

Business Models in Modern Competitive Scenarios

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Handbook of Research on Business Models in Modern Competitive Scenarios

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George Leal Jamil dedicates this book to his mother, wife, sisters, and daughters, who were always adorably helpful.

Liliane Jamil dedicates this book to her father

Cláudio Roberto Magalhães Pessoa dedicates this book to his mother (in memoriam). “She made me challenge the history and led me to the victory in my Doctorate degree. Thanks Mom, I will love you forever.”

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This chapter discusses the critical choice for a business manager, when a business model must be considered for its posterior design and implementation. Different modalities are available today and adaptations or changes are completely admissible, as competition evolves. A solid conceptualization of business models is studied, and some typical initiatives analyzed, observing their potentialities, requirements, and risks. As a market solution, several considerations are proposed at the end, regarding BM adoption in real cases, serving as a basic motivation for a clearer decision process to be pursued by business readers. This chapter contributions reach both scholars, researchers, managers, stakeholders and investors on increasing the comprehension about business models' propositions, characteristics and implementation aspects.

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Business Models Applicable to IoT	21
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Business models have been analyzed in the context of the information technology economy and are aligning the idea of innovation developing with the economy or, in other words, business aligning technology and market. Some care must be taken on the transformation of the Information Systems through the introduction of the new unique IoT offers in many fields. For the IoT systems, a complex value stack needs to be addressed in order to realize the possibilities on the innovation in the services. This induces specific requirements when it comes to designing IoT business models. IoT enables new business models, which create value by connecting existing and new things together to establish new business processes, increase business efficiency, enable greater innovation and drive improved visibility across an organization. To be successful, information systems need to consider all the layers of value

creation in order to enable the collection of information with the agility needed in the modern world of business. This chapter highlights the IoT systems, its features and market expectations. It also suggests the existence of two classes of business models for IOT, the Digitally Loaded Product and another classified as Sensor as a Service, which address the uniqueness of IoT.

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Reflecting on the Orchestra Metaphor: Aligning Business Models Simple Views 43

George Jamil, Informações em Rede Consultoria e Treinamento Ltda, Brazil

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This chapter discusses the potentialities and limitations of metaphors, as simulation techniques applied for decision-making businesses process. A special look is given to the orchestra metaphor, as it is possible to consider one of the most cited method for decades. Approaching orchestra formation definitions, a study of orchestra characteristics and peculiarities was conducted, resulting in an interesting inside view of the orchestra. A brief theoretical analysis about modelling techniques and its application in business process is also developed, allowing, at the end, to discuss how the orchestra metaphor can be applied in a useful way, encompassing several of the aspects we pointed in the text. This results as an orientation for the reader to understand how this specific technique – orchestra metaphor – can be effectively applied in decision-making processes of any level for organizations, escaping from mistakes usually committed when simple views for musical orchestras are adopted.

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The objective of this chapter is threefold: (a) assessing the development of the business model (BM) concept, pointing out efforts scholars have made to close eventual inconsistencies; (b) analyzing those shortcomings implications to the concept understanding; and (c) raising convergent themes around which future studies can be built to bring cohesion to the field. The chapter reviews BM research over the last 20 years. It indicates that BM literature still displays a discrepant use of the concept, and that divergence still constitutes an obstacle to common language development and integrated research efforts concerning BM structure and management. However, instead of justifying those gaps in literature relative newness, research and future applications can strengthen convergent themes to move forward. Four themes are identified: BM as a cognitive representation, a value reference frame, a business dynamic tool, and a two-sided view of strategy.

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This article analyses the concept of business models and their main dimensions and elements for global economy competitive scenarios. The issue studied in this research identifies disruptive business models, and builds a practical model to help the implementation of a business model for private individual transportation services, based on the case of Uber. To accomplish this research, articles were searched based on the keywords “business models concepts” and “business models elements.” The period considered was from 2013 to 2017. The goal was to identify elements of business models and strategies adopted by the company, products and services, corporate image, models and management systems: human resource management, financial management, and marketing, among others, and the formal and informal structure of the companies. The empirical case is based on the Uber business model and the new competitive scenario on personal transportation.

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The goal of this chapter is to demonstrate theoretically that a Business Model Canvas (BMC) might become dynamic to capture value and generate a sustainable competitive advantage. This chapter defines the differences between and definitions of static and dynamic business models. Furthermore, it develops the Dynamic Business Model (DBM) for the assessment of the BMC from a dynamic perspective. This chapter argues that business models are static when they are tools that merely describe the business logic of firms. However, when associated with the dynamic capacity perspective, those business models interact with the business ecosystem, allowing firms to capture value and sustainable competitive advantage.

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Laboratory medicine has a unique capability to evaluate the correct management of a medical test, its results, and the decisions it can determine. Therefore, laboratory medicine should try to improve patient outcomes, while improving quality and productivity, so that innovation in healthcare may proceed. Innovation in laboratory medicine demands an adequate identification of the unmet clinical need, evidence of clinical and cost-effectiveness of laboratory tests, and a managed implementation that takes into account the process change, appropriate resource management, and monitoring of outcomes. The main objectives of this chapter are to elucidate the role of innovation in laboratory medicine, identifying its main issues and the barriers it faces; to define a value proposition for laboratory tests and to point out several outcome measures that can be adopted in laboratory medicine.

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Dynamic markets have made it extremely difficult for firms to sustain their competitive advantages. Adapting with the reconfiguration of its internal resources has become essential for the survival of firms. In the midst of these changes in the market, the concepts of Dynamic Capability (DC) and Organizational Intelligence (OI) arise, theories that, despite their different approaches to the use of firms' resources, have as their ultimate objective the creation and maintenance of a sustainable competitive advantage. So, in order to better understand the influence of these theories on the activities of firms, this chapter approaches the relationship between both theories, analyzing their common points, and the way DC influence OI.

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Scholars and practitioners have proposed different frameworks to make business model representation easier. However, more information is still required to understand their applicability, especially concerning value perspective. This chapter focus on three of them: the Choices/Consequences, the RCOV, and the Business Model Canvas. This chapter (1) provides a comparative analysis; (2) discusses their design under the concept of value creation; (3) synthesises a new structure which contemplates their core elements, goes beyond their limitations and constitutes an alternative and useful tool. The new framework is called '(the) value of choice's (VoC). It points out – but is not limited to – the value offering architecture and enables strategic analysts to keep focus on a broad range of value outcomes: created value, appropriated value, generative value, and distributed value. The VoC is illustrated with a Brazilian tourism company's case.

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J. C. Rodrigues, Escola Superior de Propaganda e Marketing (ESPM), Brazil

E-commerce definitions allow us to understand the digital environment beyond a simplistic view of packaged products being delivered to one's home. Content, services, and experiences digitalization also became consumption options, having strong representatives such as Netflix, Spotify, and LinkedIn, among other digital services with revenue coming from recurring payments, here referred as digital subscription services (DSS). Freemium business model has gained prominence in recent years, although much of the literature considers it under a dualistic view (free vs. paid version), though there's no impediment to more than one paid version (levels). Taking advantage of the global reach, freemium DSSs usually have standardized purchase options (number of paid versions and benefits of each), turning the flexibility to set local prices fundamental to adjust the paid version(s) value perception according to the economic,

market, and consumer expectations in each market. This chapter proposes price positioning strategies in global freemium DSSs, having Cutler and Sterne's conversion digital consumer lifecycle model in the background and potential scenarios in premium levels management based on the premise of price flexibility for local adaptations. Such proposals will allow global freemium services' managers to make price adjustments according to the analysis of the consumer distribution among service's paid versions, and to future studies to seek a possible quantification of the price change due to the asymmetry of consumers' distribution.

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<i>Francisco Madeira Esteves, Instituto Politécnico de Setúbal, Portugal</i>	

The digital transformation of the economy and society itself is pushing the economic organizations to processes. Multiple digital technologies like data analytics, enterprise mobility, social networks, cloud computing, robotics, block chain, and internet of things (IOT) are pushing radical changes in the ways of working (WoW). People with strong technological skills are demanding changes to organizations towards two-way business interaction in order to meet the needs and expectations. But consumers who are technology users expect new information and knowledge products and services based on technological potential. It remains to the organizations to define strategies for this transformation, seeking to adapt their organizational and information systems to this new paradigm of digital transformation.

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<i>Zulmira Hartz, University of Lisbon, Portugal</i>	

Organizations, to achieve their strategic targets, are frequently making decisions facing modern competitive scenarios. The increment of the transparency requirements in the transactions executed is one of the factors that explain the interest in the process modeling, since it can act as a control instrument because it allows one to constantly review the base of the structure and point out problems and failures which will be reflected in chain by the other instruments used by the organizations. The literature review and the experience in the industry of productive processes shows the need to apply better management models to remain in the competitive edge of business, modeling orientation focused on the activities of each area with interfaces involved in the all productive processes. The proposal of this model is to establish the interfaces and dialogues with interaction and participation of the production areas: quality control, regulatory policies, and industrial engineering advisory to contribute technically with information to subsidize the better elaboration of the master production plan.

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<i>Ricardo Pateiro Marcão, Universidade Europeia, Portugal</i>	
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<i>Maria José Sousa, Universidade Europeia, Portugal</i>	

The profitability of performance and the reduction of turnover are the main challenges of the big companies of the professional services sector. While it is not always possible to achieve all the goals of the large multinationals in each country, it is necessary to assess their development in order to do so. In this way, the steps are identified, going to the new version of new business models, under an organization perspective that can be accompanied by interesting results with a different structure. However, for the sake of management, in order to ensure the cohesion between the teams, it is necessary to create mechanisms for obtaining high income, in order to support the enterprise architecture and the intended business model, which highlights the use of the concept of gamification as one of these mechanisms. This chapter aims to review the literature on the use of architectures and performance demonstrations. In addition to using the gamification concept, the profitability of capital invested in different business activities and the improvement of employee engagement are used. It is intended to consolidate good practices for the implementation of architectures through business models.

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Alisson Duarte, Universidade FUMEC, Brazil

Business models are an important basis for defining how companies structure the way they create, deliver, and capture value. It is an important business management activity, but it often does not receive due attention from the executives of the brands. This gap promotes, frequently, incongruities between companies' business models and what they deliver to their consumers. The lack of resources to evaluate business models and a clear understanding of how to do this activity might be as reasons for the lack of the business models' management. Thus, this chapter approaches a study about the use of a management oriented by the design. This approach can be a relevant guide the efforts in the evaluation and rebalancing between business model of the brands and their deliverables (products and services).

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José Rascão, Instituto Politécnico de Setúbal, Portugal

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The aim of this chapter is to evaluate the causality relationship between education level of the personnel and profitability of the banks. For this purpose, annual data of 15 Turkish deposit banks, between the years 2002 and 2016, is taken into the consideration. Additionally, Dumitrescu Hurlin panel causality analysis is used to achieve this objective. The findings show that education level of the personnel has a positive influence on the profitability of Turkish deposit banks. Hence, it can be said that Turkish banks should employ more personnel who are university graduate or have master or PhD degree. The main reason behind this issue is that these personnel can work more effectively with the qualification taken from the university. Another important point is that Turkish banks do not have to spend too much money to increase the training level of these personnel at the work because these personnel have taken these qualifications in their university life. Hence, it is recommended that these banks should follow their wages policies to attract the attention of educated candidates.

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Luciana Caruso de Assis, Fundação Dom Cabral, Brazil

This chapter shows the revolution that is happening in the financial system, having as main actor the technological companies—the fintechs—that don't have financial knowhow. The traditional banks didn't structure their business trying to attend the client's needs. The clients always suited themselves to banks' services. The fintechs are changing this reality by putting the client in another baseline, filling the gaps left by the banks, offering new services, and acting in places where banks have never gone before. The fintechs are offering these services with a lower price and more quality for the clients.

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Gabriela de Souza, Instituto Cultural Filarmônica, Brazil

What many people cannot see is the structure that an orchestra requires to exist. Beyond the whole group of musicians who stand up in front of the audience, there are people working on the orchestra's image, needs, fundraising, organization, programming, management, and taking care of every detail to please the audience and also the musicians themselves. As any organization, orchestras need revenue and experienced professionals to move forward. It's not a one-man work; it has to be done by many hands and brains. This chapter shows how fundraising works in orchestras in the US and in Brazil—with some similarities with European model—including which lessons each country could take from the other when talking about this subject. It also describes some examples of how musicians are being

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José Poças Rascao, Polytechnic Institute of Setúbal, Portugal

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By its very nature, the characteristics of the informal economy are largely negative, since it can hold people and companies into a spiral of low productivity and poverty. A coherent national strategy to facilitate the transition to the formality has to recognize that the costs of informality of work are high for companies, workers, and the community. From the point of view of workers without protection, the negative aspects of work in the informal economy outweigh the positive aspects. Workers are not recognized, registered, regulated, or protected under labor and social protection legislation and, therefore, cannot enjoy their fundamental rights, exercise, or defend them. As they are usually not organized, collective representation before employers or public authorities is insufficient or non-existent. This chapter explains the informal economy in Honduras and Latin America, the problems of municipal markets, and its transition into the formal economy through the plan of cooperation for local development between the various participants in the country.

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Antônio César Nunes Cruz, Fumec University, Brazil

The purpose of this chapter is to present a study that provokes a reflection and understanding about the importance of people management in the corporate world as a strategy and a fundamental resource for the success of companies and institutions. In practice, many new-company projects focus on business modeling and business plans as an initial and sufficient condition for the success of these companies or organizations that they intend to create. Little is seen about the actions concerning the importance of the human capital dimension to the desired success in a business project. Organizations cannot be successful only because of failures in the business model or in their business plan, but in the fundamental link of value creation and supply, which is boiled down to the human resource they have. People have come to occupy a place where they are seen as key elements of the value-based management model, as Kaplan and Norton in 1997 conclude, showing us that the problem of human resource management could be addressed under the strategic perspective through the balanced scorecard (BSC). It means that it becomes necessary to use organizational strategic planning as the basis for the strategic planning of human capital essential to the business.

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Fábio Mechetti, Orquestra Filarmônica de Minas Gerais, Brazil

The lights gradually dim. Like an army of warriors dressed in black and white, one hundred musicians enter the stage under the applause of the public. They take their positions awaiting the entrance of the

concertmaster, who solemnly advance to the first chair acknowledging, one more time, the applause. A sound from the Principal Oboist is heard, followed by the other musicians, looking for a common understanding, each one searching to meet the proposed “A.” Then, all stay quiet. With a determined and resolute pace, the Maestro enters the stage moving to the podium, warmly greeted by an expecting audience. The Symphony is about to start. Could it be that this moment, though, is much more than an experience of bringing to life a musical work from the past? Could this also be the utmost symbol of an ideal demonstration of society’s quest for organization, functionality and purpose?

Chapter 22

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<i>Badar Alam Iqbal, Monarch University, Australia</i>	
<i>Arti Yadav, Delhi University, India</i>	

The concept of business model is not new now, but organizations construct, identify, and innovate their models from the beginning of the business itself. The purpose of this study is to understand the importance of e-commerce business models and explore their connections to provide an overview of the concept of business model. In this study, the authors describe the business model concept in an organization, how the same works as the blueprint of how a company does business. Further, it provides an insight to understand the importance of e-commerce business models and explore their connections with various e-commerce businesses prevailing currently in India.

Chapter 23

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<i>Begoña A. García, University of A Coruña, Spain</i>	
<i>Javier Tarrío Saavedra, University of A Coruña, Spain</i>	

This chapter aims to contrast if internationalization is a key element to explain the performance of a company, especially focusing on small and medium-size enterprises (SMEs), and to identify if a business model (BM) based on exports leads to more successful companies. There is a broad theoretical body and a representative set of methodological approaches in this area of knowledge; however, the conclusions reached are very different and in many cases hardly comparable, being limited to a specific temporal and geographical scope. For the purpose of giving a step further in the investigation of BM based on exports, the SMEs from the Autonomous Community of Galicia (Spain) are analyzed through an exploratory research over the 2002-2013 period. The empirical analysis takes into account a range of firm variables linked to both firm management and fixed factors, such as the type of sector, the location, and the economic situation.

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<i>Roohollah Ebrahimnejad, Shahid Beheshti University, Iran</i>	
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<i>Zahra Faraji, Iran University of Medical Sciences (IUMS), Iran</i>	
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Shared value concept could reshape capitalism and its relationship to society. It's not just about corporate social responsibility or philanthropy. It's a new approach for business strategy regarding social issues. It could also drive the next wave of innovation and productivity growth in the global economy as it opens managers' eyes to immense human needs that must be met, large new markets to be served, and the internal costs of social deficits—as well as the competitive advantages available from addressing them. But our understanding of shared value is still in its genesis. Attaining it will require managers to develop new skills and knowledge and governments to learn how to regulate in ways that enable shared value rather than work against it. A big part of the problem lies with companies themselves, which remain trapped in an outdated, narrow approach to value creation. Focused on optimizing short-term financial performance, they overlook the greatest unmet needs in the market as well as broader influences on their long-term success. Why would companies ignore the wellbeing of their customers, the depletion of natural resources vital to their businesses, the viability of suppliers, and the economic distress of the communities in which they produce and sell? Companies could bring business and society back together if they redefined their purpose as creating “shared value”—generating economic value in a way that also produces value for society by addressing its challenges. A shared value approach reconnects company success with social progress. Firms can do this in three distinct ways: reconceiving products and markets, redefining productivity in the value chain, and building supportive industry clusters at the company's locations.

Chapter 25

How Multinational Companies Create and Capture Value From Innovation Through Business

Model Dynamics 454

Mariane Figueira, University of Lavras, Brazil

Annika Rickne, Linköping University, Sweden

Joel Yutaka Sugano, University of Lavras, Brazil

Willing to answer to the research question of how multinational companies succeed in creating and capturing value from a new technology, this chapter aimed at filling the gaps in the existing literature with regards to defining business model dynamics and demonstrating business model dynamics in practice. Through a case study of Monsanto, and of the way the company's subsidiary managed to successfully adapt and innovate in Brazil, this chapter showed that external pressures such as new technology, the need to respond to the customers' demand for information concerning the company's new value proposition, existing regulation (among other external pressures) forced the multinational company to implement changes and create new elements in some of the business model components. Results also showed that to capture part of the value created with a new technology it might be necessary to complete business model design and evaluation with the analysis of the external environment.

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Preface

Several economic, demographic and social events resulted in significant and turbulent changes in business scenarios. Among these events, it is possible to identify new technologies put available every day, startups movements around the world, need of flexibility of go-to-market plans and associated actions and strategic dynamics. The continuous demands for innovation by companies and professionals resulted in additional attention for principles announced some decades ago by Joseph Schumpeter, validated by several other authors and, finally, consolidated by the work of OECD in their Oslo Manual. In this remarkable sequence of conceptual background development, innovation was based on two main dimensions: technology and business models. At this point, business models (BM) reemerged as a main theme to be researched, aiming to give more consistency to decisions, plans and their associated execution and operational procedures.

As it can be seen, when, for example, we analyze the startup movement, which exploded in all world a decade ago, new business models were proposed by entrepreneurs who admitted facing risks in new organizational solutions which could result in an immense failure or, on the other hand, in dramatic gains, still not completely understood by classical financial management theories. Some enterprises won battles, others struggle to define themselves in the market until their disappearance. Knowledge around these events has been created, formed and registered everywhere and our book project aimed to learn from this, contributing with additional level of comprehension around the wide scope of business models as decisive strategic elements for any market, sector and economic system. Our decision on conducting this project, now completed with its twenty-six chapters, is to continuously promote debates around business models origins, intentions, experiences, results and implications around the world, gathering a valuable composition of analysis which will help both scholars and practitioners on their learning and competitive implementation. Our chapters will be analyzed in the follow.

This book is structured in three main sections. The first presents a word from the editors, where the editorial board express their studies around business models, proposing an initial presentation for the main topic. Chapters of the second section are regarded to discuss conceptual bases and theoretical relationship, seeking to compose an oversight of the background arena, allowing the reader to identify business model concept itself and many of its intricacies towards the application discussion. For the third and last section, we present, from authors of several countries, sectors and formations, cases and practical reflections about business models, composing the complete picture desired in the book project. Let us take a brief look to each chapter.

In the Chapter 1, editor George Leal Jamil and associated research partner Stephan Berwanger discussed business model concept, aiming to expand this discussion up to the point of the strategic decision covering the choice of the BM itself. As this path was chosen to develop this comprehension, the

relationship of modeling an organizational work and its associated processes, reaching to tactical and operational plans was pursued, resulting in a theory-based conception for practical application of these fundamentals, for startups, enterprises redesign and other market decisions.

Chapter 2, authored by a team of researchers – Manuel Fiúza Júnior, Cássio Batista and Marco Elísio Marques – led by professor Cláudio Pessoa, explored the application of business model theory to detail alternatives for new implementations and organizational arrangements of so-called Industry 4.0 economy. This is one strategic market which is now eagerly searching for BM propositions to define managerial parameters and support which can encompass its massive and dynamic evolution, as new solutions are proposed aggressively.

In Chapter 3, one of the main intuitive applications of business model theory, the usage of Orchestras as a metaphor to conduct business decision processes, among several other opportunities, was analyzed by authors George Jamil and Werner Silveira. Interestingly, various authors conducted their studies, over the years, observing that “something” in an organization could perform and / or be managed as an Orchestra, but with a hypothetical view of what an Orchestra really is. In this chapter, an objective approach about Orchestra’s formation and how it evolved after years is done by the authors, resulting in recommendations on how to apply this metaphor as a frequently adopted technique for decision-making exercise in firms and other organizations.

Opening the second section, authors Humberto Lopes, Fabian Salum and Karina Coleta present a study that develop a consolidated view on conceptual and theoretical fundamentals for business models in Chapter 4. A consolidation was proposed by this experienced team of researchers, observing the distance, or “gaps” of knowledge produced around propositions for many years which proposed to define business models. With its goals evidently reached, this chapter can set a new level for this relevant study, becoming a strong source of reference for future needs.

An interesting empirical test was conducted by authors Maria José Souza, Carolina Rodrigues, Jorge Martins and Mario Negas, when producing the Chapter 5. Aiming to discuss and define business model concept, they searched the literature base through a methodological approach and, with a research model, rehearsed the production of an “Uber-like” BM for transportation sector. Opportunely, the chapter resulted in a scientific observation of BM adoption which can result in a deeper perception of its origins and chances to survive.

Proceeding in the conceptual line, Chapter 6 informs about the research of authors Soraya Pongelupe, Humberto Lopes, Karina Coleta and Vivian Rodrigues when analyzing the relation of business models and value capture towards sustainable competitive advantage. Arguing about the lack of dynamicity of business models themselves, authors introduce the assessment tool Dynamic Business Model aiming to expand the static perspective of BMs as immediate descriptions of organizational logic.

Laboratory Medicine, characterized by author Carlos Lemos in Chapter 7 as one uniquely capable sector in the complex Medicine arena, is the focus of a study regarded to observe its chances of innovation, therefore resulting in bases to debate business models for this sector in the forthcoming time. As Laboratory Medicine approaches patients to understand treatments application, development and implications, also understand patients’ essential characteristics, it is possible to understand the value of this chapter as a contribution for practical BM proposition towards saving lives.

An analysis of conceptual relationships of Dynamic Capabilities and Organizational Intelligence was developed by authors Gleison Fonseca, Pedro Anunciação and Antonio Peñalver in Chapter 8. This study produces a consistency towards the potentialities for strategic alignment and reconfiguration of resources when a company attempts to govern its application for long-term sustainable planning and

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associated operation, leading to a background where business models can be further chosen with more precision and adequacy.

Authors Fabian Salum, Karina Coleta and Dalini Ferraz proposed VoC, Value of Choices integrated framework for business model's analysis and propositions, around an evidence that former contributions, such the Choices / Consequences, RVOC and Canvas can be consolidated in a stronger and wider way. Value of choices, the resulting framework, discussed in Chapter 9, is detailed based on value offering and strategic analysis conditions that support one company, with a case of Brazilian tourism organization being analyzed as an example.

Observing the business model of digital subscription system – DSS – as in its “freemium” alternative, in Chapter 10, authors José Carlos Rodrigues and Eduarda Lopes considered, in a theoretical study, the power of price positioning strategies, as a dynamic competitive adjustment. From an application of a conversion digital consumer lifecycle model as a background, this study produces a scenario of free / premium offer alternatives, which can result in a practical and theoretical contribution for implementations and new researches towards this widely adopted business model.

Chapter 11, written by Pedro Anuniação and Francisco Esteves composed an observation about the challenges faced by actual proposed business models, as new technologies emerge massively and influence the dynamics with customers, suppliers and other economy agents. Findings on customer's education on technology produced an opportune factor for this analysis, as they demand new ways of interaction and information and knowledge availability from providers.

When authors Jorge Lima, Daniele Oliveira, Jorge Costa and Zulmira Hartz evaluated the repercussions of modelling techniques, as offered by literature of strategic decision-making, they accomplished a valid relationship towards the two components of the book project proposition: business models and modern competitive scenarios. In Chapter 12, authors developed a logic view that aims to connect several critical parts and effective elements of one organization, aligning to one of the most recognized conceptualizations for a business model.

Adoption of gamification techniques, which also reappeared strongly in the market for business architecture and performance monitoring was one of the most interesting and attractive aspects of Chapter 13, authored by Ricardo Marcão, Gabriel Pestana and Maria José Souza. They searched the literature covering architecture and performance management for firms and introduced the concept of gamification, just as a tool that helps analyzing the choices of a real business model implementation.

The area of Design is an unquestionable source of academic and theoretical exercise around business models, being one of the main sources for the resurgence of business model productions. Alisson Duarte, in Chapter 14, proposed a view on how design principles can be applied around the business model management perspectives and requirements, approaching one important and sometimes far aspect: corporative branding.

Chapter 15, which ends the theoretical and conceptual section of our book, written by the experienced and renowned author José Poças Rascão, concludes our scientific arena with a wide and concise observation of an interdisciplinary field – Information Science – and its perspectives on contributing, with deeper and multi-method studies, to understand business models' productions, implications and implementations. This chapter evokes the complementarity of concepts, strengths and clearer view of an interdisciplinary field when evaluating a topic such Management.

Starting our case studies and applied section, after the editor's message and conceptual work, we reach Chapter 16, where authors Hasan Dinçer, Serhat Yüksel, Serkan Eti and Ali Tula established the introduction of demographic factors on business success, studying a case of the Turkish market. As one

of the main findings, that can be absorbed when reading the chapter, is the educational influence over employee's and agent's efficiency, towards an upgraded level of reliability and efficiency, two opportune aspects for any market sector, especially for Banking.

Working on the Financial sector, Luciana Caruso illustrated our case-study section with a mandatory observation of Fintechs phenomenon in Chapter 17. These small, agile, flexible and risky companies are really changing a remarkably controlled sector, demanding increased analysis by market professionals and analysts. With a view of the competitive Brazilian market, the author addresses the business model usually proposed by these innovators which helps understand how this new market evolves, setting a new base of rules and competition.

Chapter 18 reinforces how studies about Orchestras as typical organizations are opportune reflections regarding BMs. It was written by Gabriela de Souza and aimed to study one specific and critical component of any business model: financing. A study of financing systems adopted by orchestras was conducted, comparing a Brazilian success case to a typical American equivalent. The results, again, do not cover only artistic context, which is quite important *per se*, no doubt. But offer also insights for companies and practitioners of any sector or market.

For authors Antonio Peñalver, José Rascão and Julio Maldonado-Hernandez, the informal economy presents several risky implications, which must be addressed by governments and associated policies. This way, authors analyzed, in Chapter 19, how Honduras is assessing and taking care on the way to formalize national workforce on the way to become an open, integrated market also keeping the social security factors covered for workers, offering efficient benefits for workers.

Antonio César Cruz produced a provocative study, in Chapter 20, looking at the human resources component of a business model. This chapter addresses, in a qualified way, how these critical resources, encompassed by its managerial contexts, can become a reason of failure or success of a business model alternative, answering to corporative strategies and allowing the adequate levels of management and governance.

An invited author, famous Maestro Fabio Mechetti, presents an initiative that resulted in another level of consolidation in his remarkable career, studying the evolution of the business model characteristics adopted by the Orquestra Filarmônica de Minas Gerais in Chapter 21. As discussed in former chapters and exposed in the last one, artistic and cultural organizations present a tough context to define and develop business models. With his experience, the author completes the initial view of these complex and tutorial arrangements, which serve as a fundamental experience for entrepreneurs.

Chapter 22, authored by Badar Iqbal and Arti Yadav approached the competitive market of electronic commerce in India. As one of the most populated and diverse countries in the world, India is an unlimited source of market knowledge, with a multifaceted economy and demographic challenges. This study produces a detail of the business model adopted in one organization and discusses its outcome for application analysis.

Attempting to work the relation of business models and exporting abilities and associated level of success, authors José Vazquez, Begoña Garcia and Javier Saavedra, in Chapter 23. Examining the case of small and medium enterprises of the Spanish region of Galicia, in the period covering twelve years of competition, authors researched through factors related to the productive chain completion and operation, as to promote exports in groups of firms could be effective, becoming a new alternative for a business model proposition.

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Mona Milani, Leila Nemati, Roohollah Ebrahimnejad and Zahra Faraji produced another important study in Chapter 24 when they addressed shared value creation and offer as a new economy trend, even reaching the point to propose new fronts for Capitalism. Using these paradigm – shared value – they examine the classical business model restrictive aspects, focused on operational and financial results, which makes it difficult for a company to develop and offer value in new alternatives and working together with its productive chain with dynamism and value offer flexibility.

Approaching the case of a multinational company of the agricultural area which operates in several countries from the Brazilian branch point of view, authors Mariane Figueiras, Anikka Rickne and Joel Sugano evaluated the business model dynamics in Chapter 25. They aimed to understand this BM dynamics proposition can result in a strategic alternative even for a big company when this organization attempts to expand its capabilities on creating and capture aggregated value.

This is the path we advanced through during our project regarding business models. From creation, definition, tradition and classical aspects to innovative, flexible, risky, unknown and aggressive ones. From the capture of value, to its creation, reaching the final offer. From executive, organizational, local, national and institutional points of view. Differences, dynamics and evidences were presented together with the inescapable results still to be confirmed, in a clear instability that our book intends to help observing. A lot to be learned, discussed and, clearly, competed. We are not here to mess around. We are interested to debate this interesting issue, allowing new, innovative and traditional competitors to improve their value offering levels through business models.

As usual, we wish you a good reading.

George Leal Jamil

Informações em Rede e consultoria Ltda., Brazil

Section 1

A Word From the Organizers

Chapter 1

Choosing a Business Model: Entrepreneurship, Strategy and Competition

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ABSTRACT

This chapter discusses the critical choice for a business manager, when a business model must be considered for its posterior design and implementation. Different modalities are available today and adaptations or changes are completely admissible, as competition evolves. A solid conceptualization of business models is studied, and some typical initiatives analyzed, observing their potentialities, requirements, and risks. As a market solution, several considerations are proposed at the end, regarding BM adoption in real cases, serving as a basic motivation for a clearer decision process to be pursued by business readers. This chapter contributions reach both scholars, researchers, managers, stakeholders and investors on increasing the comprehension about business models' propositions, characteristics and implementation aspects.

INTRODUCTION

Some years ago, the choice of a business model looked like a risky enigma: if an entrepreneur committed a mistake on choosing this important element of his or her intention on making business, it will be the first and, very likely, the last one. No recovery will be possible, because changing ideas, adapting propositions and dealing with changes could be impossible and immensely costly, posing a situation where the entrepreneur had to consider this option with all delimitations just at the start of his or her ideas, intentions and wishes and live with it almost forever (Mullins, 2014; Papadopoulos, 2016).

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Obviously, things change in the competitive scenarios. One of the most remarkable changes is... exactly! Accepting changes! But, to change a strategic alternative, as the business model option is still costly, risky and can be of a difficult modification, depending on the situation. The acceptance is better, but it does not justify unstable improvisations, brand bad exposition, precarious or uncontrolled negotiations or even informality. The choice of a business model, more flexible and provided with an immense record of experiences and ideas, is still a critical decision to be made (Zalewska-Kurek et al., 2016).

However, some confusion is attributed to business model concept. In some ways, it is confused with strategy, some practitioners, for example, suggest that a business model choice can replace strategic planning – it is a wrong way to think, no doubt. Others, maybe at an opposite side, define that a business model is the operation guide for a firm, being tutored by tactical planning, not serving for a continuous dialogue among managers, suppliers, customers and other economic agents towards entrepreneurial perfection – another mistake that leads to face business model just a bureaucratic map for an entrepreneurial action (Casadesus-Masanell & Ricart, 2010; Zott & Amit, 2010).

Complicating a bit this choice, we have those habitual factors, cited and detected everywhere: economic demands, dynamics and turbulence; emerging of new, disruptive technologies; globalization and anti-globalizations waves; startups movement which proposes new productive chains arrangement and other factors that pressure entrepreneurs, legislators, customers and all decision-makers to implement new economic solutions, new ways to compete and provide value for customers.

The choice of a business model involves the precise negotiation and positioning of value for a specific customer, understanding the customer relationship negotiations to know if there is any other segment with potential attractiveness, business development with the coordination for its tactics and operations, personnel preparation and delegation, supply chain adjustments and other characteristics (Casadesus-Masanell & Ricart, 2007; Sako, 2012). The overall coordination for this valuable arrangement is attributed to corporative strategy, in a relationship that will be developed in the beginning of this chapter. So, a strategy must be thought at the beginning, at the initiative step of the entrepreneurial intention.

Discussing strategic factors for business negotiations, however, is not a simple task, in the complete picture. It involves internal and external perceptions, critical decisions – maybe eliminating alternatives and implementation issues which, alone, already encompass observations, such as human resources preparation, outsourcing, information and technology systems and other elements that should deserve their own level of project planning and risk management (Jamil, Lema & Peñalver, 2018).

In a turbulent, fast-moving, challenging scenario of maturity-related choice, the business model alternative, is possible. Business people must pay attention to it carefully, analyzing factors such as those related above among many others and work severely on executing the strategy-oriented execution, keeping governance and monitoring levels all the time (Porter and Magretta, 2011; Sako, 2012; Pfeifer, Peterka & Stanić, 2017). This defines a scenario where the complete comprehension about business models – that is not a nice drawing picture to serve as a vague compass for business guidance – that can result in progressive maturity levels and business strategy resilience, must be understood by business decision-making personnel (Tadeu *et al.*, 2018).

Initiating this remarkable discussion, it is mandatory to develop a solid comprehension about the business model concept. Along with the presentation made above, a development will be made in this chapter, aiming to foresee the width of his or her decision when choosing a business model for one organization. After this, reflections around the structural components, issues on implementing, perceptions based on cases and a first view of associated risks can be debated. This is a difficult context to limit. The discussion promoted here is to contribute for its development around initial ideas and market

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signals and promoting the reader integration, as a reflection invitation, to promote a stable definition around business model theoretical and practical issues.

To discuss the actual status of this decision scope, this chapter develops an understanding about the business model base, how it relates to strategy, tactics, operations and other entrepreneurial and competitive elements. In sequence, some alternatives of business models practice are examined, observing some factors of their adoption by entrepreneurs – or, choice alternatives that a potential entrepreneur can exam to effectively propose one business model base for his or her initiative – and, finally, generically evaluate some real cases, trying to observe how a business model choice was, or not, correct for each case, issuing some recommendations to conduct further studies or, more desirable, consider for an entrepreneurial proposition, starting a new business.

WORKING ON THE BUSINESS MODEL CONCEPT

Business model is a concept not to be worked alone, as a single fact or phenomena. Fortunately, it is possible to pronounce this affirmation with emphasis, because, nowadays, it is difficult to find something like an isolated or auto-defined. Business models (BM) have to be understood in strictly relationship with several other organizational components, such as strategy, strategic planning, organizational structure, market and sector culture, technological development, customer management, among a big relation of affected concepts (Casadesus-Masanell, 2007; 2010; Ebel, Bretschneider, & Leimester, 2016).

An origin for the explaining, with the exact writing – business model – is difficult to define (Zott, Amit & Massa, 2011; Ovans, 2015). Some authors, trying to keep pace with the recent management theory history, attribute to Peter Drucker, always a reliable thinker, in his works, like Drucker (1994), when he summarily defined that BMs are related on how the organizations get paid for what they deliver to customers (Drucker, 1994). In this article, along with his remarkable reflections, it is important to cite the “theory fundamentals to practical approach”, adopted by the author, which illustrated an opportune way to produce insights about this theme in the future. Along with the basic search for the causes and basics about what a “company does”, Drucker also contributed when he, in a historical selection, also related some other managerial contents, such as organizational structure, culture, human resources, decision-making, marketing and financial disciplines. This can be considered as a contextual relationship to develop any further reasoning around business models.

More recently, the writings of Joan Magretta – Magretta (2002), provoked several associations with strategy. This author, also with a relevant practical contribution, announced BMs as detailed and related stories, on how a company was designed, positioned and effectively implemented, associating this execution of a BM to company’s performance indicators, its associated acceptance in the market and managerial capabilities on addressing real problems and perspectives. She added contribution as to depict the dynamism for the concept, enabling to comprehend that it is not a standalone, academic definition, which will result in a set of “formulas in a white board”, but a vivid specification related to company’s strategy execution.

For Osterwalder, Pigneur & Tucci (2005), in a study also starting from historical point of view, BM theories were, at that time, still confuse and producing many different views, resulting in problems for final corporative operations. In an interesting development, authors started observing restrictions and possibilities regarding modelling techniques itself, composing a reflection which can also be found, with more philosophical approach, in Silva (2009). Modelling methods and models present a significative

diagnosis and communication principle for decision-making in any possibility, powerfully serving for business development and managerial information.

But, with pressures such as time and resources constraints to collect data, produce knowledge, design and format plans and guide it to execution, managers and stakeholders growingly started to trust on small, compacts and too concise diagrams to solve all business issues and dangerously replace plans. Clearly, planning methods, as studied by Mintzberg, Ahlstrand and Lampel (2008), reached a complicated level, transforming itself in a context, sometimes demanding too much involvement – not possible for managers in practical arenas – investing time to comprehend what that plan was coordinating and its outcome. This way, a peculiar, opportune scenario emerged to produce an uncontrolled expectation around easy, fun and gaming tools to be applied, instead of somewhat scientific, erudite and difficult to access methods and their results. This is another source for business model implementation risks, that will be addressed in the forthcoming development of this chapter.

Business models were firstly interpreted as “something” between strategy and operation. But, as authors such as Chesbrough (2003) and Casadesus-Massanel & Ricart (2007) reasoned, BMs are not business tactics. While tactical levels usually structure disciplines, departments or business units, maybe with solid specifications that determine how one of these structural components of an organizational arrangement will delegate their functions aiming to understand the strategy and compose associated operational plans, business models are high-level designs which will define the complete value positioning schemes for the same company (Porter & Magretta, 2011; Mullins, 2014; Pfeifer, Peterka & Stanić, 2017).

This difference is not a simple theoretical game of words. It becomes clear if we examine a classic organization, usually practicing business in hierarchical way of structure. Along with tactical definition and planning, for instance, for the human resources department or business unit (maybe composed by several different departments, or exerted by coordinated managers in several different units), this organizational element will have, described for its responsibilities, tasks such as (Hitt, Ireland & Hoskisson, 2014):

- Work, as requested, to collaborate in the strategic planning.
- Understand the strategic planning process.
- Learning from strategic plan, proposing the business unit effective participation to reach the predicted goals.
- Align these plans with other tactical units, such as Finance, Supply chain and Information Technology departments, enabling a rational and manageable arrangement for the strategic plan execution.
- Finally, addressing the operational plans under each department’s responsibility, producing a coordinated array of operations, oriented towards a desired level of alignment strategy – tactics – operations.

Business models, on the other hand, can be conceptualized as design propositions which connect organizations’ strategy to its continuous positioning task, delivering value to their customers and being profitable (Casadesus-Massanel & Ricart, 2010; Zott & Amit, 2010; Ovans, 2015; Jamil *et al.*, 2016; Zalewska-Kurek *et al.*, 2016). This design encompasses considerations about tactics, but incorporates several other variables, as the integrated view of cost management, perfection on understanding customer behavior, keeping a modern technological infrastructure, complete monitoring of sectorial strategic movements, along several other thinking and planning elements and initiatives. It is important to state that business modelling is a work, held at the top-level management, but with the participation and

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transparency for all organization, that will define how this corporation will be efficient on proposing and provide value for its customers.

Validating this development, it is interesting to pay attention to remarks that introduce business model definition when thinking about old-fashioned markets, such as the industrial sector on the first decades of twentieth century: a rigid, standardized, hierarchical set of rules that structured dealing with fixed, planned and predicted sectors. Maybe, in some points of the 1950 decade, along with development of new propositions of industrialization – sometimes referred as “Industry 3.0” (Maier, 2017; Schwab, 2017; Ford, 2018) – market pressures, technological conditions and competitiveness forced industries to adapt their ways to think about value negotiations with customers. This was the time of strategic alliances, as proposed joint-ventures, association with local competitors for international expansion and expensive resources sharing (even with competitors), like transportation, storage facilities and even management of specific elements, such as information technology installations.

Christensen & Johnson (2009) developed a theoretical study that lasted for, at least, seven years, appreciating the topic of business models proposition and implementation. They reached the definition of a BM, as composed from four elements:

- **Resources:** “things” a business must have to put in place to offer value to its market. People, machinery, installations and technology are examples.
- **Processes:** The ways an organization operates, how it conducts its works in coordination to enable value-offering.
- **Profit Formula:** How the company manage its costs and associated items to overcome these costs, becoming profitable.
- **Value Proposition:** Customer perception of benefits inserted in the organization’s offer.

A business model is the integrative movement of these four elements, as the value is negotiated for customers, when the profit formulation will present the economic model for the organization, about this same negotiation. Processes and resources will promote the value provision. It is a static definition, but it helps significantly differ one business model to tactical structure or planning for one organization, as this last one will address the structural definition of units, its dependencies and interventions, along with the relationship among all levels or commanding components of this firm.

It is opportune to state about the same work from Christensen & Johnson (2009), that it covers the issue of business model innovation. It can be thought as a positive circular reference, as some authors, as Schumpeter (1942), Utterback (1971; 1996) and OECD (2005) clearly stated that changes in business models can be a source of innovation. This way, a new business model can be regarded also as an innovation and an innovative positioning, producing another source of innovation, as to offer different, valuable products and services for customers.

Analyzing the conceptual relationship of strategy, business models and tactics, a remarkable contribution was conceived by Casadesus-Massanel & Ricart (2010), when these authors announced in an objective citation that:

Put succinctly, business model refers to the logic of the firm, the way it operates and how it creates value for its stakeholders. Strategy refers to the choice of business model through which the firm will compete in the marketplace. Tactics refers to the residual choices open to a firm by virtue of the business model that it employs. (Casadesus-Masanell & Ricart, 2010).

As instructed by them, it is possible to validate the initial affirmation of this section, when we defined a business model as a complete construct which aims to implement a logic, a major business definition that explain how one organization will align all its efforts, plans and actions (the “logic”), serving as a partner component of a structured, detailed, implementation-oriented view, sketched by tactical design.

In their exposition, the authors review this relationship by stating:

- The strategy will define conditions for a business model choice (an initial stage, after the strategy formulation, a business model is chosen to conceive that strategy in business terms).
- The business model will employ tactical definitions to promote competition, to allow the organization to develop its business in the market.

A two-stage definition that can, observing classical, traditional competition, sectors and companies, be observed with clear definition when studying how they operate. It can be checked as a way like: (1) The strategy board defines a strategy; (2) A business model which address the strategy is proposed; (3) The organizational structure (defined by the tactical design) will follow this guidance in the marketplace. Probably unidirectional, strict and rigid, typical of markets and companies of the first decades of the twentieth century, but with a cultural influence that is completely perceived until nowadays.

Clarifying this discussion, it is possible to find, from Eisenman (2014), amongst the development of business models analysis methodologies, one simple and useful conceptualization. For him, a BM is an “...integrated array of distinctive choices specifying a new venture’s unique customer value proposition and how it will configure activities – including those of its partners – to deliver value and earn sustainable profits...” This definition enables some interesting derivation. The first one is to relate one business model to its potentiality on delivering a new strategic situation. This way, following the remarkable developments from Joseph Schumpeter (1942), author Thomas Eisenman presents an interesting situation of innovation generation through business models. Reliving Schumpeter’s theory, two are the main dimensions on proposing one innovation: technology and business model. This way, both authors lead us to the thinking about innovation possibilities when we approach business models, implementing, modifying or creating a new one, as new strategic formulation.

Other insights from this last conceptualization are: the participation of “others” – probably the members of a productive chain, along with external influencers, like customers (loyal ones with more participation than the new, not in deeper levels of relationship), regulators, channels (like distribution companies), services to the customers (as sales, technical assistance), among several others (García-Gutiérrez & Martínez-Borreguero, 2016). So, business model specifications and implementation should involve also external elements and players, who influence transactions, potentially adding value (sometimes producing a loss of value, if strategic and marketing plans are not followed in a rigid scheme). Along with this definition, the unique perspective on value offering for customers, both producing an innovation and relating it to a competitive advantage structure and effective action plans. This reminds us about theories, such as defined by Jay Barney (1991), approaching the potential creation of sustainable competitive advantage through the evaluation and associated application of organizational resources in strategic positioning.

In this prospective analysis, Jay Barney developed the objective criterion “VRIS”, which emulates an analysis of identified corporative resources, to address if each one is a potential source of sustainable competitive advantage for one corporation. It is possible, examining this theoretical background for analysis, that a business model, as conceived with base on corporative resources, as exposed on

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conceptualizations like those proposed by Casadesus-Masanell & Ricart (2010) and Jamil, Peñalver & Lema (2018), can deliver the positioning of these resources, resulting in a design for a practical plan that will use these resources in winner tactical and operational activities. And, finally, these activities are also related to the organizational strategy, producing a solid context for this definition of a BM.

From the above, concluding, business models can be represented, as presented in Jamil, Peñalver & Lema, as one comprehensible design – with variable level of detail – that specify how a strategy will be executed, as to position resources effectively on the market, enabling one advantageous final value offer for customers. It can be regarded as composed of four basic elements:

- **Value Definition:** What is the value, in all spectrum of its composition, to be delivered to final customers.
- **Internal Structures:** Those activities, processes, resources and other features that are under organizational control and, as a main characteristic, are internal to a company.
- **External Structures:** Partnerships, relationships, additional value integrators (such as brand exposition), suppliers, regulation instances, among several others and
- **Indicators:** Both quantitative and qualitative signals that will produce an intelligible level of strategy execution monitoring for the company, resulting also in an appreciation of the business model, leading to possible adjusts and corrections.

These discussion for business model is not finished here. We discussed from one point of view, one analysis level. Business model is one of the modern, powerful concepts, which must be addressed by business people, practiced, exerted and eventually used as a source of strategy competitive advantage.

In the next section, we will approach some typical business model formats, aiming also to develop and understanding about its construction (needs) and associated risks.

TYPICAL BUSINESS MODELS FOR TODAY'S BUSINESS

As one of the most attractive topics nowadays, regarded as an economic strong force, business models are researched, practiced and tested in various sectors and markets nowadays. In this section, it will be evaluated characteristics, aspects of implementation and risks associated with some of the most successful and practiced BMs in today's arena. It is a contribution, towards practical analysis, completing the pure conceptual discussion taken in the previous section.

Marketplaces Business Models

The first business model to be approached is the marketplace. A simple and effective solution, a marketplace is a model which aims to connect people who has one resource to offer – cars, rooms, tools, expertise working hours, etc. – to other people who need these resources temporarily. The connection is provided through an information technology platform, such as a web site and mobile devices “apps”, which will present the possible services or resources owners, with some additional degree of information that helps the customer to finish his or her contract or purchase. Typically, this is the model essentially adopted by champion companies, such Uber or AirBnB, which negotiate the rentals of transportation or living for temporary final users. As it is widely known, at the interface level, the “negotiation place”,

information about the provider – reliability, comments from other users, instantaneous evaluations, etc. – are available for interested users, who analyze and choose the adequate provider. The service provision or product offer is completed through payment services, immediately put available for the interested user, with, for example, a simple debt charged in a credit card (Eyring, Johnson & Nair, 2011; Mullins, 2014).

This business model became an interesting alternative for other several uses. For example, liberal services – such as Physiotherapists, Lawyers, Project Technicians and managers, specific consultants (as Finance, Accounting, Fashion) – are among typical sectors where marketplaces are implemented nowadays, with several success cases. Marketplaces became a good option for B2B, or “business to business” relationships, as, for example, outsourcing special and more sophisticated services, such as computer programming (code development). In this sector, both, the professional and pieces of ready codes, already tested, are offered in marketplace – based environments, producing a negotiation interface for final users, who can contract someone to develop a code, delivering it following specific standardized requirements, exposed in contracting documents, or, additionally, can buy or simply pay per use one “ready to use” piece of code, which is only “called” in the main program. In this last scenario, usually, the provider can charge in many ways: number of usages, time of usage, insertion in other parts of code, etc.). There are some citations of usage also by companies with large number of workers, to be chosen in a “matrix” of human resources invoked for a specific service or task, from an internal solution of marketplace.

This service is implemented with the help of an information technology platform, which encompasses an interface – for example, the widely known screens of Waze platform, for traffic information and management – and a database which will record providers information, such as level of reliability, evaluation of other customers, number of services provided, availability, etc. Usually, this platform must show some degree of adaptability, to enable it to be used from any accessing point, through a mobile computer, tablet or smartphone. From data and information point of view is a rich environment, being a potential “big data” source, as unstructured data can be combined to structured, generating additional and deeper perceptions of a market, based on transportation requirements shown frequently by users.

These implementations, however, present some risks associated. As shown in the case of Uber, is a resource that can be rapidly adopted by competitors, not imposing, by itself, a source of good, high level competitive advantage. Additionally, any bias introduced in the database, favoring a specific provider – driver, host of an apartment, etc. – can be noticed by the final customer, leading to one of the worst threats in its usage: loss of reliability. Marketplaces, this way, must be monitored frequently, with managerial actions to be applied all the time, as to offer additional value or advantages for frequent customers. They must be promptly and effectively connected to other services, such as payment services, with reliability, and, also, to keep their fundamental value offer, marketplaces must try to offer progressive value, as perceived by the final customer, for example, promoting discounts for usage, managing resources to avoid idle times, aiming to optimize the relationship and taking care of remuneration of all agents involved. Services must be focused, objective (for example, one car sharing provider should not use the same platform for loads transportation) in one specific business, avoiding confusions and delays for the interested customers (Tennant, 2018).

Clearly, financial issues are quite delicate in marketplaces solutions, as to remunerate investments done by the platform owner. Also, providers must be conscious about internal competition to answer customer needs, as the marketplace company must assure predicted levels of competition for providers. And, finally, customers must perceive the competitive price they are paying (for example, not comparing exactly a cheap room offer in one attractive town to a fine, expensive hotel). Financial balance is critical and can become a conundrum, implicating that one of the agents involved is losing money. Risk of

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promotion immobility also is important. Sometimes, to call customers attraction, an offer – promotional discount – is practiced by the marketplace company. After the predicted or planned period for this offer, when the price should be adjusted again for an upper level, to adjust it to the normal margins for profit, the customer can develop a bad appreciation for the service, an opportunity for other competitors. Finally, in this summary review of risks and issues for marketplaces, securitization of internal databases is a critical point, as a “leakage” is not admissible by customers, although this is an impressively frequent way to attack internet companies, produced by criminals who want to sell information or other condemnable negotiations. Privacy and safety for databases, its access, code protection and interface security are some of the information technology risk management procedures adopted by entrepreneurs.

It is important to state that marketplaces are a top-level organizational arrangement available for strategists and business people to be adopted as organizational solutions for BMs to be implemented in several markets nowadays. It is not a “digital era phenomenon,” but a reality in terms of conceptually-supported design for companies, becoming a managerial alternative.

SaaS – Software as a Service – Distributed Business Model

Another widely adopted solution is the SaaS – or Software as a Service. SaaS business model is adopted in the following of the usual and traditional server – client information technology model, which became a strong trend for computer network distributed software processing, since 1970 decade (Tannembaun & Wheterall, 2010). This computer service architecture stated, basically, that a piece of software, responsible for immediate communication with the user, granting his or her access to a main service, will be put available in a local, user-oriented equipment, such a desktop computer or notebook. After interacting with this computer, when the user orders a function – such as a search in a huge database of industrial parts and their associated design details – data is transferred from a central configuration, which received this request (confirming these rights) to the final user equipment where the result was shown (Jamil, 2001).

When the internet became “the network” to be used and the mobile industry developed in a fast pace, the solution that was derived from client – server model, to become SaaS service, also turned out to be one of the main design alternatives. It was an architecture for information systems and related technological devices, involving information requisition, distribution and ease of communication with the final user (Stair & Reynolds, 2008; Jamil et al., 2016). For this user, it is completely transparent where, beyond the computer network, files with data, drawings, text, etc., were stored. The local, client or service requester interface gave him or her the comfortable feeling of control and access to a huge set of information from a distributed, shared, compact and mobile point of contact (Mullins, 2014; Interoute, 2018).

This way, with the technology substitution, services like payment providers, such as PayPal or streaming – oriented (continuity models) as Netflix or Spotify, are successfully served nowadays, becoming even new ways to watch shows, films and documentaries, or music. This success is so remarkable, that some of these services, as Netflix and musical playlists-supported Spotify are now considered new ways to consume these goods, with several degrees of additional value aggregation interactions, offered by the shared component, located closer to the final user. SaaS business model, this way, relies on a business model where a centralized – at least in architectural aspects – service is put available through a common network, for users located in several places, even with mobility, that requires this network to be served. This way, it is a “star model” network for business. It is also applied by training corporations, media services, commercial offer of data and information, among many others.

SaaS services offer several flexibilities, as the modalities of payment, for example. When contracting the commercial offer, one user can be charged by number of accesses, or for a period – monthly or annually – or by the set of data available (one specific contract can guarantee only requirements to local movies, not international, or public radios and music, not special playlists, etc.). It is also remarkable how the offer can be tuned to a specific user, as it happens in continuity models services, like streaming films or music: in those services, the list put available for users is dynamically adapted, showing possible new titles which can be of interest of this users, maybe advancing the relationship, serving for market retention and, finally, providing a feeling for improved value aggregation.

The list of SaaS applications encompasses, usually, services for supply chain management, where the client component, located in a mobile device can search and perform operations over the central software and data, where huge records of stock levels, users' interactions, parts and components movements, etc. are stored and can be consulted by a browsing facility, located in the user point of access. Additionally, parts of the user-oriented software can stay in the server, just being downloaded when needed, as, for example, sophisticated graphics presentation software, which does not need to be loaded in the small size memory of a smartphone. This is typically an information system architecture issue, leading to potential improvements and design for the developer and for the implementor.

As a versatile and, at the same time, controllable business model, SaaS face some implementation risks. The first is inherent to any centralized model, at least in its architectural base (as IT servers can be easily mirrored in an indifferent array for the user): the security issue on protecting accesses and updating the networked structure. As demands evolve, any bottleneck in the centralized service can become a performance problematic aspect for multiple requirements, resulting in loss of peak number of users to be answered. Clearly, it can be overcome with architectural investments in information technology – or business design – methods, which must be balanced in costs terms. It is noticeable that, although approaching the business model description from this aspect looks that we are facing a “just IT infrastructure” dilemma, but, indeed, it is related to the business model itself, as it is possible to think about a “business server”, as a supermarket or bank headquarters base which is answering demands send by users, across a geographical area, through small points of sales or customized agencies. This way, the maintenance of the servers, involving update of its features, security, channel performances, among other characteristics, are essential to the development of business by itself.

This architectural observation leads to a specific problem regarding operation: how and how much to invest to scale the support. As we manage to expand or multiply demands, it is possible to face increased costs in maintaining the centralized service provider, resulting in loss of financial competitiveness. This way, agreements and negotiations with the users' access points must be conducted to allow the needed investment return, keeping this solution profitable along with acceptable performance levels. This is a matter of an SLA – service level agreement – establishment to guarantee minimum levels of quality in a server-based solution, a method adopted in several IT and Finance installations.

Some issues for the users' point of consultation also arise, as interfaces, proprietary platforms which demand customer-oriented developments (leading to an undesired level of different ways, bringing additional difficulties to keep this architecture in good operational conditions) and, as previously cited, security issues on transferring data. The dimensioning of this complete structure is challenging, as the server, channels and correspondent infrastructure must be provided to allow always a balance between costs / profit versus performance. Finally, it is just the case not wanted for these paragraphs: focus only on technological aspects. SaaS is a business model, highly potentialized by information technology resources, which evolved substantially since 1960 computer-based models that were like this proposal.

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Nowadays, with the increased capabilities for IT elements, it is possible to concentrate on technological aspects, forgetting that, at the center of a “star” or the providing side, we have a company, powered by people, working for their mobile, flexible and fast-changing customer base. So, as it was mentioned above, when server or user was cited, we ask the reader to think about a distributed design for a business, a decentralized scope, which, in modern times can bring abilities for a competitive business model, to strategically answer several challenges in market. “Software”, in the last “S” of the acronym, this way, indicates a business layer possibly automatized by software usage, but it is still a firm, an organization with their objectives.

Signature – Frequent Demand – Business Models

Signature models gained attention from some years ago, as marketing theories provoked business people on trying to retain customers, evolving relationships in progressive levels (Kotler & Keller, 2015; Keiningham *et al.*, 2017). As SaaS are mistakenly considered information technology propositions, instead of business model conceptualizations, Signature could be regarded as a commercial or marketing solution. It is not only this, but a business model with proper characteristics. By a signature we mean the habitual monthly payment from a user, a requester of a service – like those which contract the delivery of a newspaper or a magazine by post office, in a classical view – but also for those B2B integrated proposition where a company also provides the periodical payment for a service which can be tangible or not, like the provision for security for digital communication, automated delivery of updates in a strategic monitoring for market intelligence service or transportation outsourcing of goods. It is a business model where a company can rely, or can define its service provision for customers with, for instance, payments in advance and incessant delivery of periodical items and / or services.

It is simple to understand and to negotiate, as a “basket” or a “box” of products is delivered to the customer, sometimes a surprise collection from items composed from the same context – sports or arts fans, wine, special food, memorabilia, amongst several options. It is also a contracting form of pre-demand service offering, which a company will provide, like corporative anti-virus, protected e-mail services, firewall update and many other items for safe digital communication consulting (Sako, 2012; Mullins, 2014).

For the provider, it is a way to have a simultaneous set of contracts about the same service, with periodical payments or installments, which allow this serving company to align and dimension the resources and items to be delivered to customers. From the customer side, it is an exchange, by that periodical payment, for a collection of items that constitute a service or products, with an increased perception of value (Osterwalder, Pigneur & Tucci, 2005). The basic financial process characteristic, dividing the cost in payments and sharing the overall cost, exchanged the aggregated value, for numberless customers, make it easier and at the same time, riskier for the provider, as the desired longer contracts come with higher expectations and correspondent levels of demand. It is also interesting to pay attention on how signature services can be adopted as an alternative to implement CRM (Customer relationship management) solutions, as to define customer profiles, identify each user with this criteria and, in the following, trying to evolve value offer and negotiation, promoting successive levels of marketing relationship with them, producing increased situations of togetherness towards “customer loyalty”.

For this offer, a provider must keep track of the set his company can offer, what can be illustrated by the services menu, rigorously dimensioned as infrastructure, personnel and resources are required to keep the offer stable for customers or the diversity of items, exemplified by sports memorabilia, that will

keep the interest of the final customer. Also, to maintain the competitiveness for this offer, the company must analyze financial profiles of their customers, both being attended and potential, as to understand their perspectives on paying periodically for this services or products. It is important to recall that regulatory laws, in some parts of the world, do not authorize providers to suspend some contracts, supposedly giving time for the customer to fix financial problems on his or her side. This way, it is possible that a provider, under the signature business model, must keep the periodical delivery of item or services without really being paid, what results in financial losses during a period, with an additional risk event.

Continuity is the main value aggregator for this business model, also implying that it is a risk source. For example, if a user loses interest on a food distribution set of items, delivered monthly (as wine, special beers or healthy food), his potential transactions are complicated to follow by the provider, as the company possibly acquired the items to be distributed in the future in advance, using a tactic of purchasing more stock items before they are sent to customers. This balance is critical, supply chain and finance must be adjusted precisely through information processing, enabling good levels of risk management.

Some markets that are increasingly using this model, based on video and textual distribution, are entertainment, education, publishing and information-based consultancy, as, in all cases, the customer (reader / user / trainer, etc.) pay monthly for the service, having access to new contents and additional offers, included in the periodical value paid or through a small additional amount, thinking both for B2B or B2C markets. It can be adopted, in the future, for industrial installations, as to periodical payments can be made in advance for automation in distribution of manufacturing between industrial installations.

Platforms: From Industrial Production to Virtual Services

The comprehension of the “platform” concept evolved and increased in the last years. Understood as a base for one industrial plant, a classical manufacturing gathering, involving people, infrastructure, furniture and machinery nowadays, is regarded much more to integrated aspects it composes, as to promote a complete level of aggregated value for customers and with the potential to integrate other platforms, amplifying the service scope and value negotiations.

The platform, according to Gautatis (2017), is presented nowadays as an integrative way to connect people through competitive levels of technology. This simple definition can be expanded to understand that platforms also connect groups of people, as teams and complete organizations, also connecting resources, such as intelligent and automated machinery, specially vehicles (which are now becoming more and more integrated to other platforms and service provisions, as to start to leverage for completed automated cars and load trucks, among other solutions). Platforms, in a historical approach, evolved from the industrial conception, physical, structured and material to an association with modern technologies, some of them are quite popular nowadays, as e-mail services and instant messengers (such as Whatsapp and Facebook messenger, among others). Integrated services from Google, Microsoft, Apple and Facebook are among the most known and commonly used platforms, offering a set of usual services for customers. These services can be developed further, or integrated to other services, for example, adding audio and video exchanging utilities to e-mail programs, increasing the overall value offered, in a typical integrative aspect for a platform. Obviously, this is an ideal situation. Competitive issues, copyrights and managerial terms have to be observed to enable the platforms integration.

Platforms are built on technology, as it can be seen both from the classical industrial solutions and the modern propositions that are frequently present in any mobile device connected to Internet. It can be adopted by organizations, as the set of services provided by companies like Google and Amazon, when

Choosing a Business Model

connected cloud services, e-mail servers, database access, GPS connection, document processing and other usual offers can be used in a simple way. This way, a platform easily becomes an integrant part of the commercial services of that company, seldom resulting in a way to interconnect with customers, eventually replacing physical or personal services, as in the retail or insurance markets.

A new powerful aspect relies on the platforms integration, where several companies can be connected through their platforms, for example, under those legal and market issues identified before. It is possible to have a common cloud server for companies working on a productive chain, sharing information regarding production levels, supply management, financial decision and market / customer relationships. Along with this integration, information systems can be shared and gather or collect data and information from scattered databases in an interconnected set of platforms, adopting an architecture of open platforms, with transparency and interface connection which allow both independence and integration. Again, it is reasonable to understand this as an ideal, technical situation. This can also be thought when we intend to connect an industrial arrangement with a typical technology-based service, such as a publishing company. A fusion of platforms can be useful to implement branding alternatives, promotional offers for targeted users, product differentiation and, again, CRM – customer relationship management – sophisticated perspectives, leading to a situation of aggregated value offered in a more robust and competitive degree.

Platform based business model results always in big projects, with different functions and wide coverage of services. This way, the first level of risk is found when the scope of functions increase beyond effective control for the provider, leading to a situation where some of predicted services will not perform with the desired quality or quantitative performance. So, the complex balance of services availability and quality must be continuously monitored and addressed by the provider. Other usual problem found in some of the known offers is the information technology concentration, or the dependence of technological implementation for platform business model. It is important to reiterate to our reader that the objective in this chapter is to discuss business models, not exclusively the IT implementation or the marketing plan of each solution, as it is possible to understand the attraction produced by this focus, instead of comprehending the overall impact and perspective of a business model solution. Excessively considering IT in this case, will probably result in the situation of the first risk presented: unbalancing the proposition of the BM, with unplanned and undesired level of quality of some services, responding more to technological issues than to the strategic objectives for the platform-oriented BM needs.

Integration of “two side markets” (Kenney & Zysman, 2016; Gautatis, 2017) present a competitive perspective, along another strategic planning demand for platform-based business models. This concept defines exactly the business interface promoted by a platform, when consolidating, from one side of the productive chain, the connection with business costumers (for example, an automotive industry details how a costumer can gain transparency of its industrial process, following, for example, levels of production, update of car technologies and, eventually, gaining access to the information of production or maintenance of his or her own car) and, on the side of the productive chain, connecting the automotive company to its suppliers, investors and stakeholders. This “two side mirrors” is a positive factor for the strategic adoption of platforms as business alternatives, although it results again in problems for a balanced, structured and adjusted implementation, tuning and protecting data flows in the two sides of the business structure.

Finally, the most important feature of a platform business model, the integration with other platforms, must be planned and carefully addressed. Frequently, when just observing the benefits of each business platform adopted and their integration, on two or more sides of connection, one entrepreneur does not

consider in his or her plans some issues for this integration: standardization for data produced and its associated flows; information integrity and privacy; processes ownership and governance; information technology costs and monitoring of effective results of integration. A cultural transformation can occur or even be planned, if possible, if the both sides of a connection admit, due to the changes imposed by the connection and future integrated workplace.

Unfortunately, it is possible to evaluate, in some market solutions, that not even all projects keep the same degree of satisfaction from the start to the normal operational status. Project review of integration for businesses models' structures like these are usually expensive and time demanding, posing some aspects of untrustworthy, requiring additional managerial intervention to reassure all users about their real objectives and final improved results from the integration strategy.

Overall, platforms are now being considering as one of the most competitive solutions in the market, presenting a competitive, modern and flexible solution for strategies such as corporative fusions, acquisitions and expansion, being one proposition to be validated and comprehended by business managers.

Other Business Model Propositions

As a demanded, versatile topic, business models are now one of the main strategic components available for organizational projections, plans and competitive alternatives to keep a company or any other organization as a modern player in any sector. From traditional, classical structures, based on rigid hierarchies, used to build “corporative empires”, supporting many brands that any customer, even not buying or negotiating products from that market, knows for decades, to actual, risky and not completely inventoried propositions. These last ones, some of which present real perspective of sectors evolution, are still being tested, configured and validated, sometimes presented with euphoria by companies, but not completely understood by customers and stakeholders, who are still based on cultural alignment to other situations.

Some other alternatives are posed every day, by important market players, such the adoption of “scarcity models” by fast fashion companies (Mullins, 2014), where companies try to negotiate the bargain power of customers (Porter, 2008), adjusting the correspondent production levels, supply chain quantitative aspects and branding, carefully and risky imposing purchase cycles according to market opportunities – as seasonal consumption – and supply and internal capacities, such as production levels and supply availabilities.

In this session, a brief, initial view of some market alternatives was examined with a first level of theoretical base, introducing it to the reader in a more consistent base and allowing to a correspondent level of risk and business adjustment. This approach will enable the final development of this chapter text, when practical considerations and perspectives for these BMs implementations will be discussed, from the adoption, choice point of view, as to seat on entrepreneurial control, thinking about the power and risks to be faced when proposing, negotiating and planning the adoption of a new business model to compete in any market or sector.

Choosing a Business Model: Considerations

From the discussion developed so far, important aspects and implications of the critical decision regarding business model adoption emerge, and the first level of it will be treated in this section. For this analysis, there is no sequence or priority in the following exposition. This text objective is to invite for a

Choosing a Business Model

reflection, which will lead to contribute for planning perspectives, when alternatives and considerations from external and internal signals and strategic factors, as those listed and discussed in the following approach, will be addressed by entrepreneurs, investors and consultants in charge of a BM definition along with the implementation details. In here, a first level of discussion, which started with the chapter objectives statements and followed by the literature review and previous exams of risks and features of typical business model possibilities, produces a base for this initial development, making the planning phase more consistent.

Personal characteristics of an entrepreneurs are considered a decisive factor for strategic formulation, movements and planning (Mintzberg, Ahlstrand and Lampel, 2008). The cultural, social and educational background, along with risk taking, project management, knowledge sharing, beliefs on centralization and market fragmentation, personal initiatives and balanced intuition are among several personal abilities and capacities acquired, developed or gathered during a life of an entrepreneur. As an important social and economic actor, entrepreneurs face risks and challenges all the time, even when they are creating small or individual businesses, proposing perspectives of maintenance or change for social factors and implications. Some of these characteristics were developed as the social and cultural background for each entrepreneur, but there are possibilities of changes, adaptations and developments, along with new postures acquired through education. It is not an easy process, however, leading to an integrated effort which, sometimes, involves other social and economic actors, such as government, professional unions, research and cultural institutions, among others. This institutional base produces a strategic national or sectorial view which will result in fundamental policies that will guide the entrepreneur towards a path considered opportune by his or her social context.

Personal characteristic will implicate in last level of decision-making. One entrepreneur, for example, can develop an expressive rejection to increased levels of risks, choosing a more conservative business model alternative, delaying riskier investments, investing more in monitoring the market and taking a slower pace for intended market penetration or growth for his business. This way, some definitions of the business model, as the financial control, can gain more details and demand more effort to implement, also resulting in more investments on composing a relationship with other sectorial economic actors.

Market knowledge is another important factor. The more naïve situation of an entrepreneurial action is to consider simply the will of a proponent to “enter in a market” only by his or her initiative, with his leadership will to innovate and face the risks. It is usually the highest level of risk, considered immature and insecure to invest. Although it cannot be completely rejected as a valid alternative, this option, seeming even illogical for some readers, can be adopted as the entrepreneur would try to learn from the market as the negotiations and reactions evolve. It is obviously immensely riskier. Knowledge about customers habits, preferences and cultural ties and behaviors are available through entrepreneurial research centers, literature is plenty available on how to analyze this data and produce associated knowledge for more complex decisions and, eventually, the immense amount of data produced nowadays can be processed and analyzed through emerging technologies, such as analytics, available from several partners in the market (Jamil & Carvalho, 2018).

To gather and process this data demands preparation and initial investment, which, sometimes, present a difficulty for business model adoption. This way, an entrepreneur must balance the decision on adopting a more knowledgeable situation – even he or she decides to compete in riskier levels and markets, knowing more precisely about the sector competition – through processing knowledge about customers, productive chain (suppliers, distribution, commerce, etc.) and other influential actors, such as governments and agencies.

Other factor is the alignment of internal capabilities and its potential adjustment to the value to be offer through a business model design. As it was shown in the previous discussion, some business model tends to be considered merely information technology or marketing solutions, attracting more attention to this conceptual base to the business strategic plan itself. A small business, for example, proposed by a team of engineers or computing professionals can be seen by these workers as dedicated to these areas of knowledge, sometimes not considering planning and management capabilities.

Strategic adjustment or alignment, as defined by authors such as Porter (2008) and Hitt, Ireland and Hoskisson (2008), is the entrepreneurial action on proposing the desired abilities, competences and capacities of a business proposition towards its perspectives of value offer. This way, those capabilities and abilities on engineering and computing must be balanced and compared with perspective market demands, as to produce effective products and services recognized by customers and feasible to be offered as an expressive value negotiation. Strategy, market and other management-based disciplines are to be applied in this case. Other cases can present the inverse situation, where the proposed business model address only management, not appreciating correctly how to produce and sustain a market offer. A business model design, exactly the context to produce this desired adjustment, will serve to detail this scenery with precision, leading to a balanced, more effective organizational proposition.

When a business model process is concluded and the final version (or what we think as a final version) is obtained, usually the first sign of relief reaches proponents and something like a “take off authorization” is considered emitted with the company allowed to perform. It is correct, but there is a fundamental part that must be considered by proponents: Very likely, it is not the end, the final version! Changes may be imposed, in the market, as some events – like those reported before, regarding customer knowledge availability, for example – in competitive arena, regulations, technology, economic and the competition itself, will produce changes over the basic premises adopted when projecting the business model design.

So, it is important to think that, with the entrepreneurial control, business model is the reachable product of a strategic process, where market signals, company’s performance and overall levels of quality and satisfaction – by entrepreneurs and customers, mainly, are monitored to assure that a specific business model answered correctly to expectations. If there is any need, the business model can be updated, changed and adapted, assuring a next level of competition, which can lead to a more successful market result. Obviously, for all the previous discussion, it is possible to understand critical aspects of strategy related processes, allowing a precise design and update for a business model. It is a critical, time and knowledge demanding process, which results in maturity for BM application and life cycle. This approach will result in more robust adjustments, for all the entrepreneurial arrangement, as to compete in future scenarios, facing risks, changes and market reactions.

A dangerous level of fast adaptation can be reached when changes in business models are proposed just for market reactions and temporarily adaptations. One typical question that is posed to an entrepreneur, regarding this fact, is “Do you need just to adapt your product line, through a differentiation technique or, in a more impacting action, do you need to change the complete business model for your company?”. As it can be seen from the possible answers for this simple, usual question, different ways, with expensive returns and deviations can be taken, resulting in exclusive alternatives. Nowadays, with the “frenzy” regarding startups and new business proposition, business “pivoting”, understood as a fast change of company’s final offer to the market and corresponding adjustments is received with dangerous levels of simplicity in several situations.

Choosing a Business Model

Abilities on changing company's actions are desired and even needed for entrepreneurs in potential or already competing in markets. But, if a business model is to change frequently, all the time, clearly, there is a potential fundamental mistake that must be corrected. Frequent cases show incomplete financial proposition (for example, informing investors about profits that are not really calculated and reachable, just a first level of assumptions), unstable modifications on production lines or service offers, leading to a confuse version for the final value offer and lack of personnel to accomplish critical tasks, as commercial and project managers. Changes are needed, but must be analyzed through a stable, reliable process of decision-making, that, at least, will evidence lack of some critical resources and, remarkably, risk levels of any decision. This chapter does not have the message to avoid risks, or only take the low-risk choice as a mandatory path for companies and their associated business models. What must be carefully seen, and it is a dangerous situation, is to propose to compete in a market without the needed risk sample, in a risk management posture. Changes are needed, pivoting can be a perfectly applicable solution but if it is frequent, the entrepreneur faces an unstable situation that must be addressed.

These facts compose a set of usual challenges when adopting a business model, as the conceptual base was defined in the beginning of this chapter. Then, with these signals, our reader has a bit more of detail on evaluating other factors, some of them eventually particular to the market where the competition will take place and trying to develop more knowledge about these signals.

CONCLUSION

Business modelling is, nowadays, an essential task for the community of stakeholders and all professionals interested in organizational performances and development. Planned and designed at its start, one business model gives the essential guidance to plan, implement and execute One strategy, as it was formulated by the top-level management of one organization. Emerging technologies and market innovations, as the startup movement, produce an opportune context for business modelling development, also bringing new perspectives on choosing one business model, or updating an existing one, as a result of competitive market dynamics.

In this chapter, business model concept was addressed and examined, from several sources, reaching a stable base, towards the comprehension of its potentialities and associated requirements and risks to become implemented in market scenarios. After this market-oriented literature review, a brief panorama of existing trends on business model design was presented, not to limit, but just to exemplify interesting and opportune efforts which are starting to show results around the world, in different sectors. As these options were discussed, some aspects regarding its implementation, strategic alignment and associated risks were also approached, producing a basic picture both for the scholar, as to develop researches associated with the topic and for the practitioner – ideally a proponent entrepreneur or business manager – who is deciding what business model to use in his or her market competition, or to modify an existing one. Chapter text was concluded with an initial evaluation on some critical aspects for a BM adoption, addressing practical issues which complete the analysis previously made in the first sections.

As this text and associated practice shows, business model, the central topic of this chapter and this book, constitute, nowadays, in an arena where academic and scientific knowledge meets the competitive picture, resulting in configurations that can promote a winning position or not. Challenges for business managers involve considerations of the business model potentialities, their risk levels, dependency on managerial bases, existence of infrastructure and technology, personnel and continuous market approach.

It is our expectation that this text can help an entrepreneur for one effective decision-making towards choosing a business model which is known, completely manageable, producing the intended level of competitive comprehension and managerial evolution.

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Chapter 2

Business Models Applicable to IoT

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ABSTRACT

Business models have been analyzed in the context of the information technology economy and are aligning the idea of innovation developing with the economy or, in other words, business aligning technology and market. Some care must be taken on the transformation of the Information Systems through the introduction of the new unique IoT offers in many fields. For the IoT systems, a complex value stack needs to be addressed in order to realize the possibilities on the innovation in the services. This induces specific requirements when it comes to designing IoT business models. IoT enables new business models, which create value by connecting existing and new things together to establish new business processes, increase business efficiency, enable greater innovation and drive improved visibility across an organization. To be successful, information systems need to consider all the layers of value creation in order to enable the collection of information with the agility needed in the modern world of business. This chapter highlights the IoT systems, its features and market expectations. It also suggests the existence of two classes of business models for IOT, the Digitally Loaded Product and another classified as Sensor as a Service, which address the uniqueness of IoT.

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INTRODUCTION

Increasingly, the modern world has come up with solutions that release the routine tasks. Automation becomes present in commercial, professional environment and at homes. Anticipating this, Mark Weiser created the concept of Ubiquitous Computing in 1991, where computers will be integrated at environments to perform some tasks in a transparent way (Bezerra; Freitas & Nascimento, 2015). In this and other models, one issue stands out: how to capture real-world data for these computers to work?

One proposal came with the concept of Internet of Things (IoT) created by Kevin Ashton in 1999. At the time, Ashton also emphasized that the data acquired by machines would have not the limitations time, attention and precision. According with him: “If we had computers that knew everything there was to know about things—using data they gathered without any help from us—we would be able to track and count everything, and greatly reduce waste, loss and cost. We would know when things needed replacing, repairing or recalling, and whether they were fresh or past their best.” (Ashton, 2009, p. 1).

As we can see above, Ashton already outlines some aspects of business (reduce waste, losses and cost). In fact, ideas need to be turned into business to prosper in the real world. A business model becomes necessary.

In this context, this chapter aims to show a collection of business models applicable to IoT. For the preparation of this chapter, research was made in online digital databases, aiming at a broad, non-exhaustive review of the literature on the subject. The research can be classified as:

- **Nature:** Basic
- **Objective:** Explanatory
- **Approach:** Qualitative
- **Procedures:** Bibliographic

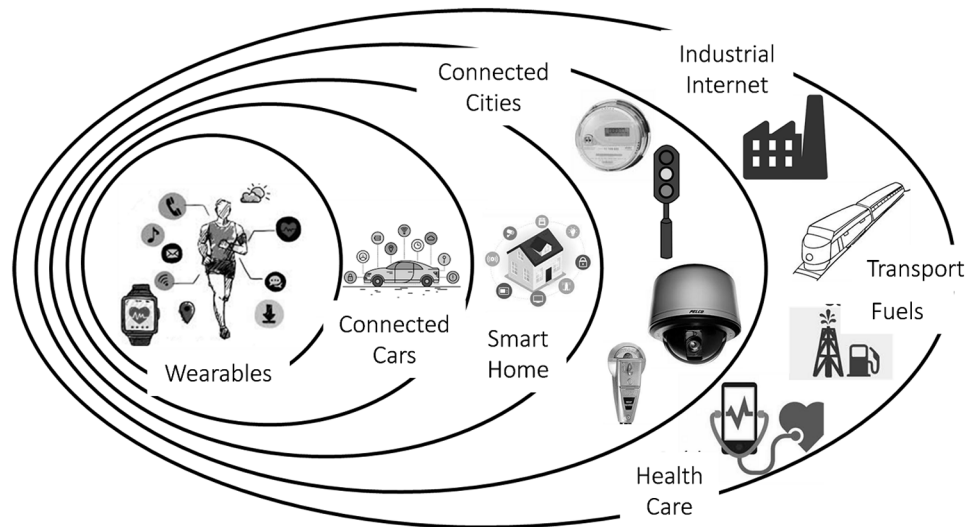
After this introduction, we are going to present a theoretical review, addressing concepts of Internet of Things, its potential market and aspects of telecommunications networks that can provide the necessary infrastructure. Next, we are going to present the concepts of business models and, finally, the business models surveyed are exposed.

THE INTERNET OF ALL THINGS

The evolution of the Internet can be summarized in five phases, as can be seen in Figure 1, adapted from Perera et al. (2017). In an initial phase, it was created to connect two computers, using a network interconnection protocol, the IP. In the next phase, the World Wide Web (WWW) was created, allowing the connection of a large number of computers. In a third phase, the Mobile Internet appears, connecting mobile devices to the Internet. In a fourth phase, identities are connected on the Internet through social networks. Finally, the Internet includes objects that connect over the Internet, thus forming the Internet of Things (IoT).

Kevin Ashton initially designated the term “Internet of Things”. In 2001, the MIT Auto-ID center presented its vision of IoT, as quoted by Perera et al. (2014). IoT was formally introduced by ITU (International Telecommunications Union) in the Workshop Report (2005).

Figure 1. Evolution of the internet until the inclusion of the internet of things



Pessoa et al. (2016) present the concepts, applications, challenges and future trends of the Internet of Things (IoT). The authors present good perspectives on the creation of solutions (products and services) that meet market needs. An example shown is the concept established by Pandikumar et al. (2014) which states that the IoT architecture is a convergence of several technologies such as pervasive / ubiquitous computing, sensors / actuators. Information and Communication Technologies (ICT) and embedded systems gives the technology the necessary flexibility to adapt the market real demands.

Support for IoT requires machine-to-machine (M2M) communication. M2M is defined as the communication between devices without the need of human interaction. It can be communication between devices and a server or between devices (“device-to-device”), either directly or over a network.

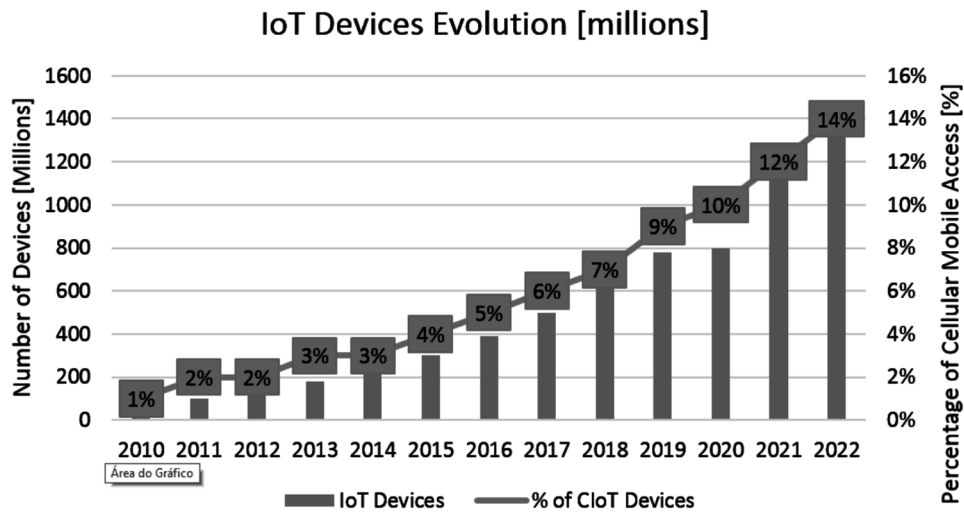
Finally, there are companies, such as CISCO, that define a new evolution of IoT to an Internet of Everything (IoE) level. While IoT is based on sensors / physical actuators, IoE generalizes to include also the inputs of data by people and the instrumentation of business processes, according to Etzion, Fournier and Arcushin (2014). Examples of data entries by people are the Waze, Facebook, LinkedIn applications whose main source of information is provided by their users.

Potential Market

For 5G Americas (2016), short-range wireless communications and wired networks should be used for most connections. However, there are emerging long-range technologies integrated with the mobile cellular network in development. They also point out that IoT should cover a large number of categories of business opportunities. There are some interpretations of how one could segment applications into key verticals. Generally, there are five key vertical highlights: Connected Wearables, Connected Cars, Connected Homes, Smart Cities, Connected Cities, and IoT Industrial, as seen in Figure 2.

Currently, mobile phones remain the main category of connected devices, and, by 2018, they are expected to be overtaken by IoT. Specifically, a 21% Compound Annual Growth Rate (CAGR) of IoT devices is expected in the period from 2016 to 2022. In total, around 29 billion connected devices are

Figure 2. Key vertical segments for IoT

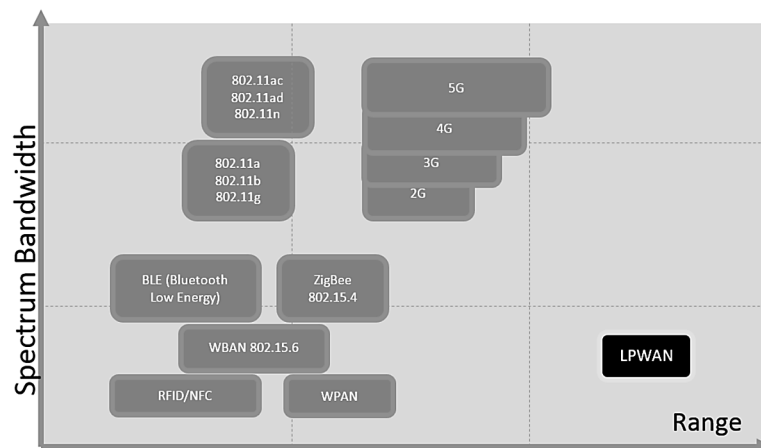


estimated in 2022 and, from this amount, 18 billion are related to IoT (5G Americas, 2016). Figure 3 illustrates this growth.

NETWORKS AND IOT TECHNOLOGY

Virtually any network can support M2M applications. Wired networks, such as Ethernet or xDSL, are suitable for monitoring fixed things, while wireless networks can be used under any circumstances. In wireless communications, there is a wide application area with technologies and standards suited to several use cases. The standards of the mobile cellular network, in its latest versions, have been developing several adaptations for IoT applications. Low Power Wide Area (LPWA) systems, various Wireless

Figure 3. Estimated growth of devices connected up to 2022



Business Models Applicable to IoT

Local Area Network (WLAN) technologies and several Personal Area Networks (PANs) can be used for IoT applications. Figure 4 shows the various wireless technologies and their relation to the range and spectrum occupation. The higher the data transmission rate, the larger the radio frequency spectrum used.

Mobile Cellular Technology and LPWA

According to Cisco (2013), the number of connected devices in the world will grow from 15 billion today to 50 billion by 2020. This forecast represents all forms of wireless connectivity, with the growth of Mobile Internet. In this context, cellular connectivity becomes more valuable as an important form of IoT access.

Considering data acquired from 5G Americas (2016), Figure 5 shows the estimate growth of cellular technology, as IoT access technology, and the percentage predicted for IoT performed through the mobile network using Machine Type Communication (MTC) with changes in the core network to this type of communications, specified as CIoT, or Cellular Internet of Things.

The first evolution of MTC technology was aimed at increasing possible scenarios, focusing on cost reduction, since Release 10 of 3GPP (mobile systems standardization entity).

The same low-cost requirements were addressed more than a decade later by other standardization forums and entities, such as: ZigBee and Z-wave, all using ultra-low-power devices and focused on providing point-to-multipoint or mesh networks that addressed four challenges for the massive deployment of IoT services:

- Low cost devices needed to be integrated into not only a single chip modem, but also sensors and actuators on all objects, including wearables
- Power efficient system, which allows the maximum possible autonomous operation of the IoT devices with reduction of the battery size
- Ubiquitous coverage in the implemented scenario. Network deployment should ensure a high degree of indoor and outdoor coverage. Mesh networks, using self-tuned routing, to enable node deployment without any manual configuration

Figure 4. Personal, local, and long-distance wireless systems

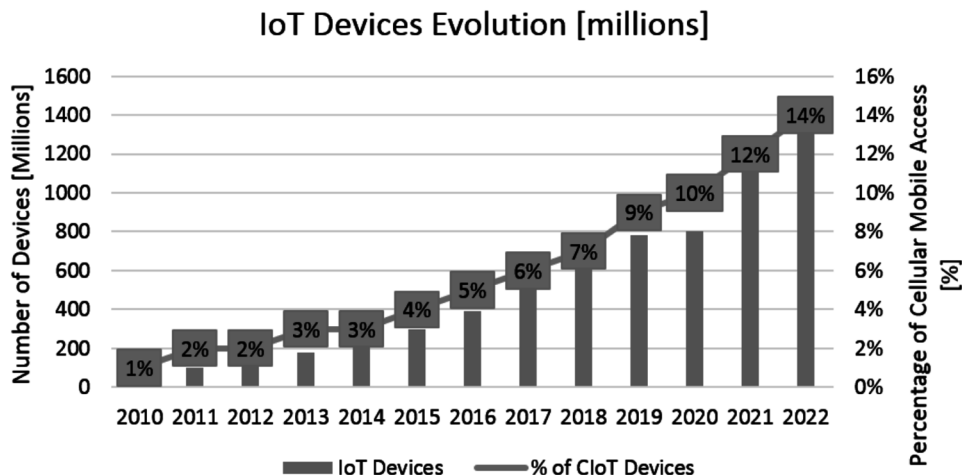
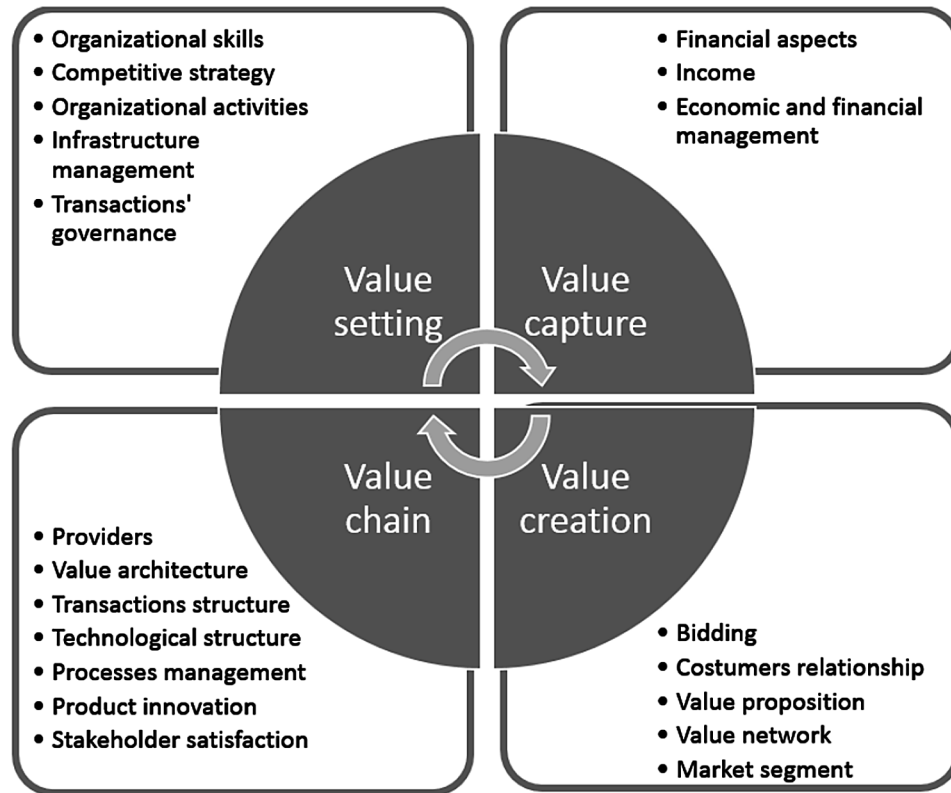


Figure 5. Growth of IoT devices and percentage of CIoT devices



- Scalability, considering the large number of devices that can be deployed in an ultra-dense scenario, such as the city centers and with expectation of exponential growth of the connected devices

These basic requirements were initially addressed with the combination of short-range devices and mesh network. However, the use of multihop mesh networks presents a degree of complexity and performance that limits their application.

To overcome this bottleneck, and thanks to the improvement of microelectronics technology, allowing the integration of high-power modems (including power amplifiers – PA- and other radiofrequency – RF- parts), a new approach designed to meet the four requirements, mentioned as challenges of IoT, known as Low Power Wide Area (LPWA), was adopted a few years ago. The basic idea is to move to a star connection, increasing cell coverage by using modulating technology in which complexity and energy requirements are centered, as much as possible, on a base station. This star approach provides a low cost of operation (OPEX) since no coordination node is needed near the end devices, with simple and highly desirable deployment for infrastructure and carrier companies.

To meet the challenges listed with an LPWA approach, several radio parameters must be degraded, as they are not required in some predicted IoT services:

- Throughput, usual scenarios require only a few kbps or less
- Packet length, messages will be very short with only a few bytes

Business Models Applicable to IoT

- Cycle of activity, very short periods of activity, in all, less than 10% of the time
- Latency, values will depend on services, but several of them have loose requirements, with only a small number of connections every day
- Handover sessions will not be required in most scenarios

Initially, the focus of mobile cellular systems was the high data rate broadband service. Currently, a series of improvements have been made in the access network and in the network core, as well as in the provisioning of users, to make them suitable for the various use cases of IoT applications.

The radio access network is optimized to enable low-cost, low-power transmission devices. Broadband protocol transmissions are designed for minimum power for a battery life of more than 10 years and provide long-range coverage, including rural and significant indoor coverage. New User Equipment (UE) categories were standardized, such as LTE-M, or M1 and NB-IoT, or NB1 category, based on the technology adopted in LTE.

LTE-M provides requirements for a low-complexity terminal category that supports reduced bandwidth, ultra-long battery lifespan using both consumption reduction and coverage expansion techniques.

NB-IoT improves indoor coverage, mass-scale “Things” support with low transmission rates, ultra-low-cost devices, lower power consumption and optimized network architecture. The technology was developed to allow deployment in the LTE (in-band), or LTE carrier guard band, or in stand-alone mode.

The NB-IoT can be seen as a standardized LPWA technology with use of a regulated range of frequencies.

Most of the new LPWA systems are based on the use of the unlicensed radio frequency band in the ISM band and use low-power radio transmitters to create network solutions optimized for low cost hardware, long battery life and ubiquitous coverage

There is always a trade-off between cost and energy consumption, on the one hand, versus network performance on the other, which need to be weighted according to the specific needs of the application. LPWA networks were initially developed for early telemetry applications, and evolved into technologies that uses the most advanced wireless networking techniques.

There are currently LPWA systems that use proprietary or semi-proprietary platforms for specific applications, such as Intelligent Meters or Supervisory Control and Data Acquisition (SCADA). Larger deployments connect millions of nodes through point-multipoint or mesh configurations. Recently, there have been some initiatives to create LPWA standardizations with open standards. So far, LoRa and Sigfox have gained more support, with long-range networks planned or under implementation in several countries.

WLAN/WPAN Technologies

The major Wireless Local Area Network (WLAN) and Wireless Personal Area Network (WPAN) technologies include Wi-Fi and Bluetooth. A family of WPAN technologies based on the IEEE 802.15.4 standardization family was designed to support a wide range of predominantly industrial uses. They include ZigBee, developed for control applications and sensors, and WirelessHART, developed for wireless networks for devices in the field.

CLOUD DEVELOPMENT

IoE systems are grounded both in low cost sensors and in microprocessors as in their computing requirements exploring new native cloud technology, avoiding significant installation and support costs in datacenters. Much of their application is an Event-driven response, such as AWS Lambda and IBM OpenWhisk, which offers low-cost computing. Modern application architecture, like micro services, match perfectly with event-driven use cases.

The massive view of IoE can generate Big Data, while the analytics, based on learning machine, is the ideal one for data mining. However, the growth of intelligent programming with “Deep Learning” opens up opportunities for automated intelligence. Remote systems can be better managed and controlled by intelligent systems and have been applied in IoE projects. Silva et al. (2016) point out that as systems are integrated, they also become an important source of input for public policy decision making, which characterizes one of the objectives of state intelligence activity.

IoE solutions integrate with numerous IT systems, including ERP, CRM and database management systems, as well as analytics and business intelligence applications. Derhamy et al. (2015) present environments for the development of cloud IoE solutions. As presented by Malm (2016), most M2M and IoE platforms are cloud-based, using Infrastructure as a Service (IaaS) or Platform as a Service (PaaS) from vendors such as Amazon, Google, IBM, Microsoft, Cisco, Oracle and SAP and cloud systems management software companies, such as VMWare, BMC, CA Technologies. IaaS offerings typically include virtual machines, storage, load balancers, and virtual local networks, available as on-demand resources. PaaS offerings also include operating systems, runtime environments, databases and development tools.

BUSINESS MODELS

Among the authors who study business models, there is some doubt about when this concept came up. There is a certain consensus that the concept has gained strength, in terms of publications and studies, with the advent of technology assisting in business. Since then, several authors have started to focus on the theme to understand how to adapt the business of organizations to the electronic world. According to Osterwalder and Pigneur (2003), most of the research in the area is related to the business that happens on the Internet. Today, in particular, the research is related with modifications imposed from the technologies of IoT and the cloud, already discussed in items 4 and 5 of this work.

Ceretta, Reis & Rocha (2016) carried out a research to know the publications of the area business models to understand their concept. The authors analyzed 3,796 publications on the subject and show that the debate is not new, but gained strength with the advent of technology. Table 1, presented in Ceretta, Reis and Rocha (2016), shows the areas that have a significant number of publications about business models. It is interesting to note that the first four are associated with the idea of innovation developing aligned with economy, in other words, business aligning technology and market.

According to Pateli (2002), from 1990, the term “Business Model” began to receive several concepts. He shows concepts of authors such as Linder and Cantrell (2000), who define business models as “the central logic of the organization to create value.” For Petrovic et al. (2001) and Auer and Follack (2002), the business model “describes the logic of a ‘business system’ to create value behind real processes”. For Applegate (2001), business model “is a description of a complex business that allows studying its structure, the relation between its structural elements and how it will be possible to adapt to the real

Business Models Applicable to IoT

Table 1. Thematic areas of the study about innovation and business model

Thematic Area	N° of Publications
1. Business Economics	2342
2. Engineering	831
3. Computer Science	763
4. Operations Research Management Science	517
5. Information Science Library Science	274
6. Public Administration	219
7. Telecommunications	111
8. Environmental Sciences and Ecology	107
9. Education and Educational Research	99
10. Social Sciences	96
11. Mathematics	45
12. Science Technology	45
13. Energy and Fuels	44
14. Health Care Sciences Services	38
15. Government Legislation	35
16. Psychology	35
17. Geography	34
18. Pharmacology	33
19. Automation Control Systems	32
20. Agriculture	27

Source: Ceretta, Reis & Rocha (2016)

world”. Magretta (2002) says that business model “describes how companies work”. For Osterwalder and Pigneur (2003), business models represent “the best way to do business under conditions of uncertainty”.

Orofino, based on several authors of the area, states that: “The digital age, and the advent of the internet, have enabled companies to experience new ways of creating value by considering the possibility of networking and have benefiting from the results of other partners. This context expanded the concept of a business model that no longer refers only to business in the context of e-commerce, referring to the set of organizational capabilities that enable the creation of value in line with its economic, social and strategic objectives.” (Orofino, 2011, p. 14).

The author brings in her work a table (Table 2) that presents the evolution of the concept over time, and a summary of studies carried out.

According to Orofino (2011), the innovative business model will be a way for organizations to create a competitive advantage, by creating a way to generate value for the organization and a change in the way they do business, which will create new and successful entrepreneurs.

Second, according to the booklet of the Brazilian Support System for Micro and Small Companies (SEBRAE, 2013, page 12), any business is a system, that is, “a combination of several elements that are interconnected, in order to constitute an organized whole”. With this definition in mind, the business model will be the description of this system. The business model will be, therefore, “the possibility of

Table 2. Concepts and definitions of business models presented in chronological order of publication

Authors	Business Model Concept
Timmers (1998)	An architecture for products, services and information flow, including a description of the various business actors and their roles, a description of the potential benefits to business actors, and descriptions of revenue sources.
Mahadevan (2000)	Meeting of organizational flows related to value, revenue and logistics.
Amit e Zott (2001)	Representation of the content, structure and governance of organizational transactions in order to identify business opportunities for value creation.
Chesbrough e Rosembloom (2002)	It is the link that mediates the technological development and creation of economic value of a company.
Dubosson-Torbay et al. (2002)	It is the architecture of a company, and its network of partners, to create, increase market, and generate capital related to one or more customer segments in order to generate sustainable profit and revenue.
Magretta (2002)	An analysis of the value chain that permeates the organization as a whole and must identify who the customer is; what is the value for the customer; how to make a profit and what the inherent economic logic is.
Osterwalder; Pigneur (2003a); Osterwalder et al. (2005)	It is the description of the value offered by a company to one or several customer segments as well as the organization architecture and its network of partners for the creation, marketing and distribution of this value and its relationship with capital, in order to generate profitable and sustainable revenues.
Osterwalder (2004)	It is a representation of an abstract model conceptual framework that represents the business logic of earning money, and its relationships among the elements that make it up. Business models help you capture, visualize, understand, communicate and share the business logic of an organization.
Lehmann-Ortega e Schoettl (2005)	It is the description of how a company can create value through what it proposes to its customers, its value architecture (including its resources and internal and external value chain) and how it can capture such value and convert it into profit
Morris et al. (2005)	A concise representation of an integrated set of decision variables in the strategic, operational and economic areas that is directed to generate a sustainable competitive advantage in defined markets.
Shafer et al., (2005)	It is the representation of the corporate logic and the strategic choices of a company to create and capture value within a value network.
Tikkanen et al. (2005)	System that is manifested in its components related to material and cognitive aspects.
Voelpel et al. (2005)	It is the way for a company to conduct a business, based on an organizational value proposition for its clients, from its strategies aimed at meeting the objectives of its different audiences.
Casadesus-Masanell e Ricart (2007)	It is a set of choices (policies, assets and governance), and consequences (flexible or rigid) arising from these choices governed by a theory.
Aziz et al. (2008)	It is the way a company gets resources and delivery value to the customer.
Plé et al. (2008)	They are the choices made by an organization to obtain revenues, considering resources and competences for the generation of value, through products (goods and / or services) provided by the company, internally and externally.
Zott e Amit (2008)	It is the structure, transactions content and management, between a company and its partners, defining the resulting links.
Gambardella e McGahan (2009)	It is the approach of how an organization generates revenue, at a reasonable cost, and incorporates the possibilities of how to create and capture value.
Doz e Kosonen (2009)	A structured set of interdependent and operational relationships between the company and its customers, suppliers, partners and other stakeholders, and between its internal units and departments. It is the representation of the content, structure and governance of transactions designed to create value by exploiting business opportunities.
Zott e Amit (2009)	It is the representation of the content, structure and governance of transactions designed to create value by taking advantage of business opportunities.
Casadesus-Masanell e Ricart (2010)	The logic of the company, how it works and how it creates value for its stakeholders
Demil e Lecocq (2010)	It is the description of the articulation between different organizational components, arranged to produce a proposition that can generate value to both the clients and the company.
Klang et al. (2010)	It is the descriptive of value creation and value appropriation in for-profit organizations.
Teece (2010)	It is a model that defines how the company creates and adds value to customers and how it translates incoming payments into profit.
Wikström et al. (2010)	They are models that describe the activities of an organization in order to deliver value to the customer.

Source: Orofino (2011, p. 18-20)

Business Models Applicable to IoT

visualizing the description of the business, of the parts that compose it, so that the idea behind this is understood by those who read it”.

According to SEBRAE booklet, what is can be brought by the business model are:

- Visual thinking, that will allow us to look at the model and understand what should be done
- Systemic vision that will allow to understand the whole through analysis of the parts
- Co-creation, that enables many people that work in the company, regardless of hierarchy, knowledge and experiences, to influence and contribute to business innovation (SEBRAE, 2013)

In order to elaborate the business model, Orofino (2011) presents the four main categories that make up a business model, as seen in Figure 6. According the author, it is of utmost importance to analyze them, in order to get help and broaden the understanding of the need to combine: intuition, creativity and analysis rigor, in order to get.

Amit and Zott (2001), corroborating with the Orofino, show that the business model must be aligned with the organization’s strategy, and that it must generate value to the business. For the authors, “business model is a structural configuration of transaction components, designed to exploit business opportunities and valid for companies operating in virtual markets and also for companies operating in conventional markets.” Joia and Ferreira (2005) understand that the authors’ view is linked to the strategic vision of Porter (2001), where it is always interesting to analyze environments, define the best strategy to act in the market opportunities and choose activities that add value to the business and, consequently, are aligned with the strategy adopted. Pessoa and Jamil (2010) and Pessoa (2016) corroborate with this idea, and show the difficulty and importance of analyzing the information and aligning them with the strategies and the market, in order to seek an improvement in the operational results of the organizations.

Figure 7 presents a model adapted from Amit and Zott (2011) that aims to add value to the business and align it to the market in today’s world. The model is focused on increasing customer loyalty, as the same is suggested in the previous mentioned strategy models.

In all reviewed models and publications, it is demonstrated that business models focus on delivering value-added product / focus on customer service. Ceretta, Reis e Rocha (2016), based on the ideas of Magretta (2002), emphasize that this fact is in line with Peter Drucker’s questions, in the concepts of neoclassical theory (CHIAVENATO, 2003): “Who is the customer? What makes the customer worth?”

Figure 6. Business model components, according with Oourofino (2011)

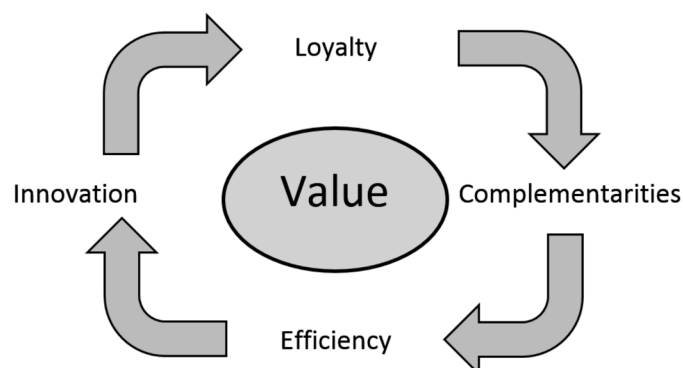
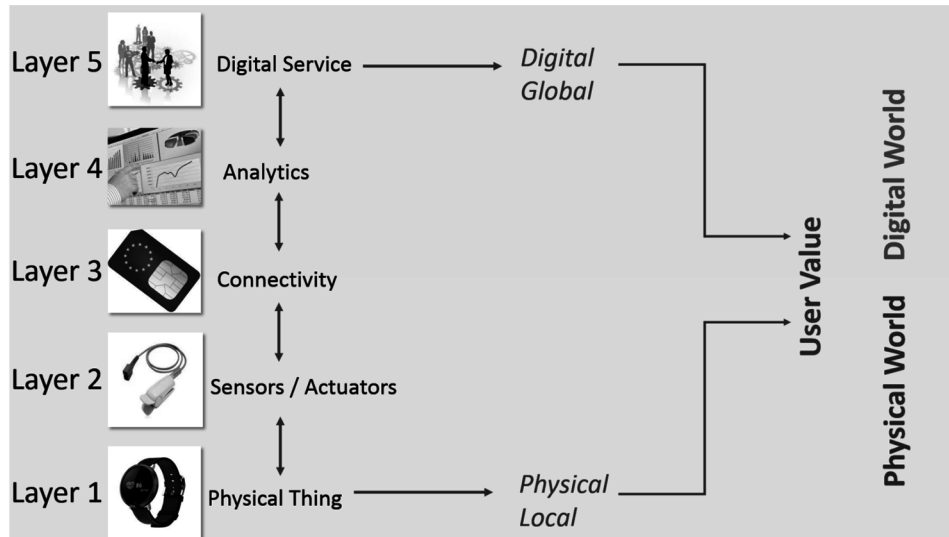


Figure 7. Business model components applied to e-commerce



In the competitive, dynamic and innovative market, know the needs of the customer (market) is of paramount importance for organizations to develop a competitive advantage, and consequently, to obtain better results in the competitive, dynamic and innovative market.

IOT'S BUSINESS MODELS

Gassmann et al. (2013) analyzed more than 300 case studies of companies that have broken with the established logic in their industries, and changed the process permanently. Gillette, IKEA, Nespresso and Pixar are well-known examples of such companies. Through years of meticulous work, Gassmann et al. (2013) examined these case studies to find their similarities by identifying a set of 55 patterns of business models.

Using the Gassmann et al. (2013) study, Fleisch et al. (2015) conducted an analysis of when new business model standards are IT-enabled and / or market transformation case studies associated with new business model patterns: a first set of new patterns of business models enabled by IT appears between 1995 and 2000. These patterns of business models are all based on what is known as Web 1.0, when the Internet was first seen and used as part of the business infrastructure. Using the nomenclature of Gassmann et al. (2013), these new IT-enabled business models included E-Commerce, Freemium, Customer Data Leverage, Open Source (in Relation to Software) and Scanning. By 2005, another set of IT-enabled business model standards emerged. They were all based on Web 2.0, the Internet that made it possible, even for ordinary users, to contribute with content. These include user development, Crowdsourcing, Crowdfunding, Long Tail and Open Source, in the sense of content (FLEISCH et al. (2015).

According to Fleisch et al. (2015), in the Internet of Things, patterns of digital business models mix with those of the non-digital world to create a hybrid construction, which becomes particularly clear in layers of value creation involved in an abstract Internet of Things application. The layers of value cre-

Business Models Applicable to IoT

ation seen in are the result of an analysis of numerous applications that, today, are classified as Internet of Things, in academia and in practice.

An important conclusion is the fact that layers 1 to 5 cannot be created independently of each other. That is why the arrows that connect them are bidirectional. An increase in the value of an IoT solution is generally not merely adding layers, but rather an integration process that extends to the physical level.

For many digital services, we need to visualize all layers, but because the digital layers influence the physical solution, many attractive digital services become unfeasible if you do not consider all the layers of value creation.

This leads us to conclude that it is increasingly essential that hardware must be developed in close interconnection with Internet solutions.

Fleisch et al. (2015) suggest the existence of two classes of business models for IOT: one called Digitally Loaded Product, and another called Sensor as a Service. The classes and their business models will be detailed below.

DIGITALLY LOADED PRODUCTS

Physical Freemium

The term “freemium” (free + premium) was proposed by Jarid Lukin and was popularized by Fred Wilson on his blog in 2006. This business model represents a solution where the digital service and the physical part are sold together, with no additional cost. However, differentiated services (called Premium) are also sold in addition to free services, which can be purchased by customers.

In this type of business model, the strategy of lowering the price of the basic product can maximize the possibility of selling for the other complementary good, which will be the differentiated product offered by the company. As an example, a company could offer a drone with real-time camera that can be accessed via WEB, but could separately sell the possibility of geoprocessing image analysis.

Digital Add-On

Digital Add-on is a form of business model where a company does not necessarily seek to make a profit from a physical asset; on the contrary, this asset can be sold at a low cost or even available free. The idea is that, over time, the customer will acquire digital services or products, sold with a higher profit margin.

Perhaps the easiest example to remember are Kindle ® tablets sold by Amazon, launched in 2007 as one of the first digital books readers. They had a crucial advantage over its competitors at that time: it was possible to buy and download books directly from the device.

Jeff Bezos, CEO of the company said: “We do not need our customers to be in the wake of hardware updates every year. We can be very happy to see people using a four-year-old Kindle out there”. This is because the device itself is not the main product of Amazon, but rather the service of selling and signing books. This philosophy has changed the way digital books are viewed today, and are increasingly influencing segments of the technology market (Bray and Mendenson, 2010).

One branch of business that is benefiting from this strategy is that of electronic games. Today, the sale of games to be used in platforms of smartphones and tablets is quite expressive, and already in 2017 surpassed the revenues with platform games in approximately 40% (Nativez, 2018).

Digital Lock In

The idea is to create persuasive ways to keep customers on the same platform, even make it difficult to migrate to another competitor's platform, or even protect your platform from new incoming or faking.

Several systems can be used as an example of this business model. One is printer accessories. The probability of when someone choose to purchase a compatible cartridge instead of the original one, provided by the manufacturer for a home printer, should not be neglected in any way. On the other hand, the purchase of accessories, through the management of impression software is quite facilitated. The combination of reading ink levels, with "need-to-buy" alerts for new cartridges in the manufacturer's stores through the management software, can be understood as a problem-prevention tool and an Add-on strategy application.

Product as a Point of Sale

In this strategy, physical products become digital outlets and marketing services. A recent example can be found with Amazon's unattended stores, where the customer uses their smartphone as a supermarket checkout.

Another service already introduced in the market is the use of tablets coupled with shopping trolleys. These tablets can advertise offers and, depending on the items placed inside, they can make shopping suggestions.

Startups have already glimpsed the scope of this strategy. American healthcare startup Oscar Health offers its customers a type of smartwatch that collects information related to each consumer's behavior, such as their daily activities (physical activities, sleep, eating), and sends them to a database. From there, discounts, on monthly payments of insurance plan, are given when health goals, stipulated by the plan, are reached. For this same gadget, there are offers of examinations and check-ups, which are offered when any health risk or a long interval is identified without medical consultation information being updated in the system (Cuco Health, 2018).

Object Self Service

This model refers to the ability of "things" equipment to request, on a scheduled basis according to restrictions imposed by users, internet orders in predetermined places. For example, a refrigerator could ask your favorite supermarket to send boxes of orange juice as soon as a certain level of consumption is reached.

A backup power generator could request a refueling supplier, from your closest supplier, when a certain level of the storage tank is reached.

Remote Usage and Condition Monitoring

This model relates to the ability of "things" to transmit data about your condition and your environment.

One of the most common examples of this model in the literature is the management of positioning, traffic and road transport conditions.

Business Models Applicable to IoT

The impacts of the use of IoT in the monitoring of maneuver equipment are fundamental for the increase of safety and the prevention of accidents of this type of transport (Ceng and Van Dongen, 2013)

Another example, already in use today, is the case of the Brother Accessories Company, which offers leasing of laser printers based on the real consumption. This is possible because the existence of the sensors, incorporated in a printer, allow the company to know how many impressions have been made and charge only those.

Digitally Charged Products

The Digitally Charged Products model can be seen as an agglutination of all presented models. It presents itself as a model in which physical products are aggregated to a set of sensor-based services and positioned with new value propositions.

Sensor as a Service

This model uses IoT's ability to collect various types of data. Unlike the Digitally Charged Products model class, where the company itself to develop new products uses data or services, the Sensor as a Service model own data is the product of the company. For example, devices can make corrections to your GPS route, depending on traffic conditions. This sound familiar. Waze can be looked at as an example of this strategy. The benefits for this type of product are quite tangible.

Transportation companies can optimize their delivery routes, busy parents can figure out the best route to get their child to school, we have predictability when we should leave the house to go to a doctor we have never been to before. In contrast, Google, owner of Waze, makes geo-targeted marketing ads.

However, such a model may raise important ethical issues, such as the recent sale of Facebook user data to an election marketing company, or even Google's flirtation with the US Department of Defense, that has interest in using the collected data by Google, for military purposes.

FINAL CONSIDERATIONS

New technologies silently occupy our space, becoming part of it. Subject of this chapter, IoT, will transform the ICT industry and the way we live.

Data that until now were not available to our senses are now available on a global scale. Everything possesses some degree of intelligence, can communicate, and the access to this data can provide analysis and generate information, knowledge and actions. This whole revolution can bring benefits to the whole society, such as increasing productivity, improving people's quality of life, and even reducing the exploitation of our planet's resources. In addition, new activities have been and will be created, fostering technological innovation.

The estimated figures of the amount of resources that will be circulated in this market point to the creation of a new economy of the size of the North American GDP. In this way, the research of the types of business models must be carried out in order to mark the adoption of the one most appropriate to a specific situation.

However, along with this new perspective new challenges are brought to society:

- **Internet of Things:** Is associated with good Internet networks; with this in mind, we have to guarantee the quality of web access to all users. This is still a reality far from being achieved, especially when we see the number of 4G networks implemented in the world;
- **Security:** Attacks can happen from the Internet of Things, then, we must create strategies to increase network security;
- **Job Creation:** The possibility of automation of various activities leads to unemployment in repetitive and less complex jobs. There will be, therefore, the need to relocate personnel in an intelligent way, through retraining or even increasing their levels of formal education.

The effective use of IoT's capabilities will require a significant level of data knowledge and analysis by most players involved. An analysis of the usefulness of the captured data should be of paramount importance in order to adopt a successful strategy.

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Chapter 3

Reflecting on the Orchestra Metaphor: Aligning Business Models Simple Views

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ABSTRACT

This chapter discusses the potentialities and limitations of metaphors, as simulation techniques applied for decision-making businesses process. A special look is given to the orchestra metaphor, as it is possible to consider one of the most cited method for decades. Approaching orchestra formation definitions, a study of orchestra characteristics and peculiarities was conducted, resulting in an interesting inside view of the orchestra. A brief theoretical analysis about modelling techniques and its application in business process is also developed, allowing, at the end, to discuss how the orchestra metaphor can be applied in a useful way, encompassing several of the aspects we pointed in the text. This results as an orientation for the reader to understand how this specific technique – orchestra metaphor – can be effectively applied in decision-making processes of any level for organizations, escaping from mistakes usually committed when simple views for musical orchestras are adopted.

INTRODUCTION

Business literature, as it happens with other research fields and its related themes, usually approach the main subject adopting metaphors. Methods like these are used to promote understanding of a specific topic, aiming a better comprehension through a routinely view of the world, based on regular, normal facts and events, associated with leisure, sports, organizational reactions, military victories and other manifestations which can become of common perception by the learner. Although valid as instruments of discussion and motivation, metaphors are not meant to promote a complete analysis of the main topic, a deep notion on how its parts are integrated, how they interrelate to perform and what are the definitions of the final solution implementation, among other limitations.

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It is possible to verify that proposals for metaphors usage for Strategy and other business topics are frequent, suggested by influential authors, consultants, teachers and researchers, just in the way to promote an easier way to discuss the comprehension of complex subjects. For instance, a consultant can try to associate an organizational decision with a “winner score” in a sport, like a basketball three-point throw, a soccer goal or a marathon completion, theoretically, making it easier to understand the most relevant implications and outcome for that specific decision.

Unfortunately, as a more accurate exam allows, metaphors are good to initiate or point out some specific events in a discussion or research, but not to provide a complete development of scenarios in some cases, turning into an incomplete depiction of a context, leaving questions unanswered. This will result in sometimes precarious level for those decisions.

This chapter intends to develop a better understanding of metaphors application for business studies, mainly addressing one of the most used techniques in recent managerial contents: Symphonic Orchestras. The Orchestra metaphor is frequently adopted to debate several business-related concepts, such as leadership, departmental organization, bureaucracy, autonomy, initiatives, expertise, creativity among many others. In this text, we analyze how an orchestra is usually composed, its regular relations, similarities with other artistic enterprises and the exercise of various of its features: leadership or conduction, expertise, interpretation, organizational structure and managerial aspects for competencies, such as knowledge creation and performance alignment.

Although extremally valid in some aspects, it is argued that this metaphor is mistakenly applied, practiced as a formal guidance towards planning and project management, observing its insertion on analyzing business issues and, finally, as a conclusive study, inadequately magnifying the metaphor enabling for simulations, communication and organizational dynamics.

When we think about corporative context, the concepts of hierarchy, structures and bureaucracy (in its structural, formal, a demanded definition) sound as a familiar, usual background. But if we think about an orchestra, is it possible to apply these concepts in the same way? This chapter intends to promote an additional light when answering this and other related questions.

For this purpose, we start analyzing how one orchestra can be defined, a view of its artistical composition. This discussion aims to level the understanding about some of the most common behaviors, relationships, capabilities and possibilities for managerial decisions regarding musical concerts. After this definition, a reflection is done about metaphors – approaching some trends, from classical usages to the modern arenas of storytelling and gamification, a situation of actual opportunities for simulations to be applied to allow fast decision-making. Then, through a literature review, potentialities and restrictions of modelling adoption is evaluated, allowing the final development around risks, limits and possibilities of metaphor adoption for businesses application. This last part constitutes the reflection intended in the chapter.

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AN ORCHESTRA AS A MODEL: A NAÏVE VIEW

For this section, references are enrolled at the appropriate final section of the chapter, although we choose not to cite it explicitly in the text.

Reflecting on the Orchestra Metaphor

The Orchestra model, as we know today, was proposed when the vocal predominance – through Choirs – were progressively replaced by usage of musical instruments, in the seventeenth century. Instruments availability and its specialization – with different tones, accessories, treated materials and other implements – were developed mainly in Europe, allowing composers to think on how these arrangements of musicians could produce the desired sound concatenation, towards improved interpretation of music. At this time, usually, compositions addressed themes such as religiosity, nationalism, history, romance, literature references, among other sources of inspiration. It was a period of intense instrumental technology development, as new materials, supporting devices and the maturity of industrial processes, along with increased design abilities by manufacturers, produced unprecedented levels of innovation for musical instruments, resulting in new potentials for their application.

The Orchestra model has been evolving from another origin, also: the musical groups of similar (technology, application) instruments, as trios or quartets of violins, cellos or woodwinds, percussion and keyboards (pianos, celestas, etc.) devices. These groups usually played compositions written for these instrument “families” alone, progressively encompassing new arrangements for older works. As these compositions can become more complex, for example, adding woodwind instruments to a string group, when trumpets and horns could redefine a possible play of a piece originally written for violins, violas and cellos, this new version could present another level of drama and feeling. Here, we have one possible start for the orchestra proposition, a group of different instruments families, put together to augment the musical scope for a melody presentation.

Claudio Monteverdi (1567-1643), a composer of Cremona, actual Italy, is considered the main figure in the orchestra model proposition. According to various citations, he understood the need and opportunity for grouping several instruments together, with a degree of coordination, to support his opera compositions. His works are regarded, by some authors, as one of the “bridges” from Renaissance to Baroque era, fundamentally influencing orchestra proposition until nowadays. These influences reached famous composers, like Johann Sebastian Bach and Antonio Vivaldi, among many others, as a valuable element for musical composition. It also influenced composition itself, introducing a new level of possibilities for artistic perception and development.

Baroque musical era, understood in the period of the start of seventeenth to first decades of eighteenth centuries, is characterized by composition techniques that were designed for small groups of, typically, eight to twelve musicians (in special occasions, like masses or specific plays this number could reach to twenty), usually groups of strings, woodwind and keyboards. These arrangements were proposed in some ways to add complexity and sophistication to the older way for musical compositions, still influenced by those older vocal-based compositions. In this era, the creations of Johann Sebastian Bach (1685-1750) present one of the most remarkable contributions in arts.

Another citation must be the productions of a phenomenal artist, Wolfgang Amadeus Mozart (1756 – 1791). After his short life of just thirty-five years, Mozart left a spectacular experience of composition, play structure and impulsive creativity. With more than six hundred registered works, he also developed, among several other unparalleled achievements, the dissemination of his artistic contributions, traveling around Europe’s main centers, such as Wien, Berlin, Paris, Zurich, Munich and London and the development of pieces for soloist instruments, such as piano and woodwind. This helped to share the culture of sophisticated compositions for groups of musicians and the proposition of solos, played in the “concertos.” Along with Mozart, Georg Friedrich Händel (1685-1759) and Joseph Haydn (1732-1809) can be cited as referential musicians, composers who explored this new organization of orchestras.

It is attributed to the incomparable Ludwig van Beethoven (1770-1827) the modelling proposition which resulted in the modern orchestra design, as some instruments were defined to act in complement with other of the same kind, generating the grouping formation adopted as a base for what we see today. This will be detailed in the forthcoming text, but it is opportune to consider this proposal as the level where the orchestra metaphor usually is practiced, leading to a similarity with organizational departments, relationships and other characteristics. At this time, also, the figure of the conductor, the figure of maestro, starts to gain relevance, increasing over time, as we have the start of the Romanticism, from the final period of the eighteenth century. Therefore, we have a significant change in Beethoven's propositions: the formation of the modern orchestra basic concept – worked and developed by many other composers – and the definition for the conductor's role.

As examples of additional developments, it is possible to cite the fundamental works from Richard Wagner (1813-1883) and Gustav Mahler (1860-1911), remarkable composers who worked mostly in the final years of nineteenth century (Gustav Mahler worked until 1911). Both, among others, composed works for huge set of musicians and instruments, involving sometimes two hundred musicians along with a complex set of instruments, eventually including new percussion, strings and other apparatuses. This way, we reach the actual level of comprehension about orchestras compositions. All these precious facts will serve to produce a base to the further discussion of potentialities and limitations of the orchestra Metaphor.

In the modern era, works of contemporary orchestral music, in their designed artistic and cultural principles, proposed several other arrangements for this traditional and influential organization called orchestra. Its types, composition, plans, among other characteristics and aspects were always a significant model to be analyzed and used for discussions, debates and simulation for regular situations, as corporative decision-making. A closer look about orchestras internal structure will be developed, aiming to produce a solid context for this model to be considered for application, towards the main objective of this chapter.

Orchestra Formation: A Typical Design

The most common comparisons between orchestras and companies start in the position and behavior of the leader, looking for an analogy about CEOs and conductors. Leadership, governance and plans execution are compared with the interpretation of a play by a hundred or more musicians (or workers), where one organization – the orchestra – wants to positively transform that short moment of people's lives, in an event of art in the concert halls. This section analyzes the typical structuration of an orchestra, how it is integrated, planned and put to work together.

Talking about orchestras structure, one must know that an orchestra is composed by instruments groups, or families, which have defined positions on the stage. The typical instrument families are: strings, woodwinds, metal and percussion. Each family is divided in subgroups. For example, the strings instruments are numerous and that's why they stay close to the conductor, semi circularly, typically in different voices, such as groups of violins, cellos, bassoons (double basses) and violas, addressing also the issue of volume, allowing plenty perception for the maestro, as the orchestra historically developed this way.

Looking at the string section, we can observe why they are considered the orchestra's base, decisively playing several roles in a typical play. This family is frequently divided into subsets as first and second team of violins, violas, cellos and contrabasses. Sometimes it is enriched with guitars (as in the famous Spanish compositions, such as Joaquin Rodrigo masterpieces), mandolins and other string instruments.

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The woodwind instruments are in the center, usually in horizontal rows, behind the strings group and are formed by flutes, oboes, clarinets and bassoons. Some other instruments are also configured in this section, as French horn, piccolo and saxophones. Metal-made instruments are placed behind the woodwind, also in semicircles and have their grouping: French Horn, trumpets, trombone and tuba.

Following, percussion instruments are positioned behind the metal and the most commons are timpani, glockenspiel, bass drums, crash cymbals, triangles and xylophones, among other specific to some interpretations, such as bells, snare drums and tubular bells. Still, a usual orchestra has at least one harp, belonging to the fingering group, and piano and celestas, which positioning depends on the play to be presented.

All the instrument's positions on the stage are pointed to the podium, where the conductor accomplishes his or her coveted and prestigious work. But, for the leadership study purpose, it is important to take notice about the Orchestra organizational structure.

Usually, all these groups have a leader, named the Principal (as the principal violinist or principal cello) and his leadership assistant. The one who is not a leader or assistant is a section musician or, as informally called, the "*Tutti*" or "*Ripieno*". Obviously, they represent the most part of the orchestra. For hierarchical definitions around plays or musical aspects, it is possible to have the "associated" musician, a professional designed to act in an intermediate level, superior to the section musician but respondent to the group leader. All this hierarchy is composed to allow musical interpretation discussions, solve and decide about technical issues and musical aspects (such as a different version of a specific work), answer to the main leadership about some decisions and facilitate the communication, especially in complex, wider arrangements for sophisticated or complex plays.

In special occasions, musicians or group leaders can be invited and hired, for one or some plays. For example, a saxophonist can be specially integrated to the main Orchestra group – without being the invited solo player for a "Concerto", but a musician to adhere to a special function in an arrangement – to play a more complex, dedicated and specific partiture in one play (for example, as the saxophone play in the Maurice Ravel's marvelous "Bolero" or at Heitor Villa-Lobos' "Uirapuru"). Obviously, it is possible to add the extraordinary abilities and musical skills of soloists, typically invited to play their solo instruments in Concerto musical plays, such as the violinist in the remarkable Beethoven's Violin Concerto.

Mapping the instruments, according with professional roles in one Orchestra, we can define basic "charts" like: For woodwind chart, typically, it is possible to find Flutes, Oboes, Clarinets and Bassoons, presenting the following categories of musicians: Principal, Assistant or Section Musician (e. g. we can have, in this chart, the principal, the assistant and, finally, the section musician).

This system is more complex in the strings group because of the "spalla" (a term that resembles the word shoulder, in Italian), who is, after the conductor, the most important musician. He also has a leading function, not only in the strings, but in all orchestra, being responsible to relate to other musicians, acting like an executive / execution manager.

Except from this important hierarchical delegation, the structure of this section is basically the same, with first violins, second violins, violas, cellos and Contrabasses, presenting a personnel designation of a Principal, an Assistant and the section musician. Interestingly, it can be evidentially noticed by the relationship with the maestro when the conductor greets the spalla or the first violin leader at the beginning or end of a play, representing all musicians, or when a brief part of a composition demands a small solo by one of the leaders, usually the first violin or cello (such, among many examples, happens in the spectacular "Also sprach Zarathustra", composed by Richard Strauss).

In the percussion section, it is possible to identify a more complex design, given that all percussionists must have ability with various instruments that compose this sector. For example, a percussionist can play, in one piece, the second timpani (as in Hector Berlioz's "Symphonie Fantastique"). Usually, the selection of the principal, "boss", musician of this family is based on his or her skills to play the instrument with excellency, by the evaluation of the conductor, along with his or her communication and managerial skills, as these functions are constantly demanded to relate to other musicians, establishing, from a hierarchical point of view, the alignment from strategy to tactics to operation – the interpretation of the play.

Clearly, these arrangements, hierarchies and relationships, along with the perspective of delegations, profile selection, attributes, dynamic (different plays) indications, among other issues, are highly inspirational to discuss their attributions in one orchestra, in one specific play and, for the metaphorical analysis, how this can simulate events that occur in any organization, mainly in corporations both in structured or flexible teams.

Beside the musical and technical competencies cited above, all the group leaders are responsible and must be in charge for the team performance. They do all group delegations in each concert, that is, who is going to play what part, informing if hiring of an extra musician is necessary, etc. This happens always according to the function that each one has in the group and with the knowing and confidence the suit (instruments family) boss has about his group and about the play that will be performed in that concert.

This planning made by the bosses must occur previously and are aligned to the conductor's – here a special observation to the maestro's intention or not to intervene at this level of delegation – to give enough time for everyone to plan their individual study of each repertoire and provide the needed arrangements in the case of the necessity of hiring an extra musician, not foreseen in the general artistic plan. Financial, logistics and human resources management plans must be reviewed to receive the extra, invited musicians, if there is a special requirement.

The orchestra must include in their routine and fundamental development the sense, in a broader and systemic way, of understanding about each artistic performance, perceiving it as a set of aligned competences and not a separate sum of separated or isolated instruments sound. This gives the arrangement expected for an "orchestration": a group of coordinated musicians, playing an interpretation of a play, exercising their artistic view together, under a designed hierarchy. An orchestra, like a company and the world we live, is an interconnected network with complex and systemic relations, but with some strict relations – in a usual, frequent sense – that are infrequently forgotten in the euphoric world of simulations.

A visceral comprehension of Beethoven or Shostakovich's compositions, for example, only happens when we realize the complete orchestral context, as the complexity of each play can be evaluated and sounds which are done by a hundred or more musicians playing together are thought as a complete contextual feeling, manifesting the transforming purpose which is intrinsic in Art.

When we think about the orchestra's work, in a medium and longer deadline, in an artistic development that it must have for months and years, as a group with its own personality and sound, the concept of a "Gardener Leader" is welcome. An external look is needed to perceive, understand and coordinate what is needed by each part of the garden. In this case, it is not an immediate perception, but slowly constructed, carefully and turned into purpose, a more embracing and committed view to promote the orchestra growth, as a complex and vital organism. In this case we have the first invocation to the artistic direction executive work – one of the images or positions where the conductor, leading the team, works.

The maestro, regent or conductor is responsible for translating the composition, sometimes produced by another composer – or guiding their own compositions, as it happened to Beethoven, Richard Strauss

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or Leonard Bernstein (these last two with several images and video plenty available in Internet public services, like YouTube) – adding his or her feelings about the original theme, interpreting it and, finally, coordinating all events that happen in a concert. But, as a matter of truth, the regency starts earlier, and is a quite absorbing job – the artistic direction.

In this other position, the conductor deals with contracts, wages, positions, human resources management – personal conflicts, relationships, communication, financial issues, logistics, organizational environment and several other issues that are typical for any organization – paying attention that is a complex, intricated situation, where we have artists producing pieces, artists configuring how it will be playing and, finally, artists playing. It is a dense organization, with particular cultural, artistic and managerial perspectives that must be addressed not only by the “musical conductor”, but also by the “executive director”, who is generally the same person.

This way, a conductor develops several of his duties with peculiar attributes of any manager – more communicative, introspective, focus aligned, negotiator, central figure or power sharing manager, controller or more participative, among many other personal and working characteristics. This complexity determines particular situations for the expected and venerated figure of leadership.

As cited by Jim Collins, in a video conference years ago, when he explored some of these concepts and metaphors about the leadership, it was possible to find: “We need to find our artistic capacity more proper to the leadership we want to execute. The leadership only exists when people follow someone, having the opportunity not to following him. This is the art of making people who want to do what is needed to be done”. This way, leadership function, exerted here by the conductor, emerges.

With this view of the Orchestra configuration in mind, we will briefly analyze the potentialities on applying models and modelling techniques to study real facts, its perspectives, limitations and possibilities.

Metaphors, Models and Modelling: Application, Limits and Potentialities

Various techniques have been applied by teachers, consultants, researchers and other professionals when trying to explain or translate some real facts and phenomena to an intended audience. Diagrams, interpretations, acting, stories composition and corresponding telling and metaphors are among the most used techniques. As observed by Silva (2008), this modelling techniques can be adopted when negotiating, but must be applied considering several limitations and theoretical fundamentals. Added to this author view, it was discussed by Jamil et al. (2016) how modelling techniques face problems on producing the intended communication levels for decision-making. From these signals, it is possible to identify some frequent expectations:

- Attempt to consider the modelling technique as the only way to communicate and produce results, this way replacing the complete methodology or process with punctual or limited productions, instead of the complete plan or project design.
- Ignore the modelling technique limitations and its fundamental theoretical base – which is also “carried along” with its application when it is adopted and used, being an imbedded base of the method.
- Dedicate too much time in using the communication and presentation techniques, for potential intermediate negotiations based on this modelling applied, leaving the main planning decision-making with less focus.

- Consider that one model is a complete plan, as it shows just initial or superficial – valid, although incomplete – findings about a business action or actor (for example, identifying that one action will be held by “Marketing”. Too simple, as this function is wide, rich, strategic and complex).

It is important, to state, in favor of the modelling techniques:

- Metaphors, diagrams, simulation sessions and other techniques can solve problems, explaining more the analytical objective and decision contexts (Vasiloaia, Issa and Issa, 2011).
- Its application serves also to determine tools and its methodological approach, configuring the required and wider view for a planning process, towards a posterior complete, business decision-related solution.
- It can motivate, integrate and align the organizational team around a consolidated view of the problem, real objectives and allow communication around real delimitations for problem-solving (Conger, 1998).
- Mainly: it can consolidate the diagnosis of the real situation of some decision elements, such as market, customer satisfaction and habits, supplier interactions, governmental dynamics, internal pressures (forces, restrictions, etc.).

It is important to mention that metaphors usage in business presentations and negotiations has been debated, as pointed by Ghyczy (2003), as the author called attention about the rhetorical, fundamental and cognitive aspects of such constructs and its associated applications. In his work, the author focused the implications of the metaphor-based sessions, relating the immediate absorption of the context to some simplicity exerted in presentations, lack of completeness and external aspects to the negotiation itself, which can overlap the business domain, contributing for superficiality. Nevertheless, as Ghyczy discusses metaphors application for works related to the strategic level, its usage achievements and findings can be regarded for all levels of the organization. Moreover, metaphor sessions can explore exactly the flaws or hidden mistakes, what can be understood as an invite to expand the outcomes of these techniques, recognizing its potentials on developing additional studies for business negotiations.

It is reasonable to present, in this discussion, works from authors such as Porter (2008), Mintzberg, Alhstrand and Lampel (2008) and Porter and Magretta (2014) which intend, in different ways, to observe how hypothetical scenarios construction can benefit strategic planning studies and projections. In their works, in some parts, themes like scenarios modelling, simulations, joint discussions and others are mentioned, not always as the focus, but like auxiliary methods and processes to favor decision-making.

Some themes were approached when composing metaphor-based studies and working sessions, specially by business related authors, motivators and consultants, as it happens mainly with sports events. Soccer, Baseball, American Football, Athletic competitions, such as Marathons and Automobile races are amongst the cases applied with this realm. Taylor (2017) produced a critical thought regarding these methods, aligned with Jamil and Rodrigues (2015), regarding the adoption of sports similarities for metaphorical comparisons.

In these contributions, it is possible to understand, from the critics, how metaphors are restricted to be applied to one context. For example, when approaching baseball, which can be considered not only as a sports practice, but a part of the American culture (also with significant practice in countries influenced by United States history in some time, like Cuba, Venezuela, Puerto Rico, Costa Rica and Japan, among

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many others), some authors simply ignore that readers and spectators from outside US do not know about sport rules (both from training, practice, competition and championship) and its tradition aspects. A sign of this, occurred in a citation presented in a book about business plans translated to Portuguese language, when the publisher (and the reviewer) admitted a baseball-based description of a successful corporative action as one homerun (a major score in a baseball play) to be converted to something like “this company has travelled back to its home” (returning to the same starting point without no production). The text, obviously, lost meaning for the reader. Language is just one of the most critical points to address for sports-based metaphors.

These thoughts occurred also for military metaphors (Chussil, 2016). Military metaphors are cited even in traditional Strategy research contents, sometimes referring to studies like “Art of War”, attributed to Chinese military strategist Sun Tzu or the remarkable “On War”, authored by the Prussian military theorist and general Carl P. G. Clausewitz.

Although recognizing the immense merit on both works, among many others, citations and references from military commanders in Napoleonic, World, Korea, Gulf and other Wars and conflicts, are affected by historical contexts, military work knowledge and organization. One must understand the limitations of these metaphors. It is not a complete rejection statement, just in the way to propose reflections on its applications by business negotiators, consultants like:

- Military tensions and structure reflect other kind of competition – it is survival, occupation and dramatic victories with loss of lives after battles.
- Several requirements, pre and post preparations are usually forgotten, as military careers and preparations, information services, infrastructure, weaponry capabilities and moral, psychological conditions for combats.
- And, finally, those works, as it exemplary happens with the title of General Sun Tzu, are translated and adapted, sometimes not corresponding to the real material originally written and proposed. This way, probably, the lecturer presents an adaptation from other adaptation, adding the risk of personal observations not only by him or her, but also inserted by the translator.

These facts impose several characteristics and real aspects to apply military histories for strategy and logistics fields and case discussions, among many others. Citations for management processes, outside the military area and its related collaborative contexts, usually end in discomfort and produce what could be called “antimetaphors”, as workers are presented with though hierarchical arrangements and risk procedures, typical of military actions in combat, comprehend that those examples were not exactly designed for an office and competitions in markets, were, “ends do not justify the means”.

An important modern source are the studies from Alex Osterwalder – Osterwalder, Pigneur and Tucci (2005) and Osterwalder and Pigneur (2010) – of modelling techniques remarkably proposed by the “Business model canvas” (BMC) solution. This modelling instruments, associated with views such as its intensive applications in studies such as Ries (2011) and Mullins (2014), resulted in an opportune scenario for BMC usage in decision-making in business. Several factors, such as openness of competitive Economics, the spread of startup and innovation movement around the world, entrepreneurial programs which attempted to react to competition stagnation in some economic systems, among others, undoubtedly favored the dissemination of entrepreneurship intentions, leading to an additional demand for discussions and studies about business implementation decisions.

As pointed by Magretta (2002), some modelling techniques could serve to design business models to be adopted. Casadesus-Masanell and Ricart (2007, 2010) perfectly exposed the connections to business concepts and intentions, defining these modelling techniques at the strategic level, towards its comprehension until operational level, promoting a desired strategic alignment integration.

Moreover, business models can also identify and register signals, risk factors estimations, process domain knowledge and several other critical signals, sometimes in difficult situations to identify these demanded components for a complete and reliable decision-making. With this point of view, a critic on how to adopt and configure such techniques, not rejecting it for decision construction and consolidation, is approached.

Returning to the main point for this chapter – how to identify real resources and flaws of a traditional modelling technique, as the Orchestra metaphor for business usage – we intend to promote a reflection along modelling techniques for business contexts, observing this specific, highly discussed, case of canvases application. Studies such as the one conducted by Joia and Ferreira (2005), shown the potentialities and differences from business models design, strategic formulation and, finally, the intrinsic knowledge production perspectives for business decision. In their study, authors analyzed theoretical perspectives of canvas application techniques from several works, with remarkable citation to Amit and Zott (2001). As they studied these techniques conceptual propositions, Joia and Ferreira produced a result which serves for this chapter, on approaching on how to identify capabilities for business modelling and its analysis in the decision context – in their case, for strategic decisions – this way the more risky and valuable level for any organization.

Another success in nowadays business decision contexts is the application of the traditional storytelling technique. A classical method to explore a problem and communicate contexts, it was also raised as a complete tool for some decisions, resulting in risky productions. As pointed out by Austen (2014), this technique presents limitations and restrictions that demand methodological analysis for its coherent application. The author presents, for example, a case where a criminal research was on course, and a potential decision could be made – a wrong one, indeed – revealing how an imprecise adoption of this modelling technique could result disastrous. In her final recommendations, some conclusions that align with our present advices to the reader: (1) Consider the limits of the storytelling, paying special attention to “warning signs” of being dependent on the story formula; (2) “Slow down the storytelling”, as first answers are just that: first answers, not a complete plan or result aimed at the beginning of this study; (3) “Explore beyond cause-effect” relationships, trying to understand really these situations, relationships and, the possible answer of any act and (4) Understand that, sometimes, we do not reach the final answer, or, as it is possible to say, we will advance with what we got, what we understood, adding a risk factor in our immediate findings. This last factor can be illustrated, as we advance in some problem solving, knowing that not all questions were made, and we can be surprised, some steps ahead, by the emerging of a new question or detail that will demand more research to check about the real understanding on what are the answers we really need.

Another new trend, which combines communication innovations, customer and social behaviors and technology availability, is the games-oriented techniques, generally called “gamification” (Silva and Bax, 2017). Usually supported by a technological platform which resembles digital games, played through a computer, smartphone, TV sets or any other internet connected device, this emerging trend is considered as one of the strong alternatives in several markets, such as personnel training, scenarios simulation and projective studies. It is interesting to notice that “simulation games” is a method used in military training for several years, also supported by technological infrastructure. In these games,

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simulation of decision-making in hypothetical – closest to reality as much as possible – are held allowing the development of implementation (military actions, indeed) models which will be analyzed by the tactical level, producing plans for operational actions.

Military games show how these methods can be adopted over a consistent base. In this case, we receive the controlled benefits of the rigid and known military hierarchy, with its associated rules, communication processes and decision-making structures and implementations, which impose an alignment connecting strategy – tactical – operational levels, as managed results can be obtained. Interesting to pay attention, this is another context where simulation methods are applied by one organization with a defined, classical and solid culture, as it happens with orchestras. This fact illustrates how metaphors and other techniques are useful, when correctly applied, for organizations to analyze their feasible performances in the operational field, with methodologies to achieve predicted objectives, and the coordinated level of risk management.

Closing this section, a message is left to the reader: in our point of view, modelling techniques have their application, but there are some facts the user – for example, a manager who oversees a dynamics session where a decision will be taken – must pay attention, such as:

- What is the real context of that base of metaphor: An orchestra? A sports action or modality? A historical event? What are their real suppositions, precedents, antecedents and repercussions? (For example, a war battle could identify, at a first glance, a victory for one army, but, on the other hand, result in a difficult situation to sustain – leading to a posterior unstable situation).
- Is there any theoretical implication? (For example, a modelling technique was proposed for financial decision. Is it good to be applied when studying, for example, logistics?).
- What are the real contributions of this technique to this decision: diagnostics? Decision risks? Personnel delegations? Tactical definitions? What are the subsidies for the remaining planning context?
- What must be applied together with this modelling technique to reach and communicate results: another study technique, a report facility?

It is interesting to pay attention to some authors that argue, for example, that canvases and other modelling techniques must be used under a methodological approach, for each case. For example, in a validation study, an application of a business model canvas analysis can be applied in the beginning. After few storytelling sessions, another level of canvas is produced, to compare to those former findings, aiming to validate and refine those intermediate productions. Relevant to state, it confirms how a modelling technique can be applied, its limitations and potentialities and its inclusion in a methodological context.

Undoubtful, when one is trying to explain a complex fact to his or her audience and use a correct approach on stimulating the learning process, time and productivity are conquered, as the audience becomes more familiar with some details, objectives and real functioning of the discussion object. This occurs without spending a lot of initial time on gathering details which, sometimes, result in demotivation, producing difficulties for the discussion development.

What is aimed, with the discussion promoted in the following section, is to balance the usage of the metaphors to real contribution situations, not classifying it as the final, complete solution for complex decision-making scenarios, avoiding vulnerabilities, simplicity and reductionism to take place in these processes, replacing the needed construction for effective negotiations.

Applying the Orchestra Metaphor for Business Decisions

Ideally, several authors debated the Orchestra metaphor for organizational decision-making, specifically when dealing with strategic alignment, among several other organizational arrangements and their planning needs (Spitzer, 1996). It is opportune to relate that, in a superficial analysis from internet search, when trying to reach something about the expression “orchestra metaphor”, two ways are perceived: one, in the exactly sense of this chapter, that tries to exam how the orchestra model comprehension has been used to understand how one business-oriented organization plan its future and execute its aligned works and, on an apparent opposite sense, other references aim to perceive business alternatives for orchestras, eventually referring to their own strategic planning. It is our goal to promote the discussion around the first hypothesis, not forgetting it contributes for the second, producing results for any organizational planning.

But, from what was exposed before, at a first glance, an orchestra is usually structured with patterns and autarchies like traditional organizations, both have similarities in their managerial models. Some factors, compositions, authority exercise and several other critical components must be addressed to enable a fair metaphorical application.

For some authors, naively, the Orchestra is a flat, dynamic organization where a leader simply arranges the composition interpretation along several autonomous groups.

There are many mistakes in this simplistic view. It is interesting to notice the remarkable video lesson from maestro Itay Talgam, major conductor of Israeli orchestras – Israel Philharmonic Orchestra, Jerusalem Symphony Orchestra and Israel Chamber Orchestra – available at Talgam (2009). In a noticeable well humored session, he analyzes several maestros’ contributions and orchestra structures and decisions, with his ability of being also a management consultant. Here, the lecturer, a respectful, experienced and recognizable conductor, explains about internal power, relationships and conduction profiles of famous composers and leaders, additionally dedicating a special view about conductors’ temper, culture, relationships and, mainly, process of managing the orchestra in performances.

An orchestra, as seen before, is a well-structured arrangement of players, different instruments and groups of “different voices” that must be aligned, admitting sometimes personal attitudes, towards a common objective: a recognizable excellency in playing. A collective, standardized composition (like a previously prepared plan), in a rigid, structured way, give orientation for a concert. Based on this agreement proposed by the partitures, the maestro conducts the orchestra, already prepared and trained, towards a top-level presentation. So, in terms of metaphorical correspondence to organizations, it is important to pay attention to two initial facts: (1) It is a structured board, functions defined, hierarchical dependence and (2) The fundamental relationship of knowledge, ability to perform, as main attributes to delegate positions for group leaders and assistants.

A lot is talked and reasoned about leadership, approaching the figure of the conductor. Among the discussed items, it is possible to find, from many different sources: technical capability (experience with some instrument in an orchestra, such as a “spalla” or main bassoon player, for example), sharpened sensibility, a profound theoretical and historic knowledge (as several plays carry significant historical background), clear and precise gestures (which are a mark of leadership, a true symbol of one maestro, as it is usual to identify the ways he or she leads the musical ensemble supported by this posture), balance of firmness and kindness with the orchestra’s group, sobriety, consistency and daring performances, and many other qualities that, briefly, are translated in excellence.

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Here, for the sake of our analysis, we can register these affirmations of several characteristics for this leadership, corresponding, in an organizational level, to a criterion composed to analyze curricula and delegate or hire persons to occupy positions and perform indicated roles.

An extra theory applied by the orchestra's subleaders, even if they are not conscious about it, is the situational leadership, approached by Hersey and Blanchard (1974). By the way, more than that, the orchestra's bosses use to adopt a "blended posture" of the situational leadership concepts and also the definition of systemic thought, widely explored by Peter Senge, in "A Fifth Discipline". Briefly, Hersey and Blanchard suggest four profiles and four leadership types to be executed, depending on the collaborator profile. The leader must guide his collaborator when he doesn't know what to do and what is the reason he is not doing that task. Even if he or she knows what to do, but without autonomy, the leader must guide him. When he knows, realizes, but he is not efficient, the leader must support and make him perceive that he is safe and efficient, that is, the best situation, and the leader only delegates.

But, as shown in several sources, as cited by Talgam (2009), the leadership can be different, strictly corresponding to the maestro cultural, technical and artistic formation and preferences. More centralized views, as the "play by the book" (we have a receipt, you must perform it! In the video attributed, for example, to the composer Richard Strauss) or, eventually, more freedom and just actions to correct and adjust performances are amongst the most different approaches usually found in conductor's profiles, which will impact the orchestra formation and interpretations. Maybe we could have the same in entrepreneurial world, being a factor to pay attention.

Another aspect is the cultural background in music education. The usual "two first lessons: direct and guide", simply do not exist in some famous orchestras, leaving additional burden to the conductor. Compared to other organizations, there is a huge advantage for orchestras on having the strong cultural context that formed an orchestra musician since his or her youth. Obviously, this reflects positively in the orchestras which always search for perfection on their stretched execution, as discipline, notion of integration and structured work towards a predefined objective were in the basic formation since from the beginning. This is another factor to consider for metaphorical application of orchestra model: there are rigorous aspects in the musician (personnel) formation, which will correspond to factors that favors an orchestra build-up and maintenance.

Thinking about situational leadership, the woodwind group leaders, for example, must pay attention, permanently, searching for them to play tuned, precisely, in the same group pulsation, looking for sound balance when they are soloist or accompanist. Also, adaptations and requirements asked by the maestro should be evaluated and implemented under group leader coordination. This way, we perceive a managerial connection towards the exercise of one conduction. It is important to cite that, although plays – symphonies, concertos, and other compositions – are adapted, slightly modified by the maestro under his or her interpretation of the composer original writings, this is the maestro's view and professional – technical and artistic – of that specific play. Just to mention a few, actual debates around presentations, tempo and small actions by musicians defined by conductors such as Herbert von Karajan, Sergiu Celibidache and Carlos Kleiber, all of them with expressive contribution for classical music presentation, are real examples of these personal appreciations about classical themes and songs. The reader is invited, for example, to dedicate few minutes listening to their conduction of symphonies from Beethoven and Dvorak, as a small, arbitrary choice, for a comparison – even for the beginner it is possible to perceive differences in the music played.

This way, what seems to be a rigid, immutable plan – the original, classical, fundamental, known partiture – is interpreted by the conductor, negotiated with assistant musicians and group leaders, where modifications are implemented. In the orchestra metaphors usually proposed, management and business planning authors usually surpass this fact, forgetting an important feature for these metaphors: the execution plan can be adapted, from the top level, with the help of the associated managerial conduction, resulting in some differences in the final delivery to the customer. This could be more explored in the metaphors, although it represents an undesirable effect on simple, naïve descriptions, illustrating a possible adaptation of the operational plan, according to a superior decision. Definitely, it is not a communitarian decision: it is a decision of the main musician – the conductor – which is followed by his delegated board of group managers and implementors – the “tutti,” musicians of each group.

Henry Mintzberg addressed these and other facts around the maestro responsibilities, enriching this discussion for managerial application for the orchestra metaphors. Some of the facts he calls attention, are the actual role of the composer – maybe the “real” conductor – and the apparent theatrical action of the maestro during performances, identified as a communication agent with the audience. The ovation, at the end, is for the conductor, not for each player. Along with his usual sarcastic approach and smart comments, Mintzberg produces a view that helps discuss metaphor limitations to our desired level (Mintzberg, 2016).

Additionally, a conductor oversees CEO-like functions in orchestras, occupying the position of Artistic, Institutional, Music or any other designation in a directive level. He or she is responsible for choosing the concert schedule for a season, examine the concert hall conditions, forming all the personnel groups and the associated hierarchy – almost everything discussed so far in this article – and, finally, producing his or her own “fingerprint” on the music execution. Some other several functions (for example, dealing with sponsors and looking for the struggling financial resources) form a complex, wide and multidisciplinary context for its role. When the maestro is at the podium conducting the play, he or she is the responsible for all these basic components, adjusted to allow the play to be delightful for the audience and for the critics. Maestro’s performance is so evaluated immediately, as the responsible for each note, for the concert hall conditions and the schedule. It is an immense responsibility not always translated to metaphors application, as the acting, choreographic and emotional attitudes during a concert call more attention than its preparation, coordination, planning and execution governance. It is a frequent failure, resulting in an excessive simplicity about the conductor’s work, leading to a bad characterization in simulation journeys (using metaphors).

There is also, exposed too by Mintzberg (2016), the role of the composer. Can you imagine that one corporation is executing a plan, originally written two centuries ago and successfully executed by some competitors, with citations in the press? Applauded by the audience? It is not likely. Here, we find a part of the planning sessions eventually forgotten, simply skipped as the analysis of competitive forces, competitors market share, strengths and weaknesses – yes, we refer to traditional models, such as Michael Porter’s five competitive forces analysis and SWOT, both conceived in the twentieth century and used for several decades – are not completely evaluated, producing another risky fashion for metaphor-based journeys. It is possible to affirm that there is the “box” in one canvas for “competitors”. What is done so? A post-it is stamped stating “Competitor 1 is good at sales” remark? Is this enough? Does not sound so, for a complete planning session. Deeper conclusions must be reached, composing the expected objective analysis.

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Structure? Hierarchy? Innovation inside a plan? Coordination? Abilities directed with an alignment? Probably quite different from the view of improvisations, uninterrupted virtuoso solos, magic performances guaranteed only by individual views of art, correct? This is the main dilemma, faced by this metaphor, that affects so many others, as those practiced in the canvas sections and applied gaming journeys: it is too idealistic, too simple and, finally, incomplete. But, it must be agreed: there is motivational and communication factors and attitudes that are significant favorable to negotiations when use these instruments and processes in a correct way. Maybe not only one journey of application of the metaphor, directly conceiving the model, but its insertion in a process, in a series of dynamic meetings, performing a convergence, using a known, remarkable base – as an orchestra – as the main proposition.

There are other interesting factors to appreciate in the orchestra metaphor. In tuning questions that aren't absolute in a concert, beyond the music program and the conductor's commands, through a refined peripheral vision, they are prepared to adjust, as soon as possible, an eventual unwanted tuned out sound. As the music happens "here and now", it is not possible to simply blame one to play tuned or late in the music time but increasingly in all the group quickly. Doing that, there is an immediate leadership by a conductor when he perceives and guides the group, including the suit bosses and subleaders, in their performance. These leaderships are ephemeral. That is why the systemic though is important.

Here, there is also another aspect to consider about the orchestra: the preparation of musicians and conductors. Sometimes, a long career must be taken to both artists, to fill in a position in an important orchestra. Formation, from courses, internships, masterclasses, auditions and other training, communication, participative and, mainly, test sessions are taken. It is a pressured path, from the intention to play until one meets his or her place in the orchestra cast. And, likely, the musician will not be always playing what he or she most admires and prefers. Musician virtuos performances are not relevant in known plays. For example, in one of the fascinating Gustav Mahler's symphonies, an immense arrange of sounds, where the orchestra massive plays a complex composition, there is no place – almost in all presentations – even for a small solo. The musician apparently (not to the maestro ears, definitely) disappears in big sets of artists who are playing the same instrument. Does this remind about that Accountant, in the company, who is a specialist on some complex tributary issue but, otherwise, is just "playing" conventional ERP filling-in procedures, working in the defined bureaucratic procedures that makes part of corporative process of accountability registering? Must the metaphor be applied here, or must we consider the individual abilities of both professionals instead? Is it Mahler's symphony comparable to the strategic plan of a big company?

A simple, personal fact illustrates our thoughts. When Mr. Werner Silveira was thirteen, something happened, producing a long-term remembrance. He was in his room, looking at his hands, when it occurred to him: Why I can do anything with that one (the right one) and nothing with the other one (the left)? From this day and this questioning, he aimed to conquer ambidexterity. At that time, he was also a dedicated athlete, playing basketball and trying to become a professional percussionist. He believed if having the equal ability to play with the left hand at the same level he used to play with the right hand, he would be a better musician and a more versatile player. After thorough training, dedication, this happened. But, truly, the advantages from this effort were bigger than he could imagine, in his words and later evaluation. He started not only doing things with both hands but, specially, thinking with both, dropping barriers and physical, mental and emotional limitations. Thinking with both hands help him to act much more inside the dialectic "and" than "or".

Thinking and managing with ambidexterity could be an important concept in the creation of management models in organizations, companies, autarchies, among others, because it has, in its essence, the necessary field for the holistic development of the individual and the group, simultaneous and inseparably, understanding the micro and macro vision as one. This fact can call also the multidisciplinary approach, so desired by professional recruiters, who seeks these abilities in potential workers for the company. A rigid, cultural, even physical apparent limitation was faced and won by the ambidextrous musician, resulting in a better and dynamic condition to exert his work with better competitiveness.

The image possible to make of the holistic and ambidextrous knowledge is like an open field (without walls!) with a lot of different ways, plan and rugged grounds, many kinds of fauna, diverse vegetation and, at the same time, interconnected. This produces the holistic view of an organic, integrated organization: the orchestra. One additional preciousness of that vision is in the developing of diversity acceptance, seeing the potential contrasting relations not simply as opposites or incompatibles but as oscillating, constantly changing, exploring its possible complementarity, expressively favorable when we talk about art. It is in the way of seeing diversity as an enrichment of the mission, purposes and values of an organization, inserted in this organization itself, encompassing family, personal relations, your company or community. This expands a lot the context of the metaphor. What about to include this integrative perception in our exercises, in our analysis and overall application of these empathic simulations techniques? For sure, it will produce several outcomes in communication, integrative view and analytical abilities for the group, for the company adding potential perceptions for decision-making processes.

Interestingly, this discussion brings light to several issues, regarding the complex, deep, long-time formation of a musician, the individual agent who composes the orchestra, a fact always forgotten in those metaphors. Musicians are not typical workers, whose careers developed from “Fordism” models, implemented in the beginning of twentieth century by industries, imposing a culture that is too hard to be apart. They can be soloists, integrate duos, quartets, quintets, chamber orchestras and, finally, the most complex and numerous arrangements, orchestras. This way, these metaphors should consider their background, cultural, preferences, abilities and overall performance conditions – mood, health, interest, as it happens to any worker – to improve the understanding on how musicians and the ensembles they integrate will interpret a play. It is not a strict plan following, not even a plan composition, it is another context that must be addressed to compose the needed studying and analysis conditions.

Passing through these aspects, we addressed several different points and behaviors of an orchestra. Just a few, indeed, but enough to approach our view about limitations on metaphors usage. Orchestras are not plain organisms, not autonomous groups integrated only by motivation and eventual characteristics. They are organic groups, which retains and develop a deep, well-structured hierarchy, conducted by a real leader and other situational leaders, who have their personal characteristics that must be put together, towards an excellency in executing a previously structured play. It is an arena of applied knowledge, interdisciplinary, career evolution and, mainly, artistic interpretation which can bring us benefit to understand our other problems, such as those faced by managers.

CONCLUSION

In this chapter, we discussed the orchestra metaphor as it is usually applied in business negotiations and simulations, towards decision-making problem solutions. With this critical view, we approached the ways an orchestra is defined, its structure, formation, planning and coordination. Specifically, we paid attention to conductor's profile, actions and responsibilities, along with other situational leaders / managers that exert and share power when an orchestra is performing. After this approach, we also discussed the issue of modelling techniques application, to understand, observing several of modern trends and types, what are the conundrums faced by it and, mainly, evaluating some ways the orchestra metaphor is adopted. As comparisons showed, it is possible to understand that a naïve view of the orchestra, not addressing several of its relationships and cultural pillars, result also in a simplistic observation of the reality, producing a superficial level for results, or, in practical terms, a simple, possibly distant from the complete reality, answer for the problem-solving context it was applied.

To address this dilemma, we discussed several characteristics of orchestra compositions, decisions, roles and leadership definition, trying to promote a better condition to apply the metaphor in journeys, writings and applied researches, towards decisions, usually taken in the strategic planning journeys, tactical implementations and others.

The insertion of the orchestra metaphor in a process of research and study was motivated, calling the reader's attention to these points and aspects we approached in our theoretical and practical description.

The conclusion we made for all this perspective presented about art and management is that, with the standardization of our human and professional education, we face the threat of quickly loose our capacity of dreaming, thinking metaphorically and holistically.

Art is a powerful instrument to break into other areas and domains of the knowledge to rescue not only the life enchantment but with a transforming perception in feeling present and active in this world, certainly, with the mind open for more and better "Insights".

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Section 2

Theoretical Studies on Business Models

Chapter 4

Business Models: Analysis of Its Conceptual and Theoretical Development

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ABSTRACT

The objective of this chapter is threefold: (a) assessing the development of the business model (BM) concept, pointing out efforts scholars have made to close eventual inconsistencies; (b) analyzing those shortcomings implications to the concept understanding; and (c) raising convergent themes around which future studies can be built to bring cohesion to the field. The chapter reviews BM research over the last 20 years. It indicates that BM literature still displays a discrepant use of the concept, and that divergence still constitutes an obstacle to common language development and integrated research efforts concerning BM structure and management. However, instead of justifying those gaps in literature relative newness, research and future applications can strengthen convergent themes to move forward. Four themes are identified: BM as a cognitive representation, a value reference frame, a business dynamic tool, and a two-sided view of strategy.

BACKGROUND

Strategy literature has given increasing attention to business models (BM hereafter, both for plural and singular form). Initially considered as a synonym for the business plan or strategy itself, BM are viewed today as a distinct concept with both theoretical and empirical relevance.

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The origin of the BM term is unprecise. Some situate its beginning in the late 50's with the studies of Bellman, Clark, Craft, Malcom and Ricciardi (1957) about business games building in which the BM is interpreted as a reality simulation (Baden-Fuller & Morgan, 2010; Osterwalder, Pigneur & Tucci, 2005; Wirtz, Pistoia, Ullrich & Göttel, 2016). However, though the concept might exist for over fifty years, it received practitioners' attention with Internet advent in the late 90's when questions about value creation in e-business started to rise (Teece, 2010; Casadesus-Masanell & Ricart, 2007; Wirtz et al., 2016). At that time, entrepreneurs in search of funding were asked to demonstrate their idea's validity even before its operation and profit generation (Magretta, 2002). Thus, the function of the model was presenting a business and its value creation logic (Chesbrough & Rosenbloom, 2002; Moyon & Lecoq, 2013).

Beyond practitioners' field, the BM concept has made its way through the scientific community and received several critiques. One of them came from Porter (2001) who viewed the BM as a concept with vague definition and faulty reasoning. Thus, from 2002 on, BM research increased efforts to clarify and demonstrate the concept's relevance (Wirtz et al., 2016; Baden-Fuller & Morgan, 2010; Da Silva & Trkman, 2013). However, those efforts have involved different research fields, such as organizational theory, strategic management, and information technology (Wirtz et al., 2016). Although the multiple approach is welcome, rich, and embraces different dimensions of the BM idea, it also leads to conceptual dispersion.

As Lecoq, Demil and Ventura (2010) states, five phases summarize BM literature development:

1. BM emergence among practitioners
2. Attempts to come up with a BM definition
3. Empirical researches
4. BM core components configuration
5. Attempts to determine BM intellectual roots

It is important to note that literature development is not necessarily linear. The phases overlap, since one's emergence may not follow another's completion. Besides, literature gaps may be attributed to BM as a relative new concept. Therefore, BM is an issue with unanswered questions, and hence there is still room to deepen the understanding about its potential contributions and applications.

However, despite efforts from business community towards the concept in the last 20 years, the literature still displays conflicting views about fundamental issues (Wirtz et al., 2016; Massa, Afuah & Tucci, 2017). Two of them stands out: concept definition and intellectual foundation. The first one indicates that the BM does not have a widely-accepted definition. Therefore, in spite of its relevance, there is still no agreement on its meaning. Likewise, the second shortcoming points out the lack of consensus concerning the theoretical base that supports the BM concept. This chapter argues, though, that full consensus or consolidation is not required – or possible – to field advancement, but it brings cohesion to BM concept application from both practitioner and academic point of view.

There are many review articles which analyze previous research, establish a common ground among them, and make new conceptual and theoretical propositions (Shafer, Smith & Linder, 2005; Wirtz et al., 2016; Zott & Amit, 2013). However, regardless of research agendas both gaps persist. Two articles written in different phases of the literature support that claim. The article from Morris, Schindehutte and Allen, published in 2005 – but written in 2002 – concludes that the BM theoretical foundation received little attention and, consequently, did not progress. Concerning the concept definition, the authors argue that conceptual divergence challenges BM understanding. On the other hand, fifteen years and several articles later, Massa et al. (2017) still highlight similar observations. As they state, from 2012 to 2017,

the main international management conferences and meetings have at least one panel or debate about the very definition of BM and its theoretical roots.

The reasoning above allows one to conclude that conceptual and theoretical gaps have not evolved satisfactorily despite the development of academic debate over the years. Therefore, those persistent gaps raise two questions: (a) how do they impact BM research advancement? (b) how do business community's efforts to close them could be more effective?

This chapter argues that both conceptual and theoretical gaps hinder the common language development and integrated research efforts. However, to diminish these shortcomings, BM future studies can strengthen the synthesis works and convergent signs among business community. For that purpose, this chapter analyzes the presence of conceptual and theoretical gaps in the literature, underlines the attempts made to close them, and presents its implications to the BM debate advancement. Then, it ends with a proposal to consolidate convergent signs which literature assessment brings about.

BUSINESS MODEL AND THE CONCEPTUAL DEBATE

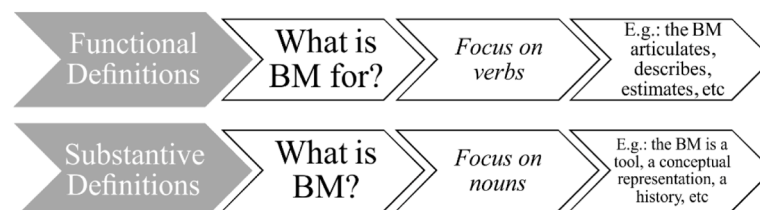
The Search for a Definition

When addressing the search for the BM meaning, it is important to distinguish two types of definition: substantive and functional. The first one refers to the term's nature; it refers to what it is. The second type is related to its purpose and finality. There is no value judgment over such distinction, for both are attempts to understand the concept. However, the occurrence of different categories of definition demonstrates how the literature approaches the idea. The Figure 1 summarizes those two types of BM definitions, their main questions and focus. Functional definitions describe what BM do, hence they focus on verbs related to BM tasks. On the other hand, substantive definitions addresses BM ontology and focus on nouns to capture BM substance.

Initially, the studies have dealt with BM in a functional mode. Considering its emergence in e-business among practitioners, as well as its first steps in the academic arena, the purpose of BM received attention even before its substantive definition was settled down. Therefore, during a period the question "what is it for?" seemed to prevail over the inquiry about "what is it?". The underlying assumption is that whether practitioners acknowledge it or not, every firm is based on a BM whose analysis explains how a business creates value. Hence, the BM is usually defined by its function which is describing organization's logic of value creation (Magretta, 2002; Chesbrough & Rosenbloom, 2002; Teece, 2010; DaSilva & Trkman,

Figure 1. Business model's types of definitions

Source: Elaborated by the authors



2014; Baden-Fuller & Mangematin, 2013). In the end, according to firms’ particularities, descriptions vary, but not BM function.

However, though common in the literature, such functional definition has not been considered enough. Defining BM as a concept that explains how firms’ parts are organized to create value is a broad statement which resembles the very concept of strategy (Casadesus-Masanell & Ricart, 2009). Therefore, the BM definition has required specificity to avoid ambiguity and concept overlapping (Arend, 2013; Zott & Amit, 2013). Thus, other purposes were ascribed to the idea, leading it to more specific functional definitions as the ones quoted in Table 1.

In addition to the examples above whose emphasis is in the BM function, there are attempts to define the concept only in substantive terms where the noun represents BM nature. However, this type of definition is so rare that it might reveal the complexity of the task of determining the concept’s nature (Moyon & Lecocq, 2013; Zott & Amit, 2014). Two of them are listed in Table 2.

Some studies alternate the two types of definition, but the functional one prevails. Usually, functional attention aims to operationalize the concept by pointing out its structural aspects such as core components, actors, and relationships (Casadesus-Masanell & Heilbron, 2015).

Therefore, functional predominance allows one to conclude that:

1. Somehow, a substantive definition is not enough and need to be combined or supported by a functional one
2. The functional definition brings concreteness to the BM as an investigation object relatively new and in search of consolidation of its nature, features, and application

Table 1. Examples of business model functional definitions

Functional Definitions	Authors
“A BM depicts the content, structure, and governance of transactions designed so as to create value through the <u>exploitation of business opportunities.</u> ”	Amit & Zott (2001, p. 511)
“The BM articulates the value proposition, identifies a market segment, defines the structure of the value chain, estimates cost structure and profit potential, describes the position of the firm within the value network and formulates <u>the competitive strategy.</u> ”	Chesbrough & Rosenbloom (2002, p. 7)
“A BM explains who you customers are and how you plan to make money by providing them with value.”	Magretta (2002, p. 3)

Source: Elaborated by the authors

Table 2. Examples of business model substantive definitions

Substantive Definitions	Authors
“The business model is a collection of decisions enforced by the <u>authority of the firm on its employees.</u> ”	Casadesus-Masanell & Heilbron (2015, p. 2)
“The business model is a conceptual tool containing a set of <u>objects, concepts, and their relationships.</u> ”	Osterwalder et al. (2005, p. 5)

Source: Elaborated by the authors

Integrative Proposals

Among substantive and functional definitions, the efforts made to define the BM concept also comprise: (a) studies that use “model” and “business” semantics as a starting point (e.g., Osterwalder et al., 2005; Arend, 2013; Salas-Fumás, 2009; Baden-Fuller & Morgan, 2010); (b) studies that review the literature, raise common ground, identify categories of analysis, and then propose a synthesis or an integrative definition (e.g., Morris et al., 2005; Wirtz et al., 2016).

The former is an attempt to evoke the base of the term given by the words “model” and “business” to communicate its sense. This approach usually highlights the word “model” and considers its use as: (a) a theoretical system or a simplified representation of a phenomenon (e.g., McGrath, 2010; Salás-Fumas, 2009; Osterwalder et al., 2005; Alberts, 2011); (b) a set of hypotheses about the structure and properties of a system (e.g., Teece, 2010; Magretta, 2002). Understanding BM as a model means to use it to describe a firm functioning in order to reduce complexity to a reasonable level. Accordingly, the BM is somehow similar to the Weberian concept of ideal type: a mental construct derived from reality observation. Hence, the BM is not a thorough description of what an organization does, but it is a simplified abstraction that captures the essence of causal relationships between the firm and other actors involved in value creation and capture (Baden-Fuller & Morgan, 2010; Casadesus-Masanell & Ricart, 2007).

On the other hand, the review studies try to organize the conceptual debate by identifying recurrent elements and proposing integrative definitions. Recent review studies (2010-2017) point out an agreement among scholars concerning the idea that BM connects firms internal and external factors to explain how value is both created and captured (Lecocq et al., 2010; Baden-Fuller & Mangematin, 2013; Zott & Amit, 2013). Also, those studies raise three common themes: the central role of value creation logic for stakeholders; the importance of other players to firms’ activities; the systemic perspective of how a firm does business (Zott & Amit, 2013). The following quote is an example of integrative definition (underlined information and those between brackets are this chapter’s authors):

The business model is a simplified and aggregated representation of the relevant activities of a company [substantive part]. It describes how marketable information, products and/or services are generated by means of a company’s value-added component [functional part]. In addition to the architecture of value creation, strategic as well as customer and market components are taken into consideration in order to achieve the superordinate goal of generating, or rather, securing the competitive advantage [systemic perspective]. To fulfill this latter purpose, a current business model should always be critically regarded from a dynamic perspective, thus within the consciousness that there may be the need for business model evolution or business model innovation, due to internal or external changes over time. (Wirtz et al., 2016, p. 6)

Nevertheless, despite the classification of common elements, the integrative definitions seem not to be adopted in subsequent studies. Therefore, the impact of those efforts in the literature – although useful to demonstrate the state of research – has been the multiplication of definitions. Anyway, it is necessary to highlight that there are authors whose definitions have turned into a reference to other researches (e.g. Amit & Zott, 2001; Winter & Szulanski, 2001; Magretta, 2002; Teece, 2010; Chesbrough & Rosenbloom, 2002; Casadesus-Masanell & Ricart, 2010).

However, despite the most cited definitions and the convergent signs, the lack of consensus persists in BM literature, leading authors to create new definitions – increasing the conceptual diversity – or cite previous studies with no explicit mention to the definition they will adopt (Zott et al., 2011).

The Concept Distinctiveness

A concept definition does not occur in a vacuum, it is related to other experiences and concepts. So, understanding BM concept means apprehending other terms related to it, though distinct from it. The BM is related to – and integrates – several management concepts (Morris et al., 2005).

The emergence of BM term in e-business has something to say about its definition and distinctiveness. At that time, traditional strategy concepts were not enough to deal with new ways of doing business (Lecocq et al., 2010; Salás-Fumas, 2009). The BM allowed practitioners to focus on profit generation and activities management. So, the concept went beyond traditional concerns of mainstream strategy theories which have given little attention to profitability (Afuah, 2004; Lecocq et al., 2006).

However, even in the absence of a consensual definition, the BM is criticized for its apparent similarity to other existent concepts. This reinforces the idea that defining a concept's limits is a relevant task not only to demonstrate its applicability, but also to distinguishing it from other concepts (DaSilva & Trkman, 2014).

The literature distinguishes BM from revenue model (George & Bock, 2011); economic model (Morris et al., 2005); business modelling process (DaSilva & Trkman, 2014); tactic (Casadesus-Masanell & Ricart, 2009); and business concept (Hedman & Kalling, 2003).

On the other hand, most efforts point out the distinction between BM and strategy (Massa et al., 2017). Those attempts consider the BM as strategy's part or complement. The strategy indicates firm's future perspective, and the BM refers to what the firm already is. As a long-term perspective, the strategy delineates dynamic capabilities which the BM requires (DaSilva & Trkman, 2014).

Another relevant BM distinctive features from strategy are:

1. The BM as an operationalization of business strategy (Baden-Fuller & Mangematin, 2013)
2. The BM emphasis on profitable consumer value generation, and strategy focus on competitive environment (George & Bock, 2011; Magretta, 2002)
3. The importance of BM evolution to the understanding that strategy is more discovery-driven than planning-oriented (McGrath, 2010)
4. The BM as an intermediary concept between strategy and operational management by linking strategy macro elements to micro functional decisions (Warnier et al., 2004)
5. The strategy analysis as a fundamental step to design a competitive and sustainable BM (Teece, 2010)
6. The BM as a tool that complements strategy and integrates firm's different functions (Lecocq et al., 2006)
7. The BM as tool to translate strategy into a conceptual model to facilitate the understanding of firm's operation (Osterwalder & Pigneur, 2011)

Although the difference between BM and strategy is also a matter of debate, it seems to be agreed that they constitute distinct concepts (Casadesus-Masanell & Heilbron, 2015). Moreover, it is possible that such divergence has its roots in BM definition dispersion. Concept distinction assumes that both

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have boundaries definition. Therefore, each BM approach concept distinctiveness in different terms according to their own purposes.

Conceptual Debate Implications

There is an effort in the BM literature to determine its nature and function, define the concept boundaries, and distinguish it from other related concepts.

The presence of convergence signs plainly indicates that BM is progressing as a research field (Wirtz et al., 2016). However, though the lack of clarity and consensus is likely related to the relative recentness of the research field, the conceptual divergence is an obstacle to the development of a common language which allows integrated research efforts (Zott et al., 2011). The ongoing work of literature review, distinction, and conceptual proposition suggests that convergence pace is slow, for the literature still displays an inconsistent use of the concept. Besides, the efforts involved in debate organization tend to propose broad definitions which subsequent studies hardly seem to adopt. Understanding the BM as a tool to describe firms' logic of value creation is a wide perspective, but it's a common one.

Some scholars argue that research progress does not depend on the consensual definition as long as each study explicitly specify its definition to avoid ambiguous conversation (Arend, 2013; Jensen, 2013; Zott & Amit, 2013). The consensus is a necessary – though not sufficient – condition for systematic knowledge progress. However, the absence of a minimum degree of consensus about fundamentals hinders cumulative process in knowledge production (Pfeffer, 1993). Research fields with a higher level of agreement both facilitate knowledge communication and save time in concepts definition and explanation since discussions can start from a shared vocabulary (Salancik, Staw & Pondy, 1980). This situation brings research forward, it allows business community to build their studies out of previous ones. Research field consistency also avoids chaotic and time-consuming debates regarding principles, assumptions, and foundations (Cole, 1993).

The definition diversity as a starting point thwarts the dialogue, the cooperative work among researchers, and the study organization. Therefore, it presents an obstacle to business community adherence to the issue. Greater consensus contributes to legitimate the concept's place in literature, avoiding the risk of being dismissed as a buzzword or a mere variation of existing notions (Arend, 2013; Teece, 2010; Magretta, 2002). Although absolute consensus might not be achieved – and it is not required – the persistence of different and diffuse definitions represents an obstacle to future research (Massa et al., 2017).

In sum:

1. The identification of common themes in literature suggests that there is a move towards conceptual consolidation which is still slow (Wirtz et al., 2016)
2. The conceptual gap persists despite convergence evidence and efforts. But the classification of common themes still needs to be translated into a more unified study of BM (Zott et al., 2011)
3. Different definitions coexist. This is not necessarily a problem, for differences are welcome and inform each other (Jensen, 2013). Although conceptual debate persistence does not need to come up with a wide definition that reconcile all interpretations, it requires a balance between “theoretical tyranny and an anything-goes attitude” (Pfeffer, 1993, p. 616)

As this chapter presents in the next section, if a concept is not well-defined it brings complexity to the task of elaborating its theoretical foundations.

BUSINESS MODEL AND THE THEORETICAL DEBATE

Traditional Perspectives on Strategy

Understanding BM concept is not only about determining its nature and function but also its intellectual roots. As the BM research has been developed over time without a widely-accepted definition, the concept is also used apart from a theory (Hedman & Kalling, 2003; Morris et al., 2005; Zott & Amit, 2013; Teece, 2010).

A concept interpretation - and the proposition of theories to support it - is usually mediated by interpretive principles which come from mainstream scientific traditions that will be called here “interpretive communities”. Therefore, the concept interpretation – as its definition – does not occur in a vacuum but bear assumptions and conventions from a given interpretive community (Fish, 1980). Such assumptions influence, and can also determine, the concept perception and approach.

Most of BM research is based on strategy and competitive advantage literature (Morris et al., 2005; Baden-Fuller & Mangematin, 2013). Thus, the BM theorization reflects, at one hand, the traditional division: positioning (which comes from the industrial organization - IO) and resource-based view (RBV). On the other hand, some studies integrate both perspectives in search of a theoretical foundation to BM. Still, others support the concept through a combination of those views and other theories from Economics and/or Business Administration.

In the first case, scholars seek to theoretically support BM by using one of the two mainstream interpretive communities of strategic thinking. Thus, each perspective elaborates the theoretical base to the concept according to the lens of its assumptions.

Interpreted by the positioning lens, the BM employs an outside-in view which emphasizes the influence of external factors over firm’s performance (DeWit & Meyer, 2010; Salas-Fumás, 2009). Therefore, BM analysis and design must consider environmental stimuli.

The BM interpretation through positioning view include, for example, the studies of Casadesus-Masanell and Ricart (2007, 2009, 2011). In their first articles, those researchers do not make explicit their theoretical foundation. However, their BM approach seems in line with IO perspective, relating competitive advantage with firm’s activities adjust and reinforcement (Porter, 1996).

On the other hand, part of BM research is interpreted by RBV since, whether explicit or not, the BM involves internal competencies which support a firm’s competitive advantage (DaSilva & Trkman, 2014; George & Bock, 2009; Morris et al., 2005). This line of thought is consistent with RBV where the firm is a bundle of resources and capabilities (Barney, 1991). That interpretive community understands the BM from an inside-out perspective, i.e., prioritizing the resource base building over time in such a way to seize market opportunities (DeWit & Meyer, 2010).

The BM interpreted through RBV is present in the studies of French researchers Warnier et al. (2004), Lecocq et al. (2006), Demil and Lecocq (2009, 2010), and Plé et al. (2010). They aim at developing academic support to their BM framework called RCOV (an acronym for resources and competences, organization, and value proposition). Their initial studies are anchored predominantly on RBV by using Barney’s (1991) definition of resources and capabilities. However, they have gradually given preference to Penrose’s (1959) theory of the growth of the firm as RCOV’s theoretical foundation.

Although the theoretical approach to BM echoes the scientific community where the concept is interpreted – especially concerning IO and RBV – there is evidence that the issue goes beyond this type of dichotomy, for there are studies that: (a) understand BM theoretical foundation as a matter of one

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perspective and another, not one or other; (b) employ other theories to support the concept as we shall see ahead.

Integrative Perspectives and Complementing Theories

As stated before, the interpreting act takes place in a given context and community which influences the sense attributed to the concept of analysis. However, it is important to consider the possibility to overlap interpretive communities (Rabinowitz, 2008). In this sense, it is possible that IO and RBV juxtapose since both emphasizes different aspects of strategy (Hedman & Kalling, 2003).

Whereas the BM, in a wider sense, is a firm's logic of functioning or value creating, such logic might be influenced by external and internal factors. With that in mind, some studies suggest the conciliation of both outside-in and inside-out views in an integrative perspective (Hedman & Kalling, 2003). To those studies, the theoretical base to BM involves elements from both RBV and IO.

There are still other researches which, beyond strategy traditional interpretive communities, add other theories as BM theoretical underpinning. Some of those works argue, for example, that RBV is not enough as a foundation since the mere possession of strategic resources is not sufficient for value creation, for value is created through transactions made with resources in use (Amit & Zott, 2001; DaSilva & Trkman, 2014). Hence, such studies join RBV and transaction cost economics (Amit & Zott, 2001; DaSilva & Trkman, 2014; Morris et al., 2005). To justify such combination, scholars evoke the Schumpeterian thought in which value creation involves resources arrangement and transaction efficiency search (DaSilva & Trkman, 2014; Morris et al., 2005; George & Bock, 2011).

Though RCOV's proponents have initially based on RBV, they also critique the idea of value creation and competitive advantage acquisition through the possession of strategic resources. Accordingly, those authors gradually moved their theoretical foundation to Penrose's (1959) thought. In their view, Penrosian theory of firm growth is relevant to: (a) overcome RBV's ambiguity in "resources" definition and the superficial role designed to managers; (b) highlight the BM dynamic reconfiguration in the presence of internal and external changes (the Penrosian's idea of permanent disequilibrium). However, even though they emphasize an inside-out view of BM, those authors do not dismiss Porterian notions of the value chain and value net as part of the theoretical foundation. Therefore, they combine elements of RBV and positioning, also adding the theory of firm growth by Penrose (1959).

In the same vein of traditional and complementary theories combination, it is relevant to underline the work of Amit and Zott (2001), Zott and Amit (2007, 2008, 2013, 2014), Zott et al. (2011). Their literature review from 2013 considers as a sufficient theoretical grounding their study published in 2001 where they explained value creation sources in e-business, and anchored BM in: RBV, transaction cost economics, Schumpeterian innovation, and strategic nets. To those authors, theories integration strengthens the understanding of value creation complexity and provides a theoretical base for BM since it is considered a primary source of value creation. Also, they relate BM and adjacent theoretical foundations like: new organizational forms, ecosystems, activity-based systems, and value chain.

Later, in 2014, those researchers related BM to dynamic capabilities by suggesting that the former can be conceived as the latter in the face of environment challenges. While Amit and Zott (2014) overlap BM and dynamic capabilities, DaSilva and Trkman (2013) and Casadesus-Masanell and Ricart (2010) argue that strategy has the task of developing the dynamic capabilities required to BM design and reconfiguration. Teece (2010) also related BM and dynamic capabilities and claimed that the former provides a foundation to the latter.

In sum, the integrative theoretical foundation echoes the understanding that the BM goes beyond IO/RBV dichotomy. Some authors argue for convergence among researchers related to the fact that BM incorporates significant internal and external causal links (Baden-Fuller & Mangematin, 2013; Massa et al., 2017).

Despite strategy traditional perspectives contribution, there are themes not contemplated by IO or RBV, like the BM evolution and dynamism, for example (McGrath, 2010). Thus, one can acknowledge that the BM theoretical foundation may involve IO, RBV, and complementary theories like strategic nets, cooperative strategies, transaction cost economics, dynamic capabilities, and others (Wirtz et al., 2016; Morris et al., 2005; Amit & Zott, 2001).

Therefore, the BM emerges as a concept which revisits classic discussions on strategy, however, it is not limited to one view. The integration of perspectives or interpretive communities is the starting point to debate BM without being limited to IO or RBV. The search for complementary theoretical groundings seems to reinforce Amit and Zott's (2001) argument that has been reverberated in literature: despite the contribution of other theories, none of them can explain, by itself, the BM nature.

Business Models Components and Frameworks

Beyond definitions propositions over time, scholars also started to propose BM core components and frameworks (Alberts, 2011). Both are supposed to guide the operationalization of BM concept.

Usually, the BM components come from the conceptual and theoretical base adopted by each author. However, only a few studies clearly connect theoretical foundation, core components, and framework. Table 3 presents BM frameworks and components from some studies. Nevertheless, BM's components propositions do not necessarily follow frameworks elaboration.

The discussion about components and frameworks is part of BM theorization. However, not all have a theoretical foundation and discuss the articulation among BM components. Besides, components and frameworks differ from one model to other, especially concerning terminological issues. Elements may share the same name, but they do not always have the same meaning, and some of them even overlap. For example, product and value proposition (Morris et al., 2005; Alberts, 2011). Therefore, the conceptual dispersion echoes in component definition, and it reinforces the current absence of consensus.

Theoretical Debate Implications

Even though BM researchers still do not rely on each other's studies and discoveries, widely speaking, it is possible to notice some progression in the field. The BM is a theme that does not characterize a theory yet, but it is a progressive research program, i. e., it has a positive internal dynamic that moves forward with new propositions, investigations, problems and solutions (Lecocq et al., 2010).

As discussed above, the BM theorization involves:

1. Supporting the concept in strategy traditional views
2. Integrating those perspectives, whether in an explicit way or not
3. Combining those debates with other existing theories in Economics and/or Business Administration field
4. Explaining the concept regarding its structure (components and frameworks)

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Table 3. Examples of business models' components and frameworks

Authors	Theoretical root	Components	Framework
Morris et al. (2005)	Positioning, RBV, Strategic Nets, Cooperative Strategies, Transaction Cost Economics	Offering, market factors, internal capability factors, competitive strategy factors, economic factors, personal/investor factors	Yes, but no specific name
Zott & Amit (2010)	Value chain, Transaction Cost Economics, RBV, Schumpeterian Innovation, Strategic Nets, Activity Systems	Design elements (content, structure, and governance), design themes (novelty, lock-in, complementarity, and efficiency)	Yes, Activity System
Casadesus-Masanell & Ricart (2007, 2009)	Positioning (implicit theoretical foundation)	Choices (assets, policies, and governance), and Consequences (rigid and flexible)	Yes, but no specific name
Demil & Lecocq (2010)	Theory of the Growth of the Firm	Resources and competences, organizational structure, value proposition	RCOV
Osterwalder & Pigneur (2011)	Not mentioned	Customer segment, value proposition, channels, customer relationship, sources of revenues, main resources, key activities, main partnerships, cost structures	Business Model Canvas

Source: Elaborated by the authors

Those efforts were useful to theoretical debate advancement. However, the idea of BM as an under-theorized or theoretical fragmented research field remains (Demil & Lecocq, 2010; Lecocq et al., 2010; Wirtz et al., 2016), and the BM connection to theories like RBV, transaction economics cost, IO, and others, requires further clarification.

Although Zott et al. (2011) have argued that BM concept is theoretically underdeveloped, their next articles consider the theoretical gap satisfactorily fulfilled (Zott & Amit, 2013; Amit & Zott, 2015). One plausible reason for that conclusion might be in the fact that such authors consider enough their theoretical base from Amit and Zott (2001) which has supported their subsequent studies. Moreover, for those authors, BM is a theme that goes towards a gradual conceptual convergence and can be considered as a theoretical solid based construct in which research can explore unanswered questions.

However, even though the BM literature mentions Amit and Zott (2001) largely, their theoretical foundation is not always a reference to other studies. Different voices point out that despite the efforts to develop a theoretical base for the concept, that work is not done yet.

Besides the lack of consensus on the theoretical foundation, there is no complete clarity and acceptance concerning BM functioning, basic features, management, and quality assessment (Wirtz et al., 2016; Arend, 2013; Lecocq et al., 2010). Those theorization shortcomings have already been raised in 2002 with Morris et al. (2005) literature review. Therefore, current theoretical gaps still seem to be the same. Massa et al. (2017) literature review present a similar conclusion. In fact, the review, analysis,

and syntheses articles result from the observation of that perspectives' heterogeneity and the lack of a consistent theoretical base over time (Wirtz et al., 2016; Teece, 2010).

Theoretical gap brings difficulties to debate advancement regarding theoretical value (Arend, 2013). That reasoning is in line with DaSilva and Trkman (2014) argument:

Unspecified theoretical expectations or a lack of theoretical knowledge may otherwise lead researchers to replicate pre-existing findings, adding little to existing theoretical knowledge, or to produce massive amounts of data without any clarity with respect to how that data can lead to novel insights. (DaSilva & Trkman, 2014, p. 4)

An implication of that statement is, for example, the coexistence of several frameworks with no consensus concerning their core components (Alberts, 2011). Such models cannot be built apart from a theoretical foundation which allows one to establish a language and methodology to facilitate researchers' conversation (Salas-Fumás, 2009).

The theoretical ground is relevant, mainly if one considers the conceptual and application dispersion of BM concept (DaSilva & Trkman, 2014). The expectation is that those persistent gaps can be closed by literature advancements, and consolidate the understanding of BM nature, as well as its theoretical support, highlighting its usefulness to empirical research.

CONVERGENT ISSUES FOR FUTURE RESEARCH

This chapter draws four convergent issues out of BM literature which establishes a common ground, i. e., a core base upon which parties can agree and use as starting points for future studies and applications.

Business Model as a Cognitive Representation

It points out BM design as a mental scheme that allows strategic analysts to visualize, share, and assess value creation logic. Thus, the BM has a cognitive character because, as in Schrauder, Kock, Baccarella and Voigt's (2017) experiment, the BM was an aid to test several components' combination possibilities and their impact on results. Therefore, as in a simulation, this application of BM represents real implementation outcomes, hence can save time and resource investment. It can also facilitate firm's internal and external communication (Massa et al., 2017).

In this sense, the BM frameworks perform a key role. They select crucial questions to discuss and analyze in order to come up with relevant recommendations (Porter, 1980). Each framework discussed in previous chapter's section is a possible view of the real BM. They will represent a firm's BM with different perspectives and analytical focus.

As a framework antecedent or consequent, there will be a BM narrative that links components relationship and guides the BM story as a whole. Thus, from components relationship flows business narratives which, as Magretta (2002) argues, share the story of how a firm creates present or future value.

Business Model as a Value Reference Frame

Most of the literature approaches present value as a BM result or the BM as a value descriptor. However, the very term value remains indefinite as researchers use the expressions value proposition, value creation, and value capture (Brea-Solís, Casadesus-Masanell & Grifell-Tatjé, 2015; Massa et al., 2017).

This chapter argues that those expressions are value's dimensions. They situate value in different contexts and perspectives. Value creation, for example, is almost a buzzword, it has multiple meanings and seems to embrace everything (Bowman & Ambrosini, 2003). It serves as an umbrella term that group several interpretations. But this all-inclusive character is a source of ambiguity and leaves room to conflicting interpretations. Both academic and practitioners often interpret value creation as a capacity, an act or a result derived from transformation or innovation. Thus, value creation may refer to the sources and inputs of the production process; to the very actions that materialize such production capacity, i. e., the mechanisms that add value to the production; or to the trade outcomes such as profit and welfare. The value creation as a phenomenon assumes multi-perspectives and multi-levels of analysis.

Accordingly, the BM value creation usually overlaps with the value proposition that is the outcome of the production process, and with value capture that is the result of the production trading in the market. The literature uses those senses interchangeably. The emphasis on value creation as a value proposition is present, for example, in the studies of Osterwalder et al. (2005). On the other hand, Magretta (2002) exemplifies the value creation with the focus on value capture when she argues that profit generation is the evidence of a good BM.

However, considering that value realization is not unilateral, but open to multiple agents, the value itself is an expression the relationship among socioeconomic agents. If so, creating value implies providing the required circumstances to this relationship. In this regard, there are four aspects to consider:

1. **Value Direction:** Determining who is the source and the target of value (Lepak et al., 2007). Value creation assumes source and target's interaction.
2. **Value Judgment:** Both source and target bear value judgments. The first one proposes the value according to what it believes to be valued by the other part. The target perceives the value of the offer and decides to engage (or not). In this sense, the value creation can be a potential or a realized phenomenon (Pitelis, 2009).
3. **Value Architecture:** Realizing value implies judgments turned into actions. If the source is a company, its BM describes what it takes to propose value in the market. On the other hand, it is consumer perception and engagement which legitimate the value offer.
4. **Value Measurement:** It refers to the amount of tangible or intangible value both parties appropriate according to their objective or subjective evaluation. This appropriation occurs at the exchange moment.

Therefore, the concept of value is the foundation to its dimensions whether proposition, capture, or creation. And the BM keep them in focus. The BM analysis allows one to describe which and how firm's choices have an impact on each value dimension and aspect.

Business Model as a Dynamic Tool

The BM concept as a cognitive representation and as a value reference frame highlights its instrumental character. It reduces complexity in depicting firm's functions of value creation, proposition, and capture. In this sense, BM narratives and frameworks play a crucial role in establishing its core components and facilitating its visualization and communication.

However, narratives and frameworks usually display a static approach of the BM. Naming and listing core components are important tasks to describe a BM design at a given moment. But those components intertwine, there is a movement inside and among them according to voluntary or emergent changes (Demil & Lecocq, 2010). The BM components are in constant interaction to create value over time. Therefore, internal consistency and environment adjustment require BM progressive adjustment.

The reasoning here is that managers may use the BM as a tool in a static or dynamic approach. The first one, focus on describing value dimensions' design whether in a new venture or an established company. That is the most common use of the BM as a tool.

On the other hand, as a dynamic tool, the BM allows a deeper understanding of components interaction and their impact on value. Moreover, it is possible to manage BM evolution and analyze its adjustment needs. The underlying thought to BM dynamic character is in line with Penrose's (1959) idea of permanent disequilibrium. It means that firms are always changing whether by knowledge improvement, new combinations of resources or new value propositions, and may not be consistent with environmental changes. Thus, employing the BM as a dynamic tool means taking recursive relationships into account.

BM as a Two-Sided View of Strategy

As this chapter showed in the last section, there is evidence that the BM concept goes beyond the dichotomy IO/RBV, since both internal and external factors influence value outcomes.

Although the literature on strategic management usually focuses that theoretical division, the BM analyses integrate them (Massa et al., 2017).

In line with Martin (2015) argument about competitive strategy "strategy is about both resources and positioning". At a theoretical level, they constitute opposite approaches to the key question of strategic management: why do some firms perform better than others? The positioning school answer analyzes the five forces model from Porter (1980). Hence, it is an outside-in view for external stimuli, opportunities, and limitations constitute the starting point. Therefore, firm value creation should seek a favorable position in its industry in order to achieve competitive advantage.

By contrast, the RBV answer highlights an inside-out view of strategy. Its focus is on firm's internal resources whether they are strategic or not, i. e., the extent to which they follow VRIN characteristics (valuable, rare, inimitable, non-substitutable). Thus, competitive advantage and superior value creation imply accumulating competitive resources (Wernerfelt, 1984; Barney, 1991).

However, the BM approach indicates that such opposition of views is elusive. Practitioners' real strategies require both sides as they are complementary. In a given situation, managers will likely emphasize one, but without losing track of the other. The value creation through BM depends on the distinctive management of firm's resource base and context changes.

Therefore, the BM as an analysis tool reconciles both approaches and constitutes a two-sided view of strategy. On the other hand, in an academic perspective, Penrose's (1959) theory of firm growth may

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integrate the outside-in and inside-out lines of thought. Although the strategy literature considers Penrose (1959) as an inspiration for RBV, Foss (2002) argues that her theory is not limited to the traditional divide between RBV and positioning. On the contrary, in the Penrosian thinking, strategic decision making is anchored in the understanding of firm's resources and context. Thus, managers can define relevant variables in order to provide appropriate solutions. With that perspective, the BM is a schema that allows one reading, interpreting, and adjusting firm's internal and external organization to create value.

CONCLUSION

Over the last 20 years of the BM academic debate, there are two persistent gaps, a conceptual and a theoretical one. One hardly finds an article with no mention to those shortcomings at the very beginning whether to distinguish and establish their concept definition and theoretical base, or to demonstrate the research state, or to elaborate propositions to overcome them.

Both gaps are related to the lack of consensus. The conceptual gap indicates there is no widely accepted definition in BM literature. On the other hand, the theoretical gap points out to the disagreement over theoretical foundation which supports the concept.

Divergence concerning concept definition hinders its position in business literature, its distinction of other related concepts, and brings complexity to the theoretical base establishment. It happens because consensus is a necessary, though not sufficient, condition to guide a cumulative knowledge process about the theme, facilitating researchers' cooperative work, and the organization of existent research corpus. Obviously, the objective is not to reach full consensus among the business community, but something that overcomes perspectives and definition dispersion over BM concept, and, accordingly, facilitates its theoretical advancement.

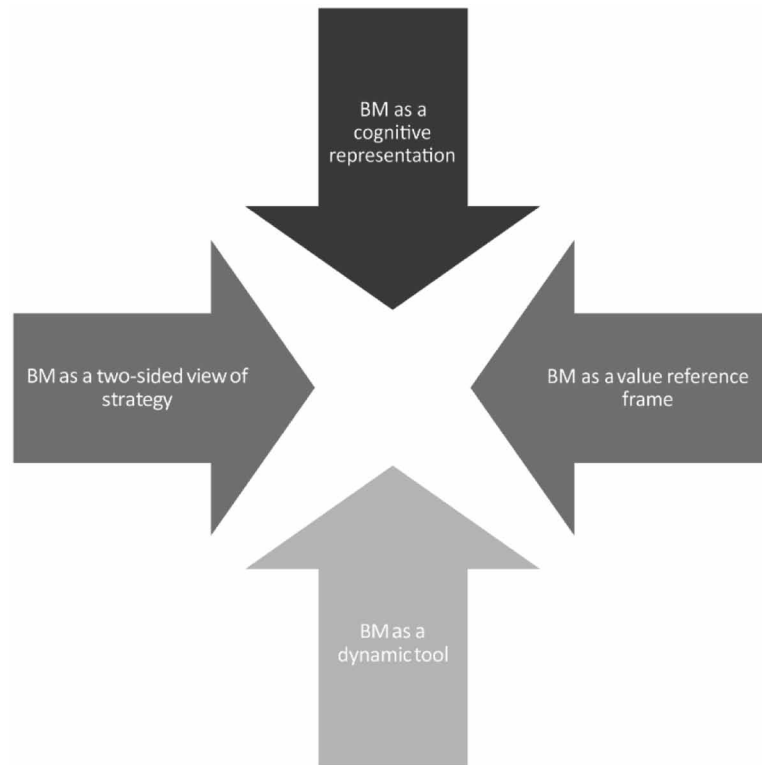
In the theoretical field, the BM emerges as a concept that revisits the classic strategy debates, but also employs other theories from Economics and/or Business Administration. However, studies still diverge concerning the theory or combination of theories used to support the concept. It is possible that such theoretical disagreement is an echo of conceptual dispersion, and, through a cascade effect, also hinders the theorization about BM structure and management.

Nevertheless, one cannot ignore the work of review articles in identifying common elements in existing definitions, and in theorization as well. Even though researchers still do not build on each other's work, in a wider sense, it is possible to notice a gradual convergence. The expectation is that convergence can consolidate in such a way that the understanding of BM nature and function, as well as its theoretical foundation, contribute to strengthening its relevance to both practitioners and academics.

In sum, this chapter calls one attention to two points: a. Even though the lack of clarity and consensus might relate to the field recentness, the conceptual divergence is still an obstacle to a common language development which allows integrating research efforts; b. The literature development points out the relevance of convergence signs and attempts to close the theoretical gap. In any case, it has not been enough to overcome the idea of BM as an undertheorized or fragmented research field.

However, new researches can validate the efforts already made by basing their studies on definitions and theorization which reflect convergence signs. Thus, future BM studies and applications would move towards establishing a common ground, assuming the elements shown in Figure 2. Those elements gather main convergence understanding in the BM literature.

Figure 2. Convergent themes in business model literature
Source: Elaborated by the authors



This chapter's contribution suggests that, by this time, the BM literature may stop justifying the same gaps with the “recentness” discourse and begin to strengthen existing convergence signs. Thus, BM research can be built from a common ground, advance, and consolidate in other discussion levels apart from fundamentals.

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KEY TERMS AND DEFINITIONS

Cognitive Representation: A mental scheme that depicts a reality through a narrative or a framework, whether formal or not.

Functional Definition: Type of definition based on a concept functions and tasks. That kind of definition usually highlights the verbs of the correspondent sentence.

Inside-Out View of Strategy: A perspective on business strategy that focus on internal factors which influence firm’s competitive advantage and profitability. It usually points out resources and capabilities analysis.

Outside-In View of Strategy: A perspective on business strategy that focus on environmental factors which influence firm’s competitive advantage and profitability. It usually points out the analysis of Porter’s five forces: industry rivalry, threat of substitutes, threat of new entrants, bargaining power of suppliers, and bargaining power of buyers.

Substantive Definition: Type of definition based on a concept inherent nature. That kind of definition usually highlights the nouns and adjectives of the correspondent sentence.

Two-Sided View of Strategy: A perspective on business strategy that integrates outside-in and inside-out views as crucial analyses to understand firm’s competitive advantage and profitability.

Value Reference Frame: The reference structure in which the concept of value is analyzed by considering its multiple dimensions and aspects.

Chapter 5

New Business Models for Global Economy: Private Individual Transportation Services

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ABSTRACT

This article analyses the concept of business models and their main dimensions and elements for global economy competitive scenarios. The issue studied in this research identifies disruptive business models, and builds a practical model to help the implementation of a business model for private individual transportation services, based on the case of Uber. To accomplish this research, articles were searched based on the keywords “business models concepts” and “business models elements.” The period considered was from 2013 to 2017. The goal was to identify elements of business models and strategies adopted by the company, products and services, corporate image, models and management systems: human resource management, financial management, and marketing, among others, and the formal and informal structure of the companies. The empirical case is based on the Uber business model and the new competitive scenario on personal transportation.

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INTRODUCTION

The starting point for this chapter was to bring together the research fields of business models and innovation. The main purpose was to create a framework of these theories and use them to develop an analytical model. The chapter begins with a description of the main features of business model concepts and theories, and this literature review tries to create a frame for the innovation process of the business model for private individual transportation services. In this context, it was important to analyse the transformation of the traditional relationships between bank, clients, and client relationship management through technology. On one hand, there are the clients which are nuclear for any business model, and the research identifies the main clusters that are important for the client satisfaction. On the other hand, there are the value proposition of the business model which is the reason why clients turn to one company over another. The business model has to solve the client's problem or satisfies their needs. The value proposition consists of a selected set of products and/or services that cater to the requirements of a specific client. In this sense, the value proposition is an aggregation of benefits that the company offers to clients. In the case of the business model of Uber, the main value propositions are: Knowledge; Professional requirements; Price; Intangible assets and brand value; Accessibility; Security and Reliability. These value propositions will be part of the model proposed as a best solution for private individual transportation services, resulting in the main product of this research. For a better understanding of the chapter, the structure is as follows: it will briefly, it will explore the business model concepts, followed by the presentation of the methodology and the research findings. The chapter concludes with a model proposal for private individual transportation services.

LITERATURE REVIEW

Business Model Concepts

The term "business model" is relatively new and arises with Jones (1960), becoming important for companies. Different definitions emerge to explain the term and its role reflecting various perspectives, such as value creation, representation of company behavior and others. Amit and Zott (2001, p. 4) define Business Model as "the content, structure and governance of value creation transactions by exploring new business opportunities." Moreover, according to Casadesus-Masanell and Ricart (2010) business model is a representation of logic and key strategic choices of the company, with the purpose of creating and capturing the value in the value chain. Also, according to Teece (2010); business model "reflects the management's assumption about what customers want, how they want it, and how the company may organize itself to meet those needs in a better way, get paid for it and make a profit". Complementary, Shafer et al. (2005) refer that the concept of business model has been used in many ways, such as describing a company's unique value proposition. Analyzing the literature, numerous studies and considerations about the concept of the business model have been discussed along the last two decades. Thus, academic articles covering the years 1998-2015 were selected and, based on these articles, several definitions of the business model and the authors that support them in Table 1 are presented.

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Table 1. Definitions of business model

Authors	Definition of Business Model
Timmers, 1998 (p. 4)	"The architecture for products, services, and information flow include the description of various business actors and their roles; a description of the potential benefits for the various business actors and revenue sources."
Venkatraman & Henderson (1998, pp. 33-34)	"A strategy that reflects the architecture of a virtual organisation along three main vectors: interaction with the customer, asset configuration, and leveraging knowledge."
Linder & Cantrell (2000, pp. 1-2)	"The logic of the organisation's core for value creation. The BM of a Profit-oriented organisation explains how it makes money."
Gordijn et al. (2000, p. 41)	"...explain value creation and addition in a multiparty network of stakeholders, as well as the exchange of value among them."
Amit & Zott (2001, p.4)	"...describe the content, structure and transaction governance to create value by exploring new business opportunities."
Weill & Vitale (2001)	"A description of the roles and relationships between consumers, customers, pairs, and suppliers to identify a major product flow of information and money, and benefits for the participants."
Chesbrough & Rosenbloom (2002, p. 532)	"...provide a coherent framework that takes the characteristics and potential of technology as input, and converts them through customers and markets into economic output. The BM is therefore designed as a device to perform intermediation between technological development and the creation of economic value."
Magretta (2002, p. 4)	"... has a logical story explaining who the customers are, what they value and how the company will make money by providing value to them at an appropriate cost."
Hedman et Kalling (2003, p. 49)	"Term generally used to describe the key components of a business: customers, competitors, supply, organisation activities, resources, supply and import of the production, as well as components of the longitudinal process to cover the BM dynamics over time."
Leem et al. (2004, p. 78)	"A set of strategies to the establishment and management of companies, including revenue model, high-level business processes, and alliances."
Yip (2004).	"can be broadly defined as comprising these elements: value proposition; nature of inputs; how to transform inputs (including technology); nature of outputs; vertical scope; horizontal scope; geographic scope; nature of customers; how to organise."
Morris et al. (2005, p. 727)	"...it's a concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create a sustainable competitive advantage in defined markets."
Osterwalder et al. (2005, p.17-18)	"A business model is a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific firm."
Shafer et al. (2005, p. 202)	"A representation of the adjacent logic of the firm and strategic choices for creating and value capture from a value network."
Kallio et al. (2006, pp. 282-283)	"Means by which a company can create value for coordinating the flow of information, goods, and services among the various industry participants, including customers, partners within the value chain, competitors and government."
Johnson et al. (2008, p. 6061)	"...consists of four interlocking elements: customer value proposition, profit formula, key resources - assets and key processes."
Casadesus Masanell et Ricart (2010, p. 196)	"Business model refers to the logic of the firm, how it operates and how it creates value for its stakeholders."
Rappa (2010)	"In the most basic sense, a business model is the method of doing business by which a company can sustain itself -- that is, generate revenue. The business model spells-out how a company makes money by specifying where it is positioned in the value chain."
Teece (2010, p. 179)	"A business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value."
Zott et al. (2011, p.1038)	"It provides a systemic approach on how to do business, considering the activities that go beyond the boundaries of the firm, focused on value creation and capture."
Nielsen & Lund (2012, p. 12)	"Consistency between the strategic choices of the company that enables relationships for creating value at operational, tactical and strategic levels."
Beattie and Smith (2013)	"Describe as a holistic description of how a firm does business."
Hill & Jones (2013, p. 7)	"In essence, a business model is a kind of mental model, or gestalt, of how the various strategies and capital investments a company makes should fit together to generate above-average profitability and profit growth."
Nielsen & Lund (2013, p. 60)	"...is the platform which enables the strategic choices to become profitable."
Rothaermel (2015)	"Details how the firm conducts its business with its buyers, suppliers, and partners."

Source: Siqueira and Crispim (2011); Zott et al. (2011); Blaga (2015), adapted

Business Model Components

The analysis of the literature presents various perspectives on the business model components, according to the Demol and Lecocq (2010, p.227) “the business model concept refers to the articulation between different areas of a firm’s activity designed to produce a proposition of value to customers”.

Johnson et al. (2008) state that “consists of four interlocking elements: customer value proposition, profit formula, key resources - assets and key processes”, and for Yip (2004), business models “can be broadly defined as comprising these elements: value proposition; nature of inputs; how to transform inputs (including technology); nature of outputs; vertical scope; horizontal scope; geographic scope; nature of customers; how to organize.

Hamel (2000) suggests that the business model should describe the distinct strengths of an organisation when doing business. Moreover, Osterwalder (2004) mentions that the business model allows new technology to be transformed into economic value because its groups activities and components are essential to create value for consumers and also allows the appropriation of part of this value. Thus, knowing the components of a business model of an organisation facilitates the perception of changes that need to be made.

Osterwalder and Pigneur (2010) describe a business model as a series of elements: the Customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships and cost structure. A business model is a sustainable way of doing business cited in Bocken et al. (2014). Also, in 2013, the authors mention that business models should define and articulate the description of strategic objectives that improve strategic discussions related to decision making, turning them increasingly complex.

Also, Beltramello et al. (2013, p.21) refer that “value creation is at the heart of any business model”; typically, such businesses “capture value by seizing new business opportunities, new markets and new revenue streams”. Moreover, Sorescu et al. (2011, p. 5) state that “A business model is a well-specified system of interdependent structures, activities and processes that serve as the firm’s organising logic for value creation (for its customers) and value appropriation partners”.

Next, the Business Model Canvas tool, consisting of nine blocks, will be analysed.

Business Model Canvas

The business model is the explicit description of the activities offered by a company’s products and services, providing, as an activity, the aid in the way of doing business under uncertain conditions (Osterwalder et Pigneur, 2011). For Abraham (2013), a business model shows who the customers are and what strategies the company can use to stay competitive, creating value for its customers. E. Kallás (2012) defines the Business Model Canvas as a tool used to describe how the organization transfers, creates and captures value (cited in Teixeira et Lopes, 2014, p. 1).

One sustainable way to do business is to use the “Business Model” tool. The application of business models is much broader, and it is a significant concept both concerning management in the public sector, universities and entrepreneurs. Clark et al. (2012) wrote the book *Business Model You*, which is a contribution in the area, and translates Osterwalder et Pigneur’s (2010) business model ideas. Business Model Canvas is one of the most used tools and, according to Dorf et al. (2012) optimizes the visualization of a project business models, dividing it into nine critical blocks to delineate a business. These nine blocks are comprised of four major areas: customers, value proposition, infrastructure and financial viability.

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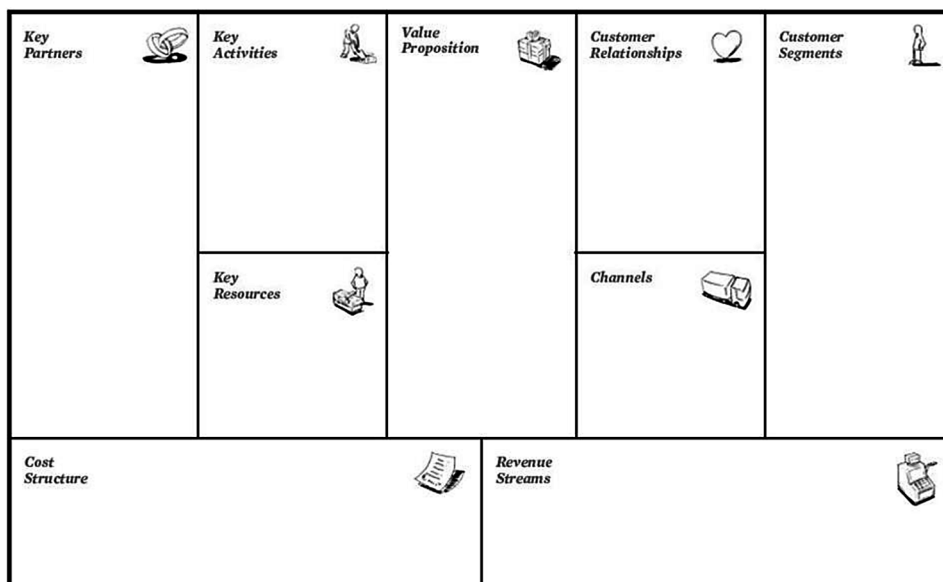
Osterwalder (2004) described the business model composed of four blocks containing nine interrelated elements: The first block, the Product: value proposition, the second block, the Consumer Interface: distribution channels, relationship and target consumers, the third block, an Administrative infrastructure: value configuration, building capacity, partnerships, and the fourth block, Financial aspects: cost structure and revenue stream. Also, Johnson et al. (2008) consider that the business model is composed of four blocks that describe the way the company creates and delivers value to its customers. Also, authors Osterwalder and Pigneur (2009) have transformed the Business Model Canvas conceptual schema, described by Osterwalder (2004) into a dynamic map to create, modify, understand and innovate, business models according to Figure 1.

According to Osterwalder and Pigneur (2011), the Business Model Canvas is a practical, intuitive map that presents the whole business logic while promoting understanding, dialogue, creativity and analysis on the present state and future of the company. The authors Fritscher and Pigneur (2010) complement by stating that none of the nine components that make up the Business Model Canvas are considered new by entrepreneurs, but a representation in a holistic way and, only on a printed paper, is new for most entrepreneurs.

As previously mentioned, Canvas Business Model tends to be intuitive, but requires careful practice and analysis. In order to create an innovative business idea or create value for new products with Canvas Business Model, filling the nine fundamental elements of the model, is not enough, so it's important to consider the following aspects:

1. It is not always easy to acknowledge the relationship between the nine components, for example, it is difficult to perceive to what extent a key resource can contribute to costs increase;

Figure 1. Business model canvas
 Fonte: Osterwalder e Pigneur (2011, p. 44)



2. That is not a structured tool privileging communication, there are several completed Canvas Business Model, which convey an image of the analysis of dense and disorderly strategic elements;
3. The simplicity of having changes in the Canvas Business Model may be tempting to have last-minute changes done; however, these changes may require adjustment work on other components;
4. After having the Canvas Business Model accurately prepared and finalized, you should question yourself whether it is still useful to you, or should you move to another tool;
5. It does not present differences between product and value proposition;
6. It does not present a specific field to describe a business growth strategy;
7. It does not present a specific field to describe value network.

In summary, the construction of the Business Model Canvas tool is a way for the organization to have higher efficiency between resources, facilitates the process and allows a complete evaluation of the different areas of the organization and their interactions, aiming for customer satisfaction. Elements of Business Model Canvas, will be shown in Table 2.

The Business Model Canvas is a disruptive innovation business model. The term “disruptive innovation” is also used to understand the managerial and human contexts that involve the acceptance of innovative technologies. According to Ettlie et al. (1984); Dewar and Dutton (1986); Gopalakrishnan and Damanpour (1997), “radical or disruptive innovation presupposes substantial changes in the activities of the company or industry leading to the complete transformation of the products, services or technologies that currently exist, making the previous version of this product considered obsolete” (cited in Martins-Rodrigues and Sánchez-Hernández, 2017, p82). Model tends to have limited applicability for different types of organizations. The Canvas Business Model is structured around a turnover generation which tends to exclude nonprofits and governmental organizations. Thus, organizations that have value creation, such as Social Value, cannot be designed with the Canvas Business Model. Another limitation is related to the different levels of detail within each of the nine components, the detail level is not similar. For example, Key Resources / Key Activities and Distribution Channels / Customer Relationships are more detailed than other components. Also, external business risks, for example those associated with competition, environmental factors and the market are not taken into consideration.

The Canvas Business Model is a great tool for visualization on the current stage of business and organizations, and to contextualizing and creating arguments for change. This model is able to assist organizations to visualize incremental and radical changes in business stemming from the process of achieving leadership in the industry. It is not a suitable model to be applied to the industry, due to fact that, it is needed to list several other aspects which the Canvas Business Model does not contemplate in its structure.

METHODOLOGY

The primary research questions which support this study are RQ1: what are the main business concepts that have been developed in global economy; RQ2: What are the main clusters that arise from the implementation of the Uber individual transportation business model, on the current competitive scenarios?

To answer to the research questions, the methodology approach was quantitative, based on the data collected through an online survey during the first quarter of 2018. The objective of the questionnaire was to establish a relationship between the degree of customer’s preferences and expectations towards

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Table 2. Elements of business model canvas

Elements of BMC	Description "UBER"
1) Customers segments	<p>Customer/Riders: Do not count w / car Do not want to drive Seeking to travel with style Seeking quality service</p> <p>Drivers: They own car and look for another source of income They like to drive They want to be entrepreneurs</p>
2) Value proposition	<p>Customer/Riders: Reduced waiting time Payment per travelled Mile Price information Driver Information Road Visibility</p> <p>Drivers: Source of extra revenue Flexibility in day and working hours Easy payment procedure</p>
3) Customer relationships	<p>Social media Technical support platform for users and drivers Comments and Ratings</p>
4) Distribution Channels	<p>Mobile Applications Android Windows Phone IOS (Apple) Websites</p>
5) Key activities	<p>Platform development (both at the application and support level and administration system) Driver evaluation and administration contract Marketing and sales to place the brand</p>
6) Key resources	<p>Technology Platform (all infrastructures), Drivers registered experts in the field.</p>
7) Key partners	<p>Car Drivers Map Suppliers (e.g., Waze) Investor Relations</p>
8) Cost structure	<p>Technological infrastructure Base employees group Marketing and sales to place the brand</p>
9) Revenues	<p>Charging per travelled Mile Variable rates according to demand; 20% of the value of each race Costs by type of service: UberX, UberXL, UberBlack, UberPool, UberSuv, UberCargo</p>

Source: Osterwalder e Pigneur (2011), adapted

the services of Uber with the existent capabilities and design of its business model. For this purpose, the questionnaire was segmented in clusters, aggregating independent variables as following: [1] professional requirements for the Uber driver, [2] knowledge of routes, [3] comfort within the vehicle, [4] price of the service, [4] intangible assets and brand value, [5] accessibility, [6] time, [7] security and reliability, [8] customer care. The design employed for this questionnaire was a non-probability sampling, using a

Likert scale of importance for the questions (ordinal measurements in a scale of 1 to 5, corresponding, respectively, to the lowest and highest degree of importance, acceptability and concern)¹.

The results from this survey were considered valid, resulting in a sample size for further analysis of 75 respondents, 35 (47%) of which are female, 24 males (32%), and 16 (21%) opted for an anonymous survey. The demographic information indicates that the average age is 39 years old, obtained from the frequency of the mid-point of the age variable-spacing intervals, from which 30 individuals (40%) are equally distributed between the ages of 18 and 24, as well as for 25 to 30 years old. A descriptive statistic of this sample shows that 29 individuals have no University degree, and 1 person has uncompleted college studies, totaling 40% of the sample. 19 individuals (25%) have a bachelor, 16 (21%) have a master's or post-graduation studies, 9 (12%) have a Doctorate and one person is retired. 41 respondents (55%) of the sample have an average household monthly income ranging between €580 up to €2.000, while 17 people (23%) have between €2.000 up to €4.000.

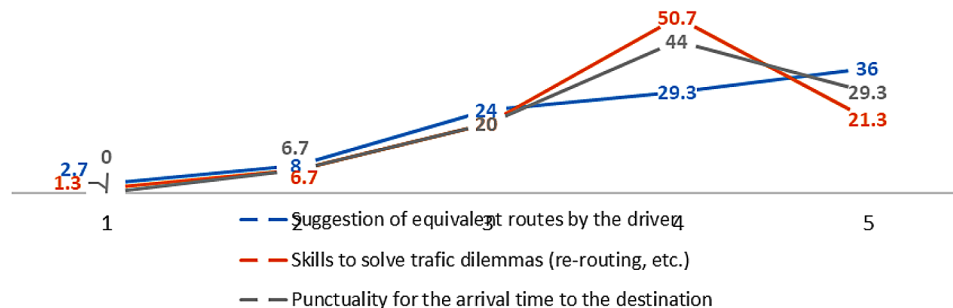
The average of the household monthly income for this sample is €2.028,1. Considering that the national average income per capita is €1.144,61 in 2016,² and that per household there are two employees, then, the national average income household would approximate €2.289,22. This shows that the household monthly income of this sample €2.028,1 is below the national average of €2.289,22.

FINDINGS AND DISCUSSION

Six of the eight clusters aforementioned in the methodology section were included in the findings of this study. Based on the cluster in Figure 2, it is possible to infer that most of the customers do not demand fully knowledge of routes by an Uber driver. However, there is clearly a lower overall preference for the drivers that can suggest equivalent routes (29,3%) compared to outcomes of a quick traffic problem-solving (50,7%): this may indicate that the overall customers prefer drivers using the standard GPS route rather than driver-suggested routes. Yet, customers expect that the driver is skilled enough to be quick in solving, unexpected road traffic issues, e.g. road maintenance, traffic congestion, inference supported by the Figure 3. This result may be justified by the assurance that the driver can be held accountable in a post-service stage by tracking the millage and time used on alternative routes.

The following cluster represents the disruptive competitive advantage of Uber services regarding the straightforward way of contracts payment within the traditional services: direct debit rather than cash or debit/credit card payment after each trip, as well as the potential credit allowance for regular users,

Figure 2. Cluster: Knowledge of routes



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Figure 3. Cluster: Professional requirements for the uber driver

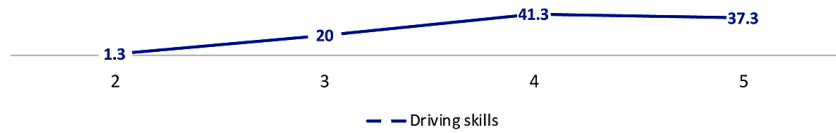


Figure 4. Cluster: Price of the service

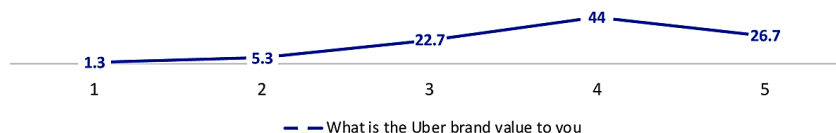


assuring transport service to the customer regardless whether in that particular moment the value in question is available on the credit or debit card associated to the client's Uber account. Both elements of this cluster are left skewed implying an overall customer satisfaction.

Brands allow companies to charge premium prices for their services³: the cluster of *Intangible Assets and Brand Value* indicates that for 26,7% of the sample customer base, Uber is an important platform/brand which may be translated in customer loyalty to its services, the star customers. However, at least 22,7% and 44% of this sample customer base are liable for risk: those can either be vulnerable customers or free-riders, which are important for the company profitability but can be poached by competitors either through promotions, for the price-sensitive segment or through guerrilla marketing or respectively, highly satisfied but not so profitable, e.g., using the Uber services sporadically. The remaining 1,3% and 5,3% are lost causes, most likely unsatisfied customers or statistical outliers that do not create value for the company and claim short-term benefits in disregard of the sustainability of the company. Usually, these customers become too expensive to retain, leading companies to prefer the reallocation of that same resources, e.g., marketing, for the other 22,7% and 36%.⁴

The comprehensiveness of the customer care provided by Figure 6 indicates an opportunity regarding customer care for Uber to express more clearly its features or to communicate the commitments in terms of quality assurance and post-purchase assessments. This may indicate that customers are not significantly or fully encouraged to contact Uber customer care in case of distress or unpleasant service. However, Uber includes a feature to rate the driver immediately at arrival to the destination point meaning that, most likely consumers are not expressing their concerning or complaints with the customer care.

Figure 5. Cluster: Intangible assets and brand value



In terms of accessibility, 42,7% are almost fully satisfied: likewise, 44% are almost fully in agreement that Uber has a brand value for them, and 41,3% feels secure entering an Uber vehicle and identifying it. The underlying inference for these clusters is that close to half of customers base are not yet totally satisfied with Uber services.

MODEL PROPOSAL FOR PRIVATE INDIVIDUAL TRANSPORTATION

Clients are the heart of any business model because no company can survive without clients. They represent several different segments and their needs require and justify distinct offer. They also can be reached through different distribution channels for different types of relationships, and have substantially different profitability's, being willing to pay for different aspects of the offer.

But a business model for Private Individual Transportation needs to include other dimensions to be sustainable: Knowledge; Professional requirements; Price; Intangible assets and brand value; Accessibility; Security and Reliability (see Figure 8).

The knowledge cluster represents the driver knowledge about the driving, the security, the routes, the technology and the client profile. They need to be skillful and entrepreneurial, constantly using new strategies to be more competitive and to know how to use the customer version of the apps at the same time as the driver versions to predict where the car will be likely needed. They have to know how to have the best deal for renting or leasing a car, and how to follow up the changes in technology.

Professional requirements cluster represents the professional licenses the driver needs, and the way he communicates and behaves with the clients. The honesty and sympathy when performing a service, helping the client to satisfy the needs with the maximum of security.

The Price cluster represents a very important value proposition of the model, because of the transparency of the process and offering similar value at a lower price is a common way to satisfy the needs of price-sensitive client.

Intangible assets and brand value are important value propositions for the clients in the simple act of using and displaying a specific brand. Also, the delicacies that this kind of business models include in the ride of the client are important to make them more satisfied and to increase loyalty.

Figure 6. Cluster: Accessibility

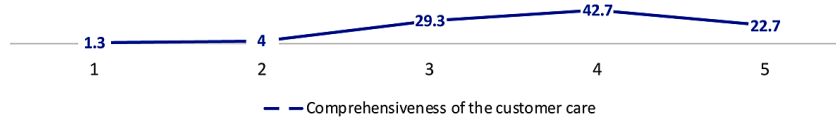


Figure 7. Cluster: Security and reliability

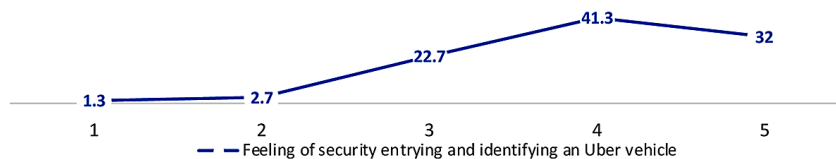
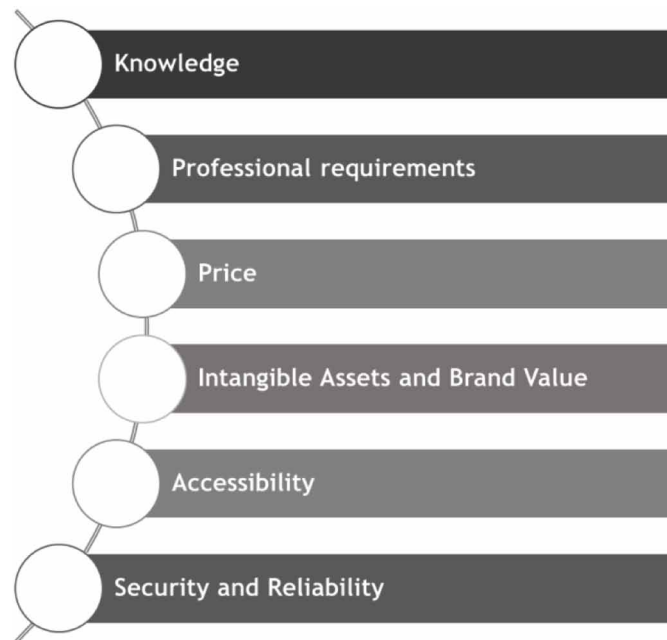


Figure 8. Business model proposal for private individual transportation



The accessibility cluster represents the goal of making transportation more accessible to all persons. The use of technology makes transportation more accessible and reliable for all riders.

Security and Reliability cluster new means an important the value proposition of a reliable transportation, safe against fraud and enhancing both driver and rider security.

CONCLUSION

The conclusions of the study, regarding the main business models concepts that have been developed in the current competitive scenarios include the description of the key components of a business: customers, competitors, suppliers, organisation activities, resources and information about the business actors and the potential benefits for all the elements involved. They also include strategies for the establishment and management of companies, including the revenue model, the business processes, and all kind of national and international alliances.

Focusing in the business model for individual transportation, the main conclusions arose in the study, regarding the clusters, are from the implementation of the Uber individual transportation business model on the current competitive scenarios, which can be shown on the Figure 8.

Regarding the Knowledge of routes cluster, most of the customers do not demand fully knowledge of routes by an Uber driver the most important is the quick traffic problem-solving. Professional requirements cluster assumes high importance expressing the driver skills to be the quick solving unexpected road traffic issues, e.g. road maintenance, traffic congestion and other problems.

The Price cluster represents the disruptive competitive advantage of Uber services in regard to straight-forward way of payment: direct debit rather than cash or card payment after each trip, as well as the potential credit allowance for regular users are competitive factors. The results of the cluster Intangible Assets and Brand Value indicates that Uber is an important brand which may be translated in customer loyalty to its services, the star customers. The cluster Accessibility is one of the most consensual. The customers are almost fully satisfied and regarding the cluster Security and Reliability the most part of the customers feel secure entering an Uber vehicle and identifying it. However, the proposal of a business model creation and its implementation will always need to consider the potential impacts in creating competitive scenarios for promoting the global economy.

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ENDNOTES

- ¹ Vagias, 2006
- ² For more information: <https://tradingeconomics.com/portugal/wages>
- ³ Gupta, 2014
- ⁴ Gupta, 2014

Chapter 6

Dynamic Business Model: Capture of value and generation of sustainable competitive advantage

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ABSTRACT

The goal of this chapter is to demonstrate theoretically that a Business Model Canvas (BMC) might become dynamic to capture value and generate a sustainable competitive advantage. This chapter defines the differences between and definitions of static and dynamic business models. Furthermore, it develops the Dynamic Business Model (DBM) for the assessment of the BMC from a dynamic perspective. This chapter argues that business models are static when they are tools that merely describe the business logic of firms. However, when associated with the dynamic capacity perspective, those business models interact with the business ecosystem, allowing firms to capture value and sustainable competitive advantage.

INTRODUCTION

The changes that the business environment undergoes as a result of the use of information and communication technology mark the business scene with movements that are lively and open to global competition. That leads to the reduction of the product lifecycle and affects the integration and organization of activities that involve partners, stakeholders, and customers in informational networks that can generate more value and competitive advantage.

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These changes impact on the understanding of the term ‘competitive advantage,’ raising two perspectives: temporary and sustainable. The first addresses the dynamism of the environment in the short time (D’Aveni et al., 2010). The second perspective seeks value creation and capture, business uniqueness, non-replicability of business models and resource substitution (Adner and Zemsky, 2006), which guarantees the maintenance of competitiveness in the long term (Teece, 2014).

Traditional business models have failed due to technological innovation, new customer needs, and new business formats. Given that business models apply to environments that require constant changes, is not suitable to count on static business models. Because of that, the dynamic business model (DBM) has gained relevance in the literature on strategy, which defines it as the basis for creating and capturing value between the relevant parts (Amit and Zott, 2014).

The DBM reinforces competitive sustainability since it can rethink, adapt, transform or substitute the traditional business model in a competitive environment (Amit and Zott, 2014; Osterwalder and Pigneur, 2010, 2002; Teece, 2018) Hence, the DBM allow firms to capture value and generate sustainable, competitive advantage. Amit and Zott (2014) show that is mandatory to consider the dynamic nature of the model. That occurs because of the continuing impacts of dynamic business ecosystems on the definition, adaptation, and redefinition of business models. Those impacts are relevant to the firm’s ecosystem because they lead to a holistic approach to the model in its capacity to renew itself as well as to bring innovative aspects from the market.

The Business Model Canvas (BMC) became popular in the business environment, emerging as an alternative for highly dynamic markets, which brings this model closer to the conceptual approach to the business models focused on innovation markets. On a first conceptualization, Osterwalder (2004) understands the BMC as the logic of how a company makes money. Nevertheless, if the BMC were to perform with this perspective, it would achieve a dynamic management, being able to transform itself and alter the business plan. As a result, it would no longer perform as a visual and static map of the business. Osterwalder (2004) argues, however, that the nature of the model is static, indicating apparent incoherence between the function and the execution of the model. Considering an unstable and volatile business environment, how can the dynamic BMC lead to a conceptual perspective?

The answer holds further into the literature on business models, on value capture and dynamic capacities for the generation of sustainable advantage. The present study has identified three conceptual assumptions that constitute the DBM. First, there is the design of the business models – interdependence and connection between their constitutive elements. Second, the business models linked to dynamic capabilities. Finally, the search for the capture of value and generation of sustainable competitive advantages by the companies. By those assumptions, it was possible to introduce a conceptual model for DBM and BMC evaluation from the perspective of a dynamic model.

This study presupposes the importance of strengthening the business model literature on the competitive dynamic perspective. It defines the assumptions of a DMB and differentiates it from a static model. That enables the evaluation of the factors that cause a BMC to become static and, thus, not equipped to allow a business logic that creates value and generates competitive advantage. Furthermore, this study also understands the business model as a development of the strategic conception of value creation and capture, which contributes to the competitive advantage of the business (Casadesus-Masanell and Ricart, 2010; Pitelis, 2009).

DYNAMIC BUSINESS MODELS: CONCEPTUALISATION AND ASSUMPTIONS

According to Osterwalder (2004), the business model concept emerged in the literature with Drucker in 1960. However, that would only rise in relevance during the 1990s. Digital markets began to grow with dot-com firms, which used the business model concept to identify the synthesis of a business idea. Currently, there is no consensus in the literature on the business model concept that brings an end to the matter (Shafer et al., 2005; Teece, 2010; Wirtz et al., 2016).

Initially, the difficulty and the disagreement surrounding that concept influenced on its comprehensibility. That happened because it connects with the simplified representation of the real and physical world (Osterwalder et al., 2005), also with the action of buying and selling, and even the processes of business (Gordijn et al., 2000). Current debates on the present and future of business model feature discussions that point to the model as a description of traditional enterprise which operates as a system in the long term.

Contrastingly, there is a continuous prospect of change performing an innovative role in the business model for value appropriation (Zott and Amit, 2013). There are various revisions of the concepts applied to the business model, which are sustained by the perspective of generating competitive advantage through value creation and capture (Afuah and Tucci, 2003; Amit and Zott, 2001; Casadesus-Masanell and Ricart, 2011; Demil and Lecocq, 2010; Osterwalder, 2004; Osterwalder and Pigneur, 2010; Shafer et al., 2005; Zott and Amit, 2007).

From the perspective of value capture the business model portrays the conception of the contents of transaction, structure, and governance to create value by exploring business opportunities (Amit and Zott, 2001; Zott et al., 2010). Moreover, they further state that the business model is the business logic directly associated with the generation of revenue for all stakeholders (Zott et al., 2010).

For Casadesus-Masanell and Ricart (2009), the definition is in the business logic, in its operating mode, in how it captures value for the relevant parts and does the interface between business strategy and tactics. According to Magretta (2002), the business model also links activities to ways of doing business (design, purchase, manufacture, etc.). In other words, it integrates ore activities, such as sales (finding the customer, sales, conducting transactions, distribution, delivery), explaining how companies work. Demil and Lecocq (2010) bring the business model concept closer to the activities and resources used to guarantee the sustainability and dynamic growth of the model.

From the perspective of value capture, business models require the connection between various competencies, such as management (efficiency), innovation/entrepreneurship, complementarity with partners and focus on the market sector (Zott and Amit, 2013). The DBM transforms itself over time, following the evolutions in the market, technology and legal structures (Teece, 2010). This fluidity is considered a sustainable advantage factor as it allows for value creation in a continuous flow of adaptation and renewal (Achtenhagen et al., 2013).

Studies on business model have not made progress on how companies should change, adapt or innovate to create value and maintain their advantage (Achtenhagen et al., 2013). In spite of that, scholars addressing the issue have identified theoretical axes and assumptions for the constitution of the DBM vis-à-vis the static model. Hence, there are, three essential assumptions from the theory of constituting the dynamic model (Table 1).

Table 1. Conceptual differentiation between static dynamic business models

Theoretical Assumptions	Static Model	Dynamic Model	References
business model design – interdependence and connection between constitutive elements	Its function is to describe the business model of the company. The design is not concerned with the fluidity and correspondence amongst model components.	Its function is to describe, manage and innovate the business models of the companies. Requires a design that promotes interaction between and integration of components. Operates with quantitative and qualitative metrics and indicators that are capable of creating connection and assessment of the model.	(Achtenhagen et al., 2013; Afuah and Tucci, 2003; Amit and Zott, 2015; Demil et al., 2015; Demil and Lecocq, 2010; Plé et al., 2010a; Wirtz et al., 2016)
business model linked to a strategic conception of dynamic capacities	It does not necessarily correspond to a business strategy. It might not consider mapping and learning mechanisms about information that is external or internal to the company.	The strategy is concerned with the structuration, construction, and alteration of the dynamic and managerial capacities. It makes use of tools and analyzes. It develops the capacities of sensing threats and opportunities, learning and transforming the business.	(Achtenhagen et al., 2013; Amit and Zott, 2014; DaSilva and Tricman, 2014; Demil et al., 2015; Teece, 2014, 2010)
Search for value creation and the generation of sustainable competitive advantage	It might capture or even create value, but has no intention of prolonging this advantage for a protracted period.	Extrapolates value capture in order to create value and consequently to generate sustainable competitive advantage.	(Achtenhagen et al., 2013; Casadesus-Massanell and Ricart, 2010; Demil et al., 2015; Massa et al., 2017; Teece, 2018, 2010; Wirtz et al., 2016; Zott and Amit, 2013)

Source: Authors elaborations

First, the design of the business model – interdependence, and linkage between constitutive elements. Second, the business model linked to a strategic conception of dynamic capacities. Third, the search for the creation of value and generation of sustainable competitive advantage. Although these theoretical axes disperse throughout the BM literature, explicitly identifying the assumptions of each of the constructs will enable the conceptualization and the differentiation between a static and a dynamic model.

The fundamental difference between the two models is the company's intention of designing a business, meaning that the analysis becomes static and restrained to a specific period (Fritscher and Pigneur, 2015). From a different standpoint, the firm uses its business model to develop, change and promote value capture for lasting periods of time (Achtenhagen et al., 2013). The analysis of Table 1 shows that, for every theoretical assumption, there is a broadening of principles and domains that structure the constructs of a DBM.

BM Design: Interdependence and Connection Between Components

The interaction between the operational structure and the components that constitute the business model presented by Demil and Lecocq (2010) is also called the business model design. Further endorsing this conception, Afuah and Tucci (2003) describe the business model as a system of activities constituted by components and dynamic connections. Amit and Zott (2015) also include the interdependence between the components.

Amit and Zott (2015) emphasize that business models are static to some extent, as they do not establish connections and interdependence between their components. Furthermore, business models do not work as recursive systems between conception and implementation (Demil et al., 2015).

Moreover, the analysis of business model components is heterogeneous. The broadest consensus that has been achieved by various authors refers to market variables and resources, some of which linked to the business strategy. An example is the customer element, which is interrelated with the value creation element (Wirtz et al., 2016).

The process of grouping, as well as the links, connections, and the dynamics of the components or activities of a business model, are fundamental to the scope of creation and capture of value (Afuah and Tucci, 2003; Amit and Zott, 2015). That process interconnects and co-ordinates the interdependencies of activities as an outcome of the business architecture of the metamodel (Amit and Zott, 2015). Achtenhagen et al. (2013) go even further, as they include interconnected actions and resources both internal and external to the business model, facilitating the capture of sustainable value. They also reaffirm the need to adapt and renew the models by taking the inner connection of their elements into consideration.

As a result, the DBM no longer merely describes but undertakes the logic of creating, implementing and recreating business (Teece, 2010; 2018) Furthermore, it modifies the static conception of the elements into a systemic view of connection and interdependence between its components. It also adopts additional actions and monitoring parameters (metrics) for the performance of its activities (Amit and Zott, 2015).

Business Model Linked to a Strategic Conception of Dynamic Capacities

The premise of the dynamic model is related to strategy, and numerous studies point out the difference between the concept of strategy and the concept of business models. Chesbrough and Rosenbloom (2002), as well as Zott and Amit (2013, 2010), identify similarities between strategy and business models based on the different concepts proposed for DBM, such as value capture and dynamic capacities. Casadesus-Masanell and Ricart (2011) also consider the business models to be a representation of the strategy that a firm put into practice. DaSilva and Trkman (2014) adopt a different standpoint, affirming that strategy concerns to the structuration, construction, and alteration of the dynamic capacities that respond to present and future demands through the business models.

Fundamentally, there are three essential strands of strategy theory in the business literature. One of those strands is rooted in the Industrial Organisation (IO), which is concerned with the structure, choice of position and economic value of industries. This theory aims at a rational outside-in approach (Ghemawat, 2002). Its weakness stands on the rigid structure of assessing the environmental conditions, with no evaluation of complementarities, support institutions, conservative possibilities, as well as the static nature of the provision of feedback concerning internal development (Teece, 2007).

Also, from an outside-in perspective, the understanding of the focal company has been developed and expanded. It comprises the conception of a business ecosystem that acknowledges the need to transcend the limits of the focal firm, adapting itself to a systemic perspective that creates interdependencies and complementarities of the firm as it captures value (Zott and Amit, 2013).

The second theory is the resource-based theory (Barney, 1991). It focuses on the development and use of existing resources within the firm to capture value and reduce imitation. Contrary to the positioning theory, resource-based theory adopts an inside-out point of view. The resource-based business model has been under negative scrutiny regarding its inability to account for what makes resources valuable, rare, inimitable and irreplaceable (Priem, 2007). Moreover, this model is referred to as static as it does not promote the continuous acquisition of competencies. Hence, it is necessary to adopt an additional construction process, such as Nonaka's spiral of knowledge (Teece, 2014).

Lastly, there is the dynamic capacities theory, which presumes complex business ecosystems and lively transformations, delineated by uncertainties and conflicts. That theory is linked to the concept of strategic entrepreneurship and focuses on the capacities of companies to integrate, develop and re-configure internal and external competencies to innovate and capture value (Nelson and Winter, 1982; Teece, 2014; Teece et al., 1997).

Another element that strengthens the dynamicity of the business model is the entrepreneurial strategic vision of business making. It allows for the renewal of the business models by sensing threats as well as taking advantage of and transforming the opportunities constructed by the dynamic capabilities (Teece, 2007;2018).

The present study will provide a detailed section on the assumptions and characteristics incorporated by the business models linked to the theory of dynamic capabilities.

Dynamic Business Model and Its Relation to the Capture of Value and Sustainable Advantage

The terms value creation and value capture have their configurations in strategy theories. However, the topic has undergone conceptual evolutions that have converged on the concept of competitive advantage.

The conception of value in positioning theories is understood as economic value – in other words, profitability or the return on investment – given by the levels of satisfaction of perceived benefits minus the relative position of the costs. In doing so, companies that sustain themselves at the maximum value of the productivity frontier obtain competitive advantage (Porter and Millar, 1985). Although it advances on the conceptualization of an extended competition for value, this approach is rooted in the perspective of costs of the Industrial Organisation, heading to the attractiveness and competitive position of the companies in the market (Ghemawat, 2002).

As to the resource-based theory, it differentiates itself from the positioning perspective. The starting point for firm performance is the bundle, as well as the singular combination of resources and competencies (Barney, 1991). That theory presumes that firms achieve and maintain the competitive advantage when those resources are valuable, rare, hard to imitate, and non-substitutable (Barney, 1991).

On its own, however, the resource scarcity in the market might lead to ambiguity regarding the sustainable competitive advantage. Within the theory of dynamic capacities, the utilization of the opportunities is the goal of surpassing competitive advantage (Teece, 2007), as well as a development of the capability of the creation of scarce resources, the identification of opportunities and the strategic implementation of valuable assets for the customer. Technological innovation is one of the mechanisms

Dynamic Business Model

for capturing value in the market. It might be easily imitated, requiring business model innovation as a means of creating value and maintaining competitive advantage (Teece, 2010, 2018).

Starting with the conceptualization outlined by positioning theories, Brandenburger and Stuart (1996) introduced ‘appropriated value’ as a suggested expansion of the concept of ‘value creation.’ ‘Created value’ presupposes the cost of opportunity and customer disposition to pay for the goods or benefits, depending on the external conditions of the business environment. As to the ‘appropriated’ or ‘captured value,’ it presupposes the price and the cost, both of which depend on the company’s performance in this business context. For the authors, the conditions of creating and capturing value depend on the characteristics of buyers, firms, and suppliers in the different business environments.

Pitelis (2009) validates this perspective as he defines the creation of value as the value added by the company. Captured value, then, is the value seized by the firm from the business ecosystem (consumer, competitor, and supplier). These two concepts of value creation and value capture have become increasingly inseparable (Demil et al., 2015), as value capture might propel the creation of a new value and vice-versa.

Accordingly, the literature has coupled the concepts of ‘value’ and ‘business model’ as the beginning of a search for sustainable competitive advantage (Casadesus-Masanell and Ricart, 2009). The business model brings together the value proposition and the technological conditions as well as those of market resources. As such, the business model identifies the segments, the value chain structure and the profit potential (Chesbrough and Rosenbloom, 2002). The opportunity for participation and the involvement of partners, suppliers, customers and even other companies from the same sector in value creation are new steps emerging in the business model literature (Massa et al., 2017; Zott and Amit, 2013). For Massa et al. (2017), the creation of value established by business models through ecosystems breaks away from traditional strategy theories. That happens because it is not limited to pursuing value in the built demand, but in the identification of value in the search for customers and other members of the business ecosystem.

ASSUMPTIONS OF THE DYNAMIC CAPACITIES APPLIED TO THE DBM

The competitive advantages that can last for extended periods are subject to analysis within environments characterized by competition, uncertainty, discontinuity, rapid changes, technological alterations and changes in consumer behaviour. These conditions require, from the companies, a strategy that can identify, utilize and develop opportunities through entrepreneurial actions (Hitt et al., 2002). Following this perspective of change in the business environment and the strategy, dynamic capacities emerge in the literature as a means for reaffirming entrepreneurial strategies (Teece, 2014). This theory is understood as the capacity of companies to integrate, construct, and reconfigure internal and external resources to sustain continuous leadership in business environments (Teece et al., 1997).

The dynamic capabilities theory underpinnings are the strategic entrepreneurship and the Austrian School of Economics. The latter prescribes resource allocation through markets (Teece, 2014), balancing innovative behavior and the management perspective on risk, flexibility, and investment.

In spite of that, the described strategic functions converge with three functions endorsed by dynamic capacities. The first is the sensing and shaping new opportunities and threats while involving the cognitive and creative capabilities of individuals, co-creation and organizational research, and development processes. The second is seizing opportunities through actions such as bottleneck management (amongst assets) in the value chain, sharing business knowledge within a system of networks, creating mechanisms

of safeguarding intellectual property rights, as well as combining knowledge from within the company and among companies. The third is being able to transform threats and opportunities, recombining and configuring organizational assets and structures through decentralization, leadership, co-specialisation, governance and knowledge management (Teece, 2007). Exercising these capacities generates a continuous flow of technological innovations and opportunities that match the most critical market needs and comply with the resource capacity of the company (Teece, 2007).

There is another theoretical perspective, supported by Eisenhardt and Martin (2000) and Zollo and Winter (2002), which addresses dynamic capabilities as a set of processes and routines that are learned. As a result, they allow for adaptation and development, which intervene in making strategic decisions as well as alliances. From this perspective, dynamic capabilities might become a source of competitive advantage. However, other authors point out the second approach: they assume that dynamic capabilities generate advantages. Yet, the study by Peteraf et al. (2013) proposes the convergence of these two perspectives, while Teece (2014) suggests naming the management of internal resources as the common capacities associated with the dynamic strategic capabilities of business promotion and innovation (Teece, 2014).

For Zahra et al. (2006), the generation of dynamic capacities does not guarantee organizational success. That happens because the relation between the dynamic capabilities and the stout capabilities, also known as ordinary or second-order capacities (Easterby-Smith et al., 2009; Sniukas, 2015), is entangled and interwoven. The dynamic capability might be affected by organizational performance, as it requires direction as well as the involvement of the whole organization, mechanisms, and processes that manage and guide the business model (Sniukas, 2015).

The literature defines three organizational processes that contribute to the construction of dynamic capabilities. The first is the coordination/integration of the routines in the selection and combination of resources in the face of continuous change in product and service development to avoid resource conflicts, misalignment, and incoherence (Teece, 2007;2018). That is also known as process orchestration (Sniukas, 2015). The second is learning, experimentation, and the knowledge acquired by the company, the sector and the customers (Easterby-Smith et al., 2009; Sniukas, 2015; Teece, 2014, 2007; Zahra et al., 2006; Zollo and Winter, 2002). The third is the reconfiguration or transformation of existing resources, requiring the creativity and swiftness of managers when adopting new processes (Teece, 2007), as well as mechanisms of implementation and reconfiguration of the business model which requires practices and methodologies able to generate alignment, result in analyses and routines (Sniukas, 2015).

This converging position between managerial and strategic capacities reinforces the fulfilment of the assumption of strategic entrepreneurship, which requires the integration within strategic and business actions (Hitt et al., 2002), while further promoting the balance between the Schumpeterian entrepreneurial behavior and the implementation and management actions. This topic has been addressed as an ambidextrous strategy that simultaneously combines the two actions (Altuntas, 2014; Demil et al., 2015; Hitt et al., 2002; Teece, 2014).

Similarly, as dynamic capabilities become linked to the business model, which has the function of rethinking, creating and adapting the business design, businesses respond to changes in the environment, to new technologies and new consumer preferences (Amit and Zott, 2015). The dynamism of the model lies in congregating a system of activities developed and activated to satisfy the needs of the markets (Zott and Amit, 2009). Besides, the model engages with the logic and provides data and other evidence on how firms create and deliver value to customers (Teece, 2010).

Dynamic Business Model

The integration of dynamic capabilities with the business model identifies a conceptual framework that combines and integrates the concepts of both dynamic and common capacities into the model. That should take place within the business ecosystem of the focal company to create value and generate sustainable competitive advantage.

FRAMEWORK PROPOSITION: DBM

This section will set up an integrative picture between the premises of dynamic capabilities and business model capacities in a business context. The goal is to build a DBM that will allow for the creation of value and sustainable advantage, thus leading to a theoretical framework that is presented in Table 1, shown below.

The dashed line in Table 1 represents the business ecosystem, understood as the relation between the focal company and its customers, suppliers, shareholders, and competitors. The dashed line works as the background against which the constitution, management, improvement, and innovation within the business model takes place. This background provides dynamicity to the business model vis-à-vis the demands required by this business environment. Accordingly, Teece (2007, 2018) argues for the need of having dynamic business models that provide companies with the means to face new realities and foster their dynamic capacities.

The importance of the analysis of the environment within a business ecosystem is relevant because the behavior of companies tends to be idiosyncratic (Figure 1). This perspective impacts directly on the decision of the composition and proposition of business model value for each focal company, meaning that a given group might not be within the same business ecosystem.

In a stable or moderately variable business environment, the business model might sustain a competitive advantage for a more extended period. That is contrary to what happens in high uncertainty environments, which require the capacity of sensing opportunities and threats, making strategic decisions and changing directions when needed (Li and Liu, 2014).

On the right side of Figure 1, the indicator for dynamic competitiveness goes in two different directions, representing the levels of advantage acquired by the company. These advantages might be temporary, competitive and sustainable. On the left side of the same figure, the indicator also goes in two different directions, representing the gradual processes of value capture and value creation. These concepts are different from one another, and that one might result from the other.

That notwithstanding, this framework proposes a relational reading of these indicators. That suggests that, as a result of value capture, the competitive dynamics established between companies might generate a temporary or sustainable competitive advantage. That means that value already existing in the market might be appropriated by the company through a business model, creating a competitive or temporary advantage.

As the company appropriates this value, it is hard to imitate the advantage and the model for a period. It is possible to argue that there has been a progression of competitive advantage and, perhaps, a progression towards sustainable advantage.

According to this study, the creation of value and the generation of competitive advantage will only happen if there is a dynamism amongst the different strategic processes and resourcefulness in elaborating and implementing business (Demil et al., 2015). Figure 1 indicates that a combined reading of the

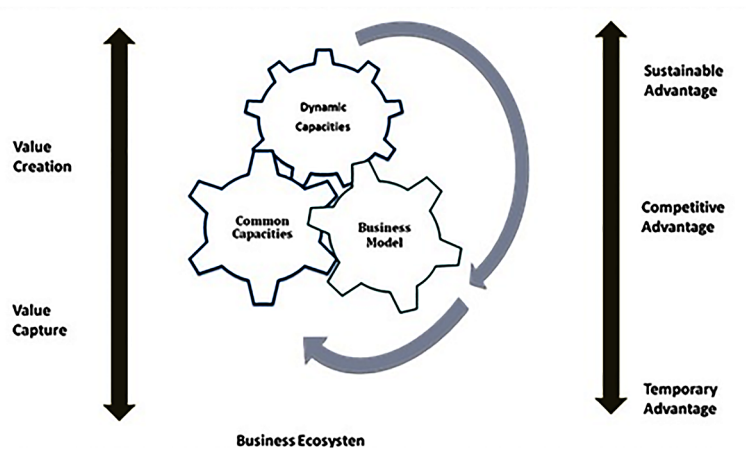
indicators on the left and right sides suggests the creation of value by a business model linked to the strategies of dynamic capabilities.

As previously mentioned, dynamic capabilities have the function of perceiving, molding and learning from actions, as well as transforming and innovating through opportunities and threats. To do so, companies adopt mechanisms that will contribute to the effective fruition of dynamic capacities, which can be related to research, co-creation, organizational experiences and information applied to strategical analyses. As shown in Figure 1, dynamic capabilities interact with the common capabilities of leadership, learning, and management of company process and routines. This convergence between strategic and management capabilities contributes to an attitude of improvement and innovation towards the business model, as managers effectively apply their knowledge, their entrepreneurial spirit and resource management (Penrose, 1989).

Insofar as the business model holds the dynamic conditions of element interdependence and interconnection aligned with the strategic functions of dynamic capabilities supported by internal management capabilities, it must translate customer needs into a way of doing business (Plé et al., 2010b). It must also adopt the design of the model to the preferences of customers and new technologies (Amit and Zott, 2014), as well as assist with decision making, whether to align with and negotiate external factors or to define internal resources (Casadesus-Masanell and Heilbron, 2015).

Beyond these strategic functions, the DBM also requires other conditions, mentioned above in this study, such as the connection and interdependence of constitutive elements, metrics and quantitative and qualitative monitoring parameters and commitment to value creation.

Figure 1. Value creation and sustainable advantage through a dynamic business model
 Source: Authors elaboration



DBM ANALYSIS FROM A DYNAMIC PERSPECTIVE

Model Design Analysis: Interdependence and Connection of DBM Constitutive Elements

The literature on business models has been described as fragmented due to its historical development and the varied perspectives of authors (Demil and Lecocq, 2010; Osterwalder, 2004; Wirtz et al., 2016; Zott and Amit, 2013). In a not much different reality, the BMC concept – initially proposed by Osterwalder (2004) – has also changed through the years. In spite of its commitment to value creation, the emphasis of the BMC concept was initially the unity of the business (Osterwalder, 2004). Later on, the concept included the creation, capture, and delivery of value, while also reinforcing the visual representation of the constitutive components of the business on board (Osterwalder and Pigneur, 2010).

Finally, the BMC concept focused on an accessible and understandable business model where value proposal features as the central element (Osterwalder et al., 2014). However, it is possible to say that, in spite of their commitment to value creation and capture, BMC-related concepts seem to assume the static function of a descriptive tool or picture of the business idea and components.

According to Fritscher and Pigneur (2015), the BMC framework has presented developments over time as a result of the criticisms it received since its initial formulation. The authors argue that there have been improvements in the structure of the model since the creation of the Canvas board (2009), which has enabled the simplification of the complexities of the business, making it intuitive and simple. Nevertheless, this meant removing the markers for the relations and interactions between the constitutive components of the model, producing a fixed form of composition and analysis.

The process of grouping, as well as the links, connections, and dynamics between the components or activities of a framework, is considered to be fundamental for the scope of value creation and capture (Afuah and Tucci, 2003; Amit and Zott, 2015)

Although the literature on the BMC asserts the importance of the interrelation and interdependence of constitutive components, there is no demonstration that the Canvas framework is adequate to these areas.

The presentation of the BMC visual board does not provide the user with a defined order between components and their parameters and indicators that could establish an interdependence between these components and, consequently, between the blocks as provided by the conceptual idealization of the model.

The user can navigate freely on the Canvas board, which means they can define the relations between the components without drawing a correspondence between the latter. As a result, there is a lack of interaction and a loss of model design.

That reinforces the perception of the BMC as a static board featuring aleatory decisions and not, contrastingly, to what is advanced in its conceptual proposition, a model that represents a business conception that can be unprovable, compared with others and recreated. For this reason, the BMC design does not fulfill a dynamic perspective’.

Analysis of the Strategic Conception of the Dynamic Capacities Applied to the BMC

The study by Wirtz et al. (2016) on the origins and the conceptualization of business model categorize Osterwalder's (2004) approach as initially belonging to a technology-based perspective, having later migrated to an organizational orientation. This categorization deserves further discussion since the BMC provides an inherently hybrid view of both the market (outside), referred to by the author as the 'right side,' and the organization (inside), referred to as the 'left side.' This strategic duality of the model is clear in the introduction by Osterwalder and Pigneur (2010) of the constitutive elements, their conceptual detail and the reference bases for these two strategic visions.

It is evident, however, that the BMC does not provide a defined strategic decision that could direct its activities as sustained by the DBM literature. It also lacks the mechanisms to manage and transform the model over time.

From this perspective, the BMC inherently carries the conditions that could link it to a strategy of dynamic capabilities. That would allow for the continuous updating of the model, thus rendering it dynamic. Nevertheless, this would require the creation of market and organizational routines and parameters (Amit and Zott, 2014) that could break with the current static and representative structure of the business model.

Another critical appraisal of the BMC version (2009) refers to the interface between the external environment and the model, which compromises the collection of information and its transformation into a strategic action. The authors have made an effort to provide additional elements from the academic literature to assess environments and analyze scenarios combined with or adapted to the BMC.

Amongst the examples provided are the five forces model, SWOT analysis, Blue Ocean model of investment evaluation, and matrix management for multiple business models. Nevertheless, it is evident that there are a certain distance and lack of knowledge regarding these additional mechanisms when the model is applied.

In 2012, the new framework incorporated the proposition of value to the BMC, introducing methodologies for the analysis of customer profile and value creation rooted in the needs of the customers. That notwithstanding, the model has yet to find an answer to the strategic approach for decision making to be considered as a supporting tool for the analysis and reconfiguration of existing models.

Analysis of the BMC as an Inducer of Creation of Value and Generation of Sustainable Advantage

The conceptualization of the established value proposition differentials is a component that describes the bundle of products and services that create value for a customer segment (Osterwalder, 2004; Osterwalder and Pigneur, 2010). The construction of the value proposition makes use of both the resource-based view – when it identifies the conditions for management and the infrastructure of the activity – and the positioning view – when it interprets the interface conditions between the company and consumers, distribution channels, and the relationship and communication with customers.

Such movement is a generating factor for the BMC revenue model and cost structure. However, the lack of fluidity in the construction and management of the business model might compromise its value proposition. Management relies on the interdependence between the components of the model, which creates dynamic integrated systems of actions that promote the value proposition.

Dynamic Business Model

Table 2. Conceptual structure of the business model canvas 2009

Interface	Components	Concepts	References
C U S T O M E R	Customer segments	Refer to the type of customers sought by the company.	Kotler, 1999; Hagel & Armstrong, 1977; Neal & Wurst; 2001.
	Value proposition	Refers to the bundle of products and services that create value for a given customer segment. Osterwalder e Pigneur (2009) describes it as what motivates a customer to choose a given company.	Kambil & Ginsberg, 1997
	Channels	Refer to how a company delivers the value proposition to customer segments. Usually, a company holds one or more direct and indirect channels, separated by the links amongst them.	Mosnary & Moran, 1990; Dolan; 2000; Ives & Learmonth, 1984; Ives 1999; Mfuther 2002
	Customer relationship	Refers to the relation between the company and customer segments.	Blattberg & Getz, 2001
	Revenue sources	Refer to the periodic revenue about the value offered by the company. They also define which mechanism will be used to determine the price of the offered value.	Klein & Loebbacke; 2000; Pitt & Berthon; 1999
C O M P A N Y	Key activity	Refers to the actions undertaken by a company to do business and to meet the goals that it has set for itself.	Porter, 1985; Fjeldstad & Haanaes; 2001
	Main resources	Refer to the resources absorbed by the process of value creation. They describe the types of skill that the company must have to provide value propositions.	Grant; 1991; Wemerfelt; 1984
	Main partnerships	Refer to the cooperation agreements between two or more independent companies. They aim at creating a project or conjoined activities through the organization of the required capacities, resources and activities.	Child & Faulkner, 1998; Dussaige & Garrette, 1999; Brandenburger & Nalebuff, 1996; Tapscom & Ticoll, 2000.
	Cost structure	Refers to the measures all the monetary costs of a company.	Maite & Aladjidi, 1999

Source: Authors elaboration

That means the model can constantly be altered and improved. As to the construction of the model, it requires mechanisms for gathering and transforming external information associated with it.

Following the approach that addresses the business model as competitive advantage, the definitions of the metrics for measuring value along business frameworks deserve further consideration. BMC's value equation considers revenue minus costs (Osterwalder and Pigneur, 2010). That is simplistic, as it does not allow for analysis of economic leverage that could justify delivering value on a larger scale. Furthermore, the lack of quantitative indicators amongst the model components might impair the generation of costs and incomes of a new BM.

According to Demil et al. (2015), research on business model has surged in the past decades. However, there are rare cases of empirical research on the topic. It is then required to expand the understanding about the applied model and how it changes over time. As with other models, empirical research on the BMC has been scarce and, thus, not allow for further testing of its theoretical assumptions.

Osterwalder has run a test on the empirical application of the business model for his 2004 thesis in which he analyses the case of the Montreux Jazz Festival. This analysis illustrates the difficulties in applying the model. The reason for this is the lack of quantitative and qualitative indicators that, when

cross-checked, could provide an answer to the final equation of value generation as the author himself established in his theoretical framework.

He has also used additional techniques for measuring processes and resources, revealing that he applied instruments as well as details and definitions of indicators that are not present in the BMC theoretical proposal. That has impacted on the study carried out by financial institutions by Teixeira and Lopes (2016), who have assessed the creation of economic value from the BMC perspective.

CONCLUSION

At the end of the present essay, it is possible to understand, from a theoretical perspective, how the DBM contributes to value creation and the generation of sustainable advantage in high-change environments.

The literature confirms that high-change, technological, complex and competitive environments impact on the competitive advantage. As a result, they require dynamic mechanisms for constructing sustainable advantage and creating value. The business model could be one mechanism.

The theoretical support for the conceptual framework proposed by the present study is rooted in existing studies on the relationship between dynamic capabilities and strategic entrepreneurship, aiming at the generation of sustainable advantage. To provide an answer to the research problem, it was, above all, required to establish connections and correlations between the constructs of dynamic competitive advantage and dynamic capabilities as well as to strengthen their relations with DBM theories.

This study shows that the business models are static when is set as a tool that merely describes the business logic of companies. However, to become dynamic and conducive to the creation of value and of sustainable competitive advantage, the model must create, implement and recreate businesses associated with a strategic perspective (Casadesus-Masanell and Ricart, 2010; Pitelis, 2009). Finally, the model design must guarantee the fluidity between the constitutive elements and promote interrelation and interdependence between them. It must also be able to be converted into parameters and metrics for management, evaluation, and alteration.

The conceptual framework of the BMC serves as a tool that describes the business logic of firms and how it connects to the strategy. That has, however, weak theoretical underpinning as there are no related mechanisms for gathering and transforming information that is external to the business. As a result, it does not incorporate the elaboration of the model into a strategic approach. The definition of the constitutive elements of the BMC finds support in various authors, but this interpretation offers an evasive description with no parameters for mensuration.

Furthermore, the route for defining the elements and the relation between components has proven to be static given that there is no interaction, correspondence or interdependence between the components and blocks. Moreover, it is not clear how to manage the model, as it does not provide a record of the parameters used. There is also no proposition of recursiveness or evaluation of the model. Given the actual BMC analyses, further empirical studies on the need for developing connectors between the elements must be pursued, relating them to quantitative and qualitative indicators that respond to the final equation of value.

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Chapter 7

Innovation in Laboratory Medicine

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ABSTRACT

Laboratory medicine has a unique capability to evaluate the correct management of a medical test, its results, and the decisions it can determine. Therefore, laboratory medicine should try to improve patient outcomes, while improving quality and productivity, so that innovation in healthcare may proceed. Innovation in laboratory medicine demands an adequate identification of the unmet clinical need, evidence of clinical and cost-effectiveness of laboratory tests, and a managed implementation that takes into account the process change, appropriate resource management, and monitoring of outcomes. The main objectives of this chapter are to elucidate the role of innovation in laboratory medicine, identifying its main issues and the barriers it faces; to define a value proposition for laboratory tests and to point out several outcome measures that can be adopted in laboratory medicine.

BACKGROUND

In healthcare, nowadays, costs tend persistently to rise and services to be restricted, well short of recommended care (The Economist Intelligent Unit Healthcare, 2014). We also observe that there is a huge gap in quality and judgment across providers and geographic areas, with innovation being restricted to some contexts. In this context, a number of initiatives has been proposed to take a more value-based approach to healthcare (Kaplan & Porter, 2011). This has led to the call for a shift in emphasis from the volume of services to outcomes delivered for patients (Porter, 2014). Much of the total cost of caring for a patient involves shared resources, such as physicians, staff, facilities and equipment. To measure true costs, shared resource costs must be attributed to individual patients on the basis of actual resource use for their care, not averages. Cost-measurement approaches have obscured value in health care and led to cost containment efforts that are incremental, ineffective and, sometimes, even counterproductive. Until now, healthcare organizations have been measuring and accumulate costs around departments, physician specialties, discrete service areas and line items, such as drugs and supplies — a reflection of the

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organization and financing of care. On the other hand, measuring total costs over a patient's entire care cycle and weighing them against outcomes will enable structural cost reduction, through steps such as reallocation of spending among types of service in the appropriate settings, elimination of non-value-adding services, better use of capacity, provision of services in the appropriate settings, and so on. The large cost differences among medical conditions, and among patients with the same medical condition, reveal additional opportunities for cost reduction. The failure to prioritize value improvement in health care delivery, and to measure value, has slowed innovation, led to ill-advised cost containment, and encouraged micromanagement of physicians' practices. Aligning reimbursement with value in this way rewards providers for efficiency in achieving good outcomes, while creating accountability for substandard care.

INNOVATION IN HEALTHCARE

Innovation has been generally defined as "...the intentional introduction and application within a role, group, or organization, of ideas, processes, products or procedures, new to the relevant unit of adoption and designed to significantly benefit the individual, the group, or wider society..." (Price & St. John, 2014). Innovation in healthcare undergoes invention, adoption and diffusion, this one is related with the facilitation and widespread adoption of the new test or device (Price, 2012). In order to innovation take place in healthcare, there has to be the identification of an unmet need, the determination of the effectiveness of a certain process, the application of the evidence-based knowledge at the time, and an audition to the application in the field. There are several drivers that impact on success of the innovation including process quality, effectiveness, efficiency, patient aspiration, the change observed in the care pathway and the impact on the stakeholders involved in healthcare delivery, as their flexibility to change (Omachonu & Einspruch, 2010).

Innovation can, thus, be classified as sustaining or disruptive (Christensen & Oversdorf, 2000). Sustaining innovation is the one that makes an incremental improvement. It allows that a product or service performs better in ways that customers already value. On the other hand, disruptive (also described as radical or transformational) innovation creates an entirely new market through the introduction of a new product or service (Hogan, 2005). Sustaining is incremental, while disruptive is truly transformational — having a major and durable impact. Sustaining innovation will take one existing concept and push it further; disruptive innovation takes several concepts and combines them into one seamless advance. Disruptive innovation improves a product or service in ways the market does not expect, for example, by lowering price or design change to address a different set of consumers. Innovation that involves impacts on more than one stakeholder is more likely to be disruptive. This disruption is achieved through significant changes in the interactions between different stakeholders, or even in the nature of the client-provider contract. Clearly, this would involve significant process change across the care pathway. This, however, is one of the most important features of innovation, since achieving a better outcome results mainly from doing something different, often radically. Very often, like in Laboratory Medicine, there is a substantial number of sustaining innovations that are then punctuated with disruptive innovations. Although sustaining innovation steadily drives progress, paradigm shifts usually occur only with disruptive thinking. Some examples of disruptive innovation in laboratory medicine include continuous flow analysis, dry reagents on dipsticks, pregnancy home testing, PCR, point-of-care testing, and use of MALDI-TOF mass spectrometry for pathogen identification (Rifai, 2015). With the escalating cost of healthcare, bold measures and disruptive approaches in delivering effective and economical clinical

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laboratory testing are more needed than ever. On one hand, Laboratory Medicine is ripe for disruption. On the other hand, it continues to depend on sustained innovation, since standards by which technologies are accepted must keep the same. They need to meet performance, sensitivity and specificity requirements for providing values that can be trusted by physicians and individuals.

However, innovation in healthcare often faces many obstacles. The most relevant are public insurance programs being more oriented to volume of care than value and inadequate information about the quality of care (Cutler, 2010). However, the importance of innovation is underlined in several European government initiatives (Council conclusions on innovation in the medical device sector, 2011; Accelerating adoption of innovation in the NHS, 2011). For instance, the Department of Health in the United Kingdom, after identifying several barriers to innovation, set up a number of working groups to develop solutions to overcome those obstacles and to promote implementation of new technologies (Creating Change: IHW one year on, 2012). An example of a change in practice is to adopt a new guideline for patient diagnosis or management. The new guideline is then implemented through changing processes. Thus, before the introduction of a new test or device, it is essential to have a clear understanding of the current practices and processes, and how these will change. Current practices, therefore, provide a baseline, while the before-and-after processes will help identify the implementation metrics. Many of the claimed benefits of a change in practice, or process are forced down by the lack of change in the use of resources or failure to disinvest. This transference of resources can be addressed reducing the cost of an element of the care pathway, or increasing the productivity of the element of the care pathway. A good example of this challenge can be found in the problem of increasing pressure on Emergency Department services: a range of strategies have been employed to mitigate this problem, including reducing unnecessary referrals, improving the efficiency of triage, reducing length of stay, and reducing readmissions (Polisena et al, 2013). In its paper on accelerating the adoption and diffusion of new approaches to delivering healthcare, the United Kingdom Department of Health has proposed a “shared-savings formula” to break down silo budgeting and encourage cross boundary working (Department of Health, NHS, 2011). Whichever approach is taken, it will take time to achieve, but requires a clear implementation plan in order to ensure successful delivery. In all of these examples, Laboratory Medicine can play an important part.

INNOVATION IN LABORATORY MEDICINE

Until the last century, medical problem solving relied almost entirely on history taking and physical examination. Physicians tended to confine their use of laboratory tests to confirming clinical diagnosis, rather than to the detection of clinically unapparent disease. The traditional patient approach has increasingly given way to a practice of medicine dominated by the use of laboratory tests (*Figure 1*). Laboratory Medicine has always undergone major changes because of technological advances. Many new diagnostic techniques and laboratory tests have been introduced as a result of both research on the fundamental pathogenesis of diseases and the development of new methods. With development of laboratory analyses of body fluids, hospitals started to need a full-time Laboratory Physician, also called Clinical Pathologists. The main role of the Clinical Pathologist is to translate the laboratory data into information that would be understandable for the clinician. Then, with the increasing reliance on laboratory testing, Laboratory Medicine started growing in importance, and Clinical Pathologists developed strengths primarily in clinical consultation and management of laboratory resources. In academic medical centers, with its high concentration of medical specialists and emphasis on basic and applied research, interpretive skills of

the Clinical Pathologist are even more important. The entire picture requires a general knowledge model that moves from laboratory data to information, into a new knowledge to facilitate medical decisions by care givers and, ultimately, the intervention and outcome. These integration and understanding is the real challenge faced by laboratory pathologists and scientists in an era when the number of available test parameters has increased enormously, and the available funds have significantly decreased. Thus, the survival of Laboratory Medicine in such an environment, ultimately depends on the ability to add value to the care of patients. The key to appreciating the importance and the true impact of diagnostic testing can only be achieved if the cost aspects are considered in the wider overall context of health economics, and not within the more blinkered area of pure laboratory economics where, almost by definition, every test represents a cost, and its value is outside the scope of the laboratory practice (Marshall, 2003).

Nowadays, 70% of clinical decisions are based upon laboratory data, on screening, prevention, diagnosis or treatment monitoring. Indeed, they truly impact the clinical outcome for patients, the efficiency of the process of care and the resources required for the delivery of that care. However, these objectives are compromised by limited evidence, demonstrating the utility and benefits of such investigations, as well as paying insufficient attention to ensuring that Laboratory Medicine services are fully integrated into the care pathway and efficiently employed. Quality improvement in laboratory medicine embraces a number of activities, including quality control and external quality assurance, audit, performance management, and strategic planning (Price & St. John, 2016). However, quality improvement tends to focus on the analytical aspects of the laboratory service rather than taking into account the whole patient care pathway, including the pre- and post-analytical phases. This focus may, in part, help explain the higher prevalence of pre- and post-analytical errors compared to analytical errors that is commonly reported (Laposata & Dighe, 2007). Other quality improvement initiatives should include analysis of frequency of testing, adherence to guidelines, and consensus guidance on appropriateness of laboratory test utilization (Wilson, 2015). However, few of these initiatives have investigated the use of the test result in relation to patient outcome or operational and resource utilization metrics. Resolution of many of the pre- and post-analytical problems and accepting greater accountability within the patient care pathway and outcome will only be achieved by working as a member of the clinical team.

This requires the Clinical Pathologists to have a deep knowledge in a diverse scope of medical specialties and organizational and leadership skills that are necessary for functioning successfully in inter-departmental multidisciplinary teams. On the other hand, physicians, who frequently request laboratory tests outside of their field of expertise, lack the knowledge base to order the optimal sequence of tests, and to correctly interpret the results. Conversely, medical laboratory professionals, combining clinical knowledge with experience in the performance of laboratory assays, have the unique expertise to advise their clinical colleagues in regard to the appropriate test selection and interpretation of laboratory results. Knowledge of analytical and biological variation, and the influence of physiological status and co-morbidities are critical in the interpretation of laboratory results, but many clinicians are unaware of these. For example, the reliability of information derived from a laboratory test may heavily depend on the quality of the analytical performance of the assay being used for the corresponding measurement. Therefore, the involvement of laboratory professionals in test selection and interpretation can significantly decrease the likelihood of several kinds of medical errors (Kratz & Laposata, 2002).

Over the last decades, laboratory medicine has witnessed a remarkable wave of innovations that transformed the field from a peripheral to a central player in healthcare delivery. These advances enabled the introduction and performance of new tests on a large scale, some in a decentralized setting, in an accurate and a precise manner, thus leading to better diagnosis, more accurate prediction of disease prognosis, and

improved patient management. This evolution was the result of both sustaining and disruptive innovation. Innovation is, in fact, one of the major drivers in evolution of healthcare and Laboratory Medicine is an important part of that process. A more traditional misconception of Laboratory Medicine often tends to narrow it to just “selection, provision and interpretation of analytical tests” (Burtis, Ashwood & Bruns, 2012). Endeavoring this reductive perspective, clinical laboratories are frequently organized, funded and managed in almost all healthcare systems with a business model based on cost and volume of tests performed. However, health goals for innovation must improve patient outcomes, and, at the same time improve the quality and productivity of the service. It happens that the value proposition of any product or service is the link between the provider and the needs of the customer describing the utility of the product or service in terms of benefit to the customer. Laboratory Medicine is one part of a complex intervention, and so the value proposition should encompass the breadth of that intervention — from addressing the unmet need through the generation of clinical, operational and economic outcomes. The foundation of this statement in Laboratory Medicine is the evidence of clinical and cost effectiveness, not only for the patient, but also for other stakeholders involved in the delivery of healthcare, e.g., the carer, service provider, commissioner, purchaser, and the supplier of the test or device, as well as society as a whole.

The laboratory-clinic interface is, therefore, of fundamental importance to ensure that the patient is given high quality care because it provides the boundary for the multidisciplinary activities which result in the improvement of the appropriateness of test requests, and in the exchange of information on test results. In order to fill the need for better quality health care, rational use of laboratory testing, avoidance of medical errors, and cost reduction, three strategies have been recommended for supporting and promoting clinical consultancy in Laboratory Medicine, as the use of reflex testing and algorithms, elaboration of interpretative comments and organization of clinical audits. Another strategy is to provide a patient specific comment and, if necessary, graphical interpretation of complex test results in order to allow a more objective utilization of the data. Adding an interpretative comment to the patient’s results and, eventually, giving advice on any action that should be undertaken, represent an essential tool for adding value to laboratory reports. An audit of this type of activity in our institution demonstrated the impact of the availability of laboratory-generated interpretative comments on clinical decision making.

Clinical laboratories should figure out whether they are actually providing a useful service for the clinicians they serve, in order to ensure that they provide the optimum service to the patient. This activity requires co-operation with functional areas outside the laboratory, reflecting the real world of medicine: a co-operative venture among medical specialty fields (Panteghini, 2004). The continuous availability of new tests renders necessary that laboratory professionals and clinicians revise and compare diagnostic strategies and different protocols to evaluate whether the new tests are to be used in addition to, or instead of, other more traditional tests. This way, the collaboration and co-operation between Laboratory Medicine and other clinical specialties may allow a continuous improvement of the processes, as well as introduction of changes aimed at further improving the results, thus ensuring better patient management.

Quality improvement also embraces innovation and it is recognized that there are often barriers to adoption of new technologies in Laboratory Medicine. They include poor understanding of the problem or unmet need, limited evidence of clinical and cost effectiveness, disinvestment in redundant procedures following adoption of new technology or process, and lack of planning (Price & St. John, 2016). Business models currently involved in the delivery of healthcare, including Laboratory Medicine, are primarily designed, managed, and executed in individual units. Such units are driven by activity in their respective units, being managed according to performance metrics that match the different areas, rather

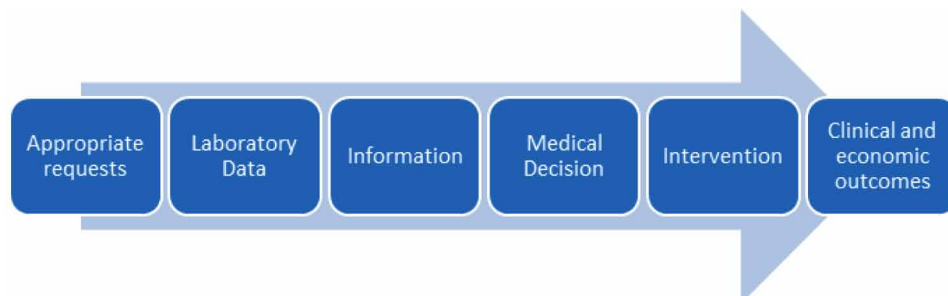
than the product of the clinical pathway, and the contribution of the stakeholders. Thus, in the case of Laboratory Medicine there is, primarily, a focus on the quality of analytical performance, volume of activity and cost of delivery. However, the central role of the laboratory medicine service is to deliver the results of investigations that enable clinicians and other stakeholders to make better decisions (Price & St. John, 2016). Consequently, the real value of the laboratory medicine service is mainly delivered to other health departments, with its benefits appreciated by other stakeholders.

Evolution of Laboratory medicine over the last few decades has shown incredible achievement in invention through the identification of new biomarkers, in new analytical methods and in the way in which results (and associated knowledge) can be delivered (Price & St. John, 2014). New biomarkers offer the opportunity to address a number of unmet clinical needs that current tools aren't able to reach, for example in ruling-in, or ruling-out a diagnosis, or in monitoring of treatment. As an example, the development of new biomarkers of acute coronary syndrome represents considerable invention and innovation, exemplified in the use of high sensitivity troponin assays. As the markers have become more specific for cardiac muscle damage, and assays capable of lower analytical detection limits, it has been possible to rule-in and rule-out myocardial infarction sooner, thereby enabling earlier intervention, as well as earlier discharge from the Emergency Department (ED) where the diagnosis has been ruled out (Reichli, et al., 2012). This has led to significant cost savings and increasing bed availability. In another study of more than 850 patients presenting to the ED with suspected myocardial infarction, the length of stay was significantly shorter and hospital charges were less for patients who had troponin measurements, with a potential annual saving of about US\$4 million (Zarich et al., 2001). However, it is crucial to the application of biomarkers in clinical practice, that Clinical Pathologists may closely monitor the proposed assays and limit their clinical use until the appearance of more robust evidence for their use (Ferraro & Panteghini, 2015). Major challenges in the adoption of new technology are changing practices, processes and resources, otherwise include stopping the funding of redundant resources otherwise known as disinvestment (Robert et al., 2010). The introduction of a new test or device to satisfy an unmet need, must involve a change in practice and, invariably, a change in process if one is to ensure that the test result is acted upon correctly.

Stakeholders in Laboratory Medicine

In any field, improving performance and accountability depends on having a shared goal that unites the interests and activities of all stakeholders (Porter, 2010). In health care, however, stakeholders have

*Figure 1. The steps of laboratory testing.
Adapted from Plebani & Panteghini, 2014*



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myriad, often conflicting goals, including access to services, profitability, high quality, cost containment, safety, convenience, patient-centeredness, and satisfaction. Lack of clarity about goals has led to divergent approaches, gaming of the system, and slow progress in performance improvement.

Given the complexity of healthcare, there are several stakeholder groups that interact with each other through some form of “provider–client” relationship or contract, each with their own expectations from innovation in healthcare. They include the patient, the carer, (the care provider organization, the purchaser of the care service, the regulatory agencies and the society as a whole. In the particular domain of Laboratory Medicine, the stakeholders are, as well, all those involved in the technology applicability in the delivery of care, namely the inventor, the developer, the manufacturer, marketing and sales organizations, the healthcare provider organization and the Clinical Pathologist, as well as other physicians enrolled in the patient healthcare (Omachonu & Einspruch, 2010). The importance in recognizing all of the stakeholders involved remains on the fact that the benefits of an innovation will be seen in several stakeholder domains (for instance, a clinical specialty), other than the domain in which the new technology is delivered (that is the clinical laboratory). This way, significant tensions may emerge between stakeholders, since it may lead to disinvestment in some stakeholder domains. Therefore, it is important that all of stakeholders involved in the overall service may take part in the process of innovation. In fact, all stakeholders are able to identify unmet needs within their immediate area of responsibility, each of them being agents of innovation. Once more, it remains important to recognize the responsibilities and accountabilities of those that take part of the clinical team, responsible for delivering healthcare to an individual patient.

However, stakeholders may have different perspectives on benefits and value (Hensall & Schuller, 2013). Benefits to stakeholders other than patients will include not only the effectiveness of the service provided and the impact on the patient outcomes, but also the efficiency and cost of care provision. Patients, physicians, health systems, payers, and diagnostics or pharmaceutical industries share interests in innovation, although such interests are not entirely aligned. Patients seek a clearer understanding of their disease, its prognosis, and the most effective treatment in terms of efficacy and side effects. Physicians and health systems also share these interests but must balance individual patient needs with management of overall healthcare utilization. Payers are concerned that new diagnostic tests and drugs will drive up health care expenditures and remain skeptical that these costs will be offset by more selective use and fewer side effects. The pharmaceutical industry seeks new drug opportunities, but often such drugs replace existing and profitable therapies. In fact, it will happen that each of these stakeholders will identify value that relates to their own operating environment, rather than the value that is generated by the overall process of care for the patient. Measures of the process of care are thus complicated and require the barriers between stakeholders, particularly financial ones, to be broken down.

Providers tend to measure only what they directly control in a particular intervention and what is easily measured, rather than what matters for outcomes. For example, current measures cover a single department or outcomes for a whole hospital, such as infection rates. Or they measure what is billed, even though current reimbursement practices are misaligned with value. Similarly, costs are measured for departments or billing units rather than for the full care cycle over which value is determined. Faulty organizational structure also helps explaining why physicians fail to accept joint responsibility for outcomes, blaming lack of control over “outside” actors involved in care (even those in the same hospital) and patients’ compliance.

However, these are common goals that make the interests of various stakeholders to converge, that include the rigorous evaluation of efficacy, safety, and cost-effectiveness, all performed with an open mind about whether the tools of precision medicine provide value (Jameson, 2014). This will enable the benefit or overall outcome to be shared across the various stakeholders rather than the generation of the usual fee-for-service performed in each reimbursement that dominates current healthcare systems. It is therefore important that the value proposition in Laboratory Medicine should identify the processes of care that make the best use of laboratory tests, the resources required to deliver these care processes, which, when combined, deliver the desired outcomes (Price & St. John, 2014). This highlights the importance of how Laboratory Medicine service should be integrated into the care process and care team.

While Laboratory Medicine may provide a service that directly impacts a patient, typically it offers benefits to other stakeholders as well, e.g., carers, healthcare providers, those purchasing healthcare services and policymakers. Typically, the value of Laboratory Medicine can only be considered in the context of the care pathway in which the test is used. Therefore, the value proposition for Laboratory Medicine (whether it be overall service or individual test utility) is expressed in terms of contributions to guide decision making in clinical care, the process of the care delivered and the resource required to deliver that care. The key objective of Laboratory Medicine is to contribute to guiding decision making that ensures the best health outcome for the individual patient, at reasonable cost. As a consequence, Laboratory Medicine can deliver clinical, operational and economic benefits across the whole care pathway, thereby addressing the interests and responsibilities of all stakeholders.

Value in Laboratory Medicine

Establishing a value proposition is essential to successful innovation and quality improvement in healthcare. This idea was raised in the commercial world as a tool to deliver better value. It was first developed by for marketing and was about delivering value to customers (Lanning & Michaels, 1988). It describes the utility of the product or service in terms of benefit to the customer. This perspective endorses a clear, simple statement of benefits, both tangible and intangible that the company will provide, along with the approximate price it will charge each customer segment for those benefits. Value proposition has then become a tool for a wider group of stakeholders in healthcare including physicians, managers, providers, purchasers and policymakers (Price & St. John, 2014). In this particular field, it has to take into account the unmet clinical need, the nature of the service, its potential benefits of the product, and the evidence the benefit claimed can be achieved. Furthermore, it shall be complemented by an implementation plan and performance management program (Table 1).

The Agency for Healthcare Research and Quality defined value in healthcare delivery as “reducing unnecessary costs and waste, while maintaining or improving quality”. Value in healthcare can then be described as “outcomes relative to costs” (Porter, 2010). Since value is defined as outcomes relative to costs, it encompasses efficiency. Central to the implementation of value-based healthcare is an evidence-driven approach to health, using data on outcomes and costs to assess cost-effectiveness. The starting point is to recognize that, historically, much of what has been done in healthcare has not delivered a health benefit. Moreover, in extreme situations, interventions can actually do more harm than good, given their adverse events. Variations in care standards in hospitals and clinics are just one result of the global failure to implement value-based healthcare. To avoid this wastage, the several stakeholders involved – payers, providers and suppliers – all need clearer information on which care pathways or treatments offer the

Innovation in Laboratory Medicine

best outcome for patients, and at what cost. They also need an incentive, via new payment methods, to implement those pathways and to invest in preventative care.

This goal is what matters for patients and unites the interests of all actors in the system. Therefore, achieving high value for patients must become the overarching goal of health care deliver. If value improves, patients, payers, providers, and suppliers can all benefit, while economic sustainability of the health care system increases. Value should always be defined around the customer, and in a well-functioning health care system, the creation of value for patients should determine the rewards for all other actors in the system. Since value depends on results, not inputs, value in health should be measured by outcomes achieved, not the volume of services delivered, and, therefore, shifting should focus from volume to value is a central challenge. The proper unit for measuring value should enroll all services or activities that jointly determine success in meeting a set of patient needs. These needs are determined by the patient’s medical condition, defined as an interrelated set of medical circumstances that are best addressed in an integrated way. Also the definition of a medical condition includes the most common associated conditions — meaning that care for diabetes, for example, must bring into focus conditions such as hypertension, renal disease, retinal disease, and vascular disease, and that value should be measured for everything included in that care.

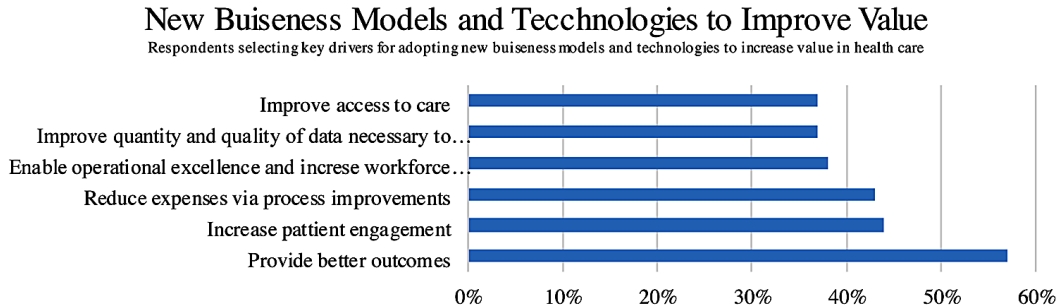
Value in Laboratory Medicine should be assessed in the context of the impact of their output on clinical services (Figure 2).

In other words, clinical laboratories have to use outcomes research to be competitive in a changing health-care landscape that is characterized by financial problems, and in the use of a wide variety of medical procedures and technologies. The simplest expression of a value proposition for laboratory medicine is to provide useful information in order to empower clinicians in their decisions. Therefore, in order to be successful, the implementation of a new test has to recognize the complexity of healthcare, to engage the unmet needs of several different stakeholders, and also impact each individual stakeholder, and their individual incentive to change. In order to develop this commercial value proposition in Laboratory Medicine, it is necessary to identify the customer and the unmet need and where it fits into the care pathway. Then, it is necessary to define the product or service to be delivered, and the way

Table 1. The changes required for a value-based health

	Traditional Health Systems	Value-Based Health System
Reimbursement	By volume of healthcare activity or product	By patient outcome compared with alternatives
Regulatory approval requirements and process	Demonstrate high quality manufacturing standards, clinical safety and clinical effectiveness, but only against a placebo.	Formal systems in US and EU now require clinical effectiveness to be proven against comparative therapies for best outcome over cost.
Pricing of supplies	By volume purchased.	Relative pricing correlated with health benefit delivered per unit of input.
Data and records	Lack of measurement of health outcomes, leading to an inability to purchase or performance manage against this metric.	Transparency of input (activity and product volumes) and outcomes.
Health system planning	Lack of planning against present and future need.	Integrated and collaborative care, budgeted and planned for in accordance with population health needs, access and universal coverage of essential services.

*Figure 2. How to improve value in laboratory medicine
Adapted from Harvard Business Review Analytic Services Survey, September 2017*



it addresses the unmet need, to identify its benefits to the customer, including cost. However, the unmet need may vary depending upon the stakeholders or customers. For the overall healthcare provider, such as government the need will be to improve outcomes and reduce costs. Individual providers such as clinical teams may have more specific needs, like the improvement of outcomes in the management of diabetes, or reducing the delays in the Emergency Department, or even reducing readmissions (Price & St. John, 2014). Invariably, tests may fit at more than one point in the care pathway, such as diagnosis and monitoring (disease management), as well as in different settings.

With identification of the customer and how the test fits into the care pathway, it is then possible to articulate the unmet needs of the various stakeholders, including patients, healthcare providers, funders and society as a whole. Following the determination of the test utility, consideration should be given to the setting in which it will be used. To a certain extent, this may depend on factors, like health system, the accessibility of services, and the severity of symptoms at presentation. Thus, some policymakers have committed to more care being delivered closer to home, while others want to provide better care to patients in remote locations; these goals may influence the approach to care delivery. In a value proposition, it is important that outcomes are both transparent and measurable, as they will inform business case and the detail of the implementation process. One requirement of the evidence that will be required to support the value proposition in Laboratory Medicine is the demonstration and quantification of the impact of laboratory tests on patient’s health (Ferrante, et al., 2012). Once the value proposition is implemented, it will need regular audit to check for compliance and to ensure that the predicted and better outcomes are being achieved with the new process.

However, lack of evidence of impact on outcomes often mitigates the opportunity to create business case for innovation in healthcare. Unfortunately, rigorous, disciplined measurement and improvement of value is the best way to drive system progress. Yet value in health care remains largely unmeasured and misunderstood. The same happens in Laboratory Medicine, where evidence-based studies are generally regarded as poor, with a predominance of studies focusing on diagnostic performance (sensitivity and specificity) rather than on patient outcomes (mortality and morbidity) and cost effectiveness quality (Lijmer, Leeflang & Bossuyt, 2009). Although, when considering the true value of medical tests, we have to acknowledge how it affects patient health” (Ferrante di Ruffano, et al., 2012). Indeed, there is a number of issues that need to be considered when using medical tests for guiding treatment choices and the decisions that are made (Janes, et al., 2011). Innovation in laboratory medicine is built around the framework of a clinical team and, importantly, across several clinical and management departments.

This means that use of Laboratory Medicine meets the criteria of a complex intervention, described as built up from a number of components, which may act both independently and interdependently (Craig, et al., 2008). Healthcare today is regarded as a very fragmented service for all stakeholders. For this reason, there should be more discussion about the merits of integrated care, and participation in clinical teams. Laboratory Medicine can only innovate within this approach if it is present at the fields of action where their services are needed, in order to underline its relevance and the benefit it can offer to the patient and the health system.

In the past, much of the evidence associated with individual tests has been based on the relationship between the test result and the presence and severity of a disease. The consequence of this is that, invariably, the value of the test has not been determined prior to its introduction and, furthermore, its implementation has not been monitored. In fact, laboratory tests have several value dimensions for the patient. Besides the more evident medical perspective, concerning the impact on treatment decisions, they sometimes get to influence the patient's ability to make better life decisions and, therefore, they may also exert a psychological impact, for instance, in quality of life, patient experience and their ability to work (Lee, Neumann & Rizzo, 2010). However, these dimensions, which endorse a more complex intervention, do not cover objective endpoints that can be easily measured and related to management decision making, and thus translated into routine practice. One of the problems with many established biomarkers is that there is little robust evidence available to justify its adoption, in part because there were no criteria established to inform it. Much of the evidence was based on observational studies relating the presence of the markers (e.g. in increased amounts in the blood or urine) to the presence and severity of a disease. Only in the role of screening, the adoption was clearly understood. In certain cases, evidence of utility in diagnosis or monitoring generally evolved over time, but in poor quality studies.

In order to meet the changing testing needs, the role of Laboratory Medicine in patient management should, therefore, be improved by adding value to laboratory tests derived from appropriate test request and utilization (Panteghini, 2004). However, there is a significant level of inappropriate testing, and so measures of the number of tests requested are not good indicators of adoption (Smellie, 2012). Therefore, adoption and diffusion of a new test or technology can only be measured in terms of impact on outcomes. It is generally assumed that physicians nowadays are over-testing. A meta-analysis has shown, however, there is also significant under testing, to the real detriment of patient care (Zhi et al., 2013). Furthermore, where evidence of clinical and cost effectiveness does exist, it does not provide the practical guidance on implementation. Thus, translation of a new testing or care process into practice can be difficult, including the establishment of the metrics to demonstrate successful implementation. As well, removal of tests that offer little incremental information would additionally save money, avoid unnecessary investigations arising from incidental and clinically irrelevant abnormalities, and improve the risk-to-benefit ratio (Plebani & Panteghini, 2014). This further emphasizes the need to include a well-documented implementation strategy in the value proposition.

Outcomes in Laboratory Medicine

Regarding the success of innovation in Laboratory Medicine, it is important an adequate identification of the unmet clinical need, an awareness of the care pathway, evidence of clinical and cost effectiveness of a test, and a managed implementation that takes into account the process change, appropriate resource management and monitoring of outcomes. The clinical perspective of Laboratory Medicine offers the Clinical Pathologist an awareness of the care pathway that reveals itself crucial to inform how the medical

test might be used, as well as the decisions that it determines, namely whether the test result is helpful for screening, diagnosis or monitoring.

Economic survival in this managed care environment will depend not merely on decreasing costs but rather on the ability to provide the best care at the least cost. In the case of Laboratory Medicine, this means ensuring that cost-saving reductions in the utilization of tests are applied only to tests that are inappropriate. Studies of interventions to modify test ordering behavior – including education, feedback, and guidelines or reward systems – have not been uniformly successful. Recent evidence, however, suggests that, when carefully chosen, administrative intervention was effective, and combinations of interventions targeted at several behavioral factors were most likely to succeed.

In assessing the performance of healthcare, we can focus on structure (organizational characteristics), processes (activities involved in delivering healthcare) and outcomes attributable to healthcare (Donabedian, 2003). Outcomes can be described from a clinical, operational or economic perspective. Given this, is necessary an existing framework in order to define the unmet need, the evidence to support the required test or device as well as its clinical effectiveness, the process changes required to achieve the desired outcomes, and the changes in the resource utilization to deliver the cost effectiveness. This information can then be employed to make the investment decisions (i.e. to invest in the new technology or treatment, and where any disinvestment can be achieved) and guide the process of implementation (Price & St. John, 2014)

Determination of relevant outcomes to measure for any medical condition should follow several principles. Outcomes should include the health circumstances most relevant to patients. They should cover both near-term and longer-term health, addressing a period long enough to encompass the ultimate results of care. The key dimensions of innovation will therefore be the resource utilization associated with achieving those outcomes, the change in the care process to deliver those outcomes and, most important, the impact of outcomes in patient health status. Outcome measurement should include sufficient measurement of risk factors or initial conditions to allow for risk adjustment. Improving one outcome dimension can benefit others. For example, more timely treatment can improve recovery. However, measurement can also render explicit the tradeoffs among outcome dimensions. For example, achieving more complete recovery may require more arduous treatment or confer a higher risk of complications. Mapping these tradeoffs, and seeking ways to reduce them, are an essential part of the care-innovation process.

First, it is necessary to decide which outcomes are the most meaningful to patients and whether those differ according to the disease involved (The Economist Intelligence Unit Healthcare, 2015). Top tier outcomes usually include survival and degree of health or recovery. Lower tier outcomes, which usually depend on the top tier, include time to recovery and complications or side-effects. Lowest tier outcomes look at the sustainability of health and wellbeing, and include long-term consequences of treatment, such as whether the disease recurs. How much value all these outcomes have may depend on the situation or the age of the patient, as well as the attitude of their families and society at large. On the cost side, meanwhile, there are also multiple considerations going far beyond the simple price of a particular drug or intervention. Treatment costs should also include the time involved for medical staff, the equipment and infrastructure, the time involved for patients and carers, and the implications in terms of lost economic productivity. Moreover, there are arguably other considerations, including the total cost of a treatment if all patients received it and the implications in terms of the future sustainability of the healthcare system. Pharmaceutical companies also argue that the future sustainability of research

and development should be taken in consideration. Even after basic principles have been established, however, questions exist on how both cost and outcomes will be measured, and how cost-effectiveness will be established. Measuring, reporting, and comparing outcomes are perhaps the most important steps toward rapidly improving outcomes and making good choices about reducing costs. Systematic, rigorous outcome measurement remains infrequent, although a growing number of examples of comprehensive outcome measurement provide evidence of its feasibility and impact. Typical measures of outcomes include morbidity, mortality, quality of life, satisfaction with care, and cost of care.

Outcome are of surmount importance to providers, for whom comprehensive measurement can lead to substantial improvement. Providers tend to measure only what they directly control in a particular intervention. Sometimes, they measure what is billed, even though current reimbursement practices are misaligned with value. Similarly, costs are measured for departments or billing units rather than for the full care cycle over which value is determined. Faulty organizational structure also helps explain why physicians fail to accept joint responsibility for outcomes, blaming lack of control over “outside” actors involved in care. It is therefore reasonable to conclude that any value proposition in healthcare is likely to be poorly informed in both its generation as well as in its translation, if it depends on a business model that rewards the provider for the activity delivered rather than the outcome achieved. It also follows that there has to be a common understanding of the meaning of value — across all stakeholders. The framework of a value proposition for Laboratory Medicine would drive key activities in the evolution and maintenance of high-quality healthcare from research through the adoption and quality improvement in an established service. It would also support innovative approaches in delivering healthcare.

These are referred to as hard endpoints, and can be used for long term epidemiological and outcome studies. Three levels of laboratory-related patient outcomes have been defined (Panteghini, 2004). The first-order laboratory outcome is simply the performance of a given test, in terms of sensitivity and specificity in actual practice. Thus, every test has at least four sets of outcomes associated with it; namely, the consequences of a true positive, a true negative, a false positive, and a false negative result. The second-order laboratory outcome is the predictive value of the test, the probability of disease in the patient as estimated by the caregiver receiving the laboratory result. The third-order laboratory outcome is the probability of a change in health status of the patient based on the test result (clinical utility). In the end, all healthcare measures, including laboratory tests, should be judged with respect to their ability to maintain or restore a patient’s health. In certain clinical situations, the introduction of new and more effective laboratory tests has influenced the management of patients and related clinical outcomes directly.

Therefore, it is more common for intermediate or surrogate outcomes to be used for research and audit studies as well as in performance management. Such surrogate outcomes can be metric – length of stay, readmission rate, complication rate, episode costs, treatment costs – or certain analytical values – disease markers, such as HbA1c, LDL cholesterol, procalcitonin (Table 2).

Laboratory professionals must now think more globally and perform studies that demonstrate the impact of laboratory tests on overall patient health, the cost of patient care, and other less tangible utilitarian measures, such as quality of life and patient satisfaction. Understanding laboratory-related outcomes enables Laboratory Medicine to become involved with institutional process improvement, including practice guideline development, redesign of laboratory services, and application of patient satisfaction measures within the organization.

Table 2. Examples outcome measures for different tests and utilities

Test	Utility	Clinical Setting/ Context	Outcomes	
			Type	Measures
Troponin	Diagnosis	Chest pain	Clinical/Operational	rule out of myocardial infarction; length of stay in emergency department
HbA1c	Monitoring	Diabetes mellitus	Clinical	Achievement of optimal HbA1c
Urine albumin/ creatinine ratio	Screening	Diabetes mellitus	Clinical	Early detection of kidney disease
INR	Monitoring	Patients on warfarin	Clinical	Ajustment in therapeutic range
NT-proBNP	Monitoring	Heart failure	Clinical	Emergency and hospital admission rates
Urinalysis	Diagnosis	Urinary symptoms	Clinical/ Economic	Reduction in requirement for antibiotherapy
D-dimer	Diagnosis	Signs of DVT	Clinical/ Economic	Rule out DVT; Reduction in requirement for ultrasonography

Adapted from Price & St. John, 2014

(Tests may be employed for more than one reason and achieve more than one type of intermediate benefit or outcome).

Abbreviations: Abbreviations: DVT, Deep Venous Thrombosis; NT-proBNP, B-type natriuretic peptide.

Technological Innovation in Laboratory Medicine

Innovation in diagnosis demands investment in new and often expensive technologies. Laboratory Medicine has considerably enriched the diversity of biomarkers and investigations available, as well as the technology to aid delivery, e.g. automation, biosensors and nanotechnology. It has been suggested that “technological innovation” has been responsible for 20 to 50% of the growth in expenditure of healthcare over the last decades. However, we tend to assist at slow adoption of new tests, as they emerge.

In a paper published in 2000 (Burke, 2000), the author announced for the future: “In the future, molecular testing will be automated—including specimen preparation, amplification, and detection—using microarray probe technology; microarray or biological chip (biochip) technology will allow thousands of biologic reactions to take place at once, analogous to computer chips simultaneously performing thousands of mathematical calculations. Applications will include screening for genetic indicators of disease, infectious disease detection, and the determination of cellular gene and protein expression profiles for the diagnosis and management of malignant neoplasms; integrated testing platforms suitable for core or satellite facilities with the capability of performing hundreds of assays will be developed”. Well, 18 years after this publication, this visionary prediction has already become a reality implemented in daily laboratory practice. The convergence of genetics, informatics, along with other technologies, such as cell sorting, epigenetics, proteomics, and metabolomics, is rapidly expanding the scope of precision medicine by refining the classification of disease, often with important prognostic and treatment implications (Jameson, 2015). For example, allowing detection of the BCR-ABL translocation in chronic myeloid leukemia, molecular biology allows successful treatment of this condition with tyrosine kinase inhibitors (TKI) (Druker et al., 2006). Another example is noninvasive prenatal testing (NIPT) through the detection of cell-free fetal DNA in maternal plasma. This discovery was translated into a safe and robust system for NIPT. This has allowed that, nowadays, fetal trisomy 21 can be detected with high

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sensitivity and specificity using maternal plasma. This technology is now used in over 60 countries and over one million pregnant women had been tested.

However, better biomarkers are still needed to assist with disease detection and to help guide treatment, particularly for common acquired conditions without a strong genetic predisposition. The financial incentives to create new diagnostic tests are not as strong as those to create new drugs, despite the fact that diagnostics and therapeutics are inextricably linked.

Adoption of new technology in healthcare is recognized as being slow, which is becoming of a particular concern in the field of companion diagnostics. One of the reasons for the poor data on the value of in vitro diagnostics is the limited information relating to the specific application of tests and the outcomes that follow.

By opposite, the information of the number of tests performed, and the costs of providing these tests, is generally well documented. The outcomes achieved remain, however, poorly understood. Several medical specialties in the diagnostics area, including Laboratory Medicine, operate in a fee for-service (or cost-per-test) business model, rather than relying on outcomes and full benefits of implemented innovation. The regulatory requirements laboratory tests have also contributed to this problem with the main emphasis on the analytical performance of the test or device. However, this paradigm is now being challenged by the development of the so-called personalized medicine, and the concept of companion diagnostics where tests represent an integral part of the delivered care (Jameson & Longo, 2015). One consequence of the current approaches to both regulation and reimbursement is that there may be little evidence of the effectiveness and efficiency of a new technology or test at the time of launch. It is, therefore unlikely, that all the possible applications of the test and the resulting patient outcomes will have been clearly defined.

In clinical laboratories, cost savings have frequently been achieved by consolidation of laboratory sections with the creation of central core laboratories. Further economies of scale endorsed regionalization of laboratory services through the creation individual laboratories serving different health care facilities. In some situations, supposed savings have also been achieved by the addition of automated pre-analytical specimen handling using robotic systems (Panteghini, 2004). The growing automation in laboratories is an excellent example of innovation, primarily sustaining elements of which have been employed in other activity areas, e.g. manufacturing. As a consequence, there have been benefits in the quality of analytical performance of tests, as well as in laboratories productivity. However, these advantages benefit primarily the laboratory stakeholder. It is less clear that there have been benefits across the whole healthcare pathway. Indeed automation, offering the potential for greater laboratory productivity, has led to consolidation of laboratory services, with the risk of the pre-analytical phase time being increased as specimens are transported greater distances to a centralized facility (Price & St. John, 2014).

Reaction of clinical laboratories to decreased reimbursement has begun on several fronts (Burke, 2000). Traditionally, hospital laboratories have been organized on a departmental basis with separate sections, such as hematology, chemistry, immunology and microbiology. In larger institutions, in particular, little or no cross-training between departments has created inevitable inefficiencies in productivity. Cost savings are being performed by consolidation of laboratory sections with the creation of central core laboratories. Further savings are being achieved through addition of automated pre-analytic specimen handling using robotic systems. Automation can also provide faster and more accurate answers than the manual equivalents (Rattenbury, 2016). Central to automation is information technology (IT), which represents the key element that bonds the individual components of automation together. In concert with expert rules, IT can help users enhance data flow. Thus, patient data can be sent directly from the

laboratory to the clinician, saving time and allowing a faster intervention. However, automation can't be used in isolation. Laboratory personnel must review and assess the results of automated laboratory tests. In fact, only with thoughtful application, continuous support by industry, and appropriate investment in human workforce, can Laboratory Medicine improve. Automation works only as well as the staff operating the service, as it's their job to ensure that the systems are verified, validated, quality-controlled, and that the results make sense in the clinical context. Size and scope of laboratory both influence the type of system that should be implemented.

With development of reliable Point-of-Care Testing (POCT), instrumentation decentralization of testing has become easier, allowing them to reach well beyond traditional boundaries of the hospital setting. POCT offers a different mode of delivery for medical testing, allowing an immediacy of the result, enabling clinical decisions to be made sooner at different points in the care pathway, achieving, this way, an improved clinical outcome. It also addresses a more patient-centered approach, creating the opportunity for more self-care (Price & St John, 2012). This way, POCT may, as well, reduce the number of admissions in the ED, which is likely to reduce the income for the hospital provider, but may reduce the cost to the purchaser. Although, it may happen that, in another health system, it could lead to increased income for the hospital by increasing productivity in the ED. At the same time, the benefit to the patient may be a better experience, as well as earlier treatment intervention. The expectation is that such testing, while not affecting laboratory costs directly, may decrease the overall cost of care.

This way, Laboratory Medicine will undergo from "central" laboratories to "mobile" laboratories owned and operated by consumers. Assays will assume markedly reduced costs using a tiny fraction of the sample amounts taken today. These will be welcome changes, both from the standpoint of availability of data to each individual seeking it. In the near future, smartphones will be equipped with the necessary technology needed to perform routine laboratory tests (with suitable hardware additions). Real-time, real-world biosensor data of most physiologic metric will provide multilayered medical data for each individual. All of this data collection and analytics would then be supported by cloud computing and validated algorithms.

These phenomena will emphasize the role of the Clinical Pathologist as a consultant on cost-effective test strategies, the management of laboratory resources, and the use of information technology to manage and translate data to clinically useful information. Disease management emphasizing coordinated comprehensive care along the continuum of disease and across health care delivery systems will largely replace the traditional focus on treating patients during discrete illnesses. Management will be evidence based in the sense that it will involve integrating pathophysiologic rationale, caregiver experience, and patient preferences with valid and up-to-date clinical research evidence. Use of evidence-based practice guidelines, clinical pathways, and algorithms, supported by computerized clinical information and reminder systems, will be the norm.

Electronic health records contain a rich database of clinical information. In this context, big data, for instance, promise to transform health care with the widespread capture of electronic health records and high-volume data streams from sources ranging from insurance claims and registries to personal genomics and biosensors (Obermeyer, et al., 2016). In the future, algorithms will be developed to identify patients with disease risk factors or in need for guideline-based screening, or to apply pharmacogenetic guidelines to assist with drug selection and administration. As the costs of genetic testing fall, electronic health records can be completed with relevant genetic or pharmacogenomics data, providing clinicians

with actionable information. Although predictive algorithms cannot eliminate medical uncertainty, they already improve allocation of scarce health care resources (Chen & Asch, 2017). Early-warning systems that once would have taken years to create can now be rapidly developed and optimized from real-world data, just as deep-learning neural networks routinely yield state-of-the-art image-recognition capabilities previously thought to be impossible.

CONCLUSION

Healthcare will face several changes, in the nature of medical practice, in the development of new technology, and in practice of Laboratory Medicine. Its future relies on how effectively it will follow advances in science and technology—particularly advances in computer-based electronic communications and information technology—to add value patient care. The implications are far-reaching and include online communication among physicians, patients, and databases, thereby facilitating the inclusion of patients as more informed participants in the medical decision-making process. Consequences for Laboratory Medicine are no less profound and include the development of integrated databases to lessen the fragmentation of laboratory information occasioned by decentralizing clinical laboratory activities within institutions and across networks. Innovation in Laboratory Medicine has the potential of improving the effectiveness of healthcare by establishing a business case for investment and practice change to be developed, implementing process and practice changes, together with resource reallocation, and generating improved outcomes that meet the clinical need. The improvements accumulate at each stage of the value proposition process, such that at its completion, the correct tests are used to address the unmet need in a clinical pathway that will deliver the required outcomes for the patient. Therefore, so that innovation may be possible, reimbursement primarily based on complexity of test and a “fee-for-service” approach will have to change—with emphasis on a more value-based approach to healthcare (Miller et al., 2011). Value-based health, or the maximizing of health outcomes over cost, may hold the answer to streamlining of healthcare provision that will make good quality healthcare and universal access possible. However, systems and structures needed to deliver value-based healthcare represent a radical departure from traditional approaches on purchasing and delivering care. Thus, moving toward a data driven evidence-based approach can significantly reduce inefficiencies in traditional health systems by reallocating resources and streamlining operations according to their impact on outcomes. This new dynamic of value-based health presents both opportunities and challenges for various segments in healthcare. For providers, we expect pressure on margins driven by reduction in volume of activity and inpatient stays, in favor of lower acuity care settings, primary and preventative care. Payers are then faced with the need to restructure policies and commissioning schemes to reflect outcomes. There is an opportunity here to streamline costs associated with claims and coverage through proper health technology assessments and evidence-based protocols (The Economist Intelligence Unit Healthcare, 2015).

So that innovation in Laboratory Medicine could be possible, a better dialogue should be undertaken between health technology assessment, coverage and regulation professionals to gain a greater understanding of the value of technology. Clinical Pathologists, combining quality laboratory assays with knowledge of the pathophysiologic processes that drive laboratory findings, have the necessary expertise to advise their colleagues, in order to achieve an adequate and rational test selection and a

correct result interpretation. Thereafter, they are at the right place to create opportunities for redefining value in healthcare, highlighting the determinant role of Laboratory Medicine in outcome improvement in healthcare delivery. Combining pathophysiologic rationale with valid and up-to-date clinical research evidence, Laboratory Medicine, supported by computerized information and expert systems, will promote the use of this new knowledge in a timely and responsible manner, contributing to the provision of better care. Which innovation will be sustained or disruptive will depend on our ability to manage vast amounts of new knowledge and treatment options within the framework of everyday clinical practice.

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Chapter 8

The Role of Dynamic Capabilities as Influencers of Organizational Intelligence

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ABSTRACT

Dynamic markets have made it extremely difficult for firms to sustain their competitive advantages. Adapting with the reconfiguration of its internal resources has become essential for the survival of firms. In the midst of these changes in the market, the concepts of Dynamic Capability (DC) and Organizational Intelligence (OI) arise, theories that, despite their different approaches to the use of firms' resources, have as their ultimate objective the creation and maintenance of a sustainable competitive advantage. So, in order to better understand the influence of these theories on the activities of firms, this chapter approaches the relationship between both theories, analyzing their common points, and the way DC influence OI.

INTRODUCTION

In an effort to stay profitable and to become more competitive than their competitors, companies face different internal and external challenges. In the external environment, opportunities and threats arise from domestic growth, global competition, better informed customers and rapid technological advances (Istudor, Ursacescu, Sendroiu, & Radu, 2016). Internally, they are pressured to reduce costs and improve the distribution of services to customers, thus creating more value. And, as a result of these challenges, companies experience difficulty competing and staying ahead of their competitors (Eidizadeh, Salehzadeh, & Chitsaz Esfahani, 2017).

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In this context, the concepts of OI and DC emerge, both related in the literature to the capacity to adapt and sustain the competitiveness of companies (Biedenbach & Müller, 2012; Eisenhardt & Martin, 2000; Istudor et al., 2016; Meirelles & Camargo, 2014).

The concept of OI highlights the organization's ability to develop efficient behavior that assures it to react to changes in the environment (Istudor et al., 2016), generating knowledge to strategically adapt to the environment and solve technical and human-related organizational problems (Toolarood & Daryani, 2015). Market development demands intelligent organizational models able to react appropriately to the needs of environment (Choo, 1999; Quinn, 1992; Senge, 1992). So, two main concepts, which are connected, emerge: the Competitive Intelligence and OI (Anuniação et al, 2017) (Zambon & Anuniação, 2014). Some of the common elements are:

- Integrating disperse data research processes, transformed into relevant information (Tarapanoff, 2001)
- Corresponding to institutional and systematic programs of information collection and analysis (Gomes & Braga, 2002)
- Corresponding to a strategic information management activity, allowing the decision-makers to anticipate the markets and the competition (Gomes & Braga, 2002)
- Implementing a formal, permanently controlled process, to evaluate the capability to aid maintenance or development of a competitive edge

The goal for developing the intelligence processes is to monitor the internal and external environment, researching information with added value, opening doors to new business opportunities, contributing to the development of strategies to reach competitive advantages (Oliveira, Gonçalves & Paula, 2013) (Sapiro, 1993).

The term DC is part of a new approach in the field of strategic management. The expression arose in the mid-1990s with the authors Teece and Pisano (1994), and evolved with the contribution of several other scholars (Eriksson, 2014).

Teece and Pisano (1994) define DC as the company's ability to integrate, build and arrange external and internal competencies to cope with rapidly changing surroundings. Therefore, DC reflects the organization's ability to develop competitive advantages in turbulent environments (Biedenbach & Müller, 2012), reconfiguring its resources to adapt to market turmoil (Eisenhardt & Martin, 2000).

Both concepts are related to the fact that there can only be OI in all its dimension if there are organizational DCs capable of guaranteeing levels of reactivity adequate to the demands of the economic responses to the market. Two aspects should be considered in the construction of DCs: the strategic resources and competences used to generate competitive differentials and the renovation and evolution of such resources and competences, based on the firm's routines. These aspects help to understand the firm's technological, organizational and environmental changes, in order to understand how to create and sustain competitive advantages (Meirelles & Camargo, 2014).

In this regard, both the inherent capacities of the two concepts depend on the organization's connections with the environment in which it is inserted, as well as the internal relations to its own system and the human intelligence of its employees (Istudor et al., 2016).

It is due to the reasons described that the OI is considered a determinant factor for the increase of the productivity of the firms. If it is not considered, it will reduce the chances of competition and survival of the organization (Rasouli, Soodi, & Jafarzadeh, 2016).

Considering the concepts of DC and OI described, this book chapter discusses the differences and similarities between the two theories, thus constructing a theoretical framework demonstrating the role of DC as influencers of OI.

ORGANIZATIONAL INTELLIGENCE

Considered a fascinating concept by several areas of study, the term intelligence has a divergent definition in the fields of study in which it is employed, varying according to the perspectives and central ideas of the researchers in the area, especially in the fields of Behavioral, cognitive and social study (Akgün, Byrne, & Keskin, 2007). Among the areas that are interested in its study, we can highlight the areas of organizational management and development, especially interested in the definition of OI (Akgün et al., 2007).

This importance in better understanding the concept of OI is justified by the different definitions given to the theme, according to the field of study in which it is employed. An example of this is the definition used by the cognitive perspective, in which intelligence is based on the structure and internal processes of the organization, treating the environment with less importance and attributing a passive role to it. The behavioral perspective gives a greater focus on the relations of behavior with the environment, thus considering that these relations interfere with the adaptive behavior of the organizations to the external environment, without mentioning the aspects related to information processing (Akgün et al., 2007).

Furthermore, the dividing line between individual and organizational intelligence is considered very inaccurate, something that occurs in part due to the reductionism on the subject and the lack of understanding about who or what has OI.

The Influence of OI on the Business Environment

It is known that the OI is related to the individual intelligence of the people through the so-called aggregation mechanisms - process of accumulation of the individual intelligences of the members of the company that ends up forming the OI - however, the complete understanding of this process is still imprecise (Akgün et al., 2007).

In this sense, although the concept of OI bears similarities to the individual intelligence concept, OI must be understood as result of social and group interaction, that is, the result of a group of individuals interactions as if they were the same unit, going beyond of the sum of the individual intelligences of the people who make up the organization (Keshtegar & Zare, 2016; Torabi, Khalili, & Moghadam, 2016). OI must therefore be understood as a result of the organization's interpersonal interactions and culture.

It is known that organizational intelligence influences behaviors considered socially accepted, such as the good relations of the individual with his co-workers and family, being considered an important capacity for the work environment (Keshtegar & Zare, 2016).

It is evident, therefore, the role of OI as a competence of the Organization for the creation of knowledge and its use in a strategic way in the market. In other words, OI reflects the organization's ability to solve problems by means of its subsystems, including its organizational structure, shareholders, capital, technological processes, knowledge and culture (Keshtegar & Zare, 2016; Torabbi et al., 2016).

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And, in order that this ability to solve problems materializes, the interaction between the groups of individuals who make up the organization becomes an essential factor. In this sense, the great challenge of the organizations in the current age of information and knowledge is turned to the management of their greatest asset: the human capital of the individuals who are part of it. Human capital is considered an important, if not, the only sustainable source of competitive advantage for organizations (Torabbi et al., 2016).

The importance of human capital to guarantee the sustainable competitive advantage becomes clearer when one analyzes the main difference between the current firms and those of the past: currently focused on constant learning, as seen by employees who are part of them, constantly engaged in learning and acquire new skills. It is through this process that OI is also developed, resulting from the acquisition of knowledge through the use of computers, humans, among other devices (Torabi et al., 2016).

DYNAMIC CAPABILITIES

The term Dynamic Capability is part of a new approach in the field of strategic management. The expression arises in the mid-1990s with Teece and Pisano (1994) and evolves with the contribution of several other scholars (Eriksson, 2014).

Teece, Pisano and Shuen (1994) define DC as the company's ability to integrate, build, and configure external and internal competencies to deal with fast-changing environments. Therefore, dynamic capacity reflects the Organization's ability to develop competitive advantages in rapidly changing surroundings.

Corroborating the authors' view, Biedenbach and Müller (2012) describe DC as a special form of organization that has the ability to gain competitive advantage in turbulent environments. Rooted in economic evolution and the Resource Based View theory (RBV), the DC theory addresses the organizations' challenge of creating and recombining resources in dynamic environments, changing organizational routines and integrating capabilities developed into operations (Liboni, Cezar, Carrijo, & Junior, 2015; Zahra, Sapienza, & Davidsson, 2006).

DC provides organizations with the development of new products and new projects to adapt to market conditions (Helfat, 1997).

It is up to the organization's processes that utilize resources - specifically the processes of integrating, reconfiguring, earning and releasing resources - to match and even create changes in the marketplace. Therefore, the dynamic capabilities are the organization's routines and strategies, whereby the company reaches new configurations of resources as markets emerge, collide, divide, evolve, and die (Eisenhardt & Martin, 2000).

Two aspects are considered in the construction of dynamic capabilities: the strategic resources and skills used to generate the competitive differentials and the renewal and evolution of such resources and competencies, based on the routines of the firm. These aspects help to understand the company's technological, organizational and environmental changes, with the aim of understanding how to create and sustain the competitive advantages (Meirelles & Camargo, 2014).

Aiming to detail the definition of DC, Teece et al. (1997) determine the fundamental triad for the creation of the concept: processes, positions and trajectories.

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- The process concerns the development of practices that provide organizational learning. In dynamic environments the ability to adapt and reconfigure internal and external resources is critical;
- For the position the focus becomes the specific assets. These are the aspects that support competitive advantage such as the organizational structure, the reputation of the firm, the relationship with stakeholders, financial resources, among others;
- The historical context (trajectory) is determinant for the future. Experience with past processes, strategic decisions, and the position taken at other times influence future behavior.

Teece (2007) explains the concept of DC pointing out that it can be divided into three capacities: (i) to feel and shape opportunities and threats, (ii) to seize opportunities, and (iii) to maintain competitiveness by strengthening, combining, protecting and, when necessary, reconfiguring the firm's intangible and tangible assets.

These aspects ground the basic precepts for the development of dynamic capacities, competitive advantages and organizational skills. The DCs are inside the firms, they are developed with time, based on the policies and experiences of the organization and good practices, being the result of the effectiveness achieved in previous periods (Eisenhardt & Martin, 2000; Teece et al., 1997).

From the perspective of Wang and Ahmed (2007) DC is a behavioral orientation of the firm. Such an orientation consists of integrating, reconfiguring and renewing resources and capabilities and, in particular, updating and rebuilding their basic capabilities in response to changes in the environment to thereby achieve and sustain a competitive advantage.

However, the authors emphasize that DC is not restricted to simple processes. Processes are explicit and codifiable structures or combinations of resources that can easily be transferred from one company to another. Capabilities, in turn, refer to the firm's ability to deploy and combine resources, linking explicit and tacit processes and incorporating them into processes. The applications of capabilities to organizational processes generate unique factors, given through complex interactions of enterprise resources (Eisenhardt & Martin, 2000; Wang & Ahmed, 2007).

To illustrate the difference between the implementation of a process and the development of a capacity, Wang and Ahmed (2007) point out that quality control is a process that can be easily adopted by a company, but the implementation of the concept of total quality management is not simply a process and requires the interaction between diverse resources (integrated vision of the whole organization, training of employees, orientation to the client, among others), uniting tacit and explicit factors.

In short, it is a hierarchical relationship in which resources form the foundation of the firm and provide a basis for the development of DC, which in turn provides the creation and sustainability of the competitive advantage (Lin & Wu, 2014; Wang & Ahmed, 2007).

Corroborating these concepts, Zollo and Winter (2002) complement the definition of DC defining it as a collective pattern of learned and stable activities, through which the firm generates and modifies its routine in search of best practices. And as a result of this process, the firm achieves organizational effectiveness. However, it should be emphasized that this search for organizational effectiveness through DC is only possible with the participation of the decision maker, that is, the manager of the firm. The importance of the decision maker is pointed out by Zahra et al. (2006) by defining DC as the ability to reconfigure the firm's resources and routines in the planned way. Therefore, the vision of these determines the application or not of the changes.

Dynamic Capability and Organizational Intelligence: Pursuit for Competitive Advantage

Both concepts of DC and OI make explicit in their definitions the objective of providing firms with the scope of sustainable competitive advantage.

This search for competitive advantage permeates the daily life of firms and, with this, creates the need to give quick answers to the market, a factor considered primordial for its survival. The management of organizational resources and systematic changes in the environment present a complex and dynamic scenario for firms, evidencing the need for internal and external alignment of their capabilities to accompany the dynamic landscape of change.

Competitive advantage is understood to be the ability of the company to generate superior economic value to its rivals. And, as an economic value, the difference between the economic costs of the products and services and the benefits provided to the customer is defined. The greater the economic difference created by a given company versus a rival, the greater the competitive advantage (Barney & Hesterly, 2014; Porter, 1989).

The basic premise for creating competitive advantage is to know the competitors. Understanding the performance of the competition and the offer of value made available to the customers gives the company the improvement of the market's operation and the possibility of providing these customers with a higher value offer (Porter, 1989).

The competitive advantage therefore takes two basic forms: temporary competitive advantage and sustainable competitive advantage. When the organization offers a lower value offer than its competitors, it has a temporary or sustainable competitive disadvantage. Companies that offer equal values have competitive parity (Barney & Hesterly, 2014).

Regardless of the company's classification in terms of competitive advantage or disadvantage, there is a constant search for the creation and maintenance of this competitive advantage, in order to make it sustainable. It is exactly in the pursuit of this goal that the DCs are inserted and mixed with the concepts of OI, acting in their promotion.

The Dynamic Capabilities can be divided into three types:

Adaptive Capability

Broadly speaking, firms' ability to adapt as a DC refers to their ability to shape themselves into the environment by organizing their internal factors to respond to the oscillations of the external environment. It is, therefore, the ability to identify and take advantage of emerging market opportunities. And to achieve this capacity, three central points are considered: the technological aspects, the external environment and the internal organizational aspects (Tuominen, Rajala, & Müller, 2004).

The way in which the firm uses technology is closely linked to the process of organizational development and the efficient use of its resources, skills and competences, which ultimately influences organizational learning in the context of the technologies implemented, that is, technological adaptability (Biedenbach & Müller, 2012; Tuominen et al., 2004).

As for the external environment, the positive relationship between the main business of a firm and its competitive position is fundamental. Strategic thinking suggests that the core business should be aligned in areas where the firm's competitive position is stronger and the attractiveness of the market is high. In this context, the firm must make decisions regarding its market scope, choosing from a broad

scope, which will limit the extent to which the firm can customize its products without significantly increasing its costs and reducing its economies of scale, or a scope restricted, in which the inverse occurs (Tuominen et al., 2004).

In this sense, the adoption of a vision focused on a particular market segment does not limit the firm's performance in other segments. Selecting a segmented customer base improves cost management via economy of scope, while broad market focus limits the customization of supply and can put cost control at risk (Wang & Ahmed, 2007).

The organization of the internal environment is also considered as an important point for adaptability. This variable concerns the organization and definition of organizational design, hierarchical relations, rules of governance, formalization, standardization, coordination of cross-functional resources and information flow. The goal is to achieve excellence in processes and efficiency in operations (Tuominen et al., 2004).

Therefore, it is important to emphasize the importance of adaptability for companies, especially those who operate in turbulent environments, such as technology companies or markets that are constantly changing, considering that for these companies it is crucial to be flexible, in order to give quick responses to the constant oscillations (Biedenbach & Müller, 2012).

Absorption Capability

Absorption capability, in turn, refers to the firm's ability to assimilate information from the external environment in the light of internal knowledge and know-how, in order to apply to the organization the changes it deems relevant. This variable stands out in companies that demonstrate strong ability to learn from partners and intermediaries, integrating external information into the internal context and transforming it into solid knowledge (Wang & Ahmed, 2007).

This ability is directly related to the organizational learning process. Cohen & Levinthal (1990) emphasize the notes of the field of psychology concerning the importance of memory in knowledge development. According to the authors, previous knowledge increases organizational learning, since the storage of knowledge is developed by associative learning in which memory establishes relationships between the new knowledge and the pre-existing knowledge, so prior knowledge must be accumulated to facilitate absorption.

Studies show that absorption capacity directly affects the performance of the company. Biedenbach and Müller (2012) divide the process of absorption into three phases: learning, in which the firm accumulates knowledge of its routines, exploration learning, coming from the search for external knowledge, and exploratory learning, which is knowledge built by the relationship between internal and external knowledge.

Innovative Capability

Wang and Ahmed (2007) define innovation capacity as the company's ability to develop new products, markets, processes and strategies of an innovative nature, and can be categorized as incremental or radical innovation capacity (Subramaniam & Youndt, 2005).

Incremental innovation capacity refers to the ability to refine or increase existing products and services, enhancing their potential. In this type of innovation there is a process of improvement in the process of an already existing technological trajectory, improving and reinforcing the existing knowledge. On

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the other hand, radical innovation promotes major transformations that can transform the predominant products, processes and technologies into obsolete ones. Radical innovation reflects profound changes where the existing technology and implemented knowledge give way to new knowledge (Subramaniam & Youndt, 2005).

The studies on capacity innovation point to a strong relation between this aspect and the survival of the firm, given the external competition and the constant changes of the market. The more innovative a company is, the more it has dynamic capabilities (Wang & Ahmed, 2007).

THE INTEGRATION OF THE DIMENSIONS THAT MAKE UP THE DC AND OI

As a result of the foregoing, OI presupposes the existence of appropriate DC to the reading of the challenges of the market; it is proposed a set of dimensions from which to analyze the organizational maturity in these two areas. The proposed dimensions follow the development of the digital economy, that is, of a greater interaction and integration of the organization with its clients, both in the satisfaction of their needs and in the integration and availability of products and services.

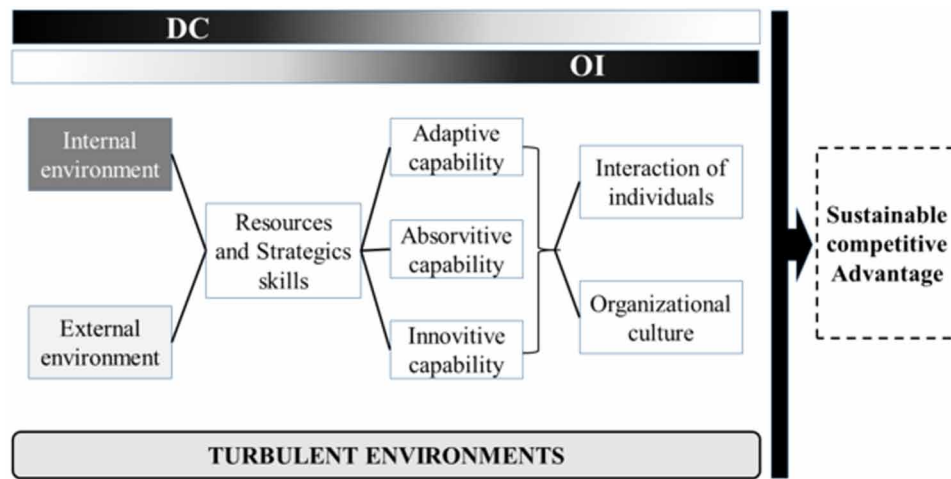
The dimensions to consider should be as follows (Anuniação, 2014):

- **System:** Must integrate the organizational system and the information system, contemplating the adequacy of the architecture, operation, purpose, support
- **User:** Expresses the human dimension of employees, contemplating the aspects of competencies, needs, responsibilities, motivations
- **Exploration:** Should integrate the results dimension with the organizational mission, in terms of operational results, the quality of products or services, benefits
- **Economic:** Must integrate the sustainability dimension of the activities carried out, the results achieved, the innovation, the development
- **Decision:** Expresses the extent of availability of information and degree of knowledge about economic factors, decision making, personalization of the commercial offer
- **Opportunity:** Expresses the ability to respond to the market timings, the commercial opportunity, the identification of needs, the offer of products and services, the conditions of sale
- **Ubiquity:** Expresses the dimension of delivery, multichannel offer, bidirectional economic interaction, absence of limitations or geographical constraints
- **Governance:** Expresses the dimension of administration, articulation and refining of all elements considered, in the definition of policies, in investments, in economic rationality, among others

These are dimensions that, as seen, integrate the concepts present in both theories. Figure 1 (below) summarizes the concepts present in OI and DC theory, integrating their perspectives and final objective, which is understood as the creation and maintenance of sustainable competitive advantage of firms:

Analyzing the two theories from the perspective of creating a sustainable competitive advantage, we can see the relation of the DC with the creation of OI in the firms. Among the determinants for the development and creation of OI in firms, there is the interaction between individuals and the organizational culture, which together will reflect the organization's ability to solve problems through its subsystems. And, this ability to solve problems, especially in turbulent environments, is what creates their competitive advantage of firms.

Figure 1. Influence of DC on OI



From these definitions, we can notice the role of DC as an influencer of OI. The DCs reflect the ability of firms to create and recombine strategic resources and competencies to adapt to market turbulence in order to achieve planned objectives and achieve organizational effectiveness. And, although DCs are grouped into three types, adaptation and absorption capacities are the types that best summarize how DCs influence OI.

Absorption capacity, for example, refers to the ability of firms to assimilate information from their external environment in the light of knowledge and know-how. And, to do so, it needs firms to develop their organizational, exploratory, and exploitative learning capabilities. All of these are directly related to the firm's OI level.

In a similar sense, the adaptability refers to the firm's ability to identify and seize the opportunities present in the market. Its connection with OI can be described because part of this capacity results from the firm's ability to efficiently utilize its technological resources in order to promote organizational learning, as well as efficiency in operations and process excellence through organizational aspects.

It should be emphasized, therefore, that the great challenge of organizations in the current information and knowledge age is to manage their greatest asset: the human capital of the individuals who are part of it.

CONCLUSION

The concepts of OI and DC are related in the literature to the ability to adapt and sustain the competitive advantage of companies in the markets in which they operate. However, despite having similar objectives, each of these theories has a different approach, as shown in this chapter, by demonstrating the influence of DCs as influencers of firms' OI.

Among the DCs, the firms' adaptation and absorption capacities can be better related to the creation of the IO. While adaptability relates to how firms identify and seize external opportunities, the absorptive capacity deals with how firms assimilate this information from the external environment based on the theoretical and practical knowledge they possess.

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The influence of adaptive capacity on OI can be better perceived through the analysis of the concepts of technological adaptability and organizational structure. In order to identify and take advantage of market opportunities related to adaptability, firms must develop their technological adaptability and organizational structure. Therefore, in order to achieve this goal, the firm must manage its development and organizational learning, in addition to defining the organizational structure that best fits the needs and objectives of the firm, which means in terms of organization in managing the interactions between individuals and organizational culture, concepts defended by the OI theory.

The influence of absorption capacity is better explained by the types of learning reported by the theory. Organizational learning advocated by adaptive capacity is related to the knowledge generated through the routine, that is, by the repetition of certain activities and processes. This concept only does not reflect the scope of OI, defined as the result of the interaction of a group of individuals interacting as if they were the same unit, that is, something that goes beyond the sum of the individual intelligences of the people that make up the organization. To encompass the entire concept of intelligence defined by OI, one must consider exploratory learning in conjunction with organizational learning. Firms that achieve these three learning will also be developing their IO.

Finally, it is important to highlight the objective reported in both theories in seeking to provide the necessary conditions for firms to adapt to turbulent environments and to obtain sustainable competitive advantage, thus demonstrating that, despite having different approaches, the theories of DC and OI complement each other.

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Chapter 9

The Value of Choices: A Business Model Approach to Value

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ABSTRACT

Scholars and practitioners have proposed different frameworks to make business model representation easier. However, more information is still required to understand their applicability, especially concerning value perspective. This chapter focus on three of them: the Choices/Consequences, the RCOV, and the Business Model Canvas. This chapter (1) provides a comparative analysis; (2) discusses their design under the concept of value creation; (3) synthesises a new structure which contemplates their core elements, goes beyond their limitations and constitutes an alternative and useful tool. The new framework is called '(the) value of choice's (VoC). It points out – but is not limited to – the value offering architecture and enables strategic analysts to keep focus on a broad range of value outcomes: created value, appropriated value, generative value, and distributed value. The VoC is illustrated with a Brazilian tourism company's case.

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BACKGROUND

Business models have become an increasingly relevant international theme both in academic and in practical terms. Around three thousand articles have been published in high-impact periodicals since the beginning of 2000 (Massa et al., 2017; Wirtz, Pistoia, Ulrich & Göttel, 2016). Among executives there is considerable interest in the subject. In the end of the 1990s, they promoted debates on value creation in e-businesses by means of business models. Since then, the specialised literature has been trying to understand and to demonstrate the utility of the concept for the field of Strategic Management (Baden-Fuller & Morgan, 2010; DaSilva & Trkman, 2014; Wirtz et al., 2016).

Topics constantly debated include the concept's definition and application, since there is still disagreement over its nature (what it is) and its function (what is it for?). Because of that, the debate suffers from some terminological inconsistency, thus hindering integrated research efforts and blurring its differences regarding related concepts such as 'strategy', for example (Arend, 2013; Massa et al., 2017).

The progress of studies on the business model field does not depend on consensual definitions because different viewpoints coexist and influence each other, showing the multidimensionality of the idea (Jensen, 2013). It is, however, important to explicitly mention the point of view adopted throughout this chapter. The business model is the logic of operation of a company. By means of that logic, internal and external resources and capabilities are dynamically mobilised, enabling a competitive positioning for the offering of products and services to the target public. Therefore, business models express the understanding of how companies organise themselves to generate value (Baden-Fuller & Mangematin, 2013; Casadesus-Masanell e Ricart, 2009; Demil e Lecocq, 2010; Wirtz et al., 2016).

Business models may be conveyed as narratives (Magretta, 2002) or as frameworks (Demil & Lecocq, 2010; Casadesus-Masanell & Ricart, 2007). This chapter is concerned with the second option and explores the instrumental character of the concept. A business model framework is a tool to depict the company's operation logic in a systemic and simplified way. It facilitates the reading and understanding of the business model an organization performs. It further allows a comparative and interrelated view of the strategic formulation's core components. Many different frameworks have been proposed to make easier the identification of a business model's components (Alberts, 2011).

However, the review carried out by Massa et al. (2017, p. 97) emphasises that the specialised literature lacks "information necessary to understand their relative merits", especially concerning value perspective. It is expected, therefore, that both practical and academic debates benefit from the comparative analysis of these tools herein conducted, as well as from a proposition that relates components theoretically consistent and empirically aligned with value generation.

This chapter focuses on the analysis of three frameworks: the first one will be called here "Choices and Consequences" (C/C) and has been proposed by Casadesus-Masanell and Ricart (2007). It suggests a cause-and-effect logic acting on the components of the value creation and capture model and represents an outside-in perspective of the business strategy.

The RCOV framework – resources and competences, organisation and value – proposed by Demil and Lecocq (2010), is included in the analysis because it underlines the dynamic relationship among components and expresses an inside-out view of the business strategy. The Business Model Canvas (BMC) introduced by Osterwalder and Pigneur (2011), on the other hand, is also analysed because practitioners more frequently adopt it, and because it integrates elements that are both internal and external to the company and take part in the composition of value.

Thus, this chapter's objective is threefold:

1. Providing a comparative analysis between the three frameworks;
2. Discussing their design in the light of the value creation concept;
3. Synthesising a new structure which contemplates their core elements, goes beyond their limitations, and constitutes an alternative and useful tool both from practical and academic point of view.

The chapter is structured as follows: after this brief background, the three frameworks will be presented and compared, similarities and differences being then identified. Next, we discuss the way the design of the frameworks represents the value created by the company and what dimensions of value they do not contemplate. Finally, and based on said comparative analysis, the article proposes a synthesis – also in a framework format – called '(the) value of choices' (VoC). It focuses on the reality that business models' choices result in tangible and intangible value not only to the company but to its stakeholders. Thus, the VoC points out – but is not limited to – the value offering architecture. It equips strategic analysts to keep the focus on a broad range of value outcomes, such as: created value, appropriated value, generative value, and distributed value. Those consequences reconcile different actors and time zones. They also facilitate business model management to keep its internal consistency and external alignment. Such framework proposition is illustrated, at the end of the chapter, with a case of a Brazilian travel and tourism company.

It is worth mentioning that the theoretical contribution of this work lies on its attempt to fill a gap, comparing frameworks beyond the simple identification of components and way into their relationships and their ability to explain value outcomes. In practice, this chapter proposes an analytical tool that is useful not only to describe but also to adjust a business model according to its potential for value creation, capture, distribution and generation.

BUSINESS MODELS FRAMEWORKS: A COMPARATIVE ANALYSIS

This section introduces frameworks RCOV, BMC and C/C. Next, they are compared with each other, their differences and similarities being highlighted based on three analytical categories: (1) theoretical foundation, (2) function, and (3) level of aggregation of components.

The RCOV Framework

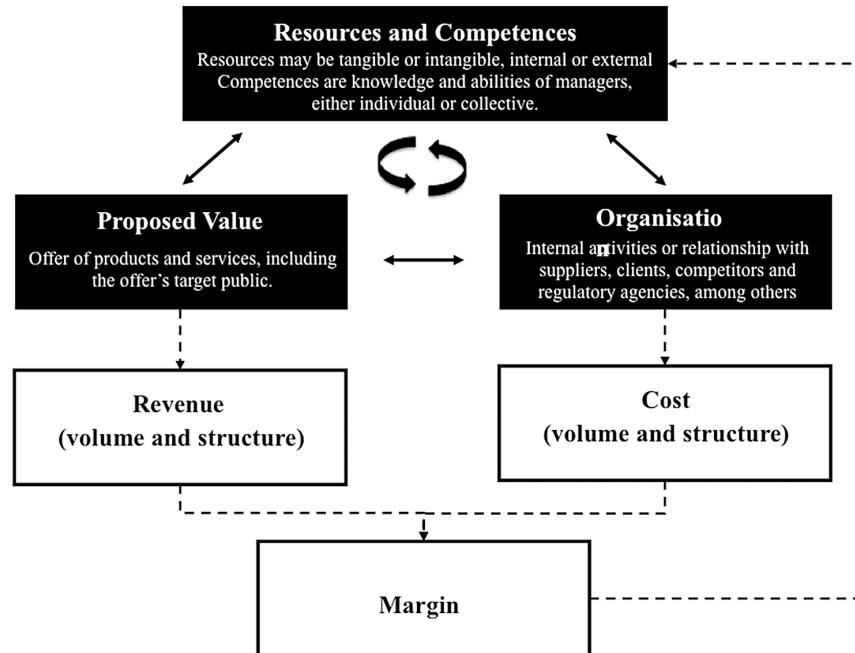
A business model articulates different areas and activities of a company in order to offer a value proposition to clients (Demil & Lecocq, 2010). This may be accomplished adopting a static approach. Accordingly, such a model is used in a descriptive way, making easier the understanding of the main components of a business, as well as of their relationship and ability to generate value. On the other hand, in a dynamic approach the model becomes a managerial tool that supports a business' change and innovation processes.

The RCOV framework attempts to reconcile the two approaches in such a way as to enable the analyst to use it to describe a current business model or adjust it to changes in the internal and external environments. To achieve that, it firstly defines three components of a business model: (RC) resources and competences, (O) organisation, (V) value proposition. These components determine the cost and revenue structure of the business and, consequently, its margins, as illustrated by Figure 1.

The Value of Choices

Figure 1. RCOV framework

Source: Adapted from Demil and Lecocq (2009)



According to RCOV proponents, business models evolve when significant changes to their structure of costs and revenue take place. A negative margin may be transitory and independent from the current business model. However, a business model is consistent when the dynamic sequence of its choices along time generates profit (Demil & Lecocq, 2010). Thus, the economic and financial sustainability of a business depends on the company's ability to anticipate and react to internal or environmental changes. The framework is a visual tool that enables tracking of said changes, so as to maintain the company's performance and, at the same time, effect the necessary changes to the business model.

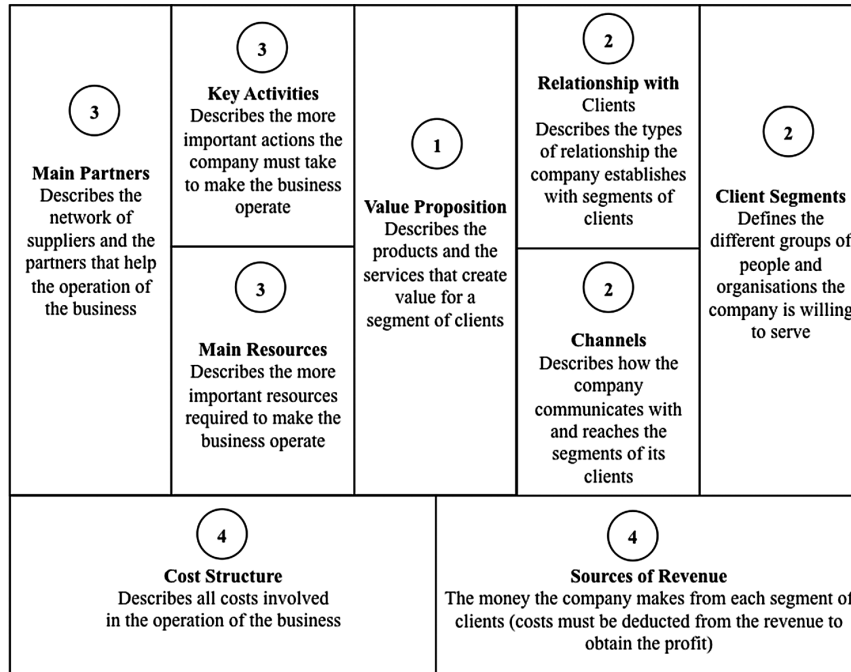
The Business Model Canvas Framework

According to Osterwalder, Pigneur and Tucci (2005), the business model is a tool that encompasses a set of objects, concepts and their mutual relations, with the objective of rendering explicit the operating logic of a given enterprise. The business model, therefore, describes, in a simplified way, how value for the client is generated and what are the financial consequences of this fact to the company.

Osterwalder (2004) proposed a framework to gather the major components of a business model. In consequence, what we now know as the Business Model Canvas introduces nine predefined fields in a static approach to business models, as described in Figure 2, where as fixed numbers refer to the four major areas proposed by Osterwalder (2004, p. 42). They are: (1) Product, (2) Interface with clients, (3) Infrastructure management and (4) Financial aspects.

Figure 2. BMC framework

Source: Adapted from Osterwalder and Pigneur (2011) and Osterwalder (2004)



The Choices and Consequences Framework

Casadesus-Masanell and Ricart’s conceptual proposal (2010) distinguishes between the concepts of strategy and business model, assuming that the latter is nothing more than a company’s implemented strategy. Thus, while the business model represents the functional logic of the company, aimed at creating value for stakeholders, it is the strategy that makes the choices inherent to the business models the company will adopt to compete in the market. Consequently, a strategy implies the conception and the redesign of a business model vis-à-vis the contingencies that may interfere with its implementation.

The C/C framework includes two sets of elements: (1) the choices made by managers relative to the way the company should operate and (2) the consequences of said choices. The authors distinguish between three types of choices: Policies, Assets and Governance. Political choices are those related to the course of action a company adopts in its operations; Assets relate to the decisions about available tangible resources and their use; Governance refers to the structure of agreements and arrangements that confer decision rights over Policies and Assets.

The consequences, on the other hand, may be rigid or flexible. Flexible consequences are highly sensitive to the choices that have produced them, and rigid consequences are those that do not change quickly in consequence of choices made.

We observe, however, that Casadesus-Masanell and Ricart (2010) do not create a fixed figure of a framework to describe a company’s operations. The various types of choices and consequences are not proposed by them s as fixed components of the model. They argue that, in spite of the fact that normative definitions offer a more objective guide to managers at the moment they describe their business

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models, this type of approach creates barriers to the description of an objective reality, which does not necessarily conform to pre-established categories. When making key choices, and from them on, it is important to have in mind the major possible consequences that may result from them.

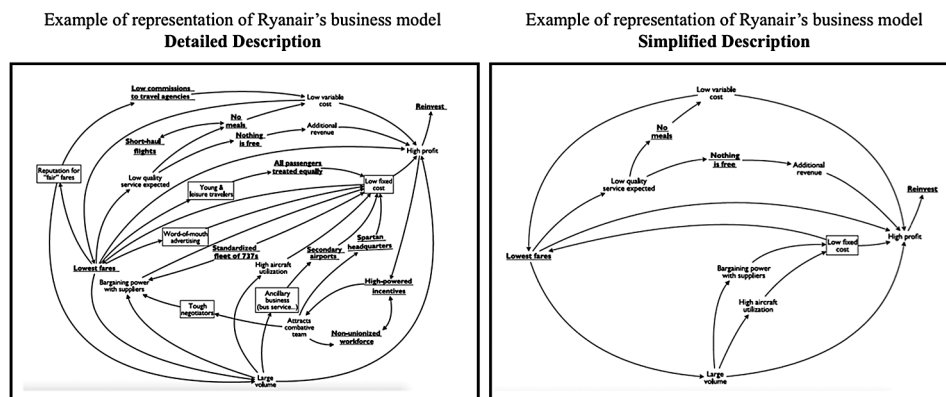
Thus, avoiding the adoption of a pre-established framework, the authors leave the strategic-level managerial body free to choose the level of aggregation they will employ to define and describe the strategic choices and, consequently, the level of detail of the description of their own models. Figure 3 illustrates the possibilities of different levels of detail in the description of a business model. Arrows represent the relationship between choices and consequences. Underlined elements are choices and non-underlined elements are consequences. Consequences surrounded by boxes are rigid and those not confined in boxes are considered to be flexible consequences.

For the proponents of the C/C framework, business models have the ability to generate virtuous cycles and feedback loops that strengthen its components at each interaction. Such cycles are fundamental aspects that help characterise the success of a business relative to its ability to create value.

Frameworks' Similarities and Differences

Given the characteristics of the three preselected frameworks, let us now highlight the major similarities and differences between them, based on three analytical categories: (a) theoretical foundation, (b) function, and (c) level of aggregation of components. The relevance of the theoretical basis as a criterion is its ability to check adherence of the framework proposition – its components and relationships – to the theories that found and support its arguments. The function, on the other hand and in addition to being the empirical objective of the framework, is the criterion adopted to analyse how the business model concept was interpreted. The level of aggregation indicates the level of pertinence of the components adopted to describe a business model. This is relevant especially because of the overlapping created by terminological inconsistencies with regard to the core components of a business model.

Figure 3. Alternatives to describe a business model
Source: Adapted from Casadesus-Masanell and Ricart (2010)



Theoretical Foundation

RCOV framework's theoretical basis, according to the authors themselves, is the idea put forward by Penrose (1959), according to which the growth of a company depends on how the managerial body promotes interaction between different components and resources. In addition, the authors rely on the idea of consistent relationships between components producing reinforcement reciprocal effects on each other, to the detriment of the influence of isolated attributes. This theoretical basis favours a dynamic view of strategy, avoiding disadvantages that would result from approaches based on the generation of sustainable competitive advantage, such as, for instance, the industrial organisation (IO) and the resource-based view (RBV). In these last-mentioned approaches, the competitive advantage must be protected, that is, changes to a winning business model should not occur. From a contrasting point of view, Demil and Lecocq (2010) argue that there are no sustainable competitive advantages.

On the other hand, the C/C framework is based on the theories of elasticity and demand offered by microeconomics. Although they do not appear explicitly in the definition of the framework, they justify the binary and causal relationship between the components (Casadesus-Masanell & Ricart, 2010a). These theories incorporate analysts' assumptions about how the choices and consequences are objectively related to each other (Ricart, 2009; Casadesus-Masanell & Ricart, 2010a). Moreover, it is possible to infer Porter's (1980) IO, which also derives from microeconomics. Adopting this approach, C/C proponents assume an outside-in viewpoint of the strategy the company employs to make choices and deal with the consequences; stimuli coming from the external environment being starting points.

As for the BMC, its proponent mentions the influences of the Balanced Scorecard (Kaplan & Norton, 1992) approach and of other authors who researched management, such as Markides (1999). A careful examination of his framework, however, suggests the presence of components related to the analysis of both the internal organisation – that the author develops starting from the infrastructure management area – and the external organisation, developed from the client-interface area. Thus, RBV elements may be identified in the inside-out perspective, as well as Porter positioning elements in the outside-in viewpoint. Osterwalder's proposal (2004), in brief, represents a chance for the practical reconciliation of two distinct theoretical approaches.

Function

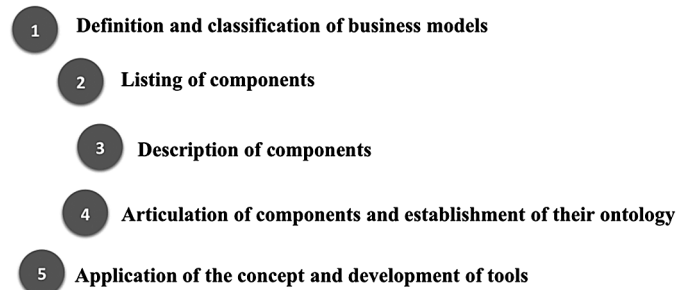
To clear up and better characterise the differences between the use of the business model concept and its function in all three frameworks, it is important to recapitulate how research on the subject has evolved. According to Osterwalder et al. (2005), the development of the business model concept can be divided in five stages or objectives, as shown in Figure 4.

Osterwalder et al. (2005) place the BMC framework itself at stage 4 of the evolution of the research on the business model concept. However, the thesis advanced by Osterwalder in 2004 clearly states its twofold objective: (a) to develop what he names ontology of the business model, so as to define meanings and relationships among the nine components of his own framework, and (b) to launch the fundamentals for the development of software applications and prototypes.

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Figure 4. Five stages of the development of the business model concept

Source: Adapted from Osterwalder et al. (2005)



The first objective fits the stage 4 of the development of the business model concept presented by Figure 4. The second objective, however, advances to stage 5, which reflects a concern over the applicability of the concept and the use of additional tools. The business model concept, as mentioned by the author, is instrumental, that is, a tool. And this matches the goals he proposes for the BMC framework: (a) Understanding – facilitates the identification, the visualisation, the understanding, the communication and the sharing of the company’s operating logic; (b) Analysis – improves the possibilities of measuring, observing and comparing this logic; (c) Management – facilitates the design, the planning and the alignment of the elements of strategy, in addition to offering support to decision-making processes; (d) Prospection – describes and simulates the business potential, and opens up possibilities for innovation and planning of alternative businesses; (e) Patenting – enables the description of businesses - as those of the e-business - followed by patenting.

On the other hand, Casadesus-Masanell and Ricart’s work (2010), despite being more recent than those of Osterwalder herein mentioned, seems to appear in two distant positions along the concept’s evolution line proposed by Osterwalder et al. (2005). *C/C* framework’s proposal starts from a conceptual discomfort. It starts from a view of the process that encompasses well-defined steps between the strategy formulation and the tactical implementation stages. When distinguishing the concepts of strategy, business model and tactics, the authors place themselves in stage 1 of the development of the business model concept proposed by Osterwalder et al. (2005). Describing a logic supposed to conduct the description of a business model (choices and consequences), the work of these authors advances to stage 4, as mentioned in Figure 4.

Finally, Demil and Lecocq’s work (2010), also more recent than that of Osterwalder, shows concerns that are more related to the application of the business model concept and, therefore, seem to appear in stages 4 and 5 of Figure 4. For those authors, it is important to reconcile the static and dynamic approaches, and so to use the concept as a tool for adjusting to the dynamism and the constant evolution of a company’s operating logic. All this, starting from a continuous process of transformation and adaptation to deliberate and emerging changes.

Level of Aggregation

The level of aggregation shows the grouping of components in broader categories or its unfolding in more specific elements. The higher the level of aggregation, the smaller the number of components

previously defined by the model. In other words, the level of aggregation shows the degree the selected frameworks define *ex ante* the components of a business model or provide a company’s strategic analyst with the opportunity to describe its own reality. The three discussed frameworks present different levels of aggregation.

As for the remaining frameworks, the BMC has the lowest level of aggregation – because it explodes the model into nine components. Thus, BMC is presented as a more rigid tool that is appropriate for the description of any kind of business, starting from the nine predefined fields and without any sign of a flow of correlations or interdependence among the components proposed by the framework.

The C/C, on the other hand, exhibits the highest level of aggregation with regard to the amplitude of its two fundamental elements, which define the logic that describes the business model much more than they specify a set of components. The C/C framework may be also understood as a framework that shows a flexible level of aggregation, since a strategic analyst that uses it may opt for a more or less detailed description of a business model based on the logic of choices and consequences, as previously illustrated by Figure 3.

Finally, the RCOV framework seem to be at an intermediate level of aggregation, with three fundamental components: resources and competences, organisation and value proposition, in addition to three other components resulting from the fundamental and interdependent components, namely cost structure, revenue structure and margin.

Table 1 shows the correspondence between the components of each framework. Starting from the BMC, at the left side, we notice that components 1 and 2 are included in and correspond to the first component of RCOV, which, in turn, is reached by C/C choices. Applying this same reasoning, component 3 of BMC – Main Resources – corresponds to the second component of RCOV, being also allocated in the field of choices of C/C. Consequently, the seven first components of BMC and the three major components of RCOV are parts of C/C choices. BMC’s components 8 and 9, on the other hand, together with the three last elements of RCOV, correspond to the consequences in C/C.

Table 1. Level of aggregation and correspondence between components

BMC Lowest level of aggregation 9 components	RCOV Intermediate level of aggregation 6 components	C/C Highest level of aggregation 2 components
1. Major Partnerships	1. Organisation	1. Choices
2. Key Activities		
3. Main Resources	2. Resources and Competences	
4. Value Proposition	3. Proposed Value	
5. Segments of Clients		
6. Channels		
7. Relationship with Clients		
8. Cost Structure	4. Costs	2. Consequences
9. Sources of Revenue	5. Revenue	
	6. Margin	

Source: prepared by the authors

BUSINESS MODELS FRAMEWORKS: A VALUE CREATION PERSPECTIVE

This section analyses the three frameworks with special regard to the creation and the capture of value, in an attempt to understand how they represent these phenomena and take them into consideration. Before we do that, we will firstly explore the approaches to these concepts as they are presented in the literature, in order to list and position the analytical options.

In spite of its frequent use in administration, the expression ‘creation of value’ is employed in different senses and, because of that, mutual understanding between emitter and receiver cannot be taken for granted (Bowman & Ambrosini, 2003; Lepak, Smith & Taylor, 2007; Magretta, 2002a). It is possible though to employ it in an intuitive way, in order to avoid misunderstandings. But this changes the expression into an ‘umbrella’ concept that admits many different interpretations. In the literature, value creation appears meaning capacity, act or result associated with the company and its different stakeholders.

Table 2 illustrates the possible interpretations of ‘value creation’. Lines A and B represent the two verbs usually associated with the creation. In the first line, ‘to create’ is ‘to transform’, because ‘starting from zero’ implies the combination of resources and activities in a transformation process. In the second line, ‘to create’ is ‘to innovate’, that is, to build upon something that already exists and in such a way as to give rise to new attributes. Columns 1, 2 and 3 indicate how these verbs may be understood. Thus, to transform and to innovate may be understood as: the capacity itself for realising them; the act that materialises this potential; and the expected result of that act. The meaning of ‘capacity’ is usually assigned to sources and inputs to value creation, that is, what renders it possible. The ‘act’, on its turn, is a meaning that describes the mechanisms that add value to what is being created. And finally, ‘result’ points to what is considered as the created value, both tangible and intangible.

The first two meanings regard value creation as content and process (Lepak et al., 2007). Questions related to content are usually connected to what value is, where it resides and who considers value as such. Process is the set of roles involved in the act of creation. The meaning of result is usually associated with questions of value capture and appropriation by the company and stakeholders.

As in a game of chess, the combination of rows and columns of Table 2 indicates a position. In this particular case, each position is one possible interpretation of value creation.

Table 2. Interpretations of value creation

Verb \ Meaning	1. Capacity	2. Act	3. Result
A. To transform	Company oriented to experimentation, balanced use of resources and employees' commitment (Achtenhagen, Melin & Naldi, 2013); Power to persuade of the value of its products (Kraaijenbrink et al., 2010).	To use the product or service (McCracken, 2007); To perform an activity of the value chain (Amit & Zott, 2001); To explore business opportunities (Amit & Zott, 2001).	Return to the investor (Magretta, 2000; Bowman & Ambrosini, 2000); Improvement of the social conditions of a group (Yunus, Moingeon & Lehmann-Ortega, 2010); Competitive advantages (Porter, 1980); Increase in the willingness to pay (Brandenburger & Stuart, 1996).
B. To innovate	Proposition of new configurations for the traditional industry (Aspara, Hietanen & Tikkanen, 2010).	To assign new meanings to the product or service (Miguelles, 2007).	Increase in the perception of the benefits of a product or service (Demil, Lecocq, Ricart & Zott, 2015; Priem, 2007).

Source: prepared by the authors

One perceives that, in practice, the interpretations intertwine, making it more difficult to perceive the borders between them. And the number of different understandings increase and everything becomes even more complex if one takes into account all theoretical lenses focusing on the subject (Strategy, Marketing, Human Resources etc.) and the points of view of the players involved (employees, managerial body, suppliers, shareholders, society, government etc.). All things considered, value creation is a phenomenon that admits multiple perspectives and multiple levels of analysis.

In the literature on business models, the ambiguity of the value creation concept is also perceptible when different meanings are used as if they were interchangeable. Thus, what is named creation of value in one article may be understood as – and even replaced by – ‘value’ itself, value capture or value proposition, without necessarily identifying subject and target. (Baden-Fuller, Giudici, Haefliger, & Morgan, 2017; Casadesus-Masanell & Heilbron, 2015; Massa et al., 2017).

Table 3 presents the emphasis laid by the proponents of the frameworks concerning value creation. The idea of creation as value capture and proposition stands out. The first meaning is usually associated with an emphasis on the business model as the ‘creator’ of value, and the second as a ‘describer’ of the created value.

However, once the meanings may alternate along the texts as if they were synonyms, the classification presented ahead synthesises the emphasis we inferred from key words of their definition of business models or from the argumentation adopted in their study. This does not mean that the meanings necessarily exclude each other or that there are no other possible meanings. Table 3, besides highlighting the emphasis placed on value creation, relates to Table 2, indicating the interpretation of each framework with regard to creation as capacity, act and result. Here, we notice that the C/C emphasises value creation as capture and interprets it as act (choices) and result (consequence). The RCOV also emphasises value creation as capture, but the interpretation favours capacity (resources and competences, organisational structure) and the predominantly economic and financial result (margin). Although BMC also considers the financial aspects of value capture, its emphasis lays on creation as value proposition to clients – as reflected in the book *Value Proposition Design* put out after the introduction of BMC and written by Osterwalder, Pigneur, Bernarda and Smith (2014). As for the interpretation, the BMC encompasses three types: capacities (partners, resources and activities), act (value proposition) and results (sources of revenue and costs).

Table 3. Emphasis on value creation for all three frameworks

Emphasis	Key Words	Framework	Interpretation
1. Value creation as value capture	Profit, profitability, income generation, make money, performance, margin	C/C	Creation as act and result
		RCOV	Creation as capacity and result
2. Value creation as value proposition	Offer, value chain, consumer, stakeholders, potential to generate benefits, value delivery	BMC	Creation as capacity, act and result

Source: prepared by the authors

The Value of Choices

The kind of emphasis on value creation presented in Table 3 shows what is expected from a business model. In the first instance, that it creates value that is materialised by the performance of the company. The second option punctuates the company's hypotheses on the value created to stakeholders, especially to consumers. In this article, we take creation and capture as distinct but interdependent phenomena. The company creates value for the client when the products and services it offers match necessities and willingness to pay. A proposal may create value that reaches beyond the consumption dimensions into social and environmental benefits. In creating value for the client, the company captures part of its economic and financial benefits, in addition to other intangible advantages, such as learning, reputation, accomplishment of its mission etc. The end consumer, as well as other players in society - that is the stakeholders - captures part of the tangible value created according to the cost and benefit relationship. But he or she also captures intangible value, such as the appropriation of the meanings of a good, promotion of well-being, mutually-driven civil development of both society and company, practice of citizenship and preservation of the environment, thus promoting the longevity of the relationship between company and stakeholders.

The RCOV framework does not explicitly state any distinction between value creation and capture. On the contrary, it understands these concepts as simultaneous and overlapping. As Warnier et al. (2004) suggest, the business model is a concept that simplifies this distinction in that it considers capture as a manifestation of the created value. For the proponents of RCOV, the interest lies on the capture of the economic and financial benefits materialised in the margin, or the difference between the revenue yielded by the value proposition and the cost structure involved in the organisation of resources and competences. The financial return provided by the margin feeds back the stock of resources and competences and determines the model's dynamism.

The financial performance and its sustainability explain the consistency of the model in terms of value creation and capture. However, the lack of quantitative empirical studies on the RCOV limits it to a descriptive dimension. It is supposed that the interrelation among the three first components explains the performance. To create and capture value, a company must acquire, accumulate, combine and explore resources and competences, changing them into a source of revenue or into a value proposition (Warnier et al., 2013).

Considering that 'value creation' is an elusive expression, the RCOV framework has the advantage of being anchored in a more precise indicator: the capture of economic value through margins. However, this can only be taken as an advantage of the framework if the company's viewpoint and the economic and financial indicators are enough to determine the efficacy of the business model.

As for the C/C framework, creation and capture also coincide at company level, but its adherence to the industrial organisation is consistent with the facts that the value is created by the sector and that the company captures only part of it as profit (Brandenburger & Stuart, 1996). Thus, the capture of the value created depends on the bargain power of the economic agents. The amount captured by a company will depend on the choices made by its business model and the corresponding feedback loops. Although Casadesus-Masanell and Ricart (2007) state that the business model must take value creation for stakeholders into consideration, in their initial studies the consequences of the model appear centred in the company.

Thus, as in the RCOV alternative, the cause and effect logic that governs the components of a business model is explained as a narrative, without any indicators that could help make the framework operational or measure said explanation in terms of value creation and capture.

The BMC framework, on the other hand, represents the creation of value as a combination of proposal and capture. But, since its use occurs predominantly in the analysis of start-up companies, the emphasis is laid on the proposed value. The company, in creating value for consumers, proposing and delivering a product or service that fulfils the clients' needs, creates value for itself, too. Thus, value creation from a BMC perspective highlights the intangible aspects involved in the value proposition, and argues that the financial and economic returns for the company appear in the revenue and cost structures. (Osterwalder & Pigneur, 2011).

Dimensions of Value not Contemplated by Frameworks

From the whole debate on value creation, capture and proposition, what seems to be the ultimate question is the meaning of value itself. What we have here are sequential effects: the way one defines value impacts what is understood as its creation, capture and proposal and, consequently, the understanding of its relationship to the business model. (Brea-Solís, Casadesus-Masanell, & Grifell-Tatjé, 2015; Massa et al., 2017).

According to Bowman and Ambrosini (2000), the materialisation of a value in the market does not depend solely on the company. The client's perception must also be taken into consideration when determining it. Accordingly, use value, monetary value and exchange value are distinguished from each other. The first concept shows how the quality of a product or service is perceived by the client with regard to his or her necessities. The second concept is equivalent to the willingness to pay for a value received, the last reflecting the price actually paid (Bowman & Ambrosini, 2000). A company creates value, therefore, when its offer is capable of changing these three elements to the benefit of the company. It creates increased perception of the use value when it increases the chances that the client assigns value to its product and is willing to pay for it. Through sales, then, it captures exchange value and converts it to profit. At the same time, the client – and even the environment – may appropriate the use and the social values provided by the company.

For this article, however, in addition to the value dimensions of creation, capture (appropriation) and proposition (offer), it is also important that the business model be able to reflect two other value dimensions: the generative value and the distributed value.

The generative value prompts the model to look at the future in search of longevity, innovation being the major drive. Ahuja, Lampert and Novelli (2013) introduced a concept as part of the value captured by the company, naming it "generative appropriability". In this present work, we considered the original idea as an additional aspect of value to be contemplated by the choices of a business model. Thus, generative value is a step ahead in the attempt to understand the kind of value offered by a company. It is linked to the company's effectiveness and capacity for creating future innovations based on current offers, these innovations and inventions being then primarily appropriated by the company. Future innovations may be enhanced versions of original offers, fulfilling the same needs as the current offer does. They may also potentially be substitutes for current offers, or be derived innovations that use ideas embedded in current offers in related or complementary markets, or even in so far unrelated markets. Finally, the generative value is the potential for continuing to generate value in the future, and may be interpreted as a capacity of the company vis-à-vis its business model, and not necessarily as a result.

The distributed value, on the other hand, prompts the business model to keep sight not only of the company's perspective, but also of its stakeholders' perspectives. The literature emphasises the fact that the business model crosses the borders of the company, as stated by Amit and Zott (2001) for instance,

but the frameworks under research do not seem to point at that direction, their analyses being centred on the company *per se*. In accordance, as will soon be seen, this work proposes the said concept as a component of the business model. The distributed value is understood as a benefit enjoyed by stakeholders. There are many different ways of distributing value: social programs that provide services to communities, more competitive wages for employees, better conditions in dealing with providers, lower prices for the client, educational development of employees through the adoption of volunteer programs etc. (Harrison, Bosse, & Phillips, 2010). In this context, the distributed value may be interpreted as a result, in terms of benefits for the stakeholders. However, different stakeholders may have different points of view on what is valuable, say Lepak et al. (2007), because of their knowledge, objectives and context. These are aspects that may affect the assessment of a novelty and the adjustment of a viewpoint relative to the value offer of some new product or service and its potential value.

BUSINESS MODELS FRAMEWORKS: A BLEND PROPOSITION

As a result of previous comparative analysis, this section proposes a framework that synthesises literature's core components, advances beyond limits imposed by the other frameworks and creates a useful and alternative tool appropriate to both practical and academic use. At the end, this proposition will be illustrated by the case of a Brazilian travel and tourism company.

The new framework is named “(the) value of choices” (VoC). It reinforces the fact that any business model is ultimately assessed by the value consequences of its choices, either from the viewpoint of the company or from that of its stakeholders. Thus, VoC does not simply describe the choices made to operate the company but enables the analyst to keep in mind their connection to other value dimensions that reach beyond the offer: namely the created, appropriated, generative and distributed values. The expected results, in terms of value for different stakeholders, combine knowledge on the causal relationships among components and realistic and objective assumptions about consequences (Nersessian, 2010).

What could be drawn from the comparative analysis of the previous frameworks to justify a new arrangement for the business model, as a tool? The answer will be constructed based on the same categories used to analyse them: theoretical foundation, use and function and level of aggregation.

As for the theoretical foundation, the VoC is aligned with what Demil and Lecocq (2010) propose with regard to the adoption of the Theory of the Growth of the Firm (Penrose, 1959). Such alignment has two main pillars: the first one is related to the dynamic perspective of a company's operations and to the results obtained. It is expected, therefore, that a business model framework reflects that dynamism rather than offer a static description of the company's options. It is expected that it helps keep in mind the interrelation among parts and the impact of a component on others and on the results desired. The second reason lies on the possibility of overcoming the OI – RBV dichotomy by means of an integrative position merging the outside-in and the inside-out views of strategy. Penrose (1959) is usually considered to be the underlying inspiration for the RBV, in contrast to the positioning perspective. However, Foss (2002) argues that Edith Penrose's thought is not restricted to the one or the other view, and this is very significant to the concept of business model, since the analysis reconciles both views (Massa et al., 2017). The strategic decision-making, according to Penrose's perspective, consists of a process in which the ‘permanent unbalance’ between the firm and its environment must be understood (Penrose, 1959). Thus, internal and external choices are not mutually exclusive, but recursively pendular. In consequence,

the elements of the model are constantly interacting with each other and must be reviewed and adjusted to allow the chosen business model to keep on generating value.

Said dynamism is also explicitly shown in VoC framework's function: emphasis on the articulation of components and pragmatic application of the concept. Thus, VoC also integrates the dynamic and static approaches of the business model, changing them into a tool to monitor and adjust the evolution of the company's operating logic. This holds true for both start-up and consolidated companies that may need to adjust themselves in order to keep or improve their capacity for generating value.

It is worth mentioning that this pragmatic bias is not essentially different from other proposed frameworks; rather VoC's contribution lies on its ability to combine the advantages offered by other frameworks. And what are these strengths? BMC's strength lies on how easy it is to understand the meaning of the components applied to several kinds of business and segments. C/C's strength is the cause and effect relationship between strategic choices and its results. As for the RCOV, the logic of recursiveness that binds the components reinforces the idea of dynamism the model incorporates in an attempt to maintain its consistency over time.

On the other hand, in order to fulfil its use proposal, VoC tries to progress in areas other frameworks exhibit limitations, namely: BMC's design does not graphically represent interaction among components; in both BMC and RCOV, consequences are limited to the appropriated value and do not contemplate the company's capacity for continuing to generate value (generative value); neither the competitive advantage achieved (or intended) by means of the model nor the value distributed to stakeholders are clearly exhibited; as for the C/C framework, despite the parsimonious amount of components, its output is complex both in the design and in the analysis of the map of consequences and of the feedback loops.

Finally, as for the level of aggregation, the VoC, with its eight components, is closer to RCOV and to BMC, favouring understanding and comparability among different business models. Figure 5 shows the new framework herein proposed. Its components are divided into two groups.

The first is the group of the choices, to the left, and its four components articulate to offer value to stakeholders. The first one, 'MANAGEMENT', encompasses strategic decisions, practices, policies and guidelines that ensure the operation of the business model. Here, there is a connection to the thoughts of Casadesus-Masanell and Ricart (2010), whose framework indicates that strategic choices are assigned to assets, policies and governance. The focuses selected by management determine the choices related to resources and positioning so as to put the value offer to work.

'RESOURCES' is a very frequently used component in the literature on business models (Wirtz et al., 2016). The VoC assumes that resources may be physical, financial and human, in addition to involving competences and activities developed to construct the value offer. Besides, they may be owned by the company itself or by third parties. On the other hand, component 'POSITIONING' reflects options taken as to which clients to direct the value offer, as well as the types of relationship established with them and the access channels employed. Next, 'VALUE OFFERING' incorporates the choices taken for the previously mentioned components, this being the reason why it is the component that links them with the consequences predicted by the model. The offer is represented by the products or services that solve problems or respond to clients' needs.

The second group of components, to the right, determines the value of choices made in the first group. The value of a choice, therefore, is given by the consequences, and they may be observed in current, past or future-time zones. They contemplate tangible and intangible aspects of the value that may be examined from the points of view of multiple agents.

The Value of Choices

As highlighted in the previous section 3 of this chapter, value creation is a concept open to many different interpretations. Accordingly, the VoC considers the company's 'CREATED VALUE' as an expression of its competitive advantages, in other words, to what extent do the choices made help the company differentiate from or overcome direct and indirect competition. 'APPROPRIATED VALUE' is a predominantly economical and financial component that indicates how much the company has captured out of its transactions in the market, in other words, it is the result, for the company and its shareholders, of the production and the marketing of the offered value. The 'GENERATIVE VALUE', on the other hand and as already mentioned, indicates the potential for the generation of future value coming from innovations, which have not been appropriated by the company yet. Finally, the 'DISTRIBUTED VALUE' adds to the business model the tangible or intangible fraction that is captured by the remaining stakeholders.

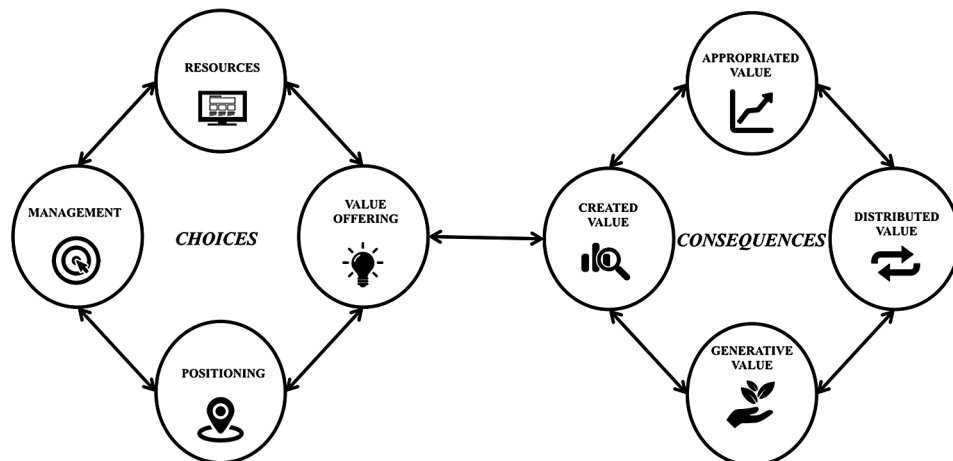
Note that the VoC framework has a mnemonic character. In the section dealing with the consequences, in addition to all fields exhibiting the word 'value', it is possible to locate time zones. For instance, three kinds of value are preceded by verbs in the past: created, appropriated and distributed. This can be useful for an analysis of the current situation, too. Generative value, on the other hand, necessarily implies a look into the future, otherwise it would be named 'generated value' but it could be taken as created value.

In addition, it is important to note that three of the 'value' consequences are related to results: created value to competitive advantage, appropriated value to economic and financial aspects, and distributed value to tangible and intangible benefits. The generative value, however, is not a result but a capacity, hence a potential value. Finally, from the perspective of the many different publics, created value is related to the company and its competitors; appropriated value to the company and its shareholders; distributed value to the remaining stakeholders; generative value being potentially related to all different publics, that is, the company and all its stakeholders.

VoC must be read from the left to the right side of Figure 6. However, the analysis may start at or be focused on any point, as long as one remains aware of the recursiveness indicated by the double arrows that cross the model. The framework gives a view of the business model as if it were machinery; the chain and the chain wheel of a bicycle, for instance, representing the dynamic and interdependent flow

Figure 5. Value of choices framework

Source: prepared by the authors



of a business model. Thus, the dimensions of value derive from the choices made by the company and return to the system, feeding it back with insights of results and with the indication of what should be adjusted for the next turn, and so on. Therefore, when using the framework, it is important, in addition to listing the elements that will be part of each component, to define their mutual relations, thinking of the VoC as a system that allows for both articulation and interdependence. The continued interaction among these elements reflects the business model the company has chosen to compete and cooperate in its segment of operation. To illustrate the use of the framework, the case of a Brazilian travel and tourism company is presented below.

ILLUSTRATIVE CASE

Ybytu (a fictitious name) is a travel agency and tour operator that conducts inward and outward touristic programs throughout Brazil, especially in leisure, business and exchange tourism and car rental. The company is regarded as one of the most representative tour operators in Brazil and Latin America. Ybytu's business model fits the "Standard Service or Product Business Model" typology proposed by Baden-Fuller, Haefliger, Giudici, Aversa & Lichtenstein (2018). As a tour operator, the company focuses its activities on the design of packages and on large-scale deals. The company's agencies, on the other hand, serve travellers individually, offering the best solution for each case, according to the desire and the financial resources of the client.

The company is present in all Brazilian states and in the Federal District with more than one thousand exclusive stores, four per cent of which are owned by the company, the remaining ones being franchisees. A network of more than six thousand and fifty independent agents also helps the company attract new businesses; in the two first quarters of 2016, these agents were responsible for seventeen per cent of the bookings taken by Ybytu. According to the Brazilian Ministry of Tourism, Ybytu collected 13.9 per cent of the total amount spent by consumers in the Brazilian leisure-travel market in 2015, 3.8 million passengers having been embarked. About sixty-five per cent of the company's gross revenue comes from domestic tourism, thirty per cent from international tourism and 2.5 per cent from sea cruises.

Ybytu started activities in the 1970s, selling road-trip tickets to the working class of São Paulo State's ABC region. In time, the Brazilian middle class ended up becoming the company's major target public. The company is still present at the most important communications media, exhibiting itself as capable of satisfying any taste. In the 1990s, travel packages to popular places in Brazil started to include air tickets in chartered flights. In the 2000s, the company began chartering ships, expanded its network of stores - entering especially shopping malls and hypermarkets - and started sales over the Internet.

In 2009, one of the world's largest private equity funds announced the acquisition of 63.6 per cent of equity interests in Ybytu. From that moment on, the network of stores grew at an even faster pace, especially in cities with populations larger than fifty thousand people.

In 2014, the company entered the business-travel segment and advertised the beginning of activities in the exchange-travel segment. Additionally, it announced the strengthening of its rental-car operation, deploying exclusive personnel for the conduction of sales. In 2015, it acquired full (one hundred per cent) control of a large and renowned website that sells travel tickets and packages, thus increasing its presence over the online channel.

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Data indicate a high growth in the number of online buyers of trips in Brazil and abroad. Trends' bulleting shows a one-hundred-and-twenty per cent growth in the number of online buyers in the 2010 to 2015 period. On the other hand, in the first quarter of 2017, Ybytu incurred a 10.1 per cent fall in confirmed bookings over its online channel, an important drop when contrasted with the strong nineteen per cent growth in the number of bookings confirmed in its network of exclusive shops. The company also exhibited an 8.1 per cent growth in its adjusted net profits, in that same period. How come Ybytu operates so successfully, even in times of Brazilian's crisis, and yet in an apparently contrary direction to the prevailing technological tendency?

Ybytu's Value of Choices

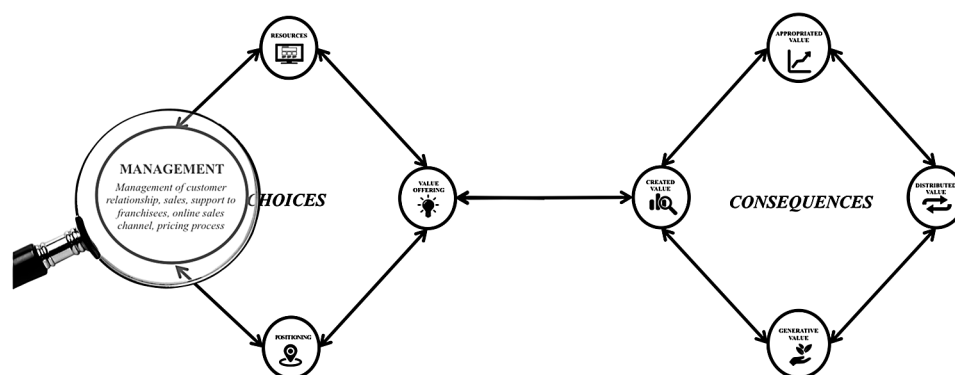
In order to apply the VoC framework to the analysis of Ybytu's business model, we will start from the choices related to the 'management' component. Next, we will follow the normal flow to include the remaining components. It is worth to mention that the starting point chosen will depend on how the analyst wants to direct his or her focus. Since a recursive effect takes place among components, one should keep in mind the possible impacts components may have on each other.

As for the management, Ybytu develops and maintains customer relationship and loyalty programmes. The idea is that such initiatives reduce marketing costs, increase conversion of client contacts into sales and improve capture of cross-selling opportunities. They may also help gather information that favours decision-making and implement sales-increase strategies, including up-selling. The company also focuses on the increase of same-shop sales by means of continued investment in systems (a new sales platform, for instance), adoption of more efficient sales processes and definition of more robust performance goals. The company also adopts clear performance indicators of value generation, designed to assess how appropriately franchisees and professionals who carry out executive functions fulfil their duties. The choices made by the management are depicted in Figure 6.

The focus on management reveals two possible ways, namely its influence on resources and on positioning. Flowing from management to resources, Ybytu maintains strategic partnerships with major hotel chains, airlines, land transportation companies and sea cruise operators. Some of these partnerships have been established more than forty years ago. Such relationships prompt the negotiation of competitive

Figure 6. VoC Ybytu: Management

Source: prepared by the authors

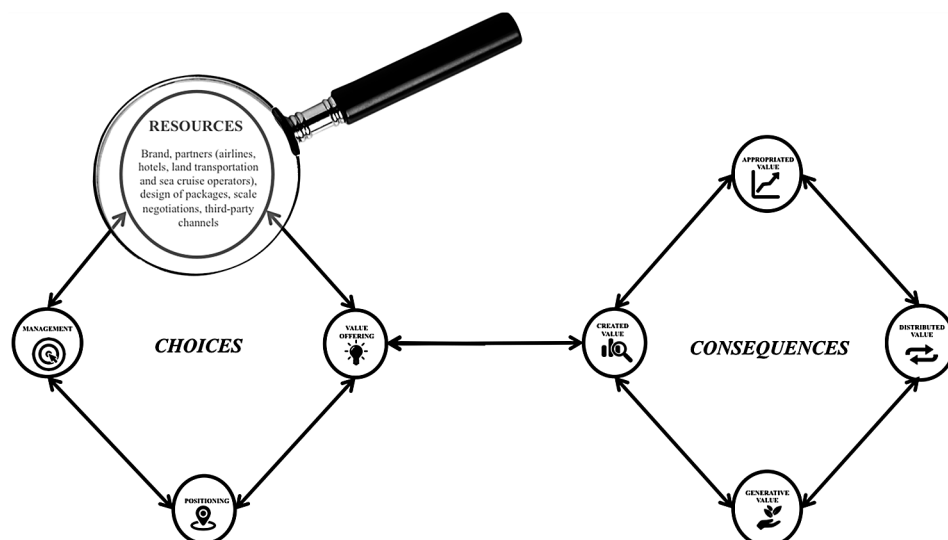


fares and the offer of a broad portfolio of products and services. In addition, executives have, in average, seventeen years of experience in tourism, of which six years, also in average, dedicated exclusively to Ybytu. The company also counts on executives and managers that have great experience and knowledge on the segment of services to clients. Figure 7 synthesises the major sources of the company’s resources.

On the other hand, the choices made in the ‘management’ component also influence and enable another perspective, namely the one that observes the effect upon the ‘positioning’ component. It is clear that resources also impact positioning, but ‘management’ acts as a mediating variable in the face of said relationship. Choices relative to the positioning of Ybytu prioritise the Brazilian middle class interested in leisure trips within Brazil and abroad. Clients are served through an extensive network of shops and accredited agents. The network encompasses more than one thousand physical outlets and more than six thousand and five hundred independent trained and accredited agents, present in all Brazilian states, especially in the southern and south-eastern regions. Shops are located in areas of more intensive circulation of people, such as shopping malls, budget-shop streets and supermarkets. In the two first quarters of 2016, physical shops operated by franchisees generated seventy-eight per cent of Ybytu’s reservations, enabling better control over the level of service provided to clients. The company also operates full-service online platforms offering touristic products in Brazil. Figure 8 depicts the addition of the ‘positioning’ component to the description of Ybytu’s business model, following the VoC framework method.

Finally, the value offering combines the choices relative to resources and positioning made in ‘management’. Ybytu offers a broad range of standardised and customised touristic services, accessible and individual assistance at all stages of the trip (from the moment of purchase to the end of the trip), competitive prices, flexible payment conditions (for instance, payment in twelve instalments), easy access to products through a vast retail network, strong online presence and qualified personnel capable of understanding the travelling habits of the Brazilian middle class.

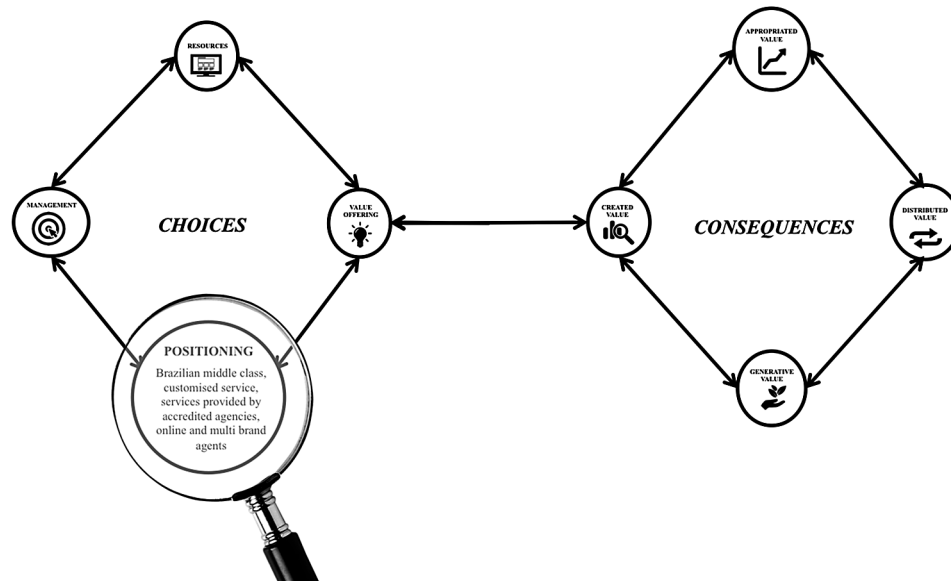
Figure 7. VoC Ybytu: Resources
Source: prepared by the authors



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Figure 8. VoC Ybytu: Positioning

Source: prepared by the authors



Given the fact that many clients' first-ever experience of air travelling takes place through services provided by Ybytu and considering that many of these customers cannot speak a second language, the ability to provide assistance during a trip is crucial for an increase in the number of new and recurrent trips. Accordingly, the company offers: (1) Portuguese-speaking guides in major international destinations; (2) service agents in the most important Brazilian and international airports; and (3) land transportation in exclusive and brand labelled buses and vans in major domestic and international destinations. The customised nature and the easy access to the services provided are very important issues for clients who will probably need assistance before and during their trips. Figure 9 shows the value offer and completes the field reserved to Ybytu's business model choices.

Since the value offering materialises the internal and external choices of the company relative to its marketing activities, it is the connection point to the consequences of said choices. From this point, the value of the choices made by the company may then be assessed.

The VoC relates the 'created value' component to the compilation of competitive advantages for the company relative to its competitors in the market. In this sense, the solidity and the scale of the relationship with suppliers and partners are crucial competitive advantages and are hardly replicable by competitors. In addition, Ybytu is the most known brand in the Brazilian segment of travel agencies, according to researches conducted by renowned institutions. In the last five years, the company was awarded the "Top of Mind" prize in the 'travel agencies' category. In 2015, and for the sixth consecutive year, the brand was considered the most reliable brand in the Brazilian segment of tour operators, according to researches. Figure 10 identifies these competitive advantages with the value created by Ybytu's choices.

With regard to the company's appropriated value, Ybytu's business model requires a low level of capital investment because the company does not own any travel-related assets such as hotels, airplanes, guide teams, translators and ships, and directly manages only four per cent of its one thousand shops. Considering that franchisees and exclusive travel agents are responsible for the bigger part of the retail

Figure 9. VoC Ybytu: Value offering

Source: prepared by the authors

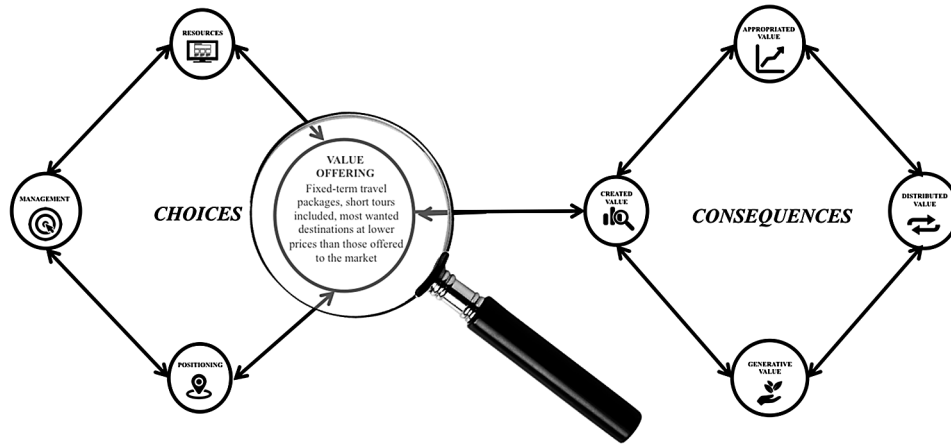
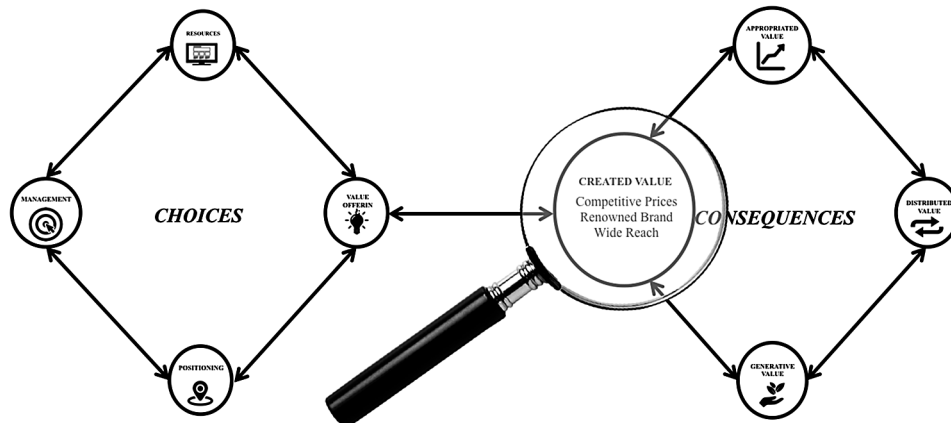


Figure 10. VoC Ybytu: Created value

Source: prepared by the authors

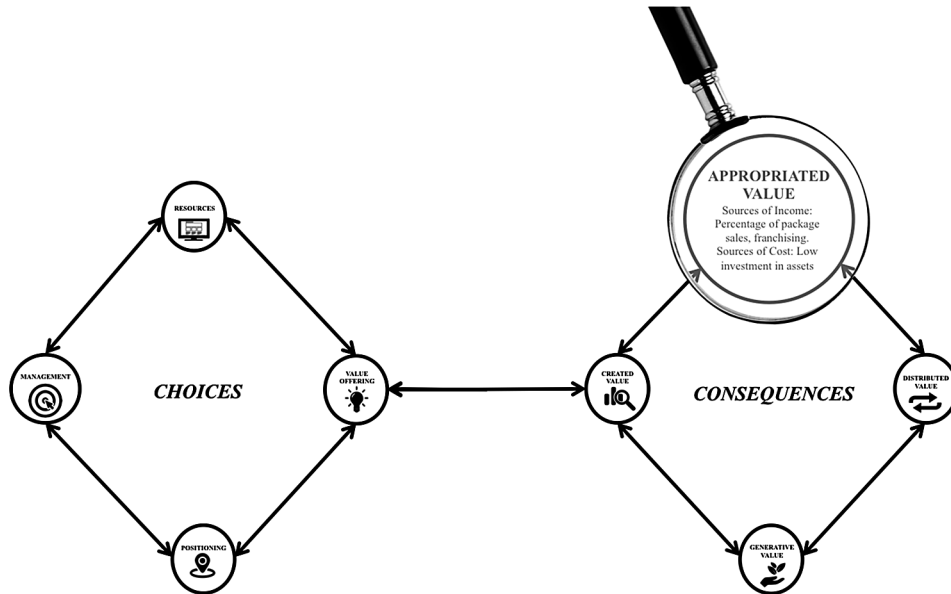


distribution, the company does not necessarily incur capital costs when opening new physical shops. Consequently, the company makes good returns on the capital invested in their operations, namely: 39.9 per cent in 2015, and 38.1 per cent in the two first quarters of 2016. The company usually does not have to anticipate payments in order to guarantee reservations of hotel rooms, ship cabins and seats in airplanes (both in chartered and blocked flights). Because of a close relationship with the major Brazilian airlines and international maritime transportation companies, Ybytu enjoys great flexibility in cancelling chartered or partially chartered flights, a capability that helps minimise operating risks. Such a business model, requiring low capital expenditure, enables the company to grow without having to make high investments and with minimal increase in fixed costs. The company strengthens recognition of its brand by frequently advertising in major Brazilian newspapers and magazines and in the most important radio stations and broadcast and cable TV channels. Figure 11 synthesises the value appropriated by Ybytu in terms of its main sources of revenue and costs.

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Figure 11. VoC Ybytu: Appropriated value

Source: prepared by the authors



As for the generative value, that is, Ybytu's ability to keep on generating value in the future – taking into consideration value offering, created and appropriated value – it can be noticed that its relationship approach to airlines and hotels has the potential to generate many new products that can be offered to the market. In 2018, for instance, the company's annual sales convention – which gathers approximately one thousand and seven hundred franchisees and shop managers – took place in Dubai, and its major suppliers were there. The choice of Dubai as the place to arrange the convention was by no means aleatory. Ybytu is already prospecting Asia as a new source of attraction for Brazilian tourists. The region is increasingly sparking the interest of many of the company's clients, especially because other destinations, such as the US and Argentina, have now become too "common". Generative value as a capability to create future value for Ybytu is depicted in Figure 12.

Finally, to conclude the flow of consequences of Ybytu's choices concerning the business model, VoC analyses the distributed value. It encompasses both tangible and intangible benefits to the remaining stakeholders (except for the shareholders, who have been included in the analysis of the appropriated value). Ybytu maintains long-standing relationships with the two largest Brazilian airlines, and its focus on the touristic-travel market enables the company to operate outside traffic-peak periods of airports. Because of that, Ybytu is an important strategic partner for airlines, since it helps mitigate the risk of profit decline the airlines face during low traffic times. In addition, the Brazilian hotel market is highly fragmented and constituted basically by family companies. Ybytu is able to channel a large flow of clients to these small-size hotels, significantly helping them to occupy their capacities. Figure 13, adding the 'distributed value' component, completes the VoC analysis of Ybytu.

This illustrative case synthesises the way the company, adopting a traditional business model, was able to prevail in the Brazilian recessionary scenario, where perspectives and results are negative by nature. From the company's perspective, this resulted in increased revenues, when compared to sales in

Figure 12. VoC Ybytu: Generative value

Source: prepared by the authors

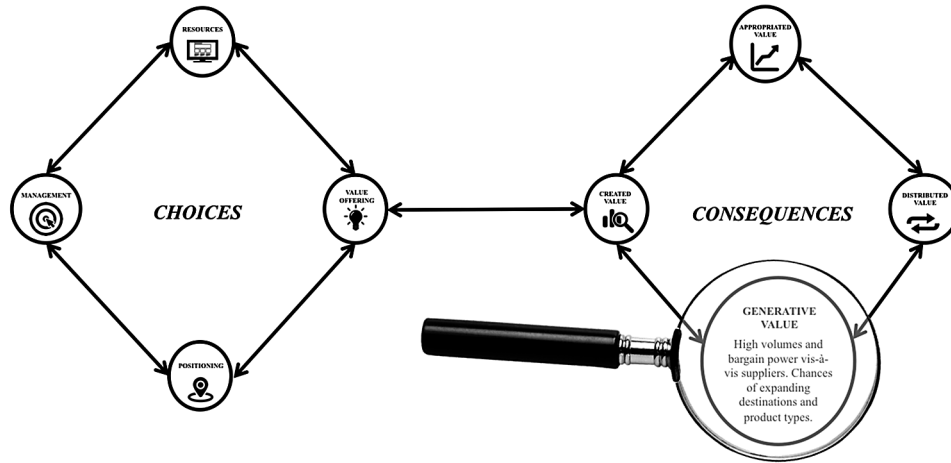
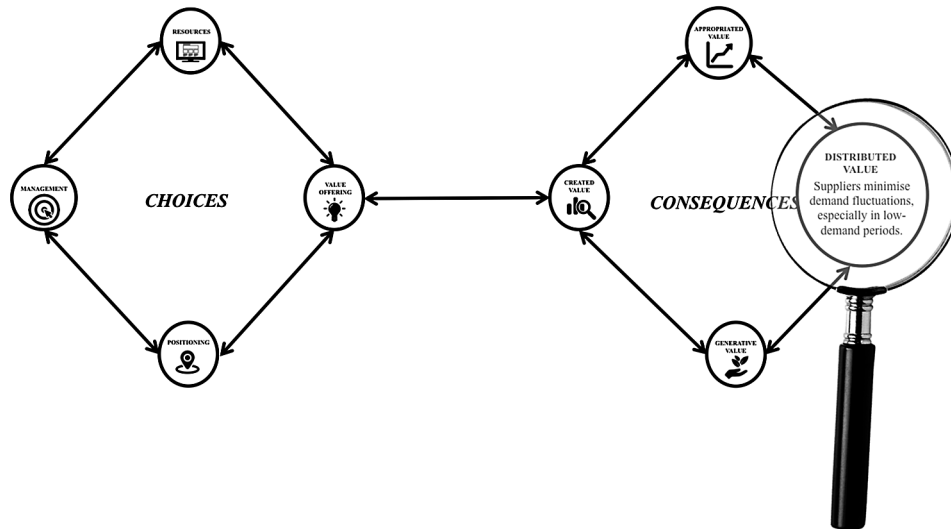


Figure 13. VoC Ybytu: Distributed value

Source: prepared by the authors



the Brazilian retail market in the same period (2015-2017). This, however, does not mean that a business model appropriate for one given situation will guarantee successful operation in another situation. Thus, monitoring of a model's internal consistency and external alignment must be kept under continuous analysis.

Examining the architecture of the offered value and its impact on stakeholders, the business model framework as a cognitive tool may help a company to be more realistic with regard to the value of an idea (Baron & Ensley, 2006). In this particular, it differs from the business model as a static representation of the status quo (Schrauder, Kock, Baccarella, & Voigt, 2017). The VoC analysis points directly to the use of business models, when trying to make sense of both the past and the present (sense-making) and

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to open new perspectives for the future (sense-giving). It fulfils, therefore, the major task of an analysis framework, that is, “identify relevant variables and issues to which users must respond in order to draw tailor-made conclusions that may favour a company or a particular segment of the market” (Porter, 1994, p. 55).

CONCLUSION

The business model, as a concept, may be interpreted as an actual attribute of the company or as an analytical tool. For both cases, the literature indicates that the nature and function of the business model are related to the concept of value creation. If considered an attribute of the company in the real world, then the concepts are directly connected, that is, the business model of a company is responsible for the creation of value. Accordingly, the business model is empirically determined and is equivalent to the company itself, taking into consideration the complex combination of strategic choices and their corresponding consequences, directly involving the capacity for the creation and the capture of value.

The business model, however, as an analytical tool and as introduced by this chapter, enables the visualisation, the description and the adjustment of the value creation and capture mechanisms of a company in the long run. To achieve that, the literature adopts frameworks like the three analysed here. Each one of them represents a different possibility of analysis of a company’s business model.

Based on the dimensions of value, however, this chapter opted for synthesising the strengths of the assessed frameworks in a new structure capable of being applied to both academic and practical environments. Hence, the new framework combines, retains and adds components that are essential for guiding the analysis not only of the options a company selects to offer value to the market, but also of its results, and this is why it was named “(the) value of choices” (VoC).

The VoC applies the choices-and-consequences causal logic, distributing its components into these two larger fields. The field of choices uses the articulation between inside-out and outside-in views of the strategy, having value offering as the major objective and suggesting it is a compound resulting from the choices related to resources and positioning. The field of consequences, on the other hand, focuses on the value generated for the company and its stakeholders, that is, on the value that derives from the choices made to build the offer. It enables the strategically wise analyst to reflect upon components that are fundamental to the perennity of a business: created value, generative value, appropriated value and distributed value.

This new arrangement contributes to prevent the analysis of a business model from focusing on only one static dimension related to the description of a company’s choices and operation. One has to keep in mind, nevertheless, that the choices are made based on what is to be offered and on what may be in fact appropriated, generated and distributed to stakeholders. Thus, the analyst or the manager reconciles different perspectives, distinct time zones, and administers the necessary adjustments as time goes, in order to ensure the model’s dynamism.

From a theoretical point of view, the VoC, as proposed, makes room for a deeper articulation between the literature on business models and the literature that addresses value from dimensions beyond creation and capture. The inclusion of the concepts of generative value and distributed value opens up new possibilities for empirical research that may help understand what companies should make, in practice, to contemplate these two dimensions. In addition, we suggest the conduction of new empirical studies that may foster the use of the VoC and define quantitative indicators to help implement the new framework.

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KEY TERMS AND DEFINITIONS

Appropriated Value: It is a predominantly economical and financial component that indicates how much the company has captured out of its transactions in the market, in other words, it is the result, for the company and its shareholders, of the production and the marketing of the offered value.

Business Model: The business model is the logic of operation of a company. By means of that logic, internal and external resources and capabilities are dynamically mobilised, enabling a competitive positioning for the offering of products and services to the target public.

Business Model Framework: A business model framework is a tool to depict the company's operation logic in a systemic and simplified way.

Created Value: Given the fact that value creation is a concept open to many different interpretations, this chapter considers it as an expression of the company's competitive advantages. In other words, to what extent do the choices made help the company differentiate from or overcome direct and indirect competition.

Distributed Value: It refers to the tangible or intangible fraction of value that is captured by a given company's stakeholders (except shareholders).

Generative Value: It is a capacity that indicates the potential for the generation of future value coming from innovations, which have not been appropriated by the company yet.

Value Architecture: Combination of company's choices concerning to its management, positioning and resources which result in a value offering.

Value Dimensions: It is the way the concept of value can be approached in its different facets such as creation, capture, distribution and generation.

Chapter 10

Price Management on Global Digital Subscription Services Using Freemium Business Model

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ABSTRACT

E-commerce definitions allow us to understand the digital environment beyond a simplistic view of packaged products being delivered to one's home. Content, services, and experiences digitalization also became consumption options, having strong representatives such as Netflix, Spotify, and LinkedIn, among other digital services with revenue coming from recurring payments, here referred as digital subscription services (DSS). Freemium business model has gained prominence in recent years, although much of the literature considers it under a dualistic view (free vs. paid version), though there's no impediment to more than one paid version (levels). Taking advantage of the global reach, freemium DSSs usually have standardized purchase options (number of paid versions and benefits of each), turning the flexibility to set local prices fundamental to adjust the paid version(s) value perception according to the economic, market, and consumer expectations in each market. This chapter proposes price positioning strategies in global freemium DSSs, having Cutler and Sterne's conversion digital consumer lifecycle model in the background and potential scenarios in premium levels management based on the premise of price flexibility for local adaptations. Such proposals will allow global freemium services' managers to make price adjustments according to the analysis of the consumer distribution among service's paid versions, and to future studies to seek a possible quantification of the price change due to the asymmetry of consumers' distribution.

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INTRODUCTION

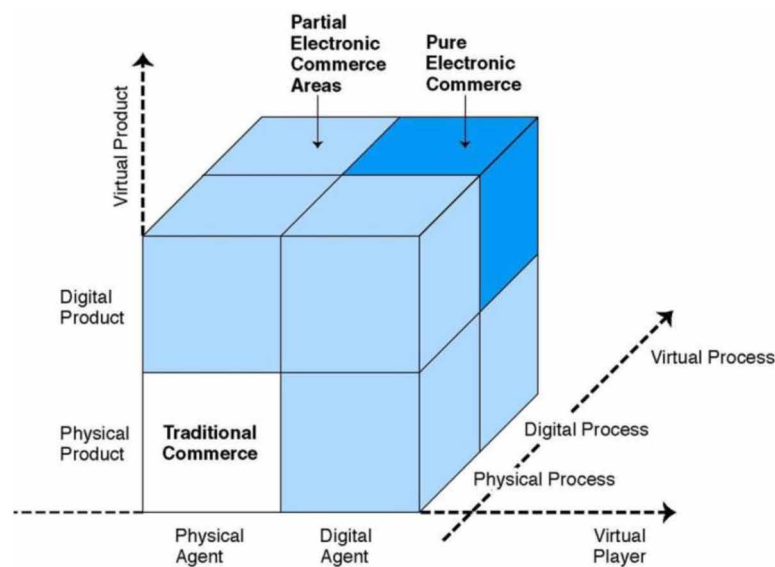
In e-retail, the definitions for e-commerce consider a wide range of goods and services marketed in electronic media. The International Organization for Standardization (ISO), for example, defines e-commerce as “the generic term for the information exchange between companies and between companies and consumers”; the Global Information Infrastructure Committee (GIIC), “Economic activities using electronic means of communication through which people can buy products, promote goods and solve problems” (Qin, 2010, p.7). Turban et al (2017, p.7): “using the Internet and other networks (e.g. intranets) to buy, sell, transport or exchange data, goods or services”; Delone and McLean (2004): “using the Internet to facilitate, execute and process business transactions”.

What all definitions allow, in general, that e-commerce goes beyond the sale of tangible products delivered to the buyer, coherent with the e-commerce dimensions presented by Choi, Stahl and Whinston (1997), and opening space to discuss peculiarities about digital services management, from the point of view of electronic retail. For this paper, e-retail is focused on global services that use the freemium business model.

DSSs (Digital Subscription Services), which include Software-as-a-service (SaaS) offers, represent what is identified by Choi, Stahl and Whinston (1997) model as *pure electronic commerce*: a digital good (intangible and accessible by digital means), sold in a digital channel (the commercial transaction is carried out in a digital medium) by a digital agent (the exchange of values takes place in the digital medium). Specifically, in the case of DSS, we have the delivery of content or experience on a recurring consumption, with periodic charges for this use through subscriptions, until the consumer decides to cancel the service. Services like Netflix, Spotify, Dropbox, LinkedIn, Microsoft Office Online, among others, are practical examples of this category of services.

Figure 1. E-commerce dimensions

Source: Choi, Stahl e Whinston (1997)



Some DSSs, in particular, also have in common the use of the freemium business model as the main source of revenue, an original concept from 1980s and described by Liu, Au and Choi (2014) as “a business model where a service or product is offered for free, but a premium version containing additional features, features or services is charged”. This is a popular strategy for digital products and services such as online games, cloud services and applications (Wagner, Benlian & Hess, 2014).

In order to gain scale and reduce the production fixed cost, their paid offer, which includes the number of paid versions available to the consumer and the benefits in each one, usually follows a standardized approach (Risenberger, Knight & Cavusgil, 2010), which, in spite of the benefits, limits local managers (in the different world markets) to adjust the differences between the paid versions according to macro-economic variables, local competition or local consumer expectations. Roughly, no changes are possible on how the digital service works nor on the features between the free version and the paid version(s), all users of this service have the same experience regardless of where they are. On the other hand, the flexibility in determining the local price of each paid version will allow this manager not only to find the price that best stimulates the conversion of free users to payers, but also moving their paying users (consumers who pay for one of the paid versions) across multiple offers.

In this article, we take as an example freemium DSSs with three paid versions, mirroring Lovell (2011) game consumers rating - which classifies them among minnows, dolphins and whales, depending on the ARPPU, although this classification is not considered in this article.

By observing the distribution curve of these paying users among paid versions (asymmetric, gaussian, inverted gaussian or egalitarian), and assuming the impossibility of adding, deleting or changing the benefits between the versions (given the global standardization of the service), a freemium DSS manager could adjust the price up or down among the paid versions by redistributing the perceived value among them and, thus, aiming to increase their conversion (from free users to paid users), or increase the average revenue per paying user (ARPPU).

This theoretical article proposes conceptual strategies of price adjustments according to the distribution of paying users in a freemium DSS, having the price as the main manageable variable in global freemium DSSs. To do so, we also revisit Cutler and Sterne's (2000) digital consumer cycle model by including the concept of *leveling up*, a vertical upward movement of paying consumers among paid levels, by proposing scenarios for future empirical studies on user distribution and movement considering the balance of price and benefits offered by multiple paid levels.

DIGITAL SUBSCRIPTION SERVICES (DSSs)

As the Internet became more available, digital products, services and experiences have become part consumers' entertainment menu. Digital Subscription Services (DSS) get its revenue through periodic charges, with examples such as Spotify, Netflix, Microsoft Office 365, Dropbox, LinkedIn and many online games and applications. Among several business options available for DSSs, the freemium one became strongly popular in the last years, a commercial model where a free version of the service with basic functionalities is offered, with the possibility to pay for, at least, one paid version - premium - with additional benefits and/or functionalities.

Price Management on Global Digital Subscription Services Using Freemium Business Model

Most of the literature about freemium considers though a dichotomous view – one free version vs. one paid version. This model allows the merchant to offer more than just one paid version – multiple levels -, which results in the possibility of creating strategies that move this consumer to higher and, therefore, more profitable versions.

In global freemium DSS - digital subscription services that use freemium business model and are available for multiple international markets -, there are usually limitations in adapting the offers - for example, the number of levels available and the benefits present in each one. This makes flexibility in pricing per market critical in order to turn revenue-enhancing strategies possible when encouraging consumers to move from lower-end to higher-end versions (explained below under the concept of leveling up).

First of all, it is worth mentioning that not every digital service is a DSS – in online courses, for example, once service is purchased (as an access to course content) and content is fully consumer - course concluded -, no more consumption should happen; not every DSS uses the freemium model – Netflix has no free version -; the freemium model is not exclusive to DSSs – mobile apps may offer free basic versions and the option to purchase (one shot) the full version, resembling the sampling technique (Bawa & Shoemaker, 2004); not necessarily all freemium services are supposed to be classified as a DSS because the realization of a punctual service could be offered for free with some limitations, and the possibility of executing it fully for payment (in case of site hosting platforms - Infrastructure-as-a-service, IaaS - that allow the client to punctually increase the servers' capacity to cover a access demand peak in periods of high sales, such as Christmas, for example). Although in this last model the purchase (momentary increase of the capacity of the servers) is unique, it exists in a complementary way to the hosting service recurring payment; therefore, there is a DSS as the driver of this timely transaction. The model below illustrates these commercial possibilities, identifying the relationship between digital services, freemium monetization model and DSSs.

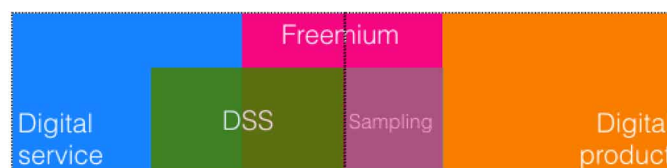
The use of freemium business model does not prevent adopting a complimentary revenue source, such as including ads at the free version (Wilson, 2006; Anderson, 2009; Liu, Au & Choi, 2014), also considering that there's a greater tolerance to receive advertising in free-versions than predisposed purchase intention (Gordon, 2013).

Offering a free version of a mobile app, for example, is an efficient way to attract new potential customers to the paid version based on experimentation and possible user loyalty (recurring use of the digital service). In addition, a good adoption of the free version of this application could take it to the top positions at online stores ranking, generating greater exposure, consequent greater adoption and increasing potential market for the paid version (Liu, Au & Choi, 2014).

It is also valid to mention that freemium DSSs differ from product trials (also referred as product samples or sampling) because trial versions of online services usually provide all available functionalities for a limited period of time, after which the user must necessarily needs to move to the paid version

Figure 2. Relationship between digital services, freemium monetization model and DSSs

Source: Authors



(Wagner, Benlian & Hess, 2014). In addition to having a differentiation between versions - with the free one clearly having limitations when compared to the paid version (s) -, there is no time limit on the availability of the free version, which coexists with (s) paid one.

There is a large literature that deals with the effects of the freemium model and the trial of free versions in business (Cheng & Tang, 2010; Faugère & Tayi, 2007; Haruvy and Prasad 2001), either in the digital music, mobile apps and / or games' industry (Wagner, Benlian & Hess, 2014, Dergousoff & Mandryk, 2015, Mäntymäki & Islam, 2015, Evans, 2016). Their approach, however, considers the existence of one free version and one paid version of such digital services, not being found papers that consider the implication of international adaptation for such business model.

The freemium model, however, allows to move from this dichotomy of one free version vs. one paid version. When considering multiple premium levels, a company has the possibility of migrating customers, after converting them to paid users, to upper (and more expensive) versions of this service - what we define here as *leveling up* -, by making adjustments at the balance between perceived price and benefits from each premium version.

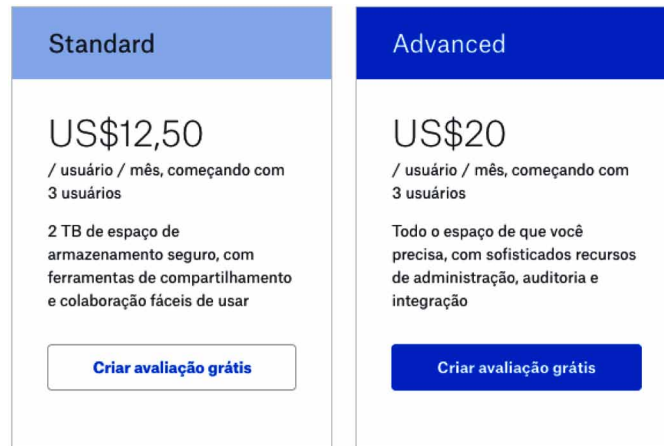
For digital services, Cutler and Sterne (2000) stated a customer lifecycle model comprising 5 linear steps: Reach, Acquisition, Conversion, Retention and Loyalty, which, by understanding the moment in which a consumer (or potential one) is, allows DSSs' managers adapt their marketing and communication strategies accordingly. The understanding of the Retention approach, nevertheless, considers the increase on customer's paying lifetime (amplify the LTV – Lifetime value by increasing the 'time' variable). Leveling up, on its turn, focus on increasing the paid value at the same period, also known as ARPPU (Average Revenue Per Paying User).

Leveling up differs from the upselling concept, defined in the literature in two ways: (1) "offering an additional product to a consumer who has just made a purchase" (Aydin & Ziya, 2008) and (2) "present the possibility (to the customer) of reviewing their initial purchase decision in favor of a higher and more expensive option" (Heidig et al, 2017). Leveling up does not consider increasing the number of products (1) nor intend to change a purchase decision before it happens but, instead, after the first acquisition (of a lower/less expensive version) in a DSS. As opposed, we state leveling down as the migration of paid users from upper versions to lower ones.

It also differs from price anchoring strategy, as stated by Tversky and Kahneman (1974) because it considers a posthumous process to the initial price comparison, where anchorage's heuristic effects influence the decision based on an initial available value (Rodrigues Pereira, E Sousa & Matos, 2017). In DSSs freemium all versions are equally exposed, even with an eventual indication of recommended version by the seller. Each version is considered valid, viable and fair, although there is a judgment, of course, about the perceived value of the balance between price and benefits or, what Xia, Monroe and Cox (2004) put as a *fair price*.

Considering that global services, such as those mentioned in this text, have the same benefits to all markets where they are available - which means that, most of the time, it has the same number of paid versions and these versions offer the same benefits to all markets -, saving money (Risenberger, Knight & Cavusgil, 2010) by reducing development and maintenance costs because of the standardization, it's up to the price variable to reflect different economic conditions and value perception among all the markets the service is offered. It is to say that the distribution of paying users over the available versions provides an indicative of how each market interprets the perceived value of each version, comparing its price and benefits.

Figure 3. Screen capture showing two paid version of Dropbox DSS freemium service
Source: Authors



PERCEIVED VALUE ON DSSs

As the core of freemium DSSs offers' management is the balance between value perception and charged price. It is particularly interesting to explore how the literature addresses the issue of perceived value and its relation to price from the consumer point of view, illustrated by the concept of Cost Benefit Analysis (CBA).

The CBA process considers the identification and evaluation of the impacts of such decision making, classifying them into benefits (pros) and costs (cons) (Boardman et al, 2017, p.2), a cash valuation and, then, the determination of the net benefits of the proposal compared to the status quo, ie that the sum of the benefits less the sum of the costs brings a positive result to the one who executes the action.

Although in another area of knowledge - medicine - Williams' description (1974) clearly portrays the prerequisites of a CBA, here adapted: (1) the independence between service options, (2) the possibility of choice between the alternatives, (3) the possibility of estimating the results associated with each alternative, (4) the possibility of valuing these results, (5) the possibility of estimating the cost of each alternative, (6) the possibility to compare the benefits and, finally, (7) the withdrawal of alternatives whose costs outweigh the benefits.

Taking into account the risk perception (Bauer, 1960), in the case of DSSs, in which there is no physical risk, being the social risk considerably low (existing only when/if there were a consumption decision judgement by others) and moderate functional risk (linked to potential frustrations regarding the paid version), the economic risk can be seen as the main, if not the only, associated cost when migrating to a premium version.

The fact that the benefits offered in DSS are linked to their functionalities – possibility to execute a task - and not to the comparable quantity of something (as opposed to item (6) of Williams (1974)), turns the CBA of this type of service less quantifiable and, therefore, less streamlined, which is why it is relevant to use the concept of perceived value.

For Zeithaml (1988, p. 14), “perceived value is the general assessment by the consumer of the product utility based on perceptions of what is received and what is given (...) value represents a trade-off (values and exchange) between given and received relevant components”. Dodds, Monroe, and Grewal (1991) corroborate Zeithaml’s view by stating that “the value of a product is a comparison of perceived benefits, or quality, offered by the product and perceived sacrifice -monetary and not - necessary to have it” (Martins & Monroe, 1994), as well as Kotler and Keller (2006), in stating that the *value* reflects the tangible and intangible benefits and costs perceived by the consumer.

The quality of the product or service, brand image and reputation are considered to be the most important benefits in assessing customer value perception (Zeithaml, 1988; Dodds, Monroe & Grewal, 1991). However, the consumer also considers other relevant factors, which may be more subjective, such as the emotional benefits achieved by a purchase.

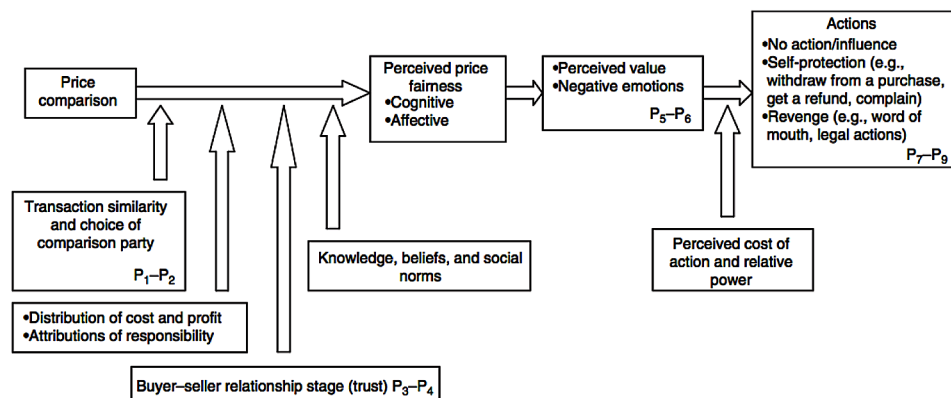
The authors converge to the concept that customer perceived value is linked to the use (utility) of the product or service, with the customer perception and not with the supplier company positioning, within the notion of cost benefit exchange. However, when we look at the price variable, and consequent interpretation what would be “expensive”, “cheap” or “fair”, we see that such a classification is personal, and even consumers with similar characteristics, values and cultural backgrounds may have different perceptions about the charged numerical value. This is why Xia, Monroe and Cox (2004) add the concept of *perceived price* and report their important role in the value perception, influenced by the benefits related to a particular purchase.

Perceived value, therefore, depends on the price evaluation in relation to the offered quality and all other intangible benefits (e.g., brand, reputation, emotions) that can be obtained from the exchange relation (Xia, Monroe & Cox, 2004). Value perception also depends on the assessment of the involved monetary sacrifice (for example, acceptability and fairness of price evaluations) and other sacrifices related to the exchange ratio (e.g. time, psychological costs).

For global DSS, perceived value can vary depending on the characteristics that differentiate global consumers, such as perceived benefits, economic situation and different moments in the product life cycle in each market. This potential adaptation comes from the analysis of how marketing elements should be standardized or customized around the world (Theodosiou & Katsikeas, 2001).

Figure 4. Relationship between price, perceived price and perceived value

Source: Xia, Monroe e Cox, 2004



When there is centralized management of a DSS, there's usually also the premise that perceived benefits (DSS functionalities) is unchangeable. So, the manipulation of the perceived value will be tied to the price adjustments for each available version, which may vary in different markets (Risenberger, Knight & Cavusgil, 2010).

PRICE STRATEGIES FOR GLOBAL PRODUCTS/SERVICES

Per Risenberger, Knight and Cavusgil (2010, 225), "the essential function of a currency is to facilitate payment for goods and services that a company sells." And to achieve success in marketing global products / services, it's critical understanding the monetary and financial dynamics around global and local operations.

In general, international businesses anchor their prices in hard currencies, or convertibles (Risenberger, Knight & Cavusgil, 2010), such as the US dollar, the euro or the pound sterling, with greater stability and globally accepted in international transactions. The extent of standardization / customization of these prices will depend on how similar the countries of origin (global operation) and the country of destination (local operation) are in terms of consumer behavior, legal environment, economic situation and life cycle momentum of the product / service. Although a large part of the price standardization studies has been carried out at the level of a global operations matrix, "the perceptions and attitudes of the managers of the subsidiaries ... have an important role in the formulation and implementation of the international marketing strategy due to its proximity with the market and a better understanding of local conditions" (Theodosiou & Katsikeas, 2001). Together with local competition, consumer expectation and such knowledge and influence of local managers, the standardized and global marketing management is understood as non-functional (Quelch & Hoff, 1993).

Proponents of the standardization model take easier management (economy of scale linked to research and management, for example) and revenue projection, faster implementation of new products, image consistency in different regions and similarities among consumers in different regions, similar purchasing power parity and common desires for globalization as incentives for such approach. Ohmae (1985) treats, for example, the triad Japan, the United States and the European Union as regions that share references and needs.

On the other hand, pricing adaptation allows to adjust the offer to the aforementioned economic situation, product (life cycle) and behavioral realities of the consumer (perception of value), in addition to eventually allowing revenue compensation / adjustment generated as a function of variables such as local cost, taxes, competition, among others (Boddewyn, Soehl & Picard, 1986).

In addition to these issues, the exchange rate constant fluctuation - the price of one currency over another - and the different inflation rates around the world - which reduce the purchasing power of a currency - make it practically unfeasible to maintain pegged prices to the original value (for example, in US dollars) for DSS global freemiums. Not only this constant local price adjustment would make any communication plan involving values unworkable, but it would also make it difficult to calculate tracking metrics such as ARPPU and LTV, among others. When measuring revenues, it also places both local and global operations under exchange risk (Risenberger, Knight & Cavusgil, 2010), due to changes in the value of one currency over another.

Thus, global freemium DSSs tend to follow the adaptive school, managing their prices according to the currencies of the different markets, understanding that the adoption of the current currency is a governmental decision, reason why we find groups of countries (economic blocks) or specific countries that adopt common currencies – like the Eurozone, used by 19 of the 28 European Union countries: Austria, Belgium, Cyprus, Czech Republic, Estonia, Finland, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands and Portugal - or like Panama and Ecuador, that adopts the US dollar as the official currency (Risenberger, Knight & Cavusgil, 2010).

It is worth mentioning that, despite the use of the same currency, purchasing power in each country can vary considerably; for example, although under the Eurozone and, therefore, sharing the same currency, Germany and Greece have considerably different purchasing power. Global freemium DSSs may choose to maintain a price segmentation by currency in this scenario, having in mind that there will be a change for the perceived value in each country due to the distinct purchasing power, or through user identification (or mapping their Internet connection via IP - Internet Protocol) present different values between countries that share the same currency. It is necessary to consider that Internet connection (IP) origin identification has a low reliability degree (Poese et al, 2011), since access providers route their connections in different ways and corporate connections usually has a common IP linked to the headquarters or regional office, eventually located in another country, meaning employees from abroad are wrongly identified as coming from the headquarters' country. Roughly speaking, it may happen that the user of a particular country is mistakenly identified as being in another, so the price presented will be that of the identified country.

But price is not the only issue in maintaining global freemium DSSs. Much of its cost structure is in the development and maintenance of such a service, which involves teams of designers, programmers, information architects and other specialized professionals. The dynamics of the digital environment also demand constant updates and new developments in such services.

High complexity products / services make the decentralization of their production somewhat challenging, since local managers may not have the speed or resources to adapt them in each country (Quelch & Hoff, 1993), making such operations take advantage of global development scale gain. Global freemium DSSs, as technology products, follow such a model.

Maintaining the same functionalities for free and paid versions, internationalization of a global digital service, such as LinkedIn, for example, occurs by (1) its localization; translation of the interface into the local language; (2) availability of local currency in global payment means (eg credit card); (3) the inclusion of locally relevant payment methods (such as the Boleto Bancário in Brazil, or Rapipago in Argentina), and (4) support staff either in the local country or attending in the local language.

In this price localization, adjustments are made according to the variables described above (economic, product and behavioral local conditions), which can be exemplified in Table 1, which compares the values charged by global freemium DSSs in US dollars (USD) and Brazilian real (BRL) versus what would be a direct conversion to BRL from USD according to present exchange rate.

As mentioned, global digital products and services seek to optimize their production costs (creation of new functionalities, design, programming) by centralizing such activities in one or a few offices around the world given the complexity of delegating to local operations research and development responsibilities (Quelch & Holf, 1993) – for example, electronic games' developer Blizzard, whose properties' development (World of Warcraft, Overwatch, Hearthstone, Heroes of the Storm, Starcraft and Diablo) is centralized in the company's headquarter, located in Irvine, California (USA), having its local unit in

Price Management on Global Digital Subscription Services Using Freemium Business Model

Table 1. Price comparison between global freemium DSSs in United States and Brazil

DSSs	Version	USD ¹	BRL (Direct Exchange Conversion) ¹	BR (offer at the DSS)	Difference Between Actual Price and Estimated Price Based on Direct Exchange Conversion
LinkedIn	Job seeker	USD 29.99/month	R\$ 98,36/month	R\$ 40,95/month	-58,36%
	Business	USD 47.99/month	R\$ 157,40/month	R\$ 69,99/month	-55,53%
	Executive	²	-	R\$ 121,95/month	-
Spotify	Premium	USD 9.99/month	BRL 32,76/month	R\$ 14,90/month	-54,52%
	Premium Family	USD 14.99/month	BRL 49,16/month	R\$ 26,90/month	-45,28%
Microsoft Office 365	Office 365 Home	USD 99,99/year	BRL 327,94/year	R\$ 299,00/year	-8,82%
	Office 365 Personal	USD 69,99/year	BRL 229,55/year	R\$ 239,00/year	+4,11%
	Office Home & Student 2016	USD 149,99/year	BRL 491,92/year	R\$ 399,00/year	-18,89%

¹NY Times exchange rate (<http://markets.on.nytimes.com/research/markets/currencies/currencies.asp>) on March-15th-2018 (US 1 = R\$ 3,28)

Source: Microsoft office 365 (<https://products.office.com/en-us/buy/office> and <https://products.office.com/pt-br/buy/office>); Spotify (www.spotify.com/us/account/subscription); LinkedIn (<https://zapier.com/apps/linkedin> and <https://www.linkedin.com/premium/switcher/onlinesub>).

²In USA, rather than Executive option, there're Sales Navigator Professional and Recruiter Lite options, not available on international instances of the service.

Source: Authors

Brazil responsible for marketing and sales; similarly, Disney Consumer Products & Interactive Media, responsible for the DSS Club Penguin Island and mobile applications, centralizes its development at the offices located in the Burbank region (California, USA); the adaptations of LinkedIn to all languages and currencies are made from its office in Sunnyvale, Silicon Valley. Content localization (translation of texts and layout adaptation according to the translations), when it exists, occurs through local or international suppliers, responsible solely for the translation of the original texts.

Despite cost savings, such some model limits local operations, organized by geographical region, available language or currency on potential offer reviews, which means that such local managers do not have the autonomy to change the premium features of each version and / or the number of versions available in a freemium DSS.

As an example, we can mention two 3-level freemium DSSs: the mindmap creation tool, Mindmeister (<http://www.mindmeister.com>), where the free user may create up to 3 mindmaps, while three premium versions (Personal, Pro and Commercial) offer other cumulative benefits (Figure 5).

Another DSS with 3-paid-levels model is the global version of LinkedIn (<http://www.linkedin.com>), which distributes its paid users among Job Seeker, Business and Executive options.

Figure 5. Screen capture of subscription page from Mindmeister website
 Source: Authors (Available at: <<https://www.mindmeister.com/pt/mind-map-pricing>>)



Figure 6. Screen capture from LinkedIn subscription page
 Source: Authors (Available at: <<http://www.linkedin.com/premium/switcher/online/sub>>)

	Premium Job Seeker	Premium Business	Executivo
Plano anual Compre uma assinatura anual e poupe até 25%	BRL40,95* Cobrado como um pagamento de BRL491,40* Este é o seu plano atual	BRL69,99* Cobrado como um pagamento de BRL839,88* Economizar com o plano anual	BRL121,95* Cobrado como um pagamento de BRL1.463,40* Economizar com o plano anual
Destaque-se			
Candidato em destaque	✓	✓	✓
Open Profile	✓	✓	✓
Encontre pessoas e entre em contato			
Quem viu seu perfil	✓	✓	✓
Mensagens de InMail®	5	15	30
Visualização de perfis sem limites		✓	✓

REVISITING CUTLER E STERNE (2000) MODEL FOR FREEMIUM DSSS

In freemium DSSs, paying users subsidize the nonpaying cost (Wagner, Benlian & Hess, 2014), which does not preclude the use of additional business models, such as the inclusion of advertising in the free version to aid revenue generation – in some cases, the leaving of ads is a benefit of the paid version, take what happens at music-on-demand service Spotify.

The migration from a free to paid model or the leveling up among paid versions takes place through the incorporation of benefits in the paid (or superior) version (s), like better quality of image (Netflix), advertising removal (Spotify) and/or incorporation of exclusive functionalities (LinkedIn). The perceived

Price Management on Global Digital Subscription Services Using Freemium Business Model

differentiation between free and paid versions (or among multiple levels of paid versions) is critical to persuade DSS users to perform this migration (Wagner, Benlian & Hess, 2014).

According to Cutler and Sterne (2000), the digital consumer follows a linear lifecycle model that considers five moments: Reach, Acquisition, Conversion, Retention and Loyalty, in addition to moments of customer loss and recovery, called Abandonment, situation in which free users stop using the tool, Attrition, situation where a conversion does not occur, and Churn, cancellation.

At freemium DSSs, the Acquisition takes place at the beginning of the use in its free version, while the Conversion occurs when this user, then using it for free, subscribes to (one of) the paid version (s) (Rodrigues, 2018).

For freemium DSS managers, the conversion rate, or the ratio between the number of users (who account for variable costs for service maintenance) and payers (responsible for revenue for service maintenance, in addition to the free version subsidy), is one of the main metrics to be observed (Figure 8).

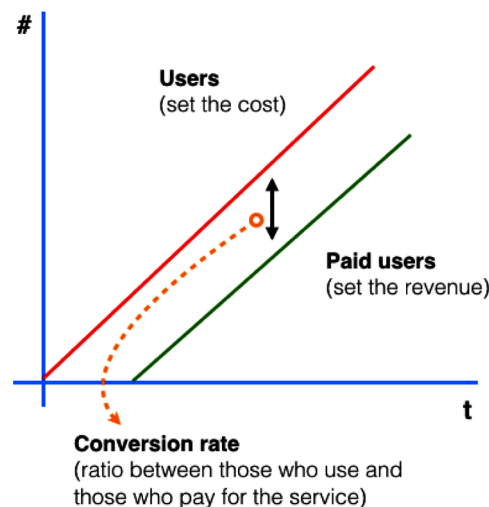
Figure 7. Digital consumer lifecycle model

Source: Cutler e Sterne (2000)



Figure 8. Visual representation of the relationship between total users, paid users and conversion rate at the freemium business model

Source: Adapted from Rodrigues (2018)



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Acquisition process is controlled in a way there is not such a disparity between free (cost) and paid (cost + revenue) users, which would make service maintenance economically unviable; however, it is imperative to grow paid users' potential base to compensate for the natural churn (paid users who leave the service or level down to the free version). According to Anderson (2009), about 95% of total users will remain at the free version, while 5% agree to pay for the premium version (s). Empirical market data provided by electronic entertainment companies 'alpha' and 'beta', however, point out that there is no absolute ratio between free and paying users, indicating it may present rates that vary from Anderson's (2009) 95/5 up to 60/40 or more in other DSSs, depending on how the company outlines the price / benefit balance between versions. No studies have been found that present empirical data on potential scenarios, models or strategies that replicate any of the possible conversion rates (Wagner, Benlian & Hess, 2014).

Loyalty is considered in Cutler and Sterne (2000) model as a situation where Retention efforts (product and communication related) are less necessary for the consumer to remain as a paid user for the digital service, understanding he/she sees value in its use and considers the price fair. Both Retention (product features or communication that stimulate its permanence as a paid user) and Loyalty are ways to increase the total revenue generated by increasing the LTV, while keeping the same ARPPU within a period of time (although, looking at the customer's entire life cycle, it is naturally higher by increasing the length of stay, as shown in Figure 9).

In addition to the original Cutler and Sterne (2000), we would like to open the discussion on how to manage more than on premium version of freemium DSSs. Rather than treating the potential migration between versions - taking a user from one paid version to (a) to another paid version (b) - as a new conversion, the fact that this user is already a consumer of the service demonstrates that the purchase decision was made, allowing the manager to focus on ways to move this customer up to higher instances (more expensive versions and more benefits).

The creation of more than one premium version allows the company to increase its total revenue without the need to increase the user base, leading to an increase in total ARPPU, or total revenue divided by each paying user of the digital service or and how much, on average, each paying user paid to the company within a specific period - concept, in other scenarios, also treated as *average ticket* or *average purchase value*. Total revenue - and consequent customer value over time, LTV - is thus increased despite of total time as paid user, offsetting (minimizing) the total losses generated by the churn. Thus, the paying users are distributed among multiple levels of revenue generation, which allows to act at both ends of the versions; on one hand, create or induce the consumer to migrate to higher versions of the service (leveling up) and, on the other hand, by planning the initial conversion.

Taking a freemium service with three price / benefit levels as an example, the intermediary price is taken as the reference point necessary for generating profit margin, while the basic version (which, of course, generates less absolute margin) as a step for consumers to adopt the intermediate version; and the higher (more premium) version as a higher margin generator.

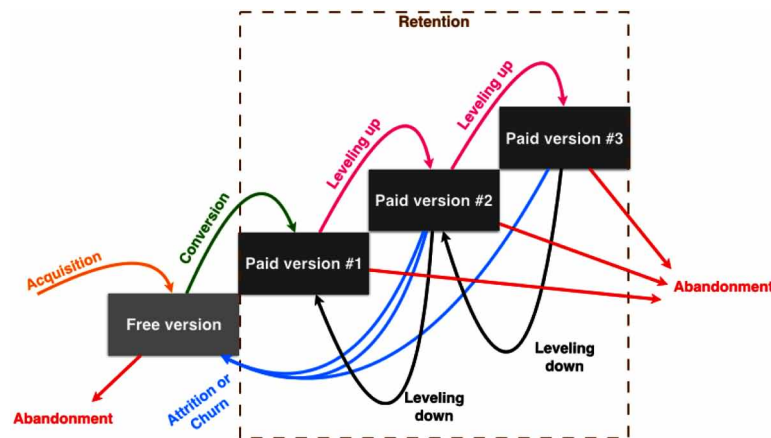
Figure 9. LTV calculation from ARPPU and period of time a consumer remains as a paid user

Source: Authors

$$\text{LTV} = \text{ARPPU (of a given period)} * \text{number of periods a consumer remains as a paid user}$$

Figure 10. Visual representation of free and paid users at the freemium business model including leveling up and leveling down movements

Source: Authors



Like any freemium product, the features of the free version should be thought of in a way that there is no cannibalization of the premium versions, in a way that is not attractive enough to the point that consumers do not see value in paying for the premium version of entry, nor is there a downward migration of consumers who consume higher to lower versions.

Assuming that the goal of the DSS is to achieve the highest possible ARPPU by reducing the effects of Churn, the shift from paying users to higher versions should be sought, while accepting that there will be a distribution of paying users out of the available options.

Price Management Flexibility on Leveling-Up Strategies

Even highly globalized companies (such as Coca-Cola or Kellogg’s) should consider levels of adaptation of their marketing mix in international markets, where global guidelines would serve as a guide - not determinative - in strategic decisions (Risenberger, Knight & Cavusgil, 2010, Silva, 2005, Quelch & Hoff, 1993). Such consideration corroborates situations where, in the impossibility of local inference on the benefits offered in global services, the variable *price* becomes the only point of control of the cost-benefits ratio when looking for a balance between the multiple paid versions of a freemium DSS.

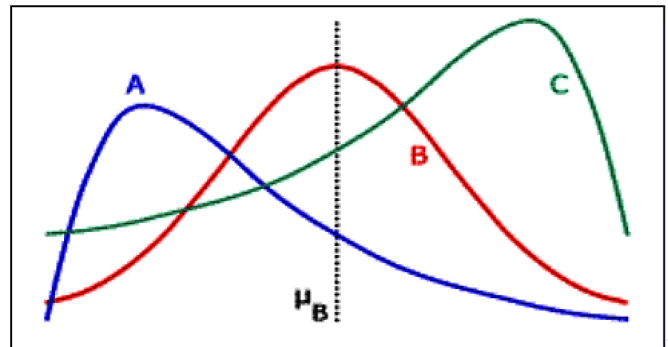
At the Table 2, there are scenarios considering a freemium DSS that has 3 levels / premium versions (named V_b - Basic version - V_i - Intermediate version - and V_s - Superior version), and how the flexibility in determining the local price in the overall product would allow companies to adjust them according to the scenario in each international market.

Such DSSs may present paid users’ distribution curves that follow a normal (gaussian) curve (Figure 11, curve B) or that present positive asymmetries (Figure 11, curve A) or negative (Figure 11, curve C).

Consequently, strategies of price positioning are suggested for future empirical studies, based on the impossibility of changing the functional characteristics of the DSS, popular in global services, as shown in Table 2.

Figure 11. Asymmetric models

Source: Datalyser.com.br



FINAL CONCLUSIONS

Global freemium DSSs have limited flexibility in adapting their functionalities to different markets around the world due to the centralization of their development (production, creation, design, programming) in one or a few offices worldwide. This low adaptability can be seen as limiting when there is a need to adjust the price-to-benefit ratio in situations where these freemium DSSs offer more than one premium version.

Since perceived value is a result of perceived benefits and costs, by having its perceived costs tied to the charged price, the local management of global freemium DSSs can count only on an autonomous price adjustment/strategy, unrelated to the absolute conversion of the original value by the current exchange rate, as an independent variable in the movement of consumers from one version to another.

Leveling up strategies aim to move users upward, with lower (cheaper) payers moving to higher versions (more expensive, however, with more benefits) and, thus, increasing the LTV of a consumer from the ARPPU and not of the time spend as a paid user. By analyzing the paid user distribution among multiple versions, it is possible to infer price modification strategies that induce this movement.

Distributions with positive asymmetry indicate a low perceived value in the higher versions, opening space for a price review that increases the perceived value of these versions and, comparatively, reduces it from the version that concentrates the majority of paying users. It is necessary to mention the possibility of churn increase if the next version fails to show a high perceived value even after the price review.

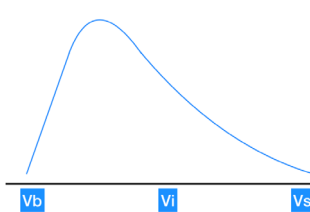
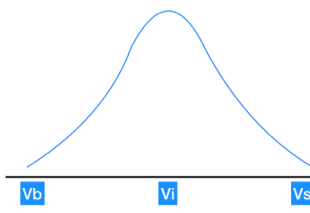
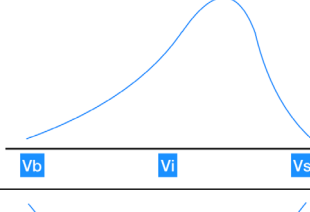
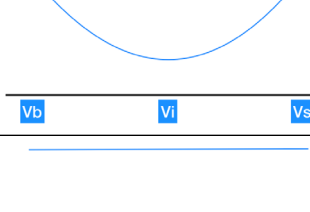
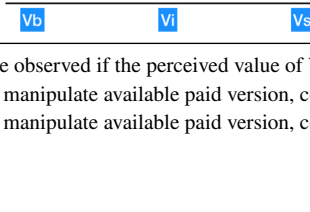
Distributions with negative asymmetry demonstrate a clear preference for higher versions and, in the impossibility of eliminating more basic versions or even creating a new version above the current superior one, allows a price increase in all versions where, even a leveling down of some would be offset by the higher margin.

A distribution that approximates the Gaussian model (normal distribution) would allow an upward movement by increasing the perceived value of the higher versions.

Less frequent, an inverted Gaussian distribution or even an equal distribution between all versions could be observed. In the first case, it would have been aimed at inverting the valency of the curve, taking it first to a normal distribution and, then, seeking the upward displacement. Egalitarian distributions, on the other hand, should purposely seek a negative asymmetry, although with the risk of churn increase.

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Table 2. Scenarios of paid users' distribution in a 3-level freemium DSS and price management suggestions aiming for the leveling up and increase in the ARPPU

Scenario	Specific Objectives	Vb Price	Vi Price	Vs Price
Predominance of users in V_b (positive asymmetry) 	<ul style="list-style-type: none"> • Reduce perceived value of V_b^1 when compared to V_i, maintaining Price of V_b so as not to compromise conversion; • Increase value perception in V_i (shift current payers V_b to V_i); • Increase perceived value of V_s (Move Current Payers V_i to V_s) 	-	↓	↓
Paid users normal distribution (Gaussian) 	<ul style="list-style-type: none"> • Increase perceived value of V_s (Move Current Payers V_i to V_s) 	-	-	↓
Predominance of users in V_s (negative asymmetry) 	<ul style="list-style-type: none"> • Increase margin in V_b2 • Increase margin in V_s3 • Try to avoid leveling down from V_s to V_i 	↑	↑	↑
Inverted Gaussian 	<ul style="list-style-type: none"> • Move current V_b to V_i 	↑	-	-
Egalitarian distribution between versions 	<ul style="list-style-type: none"> • Stimulate migration from V_b to V_i • Stimulate migration from V_i to V_s 	↑	-	↓

¹A Churn increase might be observed if the perceived value of V_i , even after price change, isn't enough to retain paid users

²If there's the flexibility to manipulate available paid version, consider eliminate V_b

³If there's the flexibility to manipulate available paid version, consider an additional superior version (V_{s2})

Source: Authors

This theoretical proposition opens up space for empirical tests that confirm or refute such strategies, keeping in mind that, because it considers the movement of individuals that already consume a freemium DSS, studies in controlled and simulated environments where there is no prior evaluation of perceived value may not reflect the actual intent of this consumer to move (up or down) among versions.

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Chapter 11

Challenges to Business Models in the Digital Transformation Context

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ABSTRACT

The digital transformation of the economy and society itself is pushing the economic organizations to processes. Multiple digital technologies like data analytics, enterprise mobility, social networks, cloud computing, robotics, block chain, and internet of things (IOT) are pushing radical changes in the ways of working (WoW). People with strong technological skills are demanding changes to organizations towards two-way business interaction in order to meet the needs and expectations. But consumers who are technology users expect new information and knowledge products and services based on technological potential. It remains to the organizations to define strategies for this transformation, seeking to adapt their organizational and information systems to this new paradigm of digital transformation.

INTRODUCTION

The economic and social environment is permanently challenged by technological innovation. The resources, structures and dynamics established in the economy and society are increasingly dependent on technological capabilities. This dependence also expresses greater vulnerability of people and organizations regarding the technological context of society and of the economy itself. As we move towards greater integration of the digital dimension into the lives of consumers and organizations, the collective responsibility of the various actors that ensure the availability and operation of infrastructure increases. It is this collective responsibility of the various stakeholders that depends on the quality of the transactions carried out, the satisfaction of the products and services marketed, as well as the general social relations carried out through the technologies.

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In this context, issues, like privacy or security, are permanently present in the activities of economic organizations, in the lives of technology users and in the new technological dimension of ethics, a concept rooted in ancient philosophy, reflects on the new human condition in the context of the digital economy and society (Anunciação, Esteves & Santos, 2014) (Anunciação, 2012) (Anunciação, 2008) (Anunciação & Santos, 2007). The lightening of the set of values and principles that, in the past, guided human practices, now, need adaptation, or perhaps not.

We live in a spiral difficult to control and even manage. Society and the digital economy constitute movements of society that have no return. The adhesion of consumers and citizens to information and communication technologies put pressure on economic and social organizations to adopt new working paradigms closely aligned with technological factors. ICT challenges business and organizations to adopt new models fully attuned to the technological potential, in any economic sector. If digital transformation in any large organization is tough - breaking down silos, overcoming legal barriers, fixed mindsets and internal conventions - negotiating technological change on the scale of the federal government is nightmarishly difficult (Gray & Parce, 2017).

Management requires responses in timings that are too short to adapt organizations and their operations to the market, modifying structures and adapting crystallized cultures. The setting is a permanent investment and managers are required net profits in the process of digital transformation of economic activities. And since many companies are not, and do not have, specialists in all technological areas, they will have to frame their activities in partnerships with specialists, focusing on their core business in order to frame their competitiveness.

The context associated with the process of economic and social transformation can be better evidenced through the analysis of the evolution of the digital economy in Portugal is presented in Tables 1-4 (IDC2015).

Table 1. Evolution of internet users

Online Population	2011	2012	2013	2014	2015
Evolution of users (millions)	6,1	6,7	6,7	7,0	7,4

Table 2. Evolution of the number of online buyers

Shopping Population Online	2011	2012	2013	2014	2015
Evolution of online purchases (millions)	1,9	2,3	2,5	2,7	3,1

Table 3. Activities on the internet

Activities on the Internet	Email	Search	Social Networks	Read News	Chat	Listen to Music
Personal computers	83%	67%	59%	55%	31%	30%
Tablet, smartphones	56%	39%	49%	35%	30%	19%

Challenges to Business Models in the Digital Transformation Context

Table 4. Business presence on the internet

Activities on the Internet	All Companies	Public Administration	Banking and Insurance	Distribution and Retail	Industry	Services
Companies with own website	29%	89%	100%	28%	30%	29%
With page in business directory	7%	11%	30%	8%	8%	4%
With page in social networks	20%	39%	80%	19%	18%	24%
Selling on own website	10%	0%	70%	19%	3%	13%
Online sales in third-party site	3%	0%	30%	5%	6%	5%
Company with mobile APP	8%	11%	90%	6%	2%	9%

There are several technologies that mark this digital era. Cloud computing, social networks, IoT (Internet of Things) and artificial intelligence, among others, are examples of new paradigms that are emerging and consolidating in the economy and society. Some of them have been breaking traditional paradigms associated with concepts fully assumed in the field of business sciences, such as cloud computing or data centers. The concept of Information System, traditionally framed and administered in the internal context of economic organizations, is now outsourced, providing remote access to users wherever they are. This feature is one of the biggest advantages of cloud computing, access to information anytime, anywhere. Take the health area as an example, and analyze the advantages of access to medical imaging and the possibility of clinics and hospitals accessing the patient's data, with just one computer or tablet and internet access.

This possibility is a new reality for management, in general, and for information systems managers, in particular. And, in this sense, it is important that management understands the various dimensions associated with the digital transformation as an impact on the organization and business. And in this sense, it is important to analyze the surrounding environment and understand, among other aspects, why traditional companies are failing at digital and how they can succeed; how to overcome strategic, operational, technical and market related causes of failure; how to benchmark, envision, roadmap and build a successful digital strategy, and why preparing for the future, near and far, ensures their readiness for the next decade's technology revolutions.

At the ubiquity (Anunciação & Zorrinho, 2006) must match the security of data / information and the respective treatments, and associated services and the scalability of the systems should match the suitability of providers. The management is, thus, responsible for a secure outsourcing of the information system, safeguarding core and core aspects such as service levels, operations and information backup or technical support, among other aspects.

With regard to social networks, their importance is not only due to the great ease of communication they provide, by allowing multiple connections between a significant diversity of people / users, but especially the exceptional source of data that originates and makes available. In social networks, people / consumers exchange opinions, evaluate products, dictate trends, judge behaviors and, above all, define

themselves as citizens and as consumers. Networks are currently the main communication channel, constituting excellent commercial channels of enormous competitive potential.

IoT (internet of things) is a new reality. Based on a network of billions of digitally connected devices, from homes to household appliances, from cars to clothing, global data collection and transmission are possible. In this domain, information and information systems governance is challenged by enhancing the digital world of economic organizations with the possibility of connecting a multiplicity of devices and objects that communicate and act according to certain parameters or instructions, given not only by people, but the machines themselves. This extension of information systems to the diverse needs of people, not only professional or social but also functional support to their life (appliances, housing, transport, etc.), challenges and will continue to challenge architecture or organizational urbanism (Anunciação & Zorrinho, 2006) (Anunciação, 2016) (Anunciação, 2015) of the economy and society itself. Not only will be required, new technological, treatment and storage, connectivity or interoperability capacities, but, above all, new instruments and models will be required to facilitate the management of a new context where the limits are difficult to identify.

While there were updates on familiar themes from prior years, such as the Internet of Things (IoT) and cloud computing, the major shift this year has been a central focus on Artificial Intelligence (AI) across industries, and a need for an even more aggressive approach to digital transformation in order to compete (Tiersky, 2017). The Artificial Intelligence has perhaps associated the most radical change, in that it provides a new relationship between the human person and the technologies, devaluing several dimensions that realize the human being.

Eventually, we are faced with a new challenge for the human being if he comes to rethinking himself, his role in the economy and his framework in society itself. Since the industrial revolution that seeks to overcome human limitations and increase their capacities. With artificial intelligence, he walks to the possibility of overcoming not only physical limitations but his own intellectual capacities. Some social researchers are currently questioning whether, in the future, people will be driven by machines or even if some “digital people” on social networks are real.

In the economic context, artificial intelligence, in addition to enabling smarter choices, provides the possibility of predictive analytics development, linking work environments, personal life, leisure, health, etc., conditioning options and choices. If the virtue of the advantage of having an instrument that can increase our capacity for action is clear, it is also evident the perspective of a greater conditioning, and control of what we are and what we do which, in economic terms, can have significant repercussions.

As we consolidate these changes, many of the foundations (principles, values, models, instruments, etc.) that have so far oriented the functioning and development of economic organizations, and even of the theory itself, have been questioned in society and in economic management. The traditional principles of business science are difficult to fit into the new reality. It is important to understand the new requirements associated with the functioning of economic institutions in a framework that tends to be completely technological and to be able to define a matrix for the desired development in view of the organizational and economic sustainability.

Most business leaders agree that digital transformation - a wave of business innovation fueled by technology - is disrupting their business or soon will be, but fewer than half have enacted a digital strategy, according to a new report by Harvard Business Review Analytic Services (Olavsrud, 2017). But, according Westerman (2018), technology doesn't provide value to a business. It never has (except for technology in products). Instead, technology's value comes from doing business differently because technology makes it possible. E-commerce is not about the internet — it's about selling differently. Analytics is not about

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databases and machine language algorithms — it's about understanding customers better, or optimizing maintenance processes, or helping doctors diagnose cancer more accurately. IoT is not about RFID tags — it's about radically synchronizing operations or changing business models (Westerman, 2018).

If it is true that technologies continue and will continue to dictate the meaning of economic and social development, managers need to understand how this development tends to take place. If, in the past, the adoption of technologies was carried out essentially from a one-to-one or individual perspective, where the main objective was productivity and efficiency gains or the improvement of the functioning of the operational structures, the development now fits into a two ways perspective, relational or collaborative, whose benefit depends on the degree of depth of relations, service and value to the parties involved.

Although the centrality lies in technological innovation, its focus is associated with the relationship between technology service providers and customers / citizens / users in general. Citizens/users, while tending to be more and more active in the technologies, will seek players who provide services capable of meeting their permanent information needs. It is not only a question of satisfying a specific commercial need, but of a whole set of complementary or associated needs. Thus, emerges, as a competitive paradigm, the "360°" vision of the client/citizen.

It is in this context that organizations must evolve and transform themselves. They should identify the critical dimensions for this evolution, from structure to technology integration, from partners to customers. Ismail (2014) characterizes the organizations in this context as Exponential Organizations, considering that these have to be better, faster and cheaper than the competitors. The economy and competition do not, in this field, leave a great alternative. Organizations are, in general, pressured to increasingly provide technology-based services. It is precisely in the capacity to complement the tangible dimension of services with the digital dimension and, above all, in the evolutionary capacity to complement supply and demand for digital products and services that will face the greatest challenge of digital transformation.

This is a movement that has no return and that fits a new scenario for the economic sustainability of organizations. Make digital transformation core to your business strategy (Albanese & Manning, 2016). Adaptation to it is a management imperative, depending on the managers' ability to give their organizations a strategic look at digital transformation.

WHAT IS DIGITAL TRANSFORMATION?

The change in the needs of the business has not happened overnight. Business needs have been gradually evolving throughout the internet and mobile computing eras where technology became more accessible, vendor offering matured products and services and the rest of the business became more tech savvy. The disruptive technologies and trends, such as social, mobile and cloud, did not create the gap; they have widened it to the point where it cannot be ignored (Shrivastava, 2017) (Cox, 2014).

In this sense, we can consider digital transformation as the set of disruptive changes that institutions must make in business, organizations, structures and forms of operation and development of the respective activities based on the digital paradigm. It is not just a substitution of people or activities for technologies, but a new economic view of the institutions and their activity through ICT and, above all, the generation of new value for customers or citizens / users in relation to the products marketed or services provided.

The digital transformation market size is estimated to grow from USD 148.04 billion in 2015 to USD 392.15 billion by 2021, at a Compound Annual Growth Rate (CAGR) of 18.7% (Newswire, 2016) (Wire, 2016). Companies are seeking ways to increase revenue and reduce expenses, as the global market

competition continues to shrink profit margins. Organizations of all sizes are focusing more on analyzing sales and market saturation in specific territories and identifying gaps. However, the lack of awareness regarding the benefits of digitalization is a restraining factor for the digital transformation market. (Wire, 2016). In the Portuguese case, for example, according to the Marktest Telecommunications Barometer study, smartphone usage and the penetration rate have registered an upward trend over the last few years, rising from 40.4% in 2013 to 71.6% in July 2017 (Marktest, 2017). It is, therefore, natural for customers to expect benefits in terms of mobility, access to information and services when they need them, whatever the channel (smartphone, for example). These challenge is not only to provide instruments, means and services that meet customers' needs and expectations, but also the possibility of collecting data on them and on the operations carried out, in order to allow a better understanding of them big data, analytics, for example). These tools enable the opportunity to develop deeper knowledge about customers, seeking to improve their experience, regardless of the device used in access to information.

There are several relevant and central domains presented in the scope of digital transformation by various authors. Tiersky (2017), for example, mentions that this shift breaks into five interrelated insights: customer expectations continue to rise, speed is more important than ever, customer insight continues to be essential, artificial intelligence is front and center and digital transformation means business transformation. On the other hand, Evans (2017) considers that digital transformation is a broad subject that requires competency across strategy and vision, people and culture, process and governance, and technology and capabilities. Strategy is before technology (Schwertner, 2017) (Westerman, 2017). In the area of the strategy and vision pillar, this author refers to the existence of some of the key elements that include digital transformation strategy, digital transformation focus and investments. The digital strategy must be understood as a process from strategy to execution. It's important for the digital strategy to set the stake in the ground in terms of target business outcomes. Digital focus is important to establish a customer-centric perspective that drives transformation journeys and continuously adjusts based on changing customer demands. And Investment specifically allocated to digital transformation as a critical factor to fund the large-scale transformational change that's essential across business models, business processes, products and services.

With regard to the second pillar, people & culture, some of the key elements include leadership, culture and digital skills. Leadership as a digital transformation necessity, to enforce behaviors, and to keep programs chartered and aligned with the external perspective front of mind. Culture because digital transformation initiatives require re-inventing and re-designing traditional business models, processes and ways of working, it necessitates an innovative and collaborative culture to enable tolerance and receptivity to risk, to embrace and empower change, and to encourage innovation and experimentation. And digital skills because digital transformation initiatives require new technologies, capabilities and approaches, so it takes strong digital skills embedded in all strategic areas across the organization to do the heavy lifting with a completely new set of tools and techniques.

Concerning the third pillar, process & governance, some of the key elements include innovation management, change management and governance. Digital innovation leading practices in corporate innovation, and they are important to identify and accelerate digital transformation initiatives from idea to execution and to provide a mechanism for continuous and collaborative innovation across internal and external constituencies. Change management because digital transformation initiatives typically have a broader and deeper change impact than traditional ones, change management programs need to take a more holistic view across a wider range of stakeholders with a richer, ongoing engagement model. And Governance because digital transformation initiatives span traditional business units and silos, affecting

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all parts of the organization. As a result, effective digital governance is important to promote the right levels of coordination and sharing to minimize risk and cost and to ensure close and continual alignment with strategic priorities.

As regards the fourth pillar, technology & capabilities, some of the key elements include disruptive technologies, platform business models and digital services mastery. Disruptive technologies because, when building the next wave of digital applications, disruptive technologies can be applied in powerful combinations – first, as digital experience essentials (with technologies such as social, mobile, analytics and cloud) and, then, as digital experience enhancers (intelligent automation, IoT and next generation cyber security) - to create unique new value propositions for customers. Platform business models because they convert traditional, linear value chains into multi-dimensional value networks. They convert the pipeline business model, where value creation is one-way and subject to bottlenecks throughout the supply chain, into a platform business model where value creation is two-way and continuous. Digital services mastery because the next step for IT is to consider the “how” as well as the “what”. It’s no longer sufficient to have an innovative set of products or services (the “what”). You have to be a master of how you design, develop, deploy, manage and continually evolve your digital services (the “how”) as well.

Rogers (2016), on the other hand, presents five more concrete domains: customers, competitors, data, innovation and value, specifying the nature of the transformation to be carried out, according to Table 5.

Among other aspects, we can point out as critical the following aspects:

- The traditional one-way business relationship (supplier → customer) tends to be replaced by a two-way economic relationship (supplier ↔ customer);
- Commercial relations tend to be dictated more by the service than by the product, more by the value they provide and not by the associated price;
- Technologies tend to be adopted and framed more by their potential and strategic value than by the productivity gains and efficiency they can provide;
- Systems tend to be evaluated more for perceived quality, output quality and reliability relative to the operations performed, no longer being considered from the perspective of production;
- Customer loyalty tends to be associated more with the value generated by the system and with the opportunity of the services it provides.

Although we can consider that, due to the great adhesion of the majority of people to information and communication technologies, digital transformation is occurring naturally among companies and citizens, it cannot be passively classified by managers and organizations. The assumption of the centrality of the digital transformation should not only result in a reaction to the market or to competition as a result forced by the need for survival, or even a result of the cost reduction demand. The digital transformation must be understood as a strategic decision, which must correspond, on the part of the management, a process of immersion in the technological potential and the inclusion of the technologies in the diverse organizational dimensions, in view of a concrete response to the digital context. It is not only a matter of generating value through productivity or organizational efficiency, but also because of the strategic dimension of competitiveness, fully in line with market requirements. Technological innovation must be reflected in the innovation of activities, products and services, structures, relationships and knowledge.

Technological innovation opens up windows of opportunity insofar as it is possible to identify, know, make and reach in relation to the exterior. It should be noted that the concept of digital transformation has associated two dimensions that give meaning to the depth of its meaning. The first refers to the concept

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Table 5. Changes in strategic assumptions from the analog to the digital age

	From	To
Customers	Customers as mass market Communications are broadcast to customers Firm is the key influencer Marketing to persuade purchase One-way value flows Economies of (firm) scale	Customers as dynamic network Communications are two-way Customers are the key influencer Marketing to inspire purchase, loyalty, advocacy Reciprocal value flows Economies of (customer) value
Competition	Competition within defined industries Clear distinctions between partners and rivals Competition is a zero-sum game Key assets are held inside the firm Products with unique features and benefits A few dominant competitors per category	Competition across fluid industries Blurred distinctions between partners and rivals Competitors cooperate in key areas Key assets reside in outside networks Platforms with partners who exchange value Winner-takes-all due to network effects
Data	Data is expensive to generate in firm Challenge of data is storing and managing it Firms make use only of structured data Data is managed in operational silos Data is a tool for optimizing processes	Data is continuously generated everywhere Challenge of data is turning it into valuable information Unstructured data is increasingly usable and valuable Value of data is in connecting it across silos Data is a key intangible asset for value creation
Innovation	Decisions made based on intuition and seniority Testing ideas is expensive, slow and difficult Experiments conducted infrequently by experts Challenge of innovation is to find the right solution Failure is avoided at all cost Focus is on the “finished” product	Decisions made based on testing and validating Testing ideas is cheap, fast and easy Experiments conducted constantly, by everyone Challenge of innovation is to solve the right problem Failures are learned from, early and cheaply Focus is on minimum viable prototypes and iteration after launch
Value	Value proposition defined by industry Execute your current value proposition Optimize your business model as long as possible Judge change by how it impacts your current business Market success allows for complacency	Value proposition defined by changing customer needs Uncover the next opportunity for customer value Evolve before you must, to stay ahead of the curve Judge change by how it could create your next business “Only the paranoid survive”

of transformation. A process of transformation presupposes, as the expression itself indicates, a change of a certain status quo and the transition to a different, higher value state. This transition, from a management perspective, must be a thoughtful, reflective and planned act, with well defined objectives and expected results. The second dimension concerns the inductive and central element of transformation, the digital dimension. This digital transformation is now an imperative of economic survival, and it is closely related to the way citizens and consumers are being increasingly supported in digital technologies. Opportunities provided by technological connectivity, ubiquity of services, business opportunities, among other examples, encourage users to demand appropriate business responses from service providers regarding the provision of products or services.

Many companies in sectors such as financial, distribution or health are making significant investments in this field in the expectation of generating competitive differentials. These competitive differentials between companies will depend on the knowledge they generate and have about their customers, the ability to interact with them and the ability to provide them with value. The central question lies in the relationship they achieve between these three dimensions, that is, in the capacity to meet their expecta-

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tions, in the timing adequacy, in the innovation in services and products and in the quality of the technological platform that supports them.

An investment in technology that does not emerge its value in organizational structures and dynamics does not provide significant competitive and economic improvements. Salesforce's State of IT survey found that digitally transforming companies are 3.7 times more likely to adopt technology trends vis-à-vis competitors, invest 1.8 times more in software and customer interface technology (for example in sales apps, marketing and customer service applications), and are more likely to adopt digital channels (4.8 times more) for customer loyalty.

The benefits of digital transformation will only be noticeable if the organizational vision integrates IS / IT and its managers understand the benefits of the economic innovation of technologies. It is true that cloud computing, for example, allows the release of resources associated with the management and maintenance of the technological infrastructure of organizations. However, it will be in the ability to overcome the legacy of technologies and the destruction of information silos that will be the critical success factor of digital transformation. Associated with this generation of knowledge are also the set of functionalities and channels of access to customers through, for example, increasing the availability of apps to customers and employees, improving the quality of business functions, customer loyalty, security, etc.

The management vision of IS / IT will have to change radically. These will have to cease to be seen as cost centers and should be classified as revenue centers. This change should put IS / IT leaders in a position of great responsibility and enormous opportunity.

CRITICAL AREAS IN DIGITAL TRANSFORMATION

There may be several drivers associated with digital transformation that can support management in the development of strategies in this domain. For example, Hess *et al.* (2016) consider that there are four key dimensions to any digital transformation endeavor: the use of technologies, that must reflect a firm's approach and capability to explore and exploit new digital technologies; change in value creation, that must reflect the influence of digital transformation on a firm's value creation; structural changes, that must reflect the modifications in organizational structures, processes and skill sets that are necessary to cope with and exploit new technologies; and the financial aspects, that must relate to both a firm's need for action in response to a struggling core business, as well as its ability to finance a digital transformation endeavor.

However, the existence of some questions regarding this transformation can help economic agents focus the objectives of this transformation, for example, what is the vision for improving the lives of customers? How do you want to put your vision into action? What are your digital capabilities? And how will you urbanize and re-architect the business and the organization? (Moore, w.d.).

We propose the analysis in three main central axes of this process of transformation:

- Business (change in business);
- Knowledge (about the activity and about the client);
- Value (generated for the customer).

It is true that other factors could be enunciated, however, we consider these as central and specific axes associated with this matter.

The change in the business must make evident how the organization and the managers can adopt innovation and the digital dimension in the organizational functioning, and the economic activities developed. It is important to analyze whether technological innovation has provided an opportunity for innovation at the business level and whether technologies, in addition to promoting productivity and organizational efficiency, have provided new ways of developing activities and greater reach in commercial actions. As mentioned previously, opportunities are not only achievable with the acquisition and introduction of technologies. The adoption of technologies must necessarily be analyzed and managed in order to provide the organization with new dynamics, both internal and external. In addition to the reflection on the improvement of the institutional image, in its brands, among other examples, there is a broad spectrum of opportunities in the approach to digital markets, such as the possibility of providing a wide range of new services and the possibility of customization or simulation, commercial advice or post-sale monitoring. These may be new requirements that, in digital markets, greatly contribute to the increase of customer loyalty.

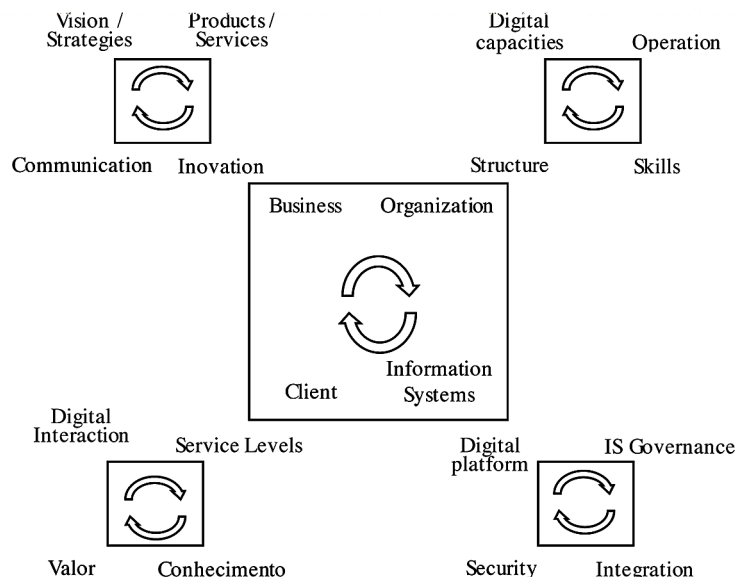
The transformation of the business presupposes, as has been shown previously, organizational adaptation. Traditional functions, such as sales, marketing, service, finance, will have to be redefined appropriate to the digital potential, but above all the boundaries traditionally delimited by hierarchical structures will have to be re-equated.

In this context, in order to understand and size the digital transformation of organizations in the aforementioned axes, we consider the following as domains or analysis strands the most relevant (Figure 1): business, organization, information systems and the customer.

In business domain, it is important to analyze, among others, the following aspects:

- **Business:**
 - **Vision / Strategies:** What strategies are defined and assumed that specifically aim at the digital transformation of the business, activities, organization, products or services?

Figure 1. Digital transformation domains



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- **Products / Services:** What digital products or services have been developed, are they developing or are they expected to be developed? How will these be complemented by the traditional offer?
- **Innovation:** What digital initiatives, within the scope of organizational innovation or of products and services, are being developed or are expected to be developed by the institution?
- **Communication:** What degree of digital communication is there and what is the expected increase in digital transformation?
- **Organization:**
 - **Digital Capabilities:** How deep is the digital dimension of processes, activities, products and services?
 - **Operation -** What changes have been or are expected to be recorded in organizational operation with a view to digital transformation?
 - **Competencies:** Are existing skills both internally and at the customer level sufficient to support digital transformation strategies?
 - **Structure:** Who takes responsibility for digital transformation?
- **Information Systems:**
 - **Digital Platform:** What is the scope of the digital platform in the framework of the activities carried out? What technological paradigms do they support (IoT, AI, etc.)?
 - **Information Systems Governance:** What policies exist in relation to systems, technologies and information (architecture, urban planning, security, investments, etc.)?
 - **Integration:** What level of integration is there in information systems? And what level is expected or desired?
 - **Security:** What policies and procedures exist in the area of information security and digital systems?
- **Client:**
 - **Digital Interaction:** What level of digital interaction exists or is expected to be generated with customers by virtue of the inclusion of digital technologies?
 - **Service Levels:** What increases our levels of service have been achieved or are expected to be achieved with the introduction of the digital dimension in organizational operation?
 - **Knowledge:** What level of knowledge is there and expected to have on customers? What technologies enhance this knowledge (for example, Business Intelligence)?
 - **Value:** What metrics are being adopted, are they adopted or will be adopted to measure the value generated for the client?

In addition to understanding the dimensions presented above, it is important that management defines a roadmap for a progressive and coherent transition to digital operation. According Weill & Woerner (2018), there are four different pathways that for a digital economy:

- **Standardize First:** Building a platform mindset with API (application programming interface) enabled business services that can be accessed across the enterprise and also externally;
- **Improve Customer Experience First:** Improve the customer experience across the whole enterprise, attempt to do several things at once: develop new attractive offers, build mobile apps and websites, improve call centers, and empower relationship managers;

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- **Take Stair Steps:** Alternating their focus from improving customer experience to improving operations and then back again, shifting the focus back and forth as needed;
- **Create a New Organization:** Transform their existing organization.

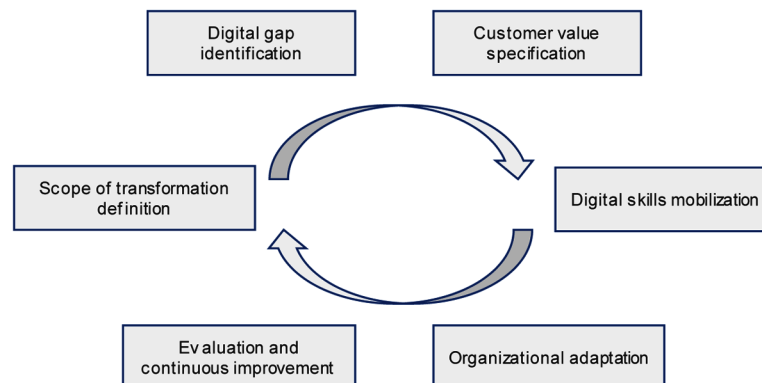
However, we propose a life cycle for the digital transformation process. This integrates a roadmap that, in our view, clarifies and facilitates management intervention and organizational adaptation. Thus, we suggest:

- **Scope of Transformation Definition:** Clear and objective identification of the transformation to be undertaken (vision, strategy, processes, products, services, value, etc.);
- **Digital Gap Identification:** Survey of the current information system and identification of the developments and investments to be made necessary for a transition to a digital operation;
- **Customer Value Specification:** Identification of the needs and services offered in the digital context, highlighting the experience and value provided;
- **Digital Skills Mobilization:** Increase of internal and external knowledge and skills for the adoption of digital products and services, highlighting the value provided;
- **Organizational Adaptation:** Flexibility in the structure and organizational functioning to ensure continuous operation, in tune with the needs of clients and according to the timings provided by the technologies;
- **Evaluation and Continuous Improvement:** Identification of technological developments and their potential as well as customer adherence to them, assessing the current status quo and innovating.

CONCLUSION

As Cox (2014) points out, the paradigm of digital transformation decrees a disruptive change that implies a strategy for the transition. This transition must be clearly assumed and fulfilled. It must go through the definition of the scope of transformation, identification of the digital gap, specification of customer

Figure 2. Life cycle for digital transformation



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value, mobilization for digital competencies, organizational adaptation and evaluation and continuous improvement.

It is not a process that begins with the introduction of information and communication technologies or ends with its entry into production. As Evans (2017) points out, we must consider that the digital transformation is clearly a journey, not a destination. This is a permanent journey that begins with the auscultation of the Market in general and of the customers in particular.

As previously mentioned, the challenge is not only to provide instruments, means and services that meet customers' needs and expectations. Essentially, the focus of digital transformation is to generate knowledge through access to customer data, to their expectations and to adjust operations, products and services, in order to allow for better understanding and satisfaction. Therefore, it will be vital to use analytical tools that address the potential associated with the big data and that provide economic value to the organization. These tools enable the opportunity to develop deeper knowledge about customers, seeking to improve their experience, regardless of the device used in access to information.

All these challenges will necessarily have to be framed within a governance perspective, which provides a starting point for the information systems and the organization, in full harmony with the challenges of the market and in close relation with the organizational capacities.

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Chapter 12

Strategic Vision on the Chain of Decision in Modern Competitive Scenarios: A Case Study in Material Planning in a Public Company

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ABSTRACT

Organizations, to achieve their strategic targets, are frequently making decisions facing modern competitive scenarios. The increment of the transparency requirements in the transactions executed is one of the factors that explain the interest in the process modeling, since it can act as a control instrument because it allows one to constantly review the base of the structure and point out problems and failures which will be reflected in chain by the other instruments used by the organizations. The literature review and the experience in the industry of productive processes shows the need to apply better management models to remain in the competitive edge of business, modeling orientation focused on the activities of each area with interfaces involved in the all productive processes. The proposal of this model is to establish the interfaces and dialogues with interaction and participation of the production areas: quality control, regulatory policies, and industrial engineering advisory to contribute technically with information to subsidize the better elaboration of the master production plan.

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BACKGROUND

To achieve their strategic goals, organizations are constantly making decisions, which makes this process crucial for their growth and empowerment. Therefore, organizations need information that supports decision making at all hierarchical levels. There will be situations where there is more than one alternative for decision-making or, in other cases, only one way to solve them. In this sense, based on the information gathered, we will have to decide for one or even none (FERREIRA, 2010).

According to Freitas (2002) and Kladis (1995), the organization is perceived as a constantly changing system, where the company's activities, at all hierarchical levels, are essentially decision-making and problem-solving activities. Decision making is such an importance that it becomes quite clear and perceived, empirically, in any organizational analysis. This relationship is so close that it is impossible and unlikely to think about the organization without considering the constant occurrence of the decision-making process (FREITAS; CAROLA, 2002; KLADIS, 1995).

According to Huang (2015) and Porter (2008), to develop a clear strategy, leadership, generally, has a fundamental role that goes far beyond administering individual functions. Essence is the strategy where the leader must provide the discipline for the decisions regarding the changes while avoiding the organizational dispersion and guarantees the differentiation (HUANG et al., 2015; PORTER, 2008).

Management systems, such as Business Intelligence (BI), use data available in organizations to make information relevant to decision making available. They can combine a set of questioning and data exploration tools with instruments that allow the generation of reports, thus producing information that can later be used by the organizations' management, in support of decision making (SANTOS; RAMOS, 2006).

As an example of BI is the data warehouse which is a special data repository bank prepared to support decision-making applications, where applications which range from simple generations of reports or queries to complex optimizations; online analytical processing that allows users to analyze different data dimensions, such as a time series and trend analysis; and automated decision systems, which are rule-based systems that typically provide a solution in a functional area (such as finance or production) to a specific and repetitive management problem common to a business sector (TURBAN, SHARDA, ARONSON, KING, 2009).

The need to use more specific, up-to-date and reliable information in planning and management activities also allows the use of more structured techniques for treatment, analysis and use in the decision-making process. The technique in question is Multicriteria Decision Support (AMD), or to Multicriteria Analysis, a tool that can be very useful since the decisions need to be guided by objective and transparent technical criteria and to incorporate the judgments of a political and subjective nature of the managers (JANNUZZI, MIRANDA, SILVA, 2009; LEE, EZEKIEL, 2013).

According to Vital, Floriani and Varvakis (2010), information management requires the establishment of processes, systematized, organized and structured steps from responsible managers with, one of the essential functions of information flows, is to provide managers with essential subsidies decision-making process.

The increase of the transparency requirements in the transactions executed by the organizations is one of the factors that explains the interest in the process modeling. In this context, process modeling can act as a control tool that allows for constant revision of the structure base and points out problems and failures that will be reflected in chain by the other instruments used, modeling records tasks, information flows, controls, people allocation and costs, as well as problems (BALDAM et al., 2007).

In this sense, this work evaluates the material planning flow in a Brazilian public company. Next, identifying the problems for the decision chain, makes a comparison for the flow of the productive process under the academic concepts. In this way, it proposes a flow for a better analysis of the strategy of the decision.

DECISION-MAKING

The term “decision making” was coined in the middle of the last century by Chester Barnard. Executive inserted this term into the business world. Since then, this expression has replaced more limited descriptions, such as “resource allocation” and “policy definition”. The definition of policies can be something interminable and there will always be resources to allocate, whereas the decision implies the end of the deliberations and the beginning of the action (BUCHANAN; O’CONNEL, 2006).

Other theoretical thinkers have laid the foundations of the study for decision-making in management, such as James March, Herbert Simon and Henry Mintzberg. The decision-making process in companies is only a small wave in a current of thought born in a time when man, faced with uncertainty, sought guidance in the stars. Knowing who makes decisions, and in what way, is what shaped systems of government, justice and social order worldwide (Albert Camus, 1996 *apud* BUCHANAN, O’CONNEL, 2006).

Buchanan and O’Connel (2006) argue that the study of decision making is a mixture of various disciplines of knowledge, such as mathematics, sociology, psychology, economics and political science. Philosophy reflects on what a decision reveals about ourselves and our values. History has said that the decision is made by leaders at critical moments. Already the study of risk and organizational behavior is born of a more practical desire: to help the administrator obtain better results.

Although a good decision does not guarantee a good result, the prerogative generally compensates. The growing sophistication of risk management, understanding the variations in human behavior, and the technological advancement that supports and simulates cognitive processes have, in many situations, improved decision making (BUCHANAN & O’CONNEL, 2006; DIAS et al, 2012).

Authors like Silva and Martins (2003), Buchanan and O’Connel (2006), Cordeiro (2009), Guimarães (2009), Franganito (2010), Gomes and Mota (2016), affirm the history of decision making for a long time. It is rich and diverse, since it is only a small sample of individuals, facts, researches and thoughts that contribute to the notion of what we have today on the subject.

Strategic Planning

Strategic planning is a business management tool widely used by organizations. According to Oliveira (1991), it is a tool to sustain the development and implementation of business strategies. However, strategic planning, as it has been used, results from an evolution from changes in the management of organizations, due to the constant modifications in the environment and the increase of competitiveness. Ferreira, Reis and Pereira (1997) affirm that one of the greatest tasks of the administrator of that time is to anticipate the changes. The enterprise value maximization strategy is executed with a focus on risk and uncertainty (MICHALSKI, 2013).

According to Terence (2002), individually analyzing each part of the term strategic planning, it is observed that literature treats planning as one of the most important tasks of an administrator, which presupposes: choosing a destination, evaluating alternative paths and deciding the specific course to reach the chosen destination.

Planning means developing a program for achieving organizational objectives and goals, involving choosing a course of action, anticipating what needs to be done, determining when and how action should be taken (MEGGINSON, MOSLEY, PIETRI JUNIOR, 1986; DAVID, 2011).

In this way, planning provides the basis for effective action that results from management's ability to anticipate and prepare for changes that could affect organizational goals (MEGGINSON; MOSLEY; PIETRI JUNIOR, 1986).

Planning has two basic aspects that are vital to the organization: determining the organization's objectives and choosing the means to achieve these goals. Such basic aspects of planning rely on methods, plans or logic, therefore, are not intuitive. In this way, the organization sets goals and the best procedure to achieve them.

On strategic, although the term originated from military art, it assumed a new connotation in the field of administration, which denotes an appropriation of the term without the corresponding appropriation of the concept. The meaning of strategy in organizations is something relatively complex, since the literature shows innumerable definitions, addressing different aspects (TERENCE, 2002). The company strategy consists of a set of competitive changes and business approaches that managers execute to achieve the best performance, seeking to strengthen the organization's position in the market, promoting customer satisfaction and achieve their goals.

According to Mintzberg, Raisinghani and Théoret (1976), there may not be a simple interpretation for strategy because it is understood to concern both the organization and the environment and can affect the organization. In addition, it implies content and process issues involving several conceptual and analytical aspects. Considering that the changes refer to new circumstances for the organization, the essence of the strategy should remain unchanged.

The elaboration of the business strategy is carried out at several organizational levels and the activities involved in this process are: analysis, planning and selection of strategies that increase the chances that the objectives of the organization will be achieved. The processes of definition, implementation and monitoring of business strategies occur in constantly changing circumstances (Mintzberg, RAISINGHANI and THÉORET, 1976).

According to Gaj (1987), among several approaches to strategy, he highlighted one which associated strategy with planning, observing that the final product, obtained from strategy, is usually expressed through a written plan for a period and with periodic adjustment mechanisms.

In this way, the strategy should be considered as a guiding scheme within the flow of business decisions (OLIVEIRA, 1991).

Decision Models

According to Freitas and Kladis (1995), to better understand and lead the decision-making process, theoretical and empirical researchers, as well as administrators, devote much of their efforts to organizations, whether public or private, to this question. Quade (1989), referring to decision-making in the public sector, noted that, this way, in the past, events were happening more slowly, where empiricism and experience were far more efficient than they are today.

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Through the process of trial and error, and the policy of “give and take” it was possible for the public official machine to develop its goals, estimates and values in the society, or in the part which its actions had influence. However, these procedures are no longer possible today. This is no longer the case: technology and events move much more rapidly and the natural attempt, error, the politics of giving and receiving become very catastrophic, not only in a war situation, but in pressures on the population, scarcity environmental degradation (FREITAS and KLADIS, 1995; GOVINDAN, K. et al., 2015).

Managers and people involved in the various decision-making processes of organizations need support (even scientific) to happen in a more satisfactory way which, in the model of Freitas (1993), is drawn as values, beliefs and resources. This process needs to be well understood and tools, methods and models need to be available now of decision making (Freitas, KLADIS, 1995).

Due to the complexity and increasing challenges of the external environment, the organizational decision-making process has been the subject of research and studies. The work “Administrative Behavior”, by Simon (1947), triggered a growing interest in the decision-making process in organizations, where an administrative theory based on limited rationality and fragmented knowledge of people was presented, as well as the impossibility of indefinite processing of information, thus, causing an interference in the dynamics of organizations (OLIVEIRA, 2009).

According to Oliveira (2009) apud Simon (1965), in the development of the theory about the decision process, a difference was established between programmed decisions (those more routine) and non-programmed (the most unpredictable and complex) decisions. Some decisions are repetitive, occurring even in each cycle of time, while others happen unexpectedly. Simon (1977), as creator of the terms “programmed decisions and unscheduled decisions,” describes that decisions are not distinct types, but a continuous whole, with highly programmed decisions at one end, and decisions of all the nuances in this continuum. The decisions are:

- **Programmed:** These are explained by a set of rules and pre-established procedures. They are taken in an environment of certainty or/of low uncertainty because almost all results are already known and, therefore, are easily delegated.
- **Non-Programmed:** In turn, have no rules to follow and do not have a specific scheme to be used, may be known or unpublished. In unpublished decisions, the decision maker is faced with a completely new situation and cannot count on any pre-established rules to assist him, hardly all variables are available, or there is much difficulty to be gathered and organized in time skillful.

The exemplification of the types of decision is shown in Figure 1, in which they are positioned according to the degree of structure of the problem. Problems already known will be more quickly solved because of highly programmed decisions, as opposed to the occurrence of new problems, where being unaware of their impacts resulted in unscheduled decisions.

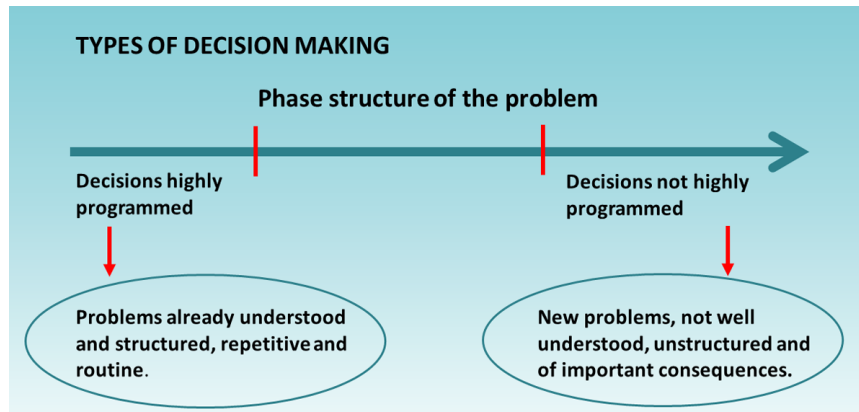
On the other hand, Mintzberg, Raisinghani and Théoret (1976) believe that, when the decision maker finds himself faced with an unscheduled situation, he seeks to reduce his decision to sub-decisions. Thus, to apply already known procedures, thus, elaborating his own model.

According to Oliveira (2009), the decisions can be classified in the administrative activity in three levels:

- **Operational Level:** Focuses on the company’s operations and involves the efficient and effective use of existing facilities and all resources to execute them. At this level, the decision is a process

Figure 1. Types of decision making

Source: Created by the authors adapted Oliveira (2009) apud Simon (1965).



by which it ensures that the operational activities are well developed, where the control uses pre-established procedures and rules of decisions. A large part of these decisions is scheduled and the procedures to be followed are generally very stable. Operational decisions and their actions often result in an immediate response.

- **Tactical Level:** There is concern about the generic acquisition of resources and tactics for the acquisition, location of projects and new products. Decisions are usually related to administrative control, and used to decide on control operations, formulate new decision rules that will be applied by the operations personnel and resource assignment.

At this level, the decision about the planned operation (standards, expectations, assumptions) and changes from a planned operation are required. The explanation of these changes or variations and the analysis of the possibilities of decision during actions are considered, in Freitas's model (1993), as criteria of rationality, effectiveness and efficiency.

- **Strategic Level:** Considers the definition of objectives, policies and general criteria to plan the way to be followed by the organization. The purpose of the decisions is to develop strategies, so the organization can reach its macro objectives. At this level, the activities do not have a period with standardized cycle. They can be irregular, although some strategic plans are made within annual plans or in pre-established periods.

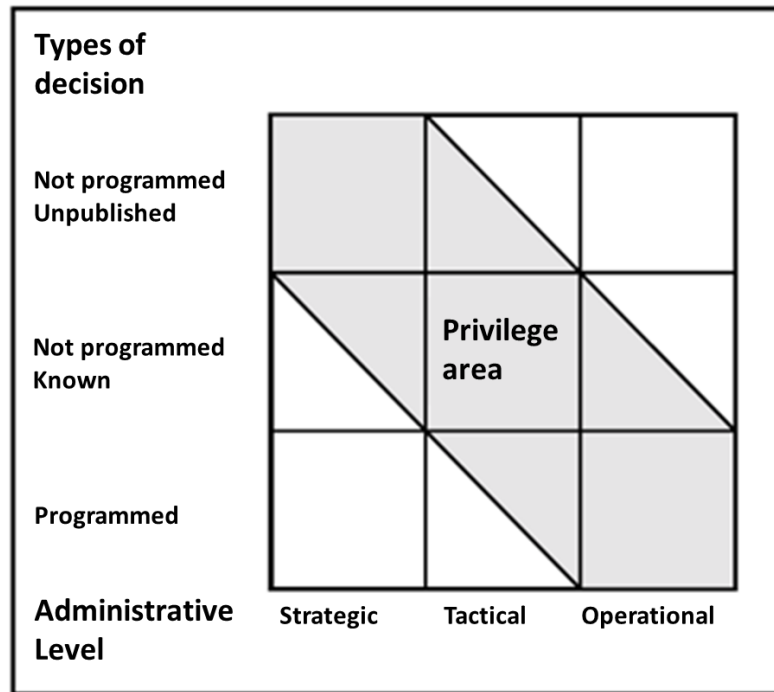
The predictability of the alternatives available in each situation within the organization can be considered in the model of Freitas (1993), interpreting how the actions will take place after each decision. Figure 2 graphically depicts the relationship between decisions and administrative levels (FREITAS; KLADIS, 1995).

The model proposed by Simon (1965) apud Carvalho (2006) admits the existence of a limited rationality and works with a simplified model of reality, considering that many aspects of this reality are substantially irrelevant at a given moment. So, it makes its choice of an alternative based on the satisfactory standard of the actual situation, considering only some of the most relevant and crucial factors.

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Figure 2. Types of decision by administrative level

Source: Freitas e Kladis (1995).



Even if the simplicity imposed by the limited rationality is adopted, the models of decision methods must be classified and analyzed in detail. From the point of view of decision making, problems can be classified into three categories (Turban, Aronson, 1998):

- **Structured:** Or also known as well defined, if its definition and phases of operation to achieve the desired results are very clear and it is always possible to repeat the execution. As, for example, payroll, accounting postings and general data processing operations.
- **Semi-Structured:** Problems with operations are well known but contain some variable factor or criterion that can influence the outcome, as with the problem of forecasting sales or purchases.
- **Unstructured:** When the problems are not fixed, or the scenarios are known, as well as the decision criterion. As, for example, the operation of choosing the cover of a weekly magazine (or first page of a newspaper of daily circulation), in which several alternatives are foreseen, but all can be replaced in the last hour, if some important fact occurs.

Organizational decision-making is also described, in which more teamwork and participation are required, where dialogue procedures are emphasized based on the understanding that, in organizations, communication should be stimulated to establish common thinking (ANGELONI, 2003).

According to Oliveira (2009), the decision can be made under the following conditions:

- **Conditions of Certainty:** When the decision is made with full knowledge of all states of nature. There is certainty of what will occur during the period in which the decision is made. It is possible to assign 100% probability to a state of nature. The probability indicates the degree of certainty in which 0% will be the complete uncertainty, and 100% or 1 indicates the complete certainty.
- **Risk Conditions:** When the probabilities associated with each of the states of nature are known. The total number of states of nature is known. Contrary to the condition of certainty, which used 100% certainty in the result, this certainty varies from 0 to 100%.
- **Conditions of Uncertainty or in Conditions of Ignorance:** When the total state of nature has not been obtained, or even the part of the known states of nature has data obtained with uncertain probability, or the probability associated with the events is unknown.
- **Conditions of Competition or in Conditions of Conflict:** When the strategies and states of nature are determined by the action of competitors. There are, necessarily, two or more decision makers involved; the result depends on the choice of each of the decision makers (Gomes et al., 2006).

According to Shimizu (2001), to be responsible to laws and penalties, as well as a specialization based on theoretical and practical knowledge of specialists, besides having adequate coordination to transmit the orders that must be fulfilled to follow the decision process; besides demonstrating empowerment to cover eventual failures on some fronts, and especially take the time in their favor, since short time can minimize uncertainty, but can increase the risk of a hasty decision, while long time can bring new perspectives of decision, but increases the level of uncertainty, are important factors for success in the decision-making process.

According to Kendall and Kendall (1991), having a “perfect decision” is envisaged when discussing the difficulties encountered at the time of the decision and its rationality.

According to Hein (1972), when it comes to quantitative methods in aiding administrative decisions, the tendency has been to express in terms of mathematical quantities and, then, to base the decision based on a mathematical optimization process. That is, this position tends to treat the decision process as a situation in which the variables are known and can be measured, and indicating the result mathematically calculated. However, according to Simon *et al.* (1987), when it comes to real situations, things behave differently: the true world of human decisions is not the ideal world of gases, planes without friction, or vacuum.

In fact, rationality is concerned with the selection of alternatives that fit most into some value system and are, to a certain extent, an acceptance of the reasonable (MARCH, SIMON, 1966).

To conduct a decision-making process, there are some models, such as those mentioned by Bethlem (1987), Freitas and Kladis (1995) and Braga and Miranda (2013):

Table 1 summarizes the main characteristics of each model, presenting them according to their creator or area and indicating the constituent phases of the decision process and / or characteristics that differentiate them from the others (BRAGA; MIRANDA, 2013).

According to Oliveira (2009), John Dewey was the first to suggest that the decision-making process consists of the five phases mentioned in Table 2, followed by the appearance of many other models, considering three to eight phases (or more) for the decision-making process.

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Table 1. Key features of decision-making model

Model	Process and / or Feature
Dewey	<p>The generic model of John Dewey (1910) is divided into:</p> <ol style="list-style-type: none"> 1. Suggestion. 2. Expression of a difficulty. 3. Development of hypotheses. 4. Reasoning or hypothesis development. 5. Thesis of hypotheses. <p>Being adapted in the form of three questions: “What is the problem?” “What are the possible solutions?” “What’s the best alternative?”</p>
Military / Situation Analysis	<p>Military model based on the systematization of training by the United States Navy in the period of World War II is divided into 5 stages:</p> <ol style="list-style-type: none"> 1. Mission definition (objective to be achieved with the decision). 2. Description of the situation and possible actions. 3. Assessment of the different lines of action regarding acceptability (consequences of actions), feasibility (possibility of execution) and adequacy (adjustment to the objective). 4. Evaluation compared to the lines of action (own and enemy’s strengths and weaknesses). 5. Decision.
Operational Research (OP)	<p>Operational Research model based on mathematical techniques developed during World War II is divided into 6 stages:</p> <ol style="list-style-type: none"> 1. Formulation of the problem. 2. Construction of the mathematical model and choice of technique (linear programming, nonlinear programming, dynamic programming, game theory, queuing theory, graph theory, Bayesian theory and probability theory). 3. Meeting the solution by means of the model. 4. Test the model and solution. 5. Establishing controls on the solution. 6. Placement of the solution in use
Creative Problem Solving	<p>The Creative Problem-Solving model created in 1950 by Alex Osborn presents as components: defining the problem, generating ideas, preparing the action and is divided into 6 phases:</p> <ol style="list-style-type: none"> 1. Building Opportunities 2. Data exploitation 3. Formulation of the problem 4. Generating ideas 5. Development of solutions 6. Deployment of the solution
Simon	<p>Simon’s model (1965) is divided into three major phases with a constant review * among them:</p> <ol style="list-style-type: none"> 1. Intelligence or Investigation. 2. Design or Design 3. Choose. <p>* Feedback.</p>
Kepner e Tregoe	<p>The rational model of Kepner and Tregoe developed in 1965 is the most complex. It involves 4 phases that are subdivided:</p> <ol style="list-style-type: none"> 1. Analysis of the situation: separation of confusing and chaotic elements, prioritization (gravity, urgency and tendency), and putting into action. 2. Problem analysis: problem definition; distinction from other problems; caused changes; possible causes of the problem; testing and checking of causes. 3. Analysis of decisions: determination and classification of objectives; development, evaluation and choice of an alternative; evaluation of the adverse consequences of the decision-making and final choice. 4. Analysis of potential problems, involving the identification of critical areas, potential problems, causes of potential problems, preventive and contingent actions and an alarm system.
Guilford	<p>Guilford’s (1967) creative and judicial model has four phases:</p> <p>In the creative line:</p> <ol style="list-style-type: none"> 1. Filter (focus on problem). 2. Knowledge (examination and structure of the problem). 3. Production (generation of ideas). <p>In the judicial line:</p> <ol style="list-style-type: none"> 4. Assessment (tests of answers and ideas).
Mintzberg	<p>The Mintzberg Model (1976) is divided into 3 phases:</p> <ol style="list-style-type: none"> 1. Identification (decision recognition and diagnosis). 2. Development (demand and design). 3. Selection (separation, evaluation / choice).

continued on following page

Table 1. Continued

Model	Process and / or Feature
Bethlem	The Bethlem generic model (1987) takes into account the similarities between the other models and presents 4 phases: 1. Decision to decide. 2. Definition of the focus of the decision. 3. Formulation of alternatives. 4. Choice of alternatives.
Freitas	The Freitas model (1993) favors SIMON's classic "intelligence-design-choice" model (1957) and its revision in 1960, with the inclusion of feedback. It adapts the decision-making model proposed by GORRY (1971) to help the end user - a priori - in two categories: information-related (the first phase of the decision-making process) and those linked to modeling (second phase of this process).
Organic (Rosseau and Couture)	The organic model elaborated by Rosseau and Couture (1998) presents 3 phases: 1. Identification of informational and documentary flows, mapping and monitoring, questionnaire application, structured and semi-structured interviews. 2. Dissemination, access and use, classification and access levels, database / organic information database. 3. Institutional memory.
Choo	The model of ambiguity and uncertainty of Choo (1998) is composed of 4 models, with differentiated phases: Rational model: 1. Collection of information. 2. Analysis of information. 3. Identification of alternatives. 4. Choose. 5. Adoption of the alternative. Process model: 1. Identification of the need for decision. 2. Development of solutions. 3. Selection / choice. Anarchic model: there are no phases to be followed. Political model: there are no defined phases, and decisions are the result of negotiations, since the objectives and interests tend to be conflicting.

Source: Created by the authors adapted Braga e Miranda (2013).

According to Braga and Miranda (2013), analyzing the mentioned models, it is verified that the Models of Simon, Mintzberg and Bethlem are generic and similar and have their applicability in all the decision-making instances. The phases of evaluation and analysis of lines of action usually occur, in many cases, before discussions between leaders and leaders.

Simon's model receives a lot of emphasis since it is a consecrated and easy-to-view model, besides being a reference on the subject and on information systems as a decision support (PERDIGÃO; FOLGÊNCIO; NETO; DORNELAS, 2012).

This model is divided into three main phases: intelligence or investigation, design or conception, choice and feedback, which represent the stages of implementation, monitoring, and review of the solutions to the problems faced, as follows (Freitas, KLADIS, 1995):

- **Intelligence or Investigation:** When the exploration of the internal and external environments happens, and the information is processed which indicate problems or opportunities. The variables related to the situation are collected and highlighted for discussion.
- **Design:** When the creation, development and analysis of the possible action plans to be followed occur. The decision maker formulates the problem, constructs and analyzes the available alternatives based on their potential applicability.
- **Choice:** Phase where the selection of the alternative or course of action, among those that are available, happens. This choice happens after the design phase, where the decision maker seeks information to try to ensure the best option.

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- **Feedback:** Between the phases (investigation, design, choice) that constitute the model, events can occur in which already completed phases of the process can be recovered and reworked. This “review” can occur between any of the phases described, that is, between the choice phase and design / design or choice and intelligence / research, or between the design / design and intelligence / research phases.

The Military Model tends to be used in situations where controversial themes are discussed. Pressure groups tend to influence those involved in the direction to adopt, or not, a given decision when the proposition is put to debate. In this case, representatives are provided with information on the advantages and disadvantages of adopting a given measure, as well as simulations on the consequences of adopting each option (BRAGA and MIRANDA, 2013).

The model of Kepner and Tregoe (1976) *apud* Freitas and Kladis (1995) has the same understanding related to the definition of decision, where the decision is always a choice between the various ways to do a certain thing, or to reach a certain end. This model deals with the exclusively rational approach of the decision model with the total absence of use of mathematical and statistical tools and the total absence of computational tool. It is, therefore, based on the work of the Parliamentary Committees of Inquiry because it considers the complexity and care of the recommendations arising from the results of the work carried out. Even if no techniques are used to assess the consequences, the actions will be analyzed.

The Operational Research Model (PO) is the least used for possible resource allocation simulations in public budget discussions. While the Creative Problem-Solving Model (CPS) has its significant place when trying to identify alternatives through the presentation of ideas by the representatives of each area involved with the subject under discussion. Also, the Creative Problem-Solving Model applies the Guilford Model, considering that it is imperative to constantly evaluate the “findings” of the research process, intrinsic to the activity of the group involved (BRAGA; MIRANDA, 2013).

According to Perdigão et al. (2012) *apud* Choo (2003), the Choo Model proposes three models of decision making in organizations. The rational model which values planning; the organizational process model that prioritizes the execution and treatment of crises, and the political bureaucratic model which focuses on the test of new decisions based on the political relations of those involved. The rational and procedural models approximate the generic models previously mentioned: Simon (1965), Mintzberg (1976) and Bethlem (1987), and apply them to all instances.

In the rational model, decision-making happens due to a problem and is goal-oriented. The choice of what to do is usually governed by rules and routines already rooted in the company, making action and decision intentionally rational. In the procedural model, the decision-making process goes through three phases: identification, when it is recognized the need to decide; development, when a diagnosis is made, and the options for action and their consequences are processed; and the stage of selection, where it is determined which action is to be employed, thus, elucidating the phases and cycles that subsidize the seemingly complex and dynamic decision-making activities. This process was initially developed by Mintzberg, Raisinghani and Théoret (1976). Already in the political model, political relations are considered decisive for decision making, considering the different degrees of influence of the actors involved in the process, so that decisions do not result in a rational choice but, instead, result from the influence of the actors (PERDIGÃO; FULGÊNCIO; SOUSA; NETO; DORNELAS, 2012).

The organic model is the one that comes closest to the Information Theory, since it is based on the actions aimed at the constant search for information for decision making. Institutions, public or private, are created to achieve a purpose, being composed of people who are allocated in the various sectors and

need the flow of internal and external information to perform their functions. This information, called organic information, is a set of information about a subject, materialized in archival documents that, in turn, maintains organic relations with each other and was produced in fulfillment of the activities and functions of the organization. Organic information, when organized and ordered, forms the institution's archives (CARVALHO; LONGO, 2002).

Organic information is one that is elaborated, issued or received within the scope of an organism's mission, can be verbal or recorded on a medium, such as paper, magnetic tape, video, disk optical or microfilm and, when recorded, give rise to archives. These archives constitute an active center of information, which need to be properly organized and structured to reach their objectives, which are to attend to the administration, to avoid errors and unnecessary repetitions, to produce knowledge to advise decision making (CARVALHO, LONGO, 2002).

Even considering all the mapping done on the decision-making process, it is understood that it is an activity that will not always be easily developed, since difficulties with different levels of importance may occur during the process. Based on all the models and information cited above, the decision-making process in any organization is a critical and very important point and, to achieve good results, it must be well applied and managed. Thus, knowing not only to identify the problem but also to interpret it, according to the several characteristics described in this paper, is a key factor to reach the correct point of decision making (OLIVEIRA, 2009).

The Freitas Model (1993) relies on decision-making theory and the latest developments in telecommunications and global computing technologies. It favors Simon's classic "intelligence-design-choice" model (1965) because he predicts three distinct and sequential phases in a decision-making process: (1) having the intelligence (identification) of the situation, (2), model several possible solutions, and (3) choose (define) the most satisfactory to apply.

Considering that no person has all the information and organizational knowledge, that this information and knowledge are not always explicit and available, and that each one has only a part of them, team decision making is a way to be used to overcome the barriers of information and partial knowledge (ANGELONI, 2003).

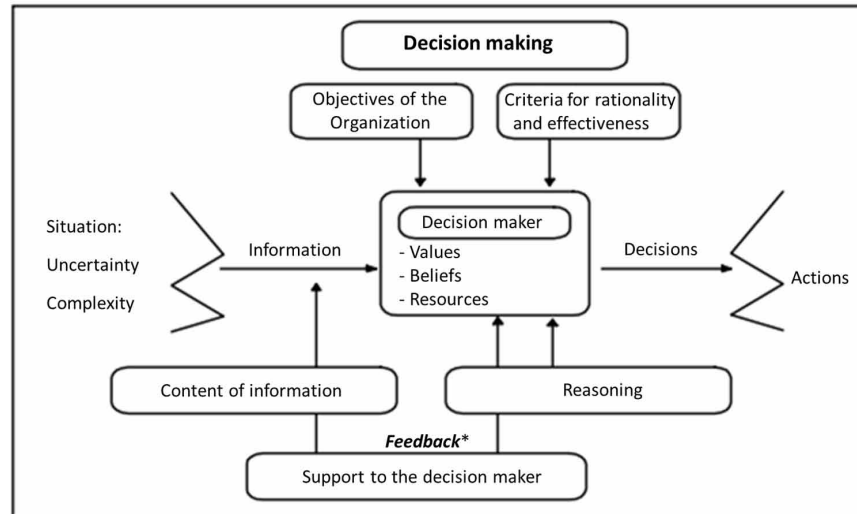
According to Guimarães and Évora (2004), the study of the structure of the organization allows to know the process of formal and informal communication, recognizing it as a means by which individuals interact within the organization and how it is used to support decisions, aiming to reach objectives. In these environments, values are added to the information, transforming it into raw material for the development of the institution's product. Its main objective is to seek the right decision-making, in a timely manner, with the right people, from the right information, at the lowest possible cost.

Figure 3 shows the model of Freitas (1993), where the decision-making process is identified within the organizations, highlighting the variables that interfere in this process, explaining that the decision maker is at the center of the process and all efforts must be spent to assist it. This model seeks, above all, to organize the intellectual process of decision makers in a rational way, perhaps alleviating the difficulties encountered at each stage of the process and can, consequently, improve the performance of organizations as well as the quality and timing of their decisions (FREITAS; KLADIS, 1995).

The model allows us to conceive that information serves decision making. So, there is a need to decide more precisely and, therefore, it is obviously justified by the need we have to act within organizations. With consistent information, we reach not only the best decisions, but also a more effective resolution of these decisions before our 'target audience' (FREITAS; BALLAZ, TRAHAND, 1993; FREITAS; BRONGER; CALDIERARO, 1994). It is often necessary, on a day-to-day basis, to justify in a more

Figure 3. Decision-making and help the decision-maker

Source: Adapted by the authors using Freitas1 model (1993)



formal way decisions that are guided mainly by common sense, this better convincing those who prefer analyzed data and presented with more structure.

Difficulties in Decision-Making

According to Oliveira (2009), at the time of decision making, the manager may encounter several difficulties. These difficulties are, in fact, restrictive factors that can contribute to the result of the process being impaired. Kendall and Kendall (1991) identify these difficulties and relate them to the three phases of the decision-making process and the constant feedback between them, cited above.

The phase of intelligence or investigation involves the difficulty to identify the problem, which is related to the perception of the problem by the manager. This problem can be considered a deviation from some desired situation and, therefore, it needs appropriate measurements, so that its existence can be identified. There may be difficulty in defining the problem, where this definition consists of the delimitation and recognition of its characteristics and limits. Besides, being able to categorize the problem because this difficulty is related to its prioritization. The problem may be of the type that requires immediate action or a future opportunity to be achieved by solving other problems (PERDIGÃO et al., 2012; WETZSTEIN et al., 2016).

The decision-making process is complex and subject to the individual characteristics of the decision-maker as to the circumstances in which he or she is involved, and the way in which he / she understands this situation (CHIAVENATO, 1997). For Robbins et al. (2010), decision-making occurs in response to a problem. A problem exists when there is a discrepancy between the current state of things and their desirable state. Chiavenato (1997), following the same logic of Freitas (1993), mentions that decisions have basically six elements:

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1. **Decision Maker (Decision Maker):** Person who makes the selection among several alternatives of performance.
2. **Objectives:** Purpose that the decision-maker seeks to achieve with his action.
3. **Preferences:** Criteria with judgment of the decision maker that will distinguish the choice.
4. **Strategy:** Direction or path that the decision maker suggests to better achieve the objectives and depends on the resources available.
5. **Situation:** Environmental aspects that the decision maker needs to manage, many of which are out of control, knowledge or understanding and that affect the choice.
6. **Result:** It could result from a given strategy defined by the decision maker.

According to Chiavenato (1997), there are seven steps that guide the whole process of decision making:

1. Perception of the situation that involves some problem.
2. Analysis and definitions of the problem.
3. Definition of objectives.
4. Search for solution alternatives or courses of action.
5. Choice of the most appropriate alternative to achieve the objectives.
6. Evaluation and comparison of alternatives.
7. Deployment of the chosen alternative.

A MODEL FOR A DECISION CHAIN

Faced with so many variables, it is necessary to model / process mapping with the objective of supporting the management of the company, by providing an intuitive notation, capable of representing semantics of complex processes, which makes a company organized, consequently increasing the performance of the sectors and providing a basis for organizational growth (VILLELA, 2000; IGARASHI, M. et al, 2013).

In order to compare current and desired situations to generate structural tension that will drive organizational change, it becomes necessary to map the organization as it is (As-Is), identifying the problem of the process to model how it should be (To-Be), to present a map of “How” the problem will be solved or the implementation of the new process (HUNT, 1996).

Therefore, in a process map, we consider activities, information and interface restrictions simultaneously. Its representation starts from the whole system of processes as a single modular unit, which will be expanded in several other more detailed units which, connected by arrows and lines, will be decomposed in greater detail successively. This decomposition will ensure the validity of the final maps. Thus, the process map must be presented in the form of a graphic language that allows (HUNT, 1996):

- Expose process details in a step-by-step and controlled manner.
- Encourage concise and accurate description of the process.
- Focus on the process map interfaces.
- Provide powerful process analysis consistent with the design vocabulary.

The activities for the mapping can be composed (sub processes) or atomic (tasks). Sub processes can be decomposed in which a set of activities can be analyzed in more detail and, visually, appears contracted

or expanded. Tasks are activities that cannot be further decomposed. The processes considered in this model are (SEIXAS; GOMES; BEZERRA; SOARES, 2017):

- **Private:** They are used when there is no interest in verifying the interaction between this process and others, involving only one area of action.
- **Abstract:** Represent the interaction between a main process and another participant process. Regarding the participant process, there is no concern with the content of the stream itself, but rather how it collaborates with the other streams.
- **Collaborative:** Describes the interaction between two or more business units, with flow content specified in all units.

According to Seixas, Gomes, Bezerra, Soares (2017), the BPMN elements used to construct the processes to be mapped are:

- **Activities:** Represent work or tasks performed by the members of the organization. They represent the manual process or automatic tasks performed by an external system or user. The activities can be atomic or non-atomic and are classified into tasks and subprocesses.
- **Task:** It is an atomic activity that is included in a process. A task is used when the work in the process is not decomposed. Generally, an end-user and / or application are used to perform the task.
- **Subprocesses:** Is a composite activity (contains other activities) that is included in a process. Compound activity means that it can be divided in lower levels, that is, it includes forms and elements within it. Examples: built-in type, reusable type, reference type, type Ad Hoc, type loop, and type multiple instances. The process within the process is dependent on the parent process and has visibility into the overall data of the parent process.
- **Events:** Something that happens while the process, affecting the process flow and usually has a trigger or result. They can be considered as start events, intermediate events or end events.
 - **Start Event:** Where a process will begin. In terms of sequence flows, it starts the process flow and, therefore, will have no input sequence stream. No sequence stream can be connected to a start event. Examples: None, Timer, Message, Signal, Conditional, Multiple and Multiple Parallel.
 - **Intermediate Event:** The intermediate event indicates where something (an event) happens somewhere, between the beginning and the end of a process. This will affect the process flow but will not start nor (directly) end the process. Examples: None, Timer, Message, Signal, Link, Compensation, Escalation, Conditional, Multiple and Multiple Parallel.
 - **End Event:** Indicates where a process will end. In terms of sequence flow, the end event terminates the process flow and, therefore, there will be no output sequence streams, an output sequence stream of an end event cannot be connected. Examples: Termination, Message, Signal, Compensation, Escalation, Error, Cancel and Multiple.
- **Gateways (Decisions):** These are locations in a business process where streaming can take two or more alternate paths. This is basically the “inbound bifurcation” for a process. They are used to control the divergence and convergence of sequence flows. They determine branching, bifurcations, combinations and fusions in the process. Examples: Parallel Decisions, Inclusive Decisions, Event Based, Decisive Exclusive Event, Parallel Event based on Decisions and Complex Decisions.

- **Data Object:** Provides information about how documents, data and other objects are used and updated during the process. Although the name “Data objects” may imply an electronic document, they can be used to represent different types of objects, both electronic and physical.
- **Data Warehouse:** Provides the activity with a mechanism for retrieving or updating stored information that will persist beyond the scope of the process.
- **Artifacts:** Provide modelers with the ability to display additional information about the process that is not directly related to the flow. The artifacts are found in the palette. Examples: Group, Annotation, Image, Header, Formatted Text.
- **Work Area (Swim Lanes):** Where will be inserted all the tasks and subprocesses that guided the descriptive of the process and can be divided in:
 - **Pool:** Represents a participant in the process. A participant can be a specific business entity (example: a company), or it can be a business function (example: buyer, seller or manufacturer). Where all the existing flow will be described.
 - **Lane:** Is a sub-partition in a process, that is, the interface area of a process, or an area responsible for the entire process being mapped.
 - **Milestone:** Is a sub-partition within a process, allowing the visualization that all previous activities must be completed for process sequencing.
- **Connectors:** Used to signal the connection between parts of the process and are divided in:
 - **Sequence Flow:** Used to show the order in which the activities will be executed in a process. Each stream has a single source and a single destination.
 - **Association:** Is used to associate information and artifacts with flow objects.

Thus, there is a message flow: used to show the flow of messages between two entities that are prepared to send and receive them.

Figure 4 shows a proposed Decision Chain Model for evaluating critical flow tasks, called “Planning Material Requirements for Production”.

The model consists of numbered hexagons that, in some cases, appear pulling information that will aid the process. When the hexagon is not large enough for writing the text, side arrows will be used to supplement the data. The numeric information corresponds to the order of evaluation of the data as follows:

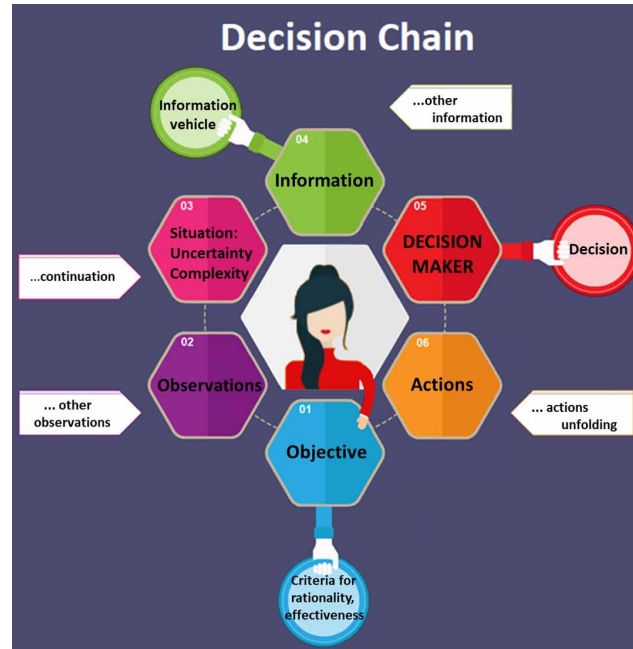
1. Objective, drawing the criteria of rationality and effectiveness
2. Remarks
3. Situation: Uncertainty and Complexity
4. Information, pulling the vehicles of information available
5. Decision makers, pulling the decision that will be made
6. Shares

After the elaboration of the Adapted Model of Freitas (1993), critical points were analyzed in the flow called “Planning the need for materials for the production flow” to understand the decision points and the options resulting from these decisions. In this way, it explains issues intrinsic to the process and shows points of possible improvements needed in the flow to make it more feasible.

The decision chain allows to visualize that the operational capacity of a given organization is not being evaluated before the definition of demand negotiated with its clients, as well as presents a high degree of uncertainty related to extra demands or decrease of the same ones.

Figure 4. Decision Chain Model

Source: Created by the authors



The situations of uncertainty and complexity involved are related to regulatory requirements that can be changed by reviewing standards or inspection processes. There is critical information that encompasses decision flows that require automation or, at the very least, documented consultation with those involved in the process. Criteria, such as rationality, effectiveness and effectiveness should be considered to maximize the profitability of processes, so that deadlines are met.

Often, it can be concluded that there is a need to renegotiate with the customer, since there will be a new sequencing of production due to the evaluation of the impacts in the Material Budget Planning and the planning of the production processes themselves.

Following the flow to the strategic decision chain, it is necessary to include the planning of not only direct but also indirect materials (spare parts, reagents for quality control analysis, process, etc.). Some organizations include the Master Production Plan. In any case, the importance of involving all sectors (direct and indirect) in the macro decision-making chain is important, so that the executor (micro phase of the process) of each area is heard. This approach is pressing, in the sense that everyone feels responsible for the feasibility of demand, and in line with the organization's mission and strategic objectives.

CONCLUSION

The approach to decision making is not a new topic. However, it was only in the 21st century that its foundations and developments began to be studied, imputing the differentiation between resource allocation and policy making. It is highlighted that the definition of policies can be something interminable and there will always be resources to allocate, but, for the decision, this already implies the end of the deliberations and the beginning of the action to be carried out.

Models for strategic decision-making could be observed and listed their virtues and differences. In many cases, necessary alignment and complementarity in the daily approach. Among them were Dewey, Simon, Rosseau and Couture, Choo, Kepner and Tregoe, Guilford, Mintzberg, Bethlem, Freitas. Also featured are the models: Organic, Situation Analysis Operational Research, Creative Problem Solving.

To evaluate the decision chain flows, it is evident the need for process modeling to quickly identify the flow of the decision process. Non-existence causes, difficulty in finding the cause of damages of a bad decision taken by the manager of the process. This fact may lead to a fragility in meeting the delivery deadlines of the products for the customer.

A flow of decision-making aids assists in the sequencing of production and the non-underutilization of systemic information and relevant to the process of forecasting demand and, consequently, the planning of production itself. This fact can help the best sequencing design with the maximum utilization of the installed capacity in the organization. This fact is based, since all involved (quality control, maintenance, purchasing, financial, production, etc.), perfectly, to understand the processes that exist under their control.

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Chapter 13

Performing Enterprise Architectures Through Gamified Business Models

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ABSTRACT

The profitability of performance and the reduction of turnover are the main challenges of the big companies of the professional services sector. While it is not always possible to achieve all the goals of the large multinationals in each country, it is necessary to assess their development in order to do so. In this way, the steps are identified, going to the new version of new business models, under an organization perspective that can be accompanied by interesting results with a different structure. However, for the sake of management, in order to ensure the cohesion between the teams, it is necessary to create mechanisms for obtaining high income, in order to support the enterprise architecture and the intended business model, which highlights the use of the concept of gamification as one of these mechanisms. This chapter aims to review the literature on the use of architectures and performance demonstrations. In addition to using the gamification concept, the profitability of capital invested in different business activities and the improvement of employee engagement are used. It is intended to consolidate good practices for the implementation of architectures through business models.

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INTRODUCTION

The rapid evolution of technology, as well as the adaptation of the digital universe, has infiltrated over-time into many aspects of everyday life. Advances and progress in this field have brought simplicity and automation in different industries, from industry to professional services to education. According to Mchucha et al. (2017), activities that in the past would take days or even months to be completed, now they can be finished in hours, or even minutes. The advancement of technological know-how and its application have resulted in a greater efficiency in the delivery of the product and its placing on the market.

The role of a company in the context of value creation is to support customer processes by providing them with resources, as considered by Huotari and Hamari (2017). At the same time, and in a perspective of maximizing results, it is necessary to gauge the business model in practice, in order to build a complete assessment. According to a study carried out by Siegfried et al. (2018), focused on the implementation of quality improvement activities in the processes used in public health, it is possible to achieve positive changes in different departments, in which the related tasks are performed in a more effective and efficient way. In this context, after the implementation of such activities, we have been able to use the information flowing between different departments that share the same processes to infer decision making at a higher level. Although each department has a unique nature, which is one of the limitations identified in the research in question, the data gathered showed that there is a greater amount of changes in management with a stronger quality improvement culture among the different health departments.

In recent years, the concept of gamification, related to the conversion of tasks into games of a game, has gained considerable attention, not only in the design of services, but also in the operationalization of these, being such an example of the typology of resources mentioned above. Here, it is possible to use games as service systems composed of operative and operational resources, but there is no exact definition for such. According to Huotari and Hamari (2017), the definition given to the concept of gamification highlights four important aspects: i) affordances, ii) psychological mediators, iii) goals and iv) context. Although we can identify different types of actors in play, the author considers the concept as a communicative scenario in a given environment or service, with a perspective of testing different theories of marketing, assigning to the consumer the role of provider of a certain service, where a win-win model is created.

This paper summarizes a literature review on redefinition of gamified business models, using business architectures that support them, and is structured in five sections: i) Introduction, ii) Enterprise architectures and frameworks in a performance management context, iii) Gamification: How to use this concept in order to boost business activities?, iv) Defining gamified business models and v) Conclusions.

ENTERPRISE ARCHITECTURES AND FRAMEWORKS IN A PERFORMANCE MANAGEMENT CONTEXT

There are many frameworks used in monitoring help in the development of digital and physical products, such as dashboards and temperature or gases sensors, among others. Dashboards are the oldest, whose concept emerges in the early 20th century in France such as on-board computers. Even today, French cars are the first, from the mid-low range, to present high technology behind the wheel. (Yigitbasioglu and Velcu, 2012) Although the dashboard projection spectrum encompasses an extensive universe of

languages and concepts, the standard focuses on Unified Modeling Language (UML) and Business Activity Monitoring (BAM). (Lankhorst, 2009)

Within the information systems, a framework is developed that supports the research in this area, allowing the comparison between the paradigm of the science of behaviour and drawing science. The Information Systems Research Framework is composed of: i) environment, ii) IS research, and iii) Knowledge Base. The environment defines the surroundings of the problem, where the interest of research is triggered. In the research, the people, the organization, where the business and the technology involved reside. The Knowledge Base provides the basis for research, so that it can use methodologies and create the necessary foundation for it to become credible. According to Hevner et al. (2004), it is in this perspective that the DSR methodology enters, which is based on knowledge (and understanding), through the Knowledge Base, of a problem and the projection of its solution, through the design of artifacts and processes that support it. This methodology is focused on the development of technological solutions for insurgent problems at the business level, giving some rigor in the research, in order to provide verifiable contributions in the areas of the design of the artefact and its foundations.

The Zachman Framework is directed to the specification of Information Systems Architectures, which includes the design of artifacts and the design of processes. These artifacts will allow you to relate the roles, in the process design, and the abstractions of the product. Its main roles are the Owner, the Designer, and the Builder, who refer to the owner, the designer, and the maker of the process. In the columns of the matrix one can see the abstractions of the product, such as what, how, where, who, when and why, each one of them implies, requiring answers regarding data, function, network, human capital, time and motivation, respectively. Although the Zachman Framework can be complex with a large number of cells, it can address the entire enterprise in a matrix, regardless of methodologies or tools addressed, leading to the generation of other frameworks for enterprise architectures. Due to such complexity, Vail (2012) tries to bring it back to the companies, with the premise that it is the definition of a causal architecture that improves performance, fitting the conceptual map of architecture in the Zachman Framework, where it is possible to prioritize different variables. To validate the study, training and clarification sessions have been conducted at Alliant Techsystems, an American company focused on IT strategy, allowing for organizational links between the different business units, resulting in an increase in professional effectiveness and a faster implementation of the Zachman Framework.

According to Sripada et al. (2016) and Warmelink et al. (2018), a mature business architecture allows for more economical operations, because it helps organizations to standardize their business processes and increase the transparency of cross-organizational data, reducing their redundancy, duplication of efforts and the occurrence of errors. Because its cost sometimes is high, we must design it carefully, using frameworks that allow us to address the issue in a correct way, either in an IT approach or in a business approach. According to Lankhorst (2009), one of these frameworks is the Open Group Architecture Framework (TOGAF), made available by the Open Group and applied to information systems architectures. This framework exists since 1995, descending from Technical Architecture Framework for Information Management (TAFIM), a framework developed by the United States Department of Defense (DoD), focused on information systems management. TOGAF does not only define a set of metrics for the implementation and definition of a new architecture of information systems, but also a taxonomy for the services involved, from a technological point of view. Although the framework does not focus on organizational architectures, the creation of new services and business requirements is performed consistently, according to Guijarro (2007). According to the taxonomy of services, defined by the same, in a technological point of view, the services are distinguished by different types, such as data

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exchange, data management, graphics and image, location and directory, network, operating systems, software engineering, transaction processing, security and network management and systems administration. These are still categorized, relative to quality, being distinguished by availability, safety, usability and adaptability. In this way, it reinforces Chennal and Euske (2007), all data warehouse management, through the Configuration Management Database (CMDB), involves a number of issues, ranging from incidents to configuration, placing TOGAF in the creation of new business products, being supported IT Infrastructure Library (ITIL) in change management.

Business architecture is the organizational logic of an organization's information systems infrastructure, which includes business processes. For this reason, many organizations design the enterprise architecture to solve the problems caused by legacy systems, say Bradley et al. (2012) and Proper et al. (2017). By identifying the main components of technology, data and shared systems in an organization, it is possible to gauge the level of maturity of the business architecture to be designed, so that we can define the best management standard, as stated by Boh and Yellin (2006) and Roth et al. (2013).

Considering that the architectures that preceded the enterprise architecture focused on the development of systems and their integration within the organization, we can conclude that the business architecture evolved in a management perspective of IT governance. This provides organizations with the knowledge to leverage and utilize IT resources in a way that enables them to gain and sustain competitive advantage and rapid adaptation to changes in technology, organization, industry and inter-organizational relationships. The higher the maturity of the business architecture, the greater the impact of the use of information technologies in the organization. (Armour et al., 1999) (Bradley et al., 2012) (Guijarro, 2007)

According to Boh and Yellin (2006) and Sripada et al. (2016), organizations implementing enterprise architecture standards must ensure that they are conformed to all organizational silos. After implementation, resources are required to continually update and revise the standards to ensure that they remain relevant and be differentiated, and they can be differentiated: i) Management of technological infrastructure, ii) Human resources management, iii) Management of business applications at strategy level, and iv) Data management. The patterns i) is used to standardize the underlying technologies needed to run business applications. The pattern ii) is used to manage human IT resources, including organizational skills. The pattern iii) is used to define business strategies to manage the portfolio of applications and technologies for application integration. The pattern iv) uses critical data that can be integrated into the organization.

Although effective use of enterprise architecture standards brings benefits, its projection, implementation and maintenance require some investment in terms of effort. In order to ensure that standards meet the organization's business needs, stakeholders need to be involved. The definition of the scope of architecture must be carefully managed, because the larger the size of the architecture model intended, the greater the investment in terms of effort to do so, running the risk of becoming obsolete upon completion. Organizations that want to develop it should ensure that there is alignment between the different business units and technology, otherwise the use of business architecture standards will not have any positive consequences. After implementation, an additional amount of effort is required to continually review and update the standards developed, otherwise they will no longer be relevant to the organization.

For better performance in the business, the essential is the set formed by the effective measurement and analysis of the performance of the management activities of the same, says Luckham (2004). Following the same premise, Kang and Han (2008) consider that a BAM system can be used for real-time performance management for a company to monitor its activities and respond in real time. Since a system of this kind monitors several enterprise systems simultaneously and shows deviations in a dashboard, if the symptoms of the problem are identified by predefined rules, they have developed a procedure for

designing such a system and comment the results implementation. It is a company of the automobile industry, which is dispersed worldwide. Real-time monitoring for improved business performance across all offices is essential due to rapid globalization and insurgent changes. Since it was difficult to monitor and analyze business events due to the location and source of information systems for performance measures, the BAM system was proposed with the most promising solution to complete all needs and a pilot project.

Defining standards is a task that requires coordination among organizational units in order to increase the likelihood that standards will be used and followed by the organization. While this can be done informally, the adhoc efforts involved are dependent on individuals and the process should not be cyclical. To facilitate its use, processes are needed to ensure that standards are effectively implemented at the operational level: i) Mapping of governance activities, ii) Definition of key architecture functions, iii) Involvement of key stakeholders, iv) Monitoring the implementation of standards, and v) Centralization of decision-making.

Because the implementation of enterprise architecture standards is only effective when all the aforementioned processes are executed, it is necessary to ensure that the different stakeholders involved are aligned and motivated. According to Ryan and Deci (2000), we must take into account two types of motivation: i) intrinsic and ii) extrinsic. Intrinsic motivation is defined by Ryan and Stiller (1991) as a natural source of engagement, which is manifested when performing a given task becomes simply interesting without any stimulus external to the business. Conversely, extrinsic motivation aims to achieve an objective under instrumental valorization, affirmed Ryan and Deci (2000). That is, following the processes of implementation of efficient corporate architecture standards, and guaranteeing employees' motivation and engagement, according to Chenhall and Euske (2007) and Zimmermann et al. (2015) it is possible to strengthen the management control systems for the acquisition of top results.

In a perspective of profitability of an organization's performance, among the different variables involved, it is necessary to take into account the business model in practice, the business architecture defined for the execution of this business model, the intended macro organizational objectives and the agreed work methodology to operate in a particular market (Armstrong and Landers, 2018). For this reason, throughout the next section will be presented the concept of gamification, which is used as motivation driver to boost the results of a certain organization.

GAMIFICATION: HOW TO USE THIS CONCEPT IN ORDER TO BOOST BUSINESS ACTIVITIES?

The concept of gamification has evolved in such a way that, although it refers to the conversion of different situations of daily life into a game, nowadays, it is seen as an engine of motivation. Although its application is discussed differently by different authors, Hamari and Parvinen (2017) consider that the concept of gamification refers to a process of continuous improvement of services, with the aim of providing behavioral changes, through the use of game characteristics. Its short-term goal is to transform the professionals, traditionally called Homo Economicus, into Homo Ludens.

According to Huotari and Hamari (2017) and Huang et al. (2018), in recent years, gamification has attracted a significant interest in industry and the academic world, not only because of the discussion that surrounds the field of game studies, but also through human-machine interaction, in a more ethical and moral issues. Kim (2009) states that, while gaming is increasingly offered to the consumer from a

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service perspective, the existing literature is very limited, also in particular and surrounding areas, as marketing and motivation.

According to Hense et al. (2014), the concept of gamification can also be applied in areas such as logistics, in a perspective of profitability of the business activities, not only of the employees, with which it agree Di Chio et al. (2011) and Park and Bae (2013). However, despite its versatility, there is still a large gap regarding the definition and understanding of the concept of gamification in concrete, which makes it difficult to be applied directly, say Huotari and Hamari (2017) and Lieberoth et al. (2017). Nevertheless, in order to define the concept of gamification, it is necessary to understand the concept of game. In the context of game studies, Deterding et al. (2011) defines the concept of gaming with a set of conditions necessary to achieve a particular goal, and, from a singular perspective, no single condition is sufficient to define such a concept. Juul (2010) considers that the combination of this type of conditions is essential for the effective creation of a game, although it has been verified that there are other authors, such as Takahashi (2011) and Pedreira et al. (2015), who defend that there may be unique conditions capable of composing a game, a phenomenon known as gamefulness. For this reason, Deterding et al. (2011) defines the concept of gamified service as a service that can lead the user to live experiences of a game, and distinguishes between this and the concept of game, making possible the application of the gamefulness phenomenon as a condition that is not exclusive of games.

From the gap identified by Huotari and Hamari (2017), between the inexistence of the relationship between the concept of gaming and the experiences they provide, there is the so-called concept of service marketing, characterized by a type of service aimed at providing other services or system of services to people. Following the identification of characteristics of game experiences, in the context of the psychological forum, such as i) mastery, ii) flow and iii) suspense, we can then create an interactive process with a value proposition that allows the use of design elements of games as services and service systems.

Depending on the results obtained in the projection and development of products or services, it is possible to transform the professional activity of a collaborator in a game, which is possible through the definition of indicators. According to Landers et al. (2018) and Dalpiaz et al. (2018), indicators are metrics used to plan, execute and monitor business strategies, highlighting key performance indicators (KPIs), key risk indicators (KRI) and key control indicators (KCI). These determine the monitoring of the objectives to be fulfilled and allow the monitoring of the relative levels of control with certain tolerance, used in the organizations. Since the concept of gamification refers to a process that allows the improvement of a service, according to the research conducted by Morschheuser et al. (2018), through the creation of value triggered by the collaborator himself, his potential is based on motivational support.

Gamification is one of today's most powerful technology trends, but the cost and effort of its implementation does not always justify its results. For this reason, companies are actively investigating different ways of overcoming difficulties in projecting successful gamification solutions, say Hamari and Parvinen (2017). Even so, in the public education sector, in many cases, this cost-benefit analysis is not taken into account, since the curricular development of the student prevails. It is based on this premise that Mchucha et al. (2017) develop an interactive application based on gamification, aiming to improve knowledge about the English language and use Malaysian higher education as a case study. The same authors also state that the acquisition of new vocabulary in a second language requires repeated exposures. With the use of emerging digital platforms and games, this exhibition is made easier. Given the access to mobile technology, students showed greater engagement and better results when learning English through an app when compared to the traditional teaching approach.

Unlike traditional teaching, technology provides an environment that contributes to greater motivation in learning a particular subject, according to Bovermann and Bastiaens (2018). Since the younger generation spends a greater amount of time using digital tools, including games, it is important that teachers and educators understand the value of including these elements in teaching. However, Yunus et al. (2012) and Wells et al. (2018) consider that although the use of gamification has a major impact on education, technology itself cannot serve as a means to ensure that pedagogical meaning and learning objectives are achieved. For this reason, in recent years, many researchers have proposed the integration of the concept of gamification into education as a means to specifically boost learning experience and motivation, such as Osheim (2013), Garland (2015), Nourdin and Quintana (2015), and Gunter et al. (2016). According to them, although it is a new concept, its use has played such a role in the sectors mentioned above, where its non-use to enhance motivation and learning is equivalent to the growth of a child without knowing what a game.

Although the concept of gamification first emerged in 2008, by Brett Terrill, with the goal of enhancing engagement of a collaborator to a particular task, it only began to be widespread in the industrial and professional services sectors in 2010. Since there are different definitions for this, Huotari and Hamari (2017) redefine the concept as a process of improvement of a certain service, using game experiences, with the objective of supporting the creation of value to the activities of the employee (player in this case), neglecting possible methodologies and models used. Since there is no analysis of the typology of game elements in the literature used, it is dubious whether rewarding models involved in loyalty programs, decision support systems, and other services that consider the assignment of points, levels and progress metrics could be included. However, if we consider the concept of affordance as part of the concept of gamification, it is necessary to define models that allow the calculation of the evolution of the collaborator throughout the game.

The term of affordance refers to elements that allow the execution of certain activities in the field of human-machine interactions, opening the possibility of experiencing experiences through recognition. According to Blin (2016), in the case of stimuli projected with the purpose of providing certain behavior to the user, affecting the psychological state of the user, then it is motivational affordances, a statement with which agree Zhang (2008) and Sherriff et al. (2016).

Since the definition of business architectures presupposes the alignment between the business and IT, regardless of the business model and methodologies used, it should be possible for the collaborator to be able to compare himself with other colleagues of the same profile, through collaborative tools that allow the sharing of results in real time. However, when using a gamification system, the profitability of the economic activity of the organization is addressed more efficiently and better results are presented. In order to improve such monetization, such systems should be embedded in the business model in practice, a theme that will be addressed throughout the next section.

DEFINING GAMIFIED BUSINESS MODELS

According to Bradley et al. (2011), organizations are increasingly living in dynamic environments, where internal and external changes are constant, not to increase the motivation of their employees, but because they feel the need to become increasingly competitive in the market where operate. For this reason, according to Chenhall and Euske (2007), the role of management control systems has become a concern for professionals and researchers in the area of management.

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Although employee motivation is not the focus of corporate development, according to Roos and Van Eeden (2008), the social comparison between employees, whether individual or through rankings, acts as an engine for implementing changes in habits and wants. Social comparison allows the employee to evaluate their opinions and abilities. In the absence of a goal, the focus is on assessing their own abilities, although the need for comparison shrinks as the gap between skills increases, say Osheim (2013) and Piras et al. (2016). Specifically, and according to Roos and Van Eeden (2008), normative comparison is a type of social comparison in which one individual (or group) is compared statistically against another group. For this reason, feedback is an essential tool in this forum, allowing employees to better evaluate their performance by monitoring and comparing their behavior. By using direct communication channels, it is possible to collect data, not only for benchmarking, but also to provide behavioral change in collaborators, as with agree Iyer et al. (2018) in a different perspective.

Considering the different management cultures present in many of the organizations of the day, management control systems become useful in the strategic response to the creation of organizational silos. Although this depends on the business model adopted, in the context of change management, Chenhall and Euske (2007) and Piras et al. (2017) consider these types of systems to be an impetus to operational management focused on implementation. Different studies indicate that, as a general rule, incremental innovation mechanisms should be managed differently from radical innovation mechanisms. However, Cardinal (2001) suggests the opposite and focuses on the research and development activities of pharmaceutical companies. Here, technological innovation has acted as an engine for achieving competitive advantage, not only because of globalization, but also because of the acceleration of product lifecycles, increased competition, technological fusion or the commercialization of products in different media. Although it is an industrial sector with a very strong market, particularly and constantly profitable, it is not immune to business competition. The basis of competitive advantage in the pharmaceutical industry lies in successful innovation, hence the fact that its investment in research and development is far superior to that of any other high-tech, electronic or aeronautical industry. For this reason, organizational control is one of the key points to be considered. This can be defined as any process by which managers direct their attention, motivate and encourage the members of the organization to act in the desired way, so that the organization's goals are achieved in the best possible way. At the same time, structural control, also known as bureaucratic or behavioral control, is another pillar to be taken into account, since it allows the regulation of activities and behaviors and is often implemented in the form of rules and procedures. However, because of the pharmaceutical sector, formal control mechanisms coexist with strong professional standards, some of which are informal, which also influence values, activities and outcomes. In the case of the United States of America, the organization that defines these standards is the Food and Drug Administration (FDA), in Europe is European Medicine Agency (EMA), and in Portugal there is the National Drug Authority (INFARMED), which responds to the EMA. In this configuration, different forms of input, behavior, and output control allow scientists to effectively conduct their work and align it with different collaborative and professional goals. Although organizational control influences innovation, this depends on the nature of product development activity.

As already mentioned in previous sections, the concept of gamification is a trend under which all the activities, defined by the constituent processes of a given business model, can be measurable in order to maximize organizational efficiency and employee engagement (Herzig et al., 2012) (Cudney et al., 2015).

Since a business architecture with a high level of maturity provides for the qualification of the use of technology in business management and information systems, according to Boh and Yellin (2006), we can adopt Enterprise Resource Planning (ERP), Customer Relationship Management (CRM) or Supply

Chain Management (SCM). They will serve as mediators for introducing gaming techniques such as scorecards, real-time performance monitoring, and rapid feedback on business processes performed in real-time, with which they agree Herzig et al. (2012). According to the assumptions of Boh and Yellin (2006), the centralization of decision making is one of the capabilities that can be used, although this may affect the use of business architecture standards. Because centralization increases the ease of communication between technology and management areas, management has a greater amount of opportunity to voice its concerns in the process of setting standards. At the same time, this centralization facilitates compliance assurance, causing all identified exception cases to receive due process.

Since this is not an emerging theme enough, there are already related projects exemplifying the performance of projects of performance profitability, using different business models. Kumaran et al. (2005), a group of researchers from an IBM research center in the United States of America in New York developed an intelligent event adaptation mechanism to capture and transform technology-dependent applications into Common Business Events (CBE), so that the execution of operations at the level of the business could be controlled. These are propagated to a Common Event Infrastructure (CEI) infrastructure, to be consumed by a business performance management system. To facilitate the extraction in real time, from the source, the group opted to use the source information directly, using an SAP system, as an example of an event transaction source.

A business performance management system needs to obtain a complete and correlated set of data events in order to deduce the corresponding indicator. To bridge the gap between KPIs and events at the IT level, there is a need for a mechanism in the middle layer that provides the adaptation and transformation tasks.

As a constituency of the research group test scenario, a call center was suggested for a finished business, where vendor representatives typically use business order and value chain applications to process customer orders. A business performance management system usually contains a dashboard to monitor business activity, a capture and processing infrastructure such as the CEI, and an operating environment of the management system. The event processing system handles events related to operations. The operations of the management system environment monitor the processes of the most critical operations in temporal terms, through the correlation of events of the CEI and reports the state to the dashboard. The dashboard shows the state of business processes in terms of KPIs, and triggers an alert to end users.

In a typical adaptation approach, the adapter captures IT events and forwards them to the target application in the simple format of a conversation. The business performance management system addresses the filtering, sorting, and correlation of these low-level events according to pre-defined business rules. Such has to capture the corresponding objective data, several times, through the adapter, to form the KPI.

The event adapter needs to incorporate an event fitting mechanism that captures, analyzes, enriches, and transforms events. In the proposed adapter, we have four functional modules: Event Manager, Data Search Engine, Business Rules Module and Data Transformation. The event manager is responsible for capturing and analyzing events by invoking the data search engine to obtain business data, according to the business rules module. This uses the data transformation module to form the business events so that they can be forwarded to the server for business performance management.

KPI calculation requires information from different applications and data sources. Events at the IT level enable KPI to be read and returned business-related messages to the business performance management server based on business rules. For this reason, an IBM WBI middleware adapter was used to process the events and a SAP business event adapter to provide the related KPIs in real time to proceed with the transformation, this being data as input of the engine designed.

Business performance management enables organizations to monitor and respond to changes in the business environment in order to optimize business performance and relate it to business objectives. Business performance is measured through KPIs to reflect the return of business activities under the technology layer. Here, an indicator is defined according to a high-level perspective with respect to the business, and is calculated and extracted from the source under the technological layer. Any transactional activity, in the technological layer, potentially affects the result of the KPIs, which have to be adapted and propagated to the business performance management system for a possible analysis, as with agree Khalil et al. (2018) and Hamari et al. (2018).

One other example of a development of a performance management project was in South Korea by Lee et al. (2010), a method of online monitoring for fault detection, aiming to improve the performance of a factory. This is based on the multivariate statistical control process (MSPC), which allows to calculate the value of statistical monitoring by observing at certain time intervals. Consider two states of the process: Controlled and Uncontrolled. The controlled state is assigned when the statistical value is within the limits, the uncontrolled being assigned when it exceeds this value. The statistical control process uses two control algorithms: the Local Outlier Factor (LOF) and the ICA (Independent Component Analysis); which allow detecting discrepant or antagonistic faults. Here, we t as the time index, $d(t)$, as the observed real-time monitoring function is $s(t) = \{\text{normal, missing}\}$ as the process state function, and the purpose of the monitoring is to consider the state of the current process $s(t)$ correctly. Parallel to this scheme, there is a monitoring process, proposed by Kulkarni et al. (2005). This was used in optimization, predictive control, diagnostic process..., which was used as a test monitoring process for the previously proposed scheme (Tennessee Eastman Process), but it is no more than a set of ECA rules (Event Condition Action), with the categorization of the type of possible faults in the manufacturing process.

While it is sometimes necessary to redefine a root enterprise architecture, in order to introduce the concept of gamification, Bradley et al. (2011) state that, although its implementation is costly, traditional approaches to restructuring strategic planning should be avoided. Among the different identified risks, we highlight the technical and the social, where the instability of the organizational environment and the reduction of engagement to the success of projects is highlighted.

CONCLUSION

Although the definition of the gamification concept proposed by Deterding et al. (2011) culminate around the set of game design elements, which implies that a service system is considered gamified when it is based on the existence of game characteristic elements in that system; the definition of gamification proposed by Huotari and Hamari (2017) focuses on the motivation and the different psychological states of the player. These states focus on motivational affordances and allow the focus of this definition of gamification to be related to psychological outcomes, rather than being related to design specificities. Besides acting as mediators of behavioral results, they allow the creation of value to the concept of gamification. Specifically, adopting this definition, according to Hamari (2013), such a service system invokes psychological states and emotions, which allows to mediate behavioral results, providing value creation.

The concept of gamification allows the addressing of themes such as engagement and player performance. However, its use need not necessarily correspond to an inherently successful process. Gamification only guarantees player support in the development of gaming experiences in order to promote value creation. However, depending on the indicators associated with the model in practice, we can enhance

its development and that of its activities, according to Deterding et al. (2011), which provides the profitability of the results and their performance. In the case that the concept of gamification is applied in order to improve certain behaviors, instead of focusing on the emerging experiences of players, designers run the risk of falling into a trap, which leads to the conflict between the intended goal of behavior change development of value-added experiences.

Because the application of performance management models, based on the concept of gamification, depends on the standard of business architecture adopted, which is related to the management of IT services per business unit, according to Boh and Yellin (2006), it is necessary to take into account different organizational control variables: i) years of architecture experience, ii) architecture objective, iii) support for top management, iv) problems with legacy systems, and v) organizational and industrial dimensions.

The use of business architecture standards for business applications allows to describe and understand the applications required to successfully execute business processes, along with an assessment of their strategic value and impact on running the business. In this way, the use of this type of standards is directly associated with the management of the IT infrastructure and the execution of processes to control and monitor the configuration and the conformity of the standards. On the other hand, the business architecture standards for integrating business applications have a more complex management, requiring a greater involvement of all the pillars of the company. Thus, it is important to clearly define the main roles at the architecture level in order to ensure the involvement of business units and architects with the necessary knowledge to establish and implement a viable set of business architecture standards. In conclusion, Boh and Yellin (2006), and Iacob and Jonkers (2006) reaffirm that the use of enterprise architecture standards for data integration may not have positive effects because of its high complexity, and, therefore, only significantly positive in the development of IT application planning.

In order to ensure greater efficiency, organizations should be more demanding in making decisions, regarding the adoption of IT governance mechanisms because it is necessary to define which resources will be managed using business architecture standards and what their typology.

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Chapter 14

Mindset of Design as a Tool for Alignment Between the Brands' Business Model and Their Value Delivered: A New Approach in the Business Model Management

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ABSTRACT

Business models are an important basis for defining how companies structure the way they create, deliver, and capture value. It is an important business management activity, but it often does not receive due attention from the executives of the brands. This gap promotes, frequently, incongruities between companies' business models and what they deliver to their consumers. The lack of resources to evaluate business models and a clear understanding of how to do this activity might be as reasons for the lack of the business models' management. Thus, this chapter approaches a study about the use of a management oriented by the design. This approach can be a relevant guide the efforts in the evaluation and rebalancing between business model of the brands and their deliverables (products and services).

INTRODUCTION

In order to build a relevant brand that delivers pleasant experiences to people through products and services, it is natural exist some lack of clarity, by the executives and entrepreneurs, to ensure that this idea be delivered to consumers in the right way. Providing a balance between what the company wants to deliver as value and what consumers perceive in using its products and services, market is a challenge that executives often do not realize the paths they have to take to succeed. Even in brands already

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established in the market, it is not uncommon to verify a certain disparity, greater or lesser extent, of what companies deliver to their consumers and the design established in their business model. This fact is often due to inadequate planning of this model.

Another point that these brands need, day by day, is to perceive the need for changes in their business models due to changes in scenery that, at present time, occur much faster when compared to a recent past. We have important (and painful) experiences of brands that insisted on their business model and, not understanding the changes in the economic scenario, have caused a deterioration of their brands, losing prominence in their segments or ceasing to exist. In this way, conducting constant evaluations of the company's business models is necessary because this is a good practice to evaluate the health of the business, its position in the markets and to seize opportunities to improve this model or even promote deep interventions in order to rebalance its strengths and market position (Osterwalder, Pigneur, 2010).

In an increasingly competitive market, where the profile of consumers changes at all times, ensuring a robust and tangible value delivery to these people is an important factor for the brands' success. Unlike the past, when the industrial revolution established a strong advance in the production of consumer goods, the industry's focus was the production of products with minimally functional requirements. In addition, the overweight factor for the establishment of a brand's success in its market was concentrated in the effort to use resources in order to foster a better relationship between the cost of production and the sale price. In this quest for efficiency and profit, the first assembly lines, the use of new sources of energy and the specialization of work emerge. This period is what history defines as the second industrial revolution. At the moment, these advantages obtained by the second industrial revolution become commodities and, in addition, new entrepreneurs arise and intensify the competition for the attention of their consumers, the need arises that the products will have to offer something beyond what they a functional artifact provides by a restricted way.

Although the purpose of this chapter is not a historical approach to design, it is necessary to briefly contextualize this important knowledge area, mainly because of its different shades and application at present times. Knowledge that shapes our world and often passes imperceptibly to the vast majority of people, regardless of the impact that design has on their daily lives. Impact that often causes these same people to decide for a product motivated by aspects brought through the design. Or even having pleasant experiences when they use services that are the result of a creative effort of designers. This effort demonstrates one of the most valuable purposes of design, which has been following it since its birth and which has gained strength in the present day: a tool to promote the well-being of the human being, building solutions for all humanity in a holistic and empathic way. In addition, design, in its comprehensive approach, seeks to foster a positive relationship by creating mutual value for manufacturers and the people.

Design as practice quickly becomes a major tool of the new consumer society that emerged in the late 19th century. As an example of the application of this tool, we can cite the artistic poster that performs an advertising function of divulging products, entertainment and was "an expression of economic, social and cultural life" (Hollis, 2001, p.11). In this way, the design as practice establishes an inseparable relation of the aesthetic and communicational perspective. Attempts at this separation occur, it is true, especially through the efforts of the German school *Hochschule für Gestaltung Ulm*, which undertook an approach to the training of designers who did not strictly perform their duties in the field of aesthetics. Designers-thinkers who would have interests in diverse areas like social sciences, cognitive sciences and politics, culture and industrial technology, in order not to be just executors of artifacts. Executors who would ignore technological attributes of these artifacts built by themselves and that would be consumed in a society equally unknown by these professionals (Cardoso, 2011). However, this systemic perspective

offered by the ULM school, at the end of World War II will gain impulse only decades later, especially through practitioners of what we know as Design Thinking.

Design, today, is understood as an area of knowledge not being compartmentalized only as a professional practice (Mizanzuk, Portugal, Beccari, 2013). In this sense, the design expands its perspective and being increasingly disassociated as an approach restricted to the artifacts' aesthetic aspect and rise forth a new force, as Cardoso points out:

Today, the great importance of design resides precisely in its ability to build bridges and forge relationships in a world increasingly shattered by the specialization and fragmentation of knowledge. (Cardoso, 2011)

Design as an ensemble for a set of tools, techniques, processes and behavioral attitudes has been widely used today as an engine of anticipation of the future, innovation and problem solving. Besides that, the mindset of design has expanding as a very useful leadership model in this time at which point brands need to add to the analytical thinking the imagination and agility offered by design attitude (GIUDICE,2014). In addition, designers acting as executives can offer their creative skills on the path to building strategic and innovative solutions through this systematic process of problems identification, ideation, testing and implementation of a new strategic path for the brands. For this reason, today, designers occupy not only positions related to the development of design projects. For Roger Martin, author of "The Design of the Business", the designer, as a central stakeholder in the management arena, might be facilitate new designs and organizational processes expanded. Thus this new type of management evolve the management beyond the traditional procedures generally adopted by executives. It follows from this fact a possible result that is the disruption of exclusivity between market leadership by price or differentiation (Stickdorn, Schneider, 2014).

Designers currently comprise top-level decision-makers from the most innovative companies in the world, such as IBM, Google, Apple. We can see that this change was initiated of professionals such as David Kelley, Tim Brown, Roger Martin, Richard Boulard, Fred Collopy, and, recently, Maria Giudice, author of the book Rise of the DEO - A leadership by design. These professionals start to construct a relevant set of studies around the application of the knowledge, perspectives and mindsets of the design applied to the management. This effort to promote this new approach by design takes place through books, workshops and consultancies, fostering great interest around the practices of the designers and a methodology known as Design Thinking

We can understand that Thinking design emerges as a mentality that inherits process and cognitive aspects from the tradition of design and of the practice of the designers. This approach provide the realization of innovative connections considering, however, the restrictive environment of the business. Regarding processes, Design Thinking acts as the engine of innovation and promotion of competitive advantages through three spaces of innovation, described by Tim Brown as "space of inspiration", "space of ideations" and "space of implementation". Through these spaces, the Design Thinking practitioner can:

1. Get a deep understanding of unmet needs or opportunities that emerge through the quest by means of qualitative, qualitative and observation tools. In addition, Design Thinking is an empathic process where these surveys are always carried out from the perspective of the people impacted by these solutions or innovations that will be developed.

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2. Provides a multidisciplinary, creative environment with a continuum collaboration between all members of the development team. These characteristics creates a strong chain that, through diverse experiences, views and perspectives, make rise innovative solutions.
3. It allows an environment of prototyping and continuous testing. By this way, the companies can be get a better use of resources in a search environment for innovation.

From the cognitive and behavioral point of view, Design Thinking motivates its practitioners to have an active and positive attitude towards the challenges of designing something new, or at the effort to solving a complex problem. These and other features are components of what is known as “Design Attitude” defined as the *‘expectations and orientations one brings to a design project’* (Bolland, Collopy, 2004, p.9). We can further characterize such an attitude through actions such as embracing risks and ambiguities. Professions that embrace the “Design Attitude” do not fear mistakes, but instead they use those mistakes as part of the learning curve, maintaining a resilience posture as a creative force. Establishment of connections from distinct areas, use of an intuitive mind and abductive thinking. Feeling comfortable working with ambiguity, in scenarios considered threatening by other professionals, are some of the behavioral advantages that the “Design Attitude” and Design Thinking stimulates in its practitioners.

The IBM’s Global Business Service study indicates that in the past product-based innovation was considered of major importance. However, the study shows that 31% of respondents note that innovations in business models of companies are an important area for promoting innovation, “the business model we choose will determine the success or failure of our strategy.” (IBM, 2006 p.12). The same study informs that promote innovation of the business model results in reduction of costs, fast exploration of new opportunities in markets and products, sharing or diminution of risks in investments and other advantages.

Current business models need to go the way of creating value for people, and it is no longer possible to compete with others players in an egalitarian way without adopting the premise of offer a consistent value proposition to the consumers. It adds to this important need to create value for consumers, the way in which companies offer this value proposition (the deliverables of companies are materialized in products and services) and how these brands capture the value offered (profit, building a loved brand, relevance in the market, etc.), providing sustainability to the business. This premises are important points of attention in which entrepreneurs, executives, brand CEOs must be vigilant in order to ensure an optimal balance of important aspects of business models that will be approached ahead. However, it is not uncommon to identify companies that, focusing too much on their operations and business models (that has allowed this brand to establish itself in the market), do not have the resources, time and skills to perceive that their business model is not aligned with their offers. Or even did not understand that their business models are out of date. The story has important examples of companies that, despite the success they have achieved, have seriously failed to keep pace with market and consumer profile changes. Or even in the technological advance that would enable them to use their forces to maintain their protagonism or to avoid their bankruptcy. For example, we can mention the failure of Kodak not to perceive that times were changing. This failure has become one of the most emblematic cases in terms of errors provided by the non-reevaluation of its business model.

The brand was responsible for the popularization of cameras and amateur photography became the third largest American company in the late 1970s. Twenty years later, it became irrelevant in the market it dominated. His business model was based on the sale of machines, films and revelation. However, when the Kodak’s engineer created the first digital camera, the company felt threatened. A digital camera

before being seen as an opportunity was understood as a threat. This fear was assumed because it directly attacked two fundamental pillars of the company's business model (and the most profitable ones too): photographic film printing and sale of a variety of film's reels. The non-reevaluation of this business model resulted the Kodak let the first place in its market segment.

The iconic case of Kodak demonstrates the frequent lack of perception that many companies have, resulting in losses of latent opportunities that could be identified through an analysis of economic scenarios, technological advances. In addition, brands can significantly increase their value proposition through having a close relationship with their consumers, thereby aiming to understand their unmet needs, desires and perceptions of value over by the offer of their products and services. This distancing of the brands, its executives and CEOs from its customers is frequently and, according to Heater (2014), "we are spending time and money on a lot of initiatives, but we wonder if we are investing in the right things – those that really matter to our customer" (p.4).

Design-thinkers have had a long opposed to this narrow perspective, quite common in companies, which relegate to the research and development sector, or to the technical staff of the brands the condition of almost exclusive repositories of information that would be the source of ideas and opportunities that save enterprises. Innovation and the use of opportunities go through by the adoption of a larger perspective in the search for insights and ideas. The way to find more opportunities and ideas also happen by the diversity of people, knowledge and experiences.

The relevance of seeking diversity of sources to promote innovation can be seen in the study published by IBM in its report "The Global CEO study", in which 706 CEOs were invited to share their views on innovation. An expressive part of these executives note that external sources to their companies compose a significant part of the inspiration and relevant data to bring innovative ideas, in addition to representing a predominant portion in the ranking. Only 17% of executives see the sector of the Research & Development of the companies as an important source of innovative ideas.

Today, this perspective is supported by several other professionals from the most different areas, such as marketing, design, administration, besides being an approach disseminated by several authors that demonstrated there is no doubt that innovation happens by a holistic understanding of the various stakeholders involved in this process. In this way, the study promoted by IBM is of great importance to guide executives and brand leaders who don't have a clear perception of the sources they can seek in order to find relevant data to evaluate their business models and the value proposition offered by these models.

In this sense, the applied design approach in the brands' business models re-evaluation is a robust methodology for such a task because the design mindset approaches the problems and the search for innovation from a holistic perspective. In addition, the management by design brings back two important points: the focus on the human being and the alignment between desirability, viability and feasibility.

BUSINESS MODEL: AN APPROACH PERSPECTIVE

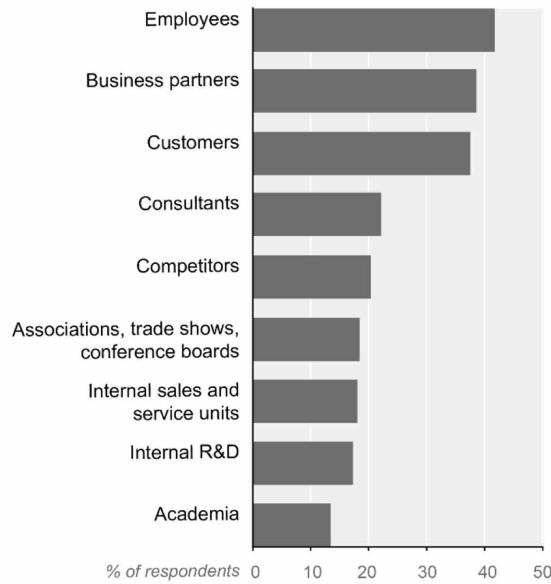
Examples like Kodak, Blockbuster and others companies that have suffered a degradation of their brands offer to the new companies that come up, like Airbnb, Netflix, and Spotify, can show that business models are not as perennial as it was in the past. In this sense, the brands must always be attentive to their offers. However, the concept of business model, for many, is not always clear: after all, what is in fact a business model.

Figure 1. Most significant sources of innovative ideas (IBM 2006)

Source: IBM The Global CEO study, 2006

Most significant sources of innovative ideas*.

*Respondents could select up to three choices.



To answer this question, we will adopt the concept that Saul Kaplan offered in his book “*Business Model Innovation Factory*,” in which the author uses a metaphor to establish that the business model of a brand and the history of how this brand creates, offers and creates value for people. It is a powerful approach, especially with the strength that the concept of storytelling has been widely used in marketing and advertising with interesting results in communicating more effectively the value offer of brands, and in the engagement of their public around from them. In this sense, the author proposes that the basis for the draw of innovative business models is constructed through three questions:

How Do Brands Create Value?

We can understand that this question reports to the type of purpose that the company intends to fulfill, or what need it has to satisfy with the people in which the company offers a product or service.

How Do the Brand Offer Value?

This second aspect refers to how the company delivers a certain value that it wants through its offer that can be a service or a product. In addition, the brand must be able to deliver such value frequently to their consumers. This requires clarity not only in how an idea can be transformed into a business, but how the brand, through processes, training, specialized manpower and other resources, the brand meets the demand that goes to want the value which it delivers.

How Do the Brand Capture Value?

In this last point of orientation for the draw of innovative business models, the capture of value refers to the how company makes money and promotes a sustainability in their business. In this sense, the leaders of these companies must be clear in formatting the entire financial system of this brand, making clear the payment model for their offer (revenue source, customer segment). The way where the expenses are evaluation for the promotion of the supply (structure of cost and main resources), growth of the company and obtaining of profit (Sources of Revenues).

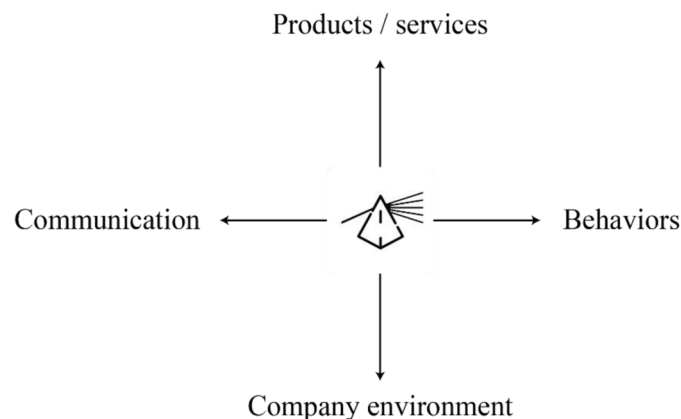
This approach, despite its simple structure, strongly helps brands leaders be clear about their business models and always reevaluate the outputs of each of these questions in order to establish a value offering that is relevant to the persons. However, this “checklist” presents as the basis of what one should look for to implement or evaluate a business model: it is the starting point of considerable effort to search and building that enables a sustainable business.

VALUE PRISM

Along with this view presented earlier, we can include a useful approach in this effort to understand the business model that is delivered to the consumer and the relationships that are established in this process. The following approach is established under what is known as “Branding”, and can be understood through four vectors that, when used correctly, helps clarify what the consumer perceives as the value delivered by brands. It is good that this approach should be known to brands' leaders because they are correlated with Business Model. The companies that always maintain consistency between this four vectors, because people increasingly perceive the inconsistencies in brands' advertising speech and what they actually consider as value.

Figure 2. Value prism

Source: author



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- **Products / Services:** This vector represents what the brand does and the processes of how it accomplishes this delivery. These processes must be consistent with what the company communicates as value.
- **Behaviors:** The conduction of the company in relation to after-sales, employees properly trained to communicate and act within the understanding of the value offer as the brand desire; the consistent between the brand's position in a community and with that value it claims deliver to this community. These are only some perspectives included in this vector that have a attention by the executives and CEOs of the companies.
- **Company Environment:** This vector communicates the company's own environment. For example, the Google brand is positioned as being an innovative company, ahead of its time. This reflects its environment and the way it organizes itself, which we can see by means of the colorful slides and beanbags, the free and the crazy offices of Google employees (Bock, 2015)
- **Communication:** This vector indicates the way in which a brand communicates, within the aesthetic aspects, of language and the channels that it uses to transmit these messages. Today, companies are able, regardless of their size and ability to invest in marketing, to communicate their value proposition. Channels, such as social networking, websites or marketplace brands can communicate their value offers to a considerable number of people. In this way, the leaders of these brands must be always aware of how these messages are being linked. Does the company's website communicate the value it offers? The bank's website communicates the security it claims to have in the various leaflets, Facebook and Internet advertising or do their clients think twice, three times before putting their passwords on this bank's website to make some transaction?

We can verify that these four vectors can present imbalances in any brands, thus promoting an inconsistency in what companies consider its value proposition and what they actually offer as products and services. Of course, the product / service vector must have the attention of entrepreneurs and managers, because this is the closest point of contact between the brand and the customer. This is what often unites both. However, brand sustainability is directly related to all four vectors, being a very important point to be monitored by the leaders, executives and managers of the companies.

The business model and value prism correspond to chapters of a great story of how brands provide enjoyable experiences for their consumer. These approaches are like compasses in the search of valuable information about latent opportunities, marketplaces or improve their value proposition. The brands can use these approaches to easily visualize gaps in their business models, consumers' patterns, pains and gains bringing them to the surface and making them more visible to all stakeholders responsible for establishing a sustainable business. It is increasingly necessary for brand leaders to invest time and resources in what is in fact of interest to the people whom the brands want to achieve. This effort will bring a clearer way to organize this data, focus on what is important and not establish relationships and data that will not result in gains for the brand or its consumers.

There is a real need for a planning that can establish how data collection will be carried out in a consistent manner, identifying consistent repositories where the opportunities can be obtained, which will support assertiveness in the evaluation or construction effort of a business model, being, thus, a phase of great importance for the success of this activity. However, we realize that this planning phase is often neglected, either in business analysis or project management. It is possible to find difficulty in the entrepreneurs and brand leaders in establishing this planning, preferring act "in the dark," or with a

wide unfamiliarity of the paths that innovation goes through and how to implement those processes in their organizations.

In this sense, we can observe the recommendations offered by the PMI - Project Management Institute, which informs the importance of carrying out a previous planning effort in business analysis and project management, since without this stage is very difficult to understand the work to be carried out, the expectations of the stakeholders involved and the way in which the important requirements are identified. This approach might be observed when the brands needs to consider their value proposition in the search to rebalance what it is delivers to their consumers and how their business model was designed. Thus, it is important to note that this planning stage that defines the means, tools which the executives, business analysts and others involved will use to evaluate a business model should always be a point of attention, because this activity precedes the efforts of creating and implementing a project that will transform the desires, ideas of the entrepreneurs, executives and CEOs of a brand into a value proposition aimed at a market segment. This project will have duration, resources needs, etc. according to the size of the idea that one wishes to transform into value or how extensive the actions will be to realign what a brand proposes as a business model and what it currently delivers to its consumers. For example, a company that wishes to re-invent its business model to increase value delivery in its health services, after re-drawing how the company creates, offers and captures value, the responsible professionals should have a plan that be materialized in a project where is identified all resources needed to create the technological bases to deliver the value designed in the business model. This project will also determine how physical structure will be needed to receive the resources needed to serve its consumers, the points of sale of this offer and other resources that are necessary for this new value offer to be implemented in the real world.

Thus, an inconsistent survey promoted by the lack of planning in relation to the activities to draw or reformulate a business model can generate a cascade effect that increase significantly the risks in the implementation of this new model. In this way, the approach by means of the Design Thinking presents itself as a methodology applicable to the planning of the efforts of revaluation of a business model and creation of the new alternatives that satisfy the strategic objectives of the brands.

DESIGN-DRIVEN BUSINESS MODELS

At first, it is possible to think that the approaches present in the body of knowledge of the design do not offer a competitive advantage in the strategic and managerial aspects of the companies. From another perspective, we might assume that design would be a marketing tool that would help brands in the strictly promotional field of their offerings, enabling them to communicate the value proposition that certain products or services offer to their buyers. In other way, design will be a tool to create some beautiful artifacts, making a brand different from its competitors. However, actually, the design mindset do more.

In general terms, the advantages that the mindset of design and the Design Thinking offer to brands, in the strategic and managerial scope, are an approach that promotes innovation, the construction of solutions more assertive and adherent to the desire of the people. These advantages came to be seen from the moment the tools, mindsets and techniques that designers use in design projects began to draw organizational strategies, design business models and project management of products, services and innovation. This knowledge has become accessible to professionals in different areas (as executives, CEOs, entrepreneurs) through Design Thinking and other derived methodologies and frameworks, for

example, Business Design, Business Model Generation and Service Design. The great strategic and managerial usefulness of these approaches are based on the need of the brands to deeply understand the desire of the people and the changes in the complex environment that they are inserted. In this context, the way the designers tries to be informed about the problems through a holistic understanding can be an effective tool. This allows brands to deeply understand of desires and opportunities to make a big change that are often not perceived by executives.

The fact that today is widely perceived by companies is changing the profile of people's consumption. This change has been increasingly characterized by the need to offer pleasant experiences when the clients buy some good of consumption, that can be a smartphone, a tour of the Caribbean or a dinner in a typical Brazilian restaurant. The success of a brand passes through its ability to be close to its consumer, maintaining close relationships with then and listened to what they want. The movement now is to understand people, establishing a different positioning from the one adopted in the past that focuses more on the relationship between buyers and sellers. There are some experiences, like those in Nokia which surpassed its competitor Ericson by offering a different experience to their consumers. We can call it "pleasure principle by design" (Stickdorn, Schneider, 2014) that determined the idea of an economy of experiences, in which people define pathways that brands must create to built sustainable business. Or an economy that allows the create of very sustainable businesses operating in extremely segmented markets, generating a high value for a small number of people who opt for a differentiated or a unique experience. The marketing professional, Set Godin, had the opportunity to say that, in order to sell itself, it is necessary to discover groups of people who will listen to us, developing great stories (or experiences) engaging these people, who will even act as disseminators of these brands.

Design-driven management has been increasingly embraced by companies because of the assertiveness this mindset offers as regards deep understanding of people, creating unlikely connections that promote disruptive innovation, and deliver value-giving offerings and satisfying experiences people. Roger Martin (Dean of the Rotman School of Management) explains the need for business people to become designers, not just understand them. Obviously, their perspective is not that managers, executives and CEOs should necessarily undergo training in design universities, but rather deeply understand how these professionals are successful in accomplishing their projects and the tools and resources that those professionals use to solve the problems, in the offer of value for the people and in the anticipation of the future by means of disruptive innovations. These tools, according to Roger Martin, would complete the skills of executives within the scope of their professional practice, once such their practice resembles that of the designers. Management activities resemble those of designers because, in both functions, these professionals need to establish relationships between a wide network of processes and strategies. Relations that often occur in environments that are not familiar to executives and designers.

We can see that this proximity between the management and design areas has been strongly wide, and today, we can verify terms like "personas", "empathy", "user experience", that are widely known by designers be found in publications which address issues of business analysis, requirements elicitation, project management and administration. By the way, it can be founded in the publications created by PMI - Project Management Institute and that guide the practice of project management, requirements survey and business analysis the following orientation:

Personas can be used in product development or IT systems development to design or map out user experiences. Although it may not be possible to obtain requirements for every stakeholder on the stakeholder

register, stakeholders can be grouped into user classes and a persona built to understand the needs of each by the class that represents them. (PMI, 2017)

In addition, the techniques and visions employed by the designers in their projects have become integral tools of PMI's body of knowledge. For example, the existence of references to ethnographic techniques, such as observation and interviews in the "Requirement - A Practice Guide" publications and Business Analysis: A Practice Guide, "The PMI Guide to Business Analysis". These ethnographies approaches have been used by Designers long time ago. We also verified in this business analysis guide the approach of prototyping through the perspective of product design, which makes use of low resolution prototyping as a tool to perceive value from the view of the user or to better visualize what is being designed. Prototyping can provide more assertive communication to the project leaders, executives, development teams and so many other stakeholders that integrate the network of interest around an enterprise.

From the perspective that Design Thinking brings cognitive and process approaches, we can understand that both are of profound utility for promoting assertiveness in the construction and evaluation of brand business models. In addition, this mindset can contribute to the implementation of a culture of innovation, promoting what we know (and was previously cited) as "attitude design". However, the object of this study presented here focus on the methodology, processes and tools that the Design Thinking offer for use by executives, CEOs and entrepreneurs to manage their business models.

A relevant approach that Design Thinking promote is building solutions and disruptive innovations to the brands business model through the alignment between human desires, technical and commercial aspects:

1. **Desirability (Human):** Good designers always work by solving problems through a deep understanding of human needs and deal with those needs through vision and user perspectives. In this process, designers use empathy as an important tool to perceive in an assertive way how people feel when they do not have a need fulfilled.
2. **Feasibility (Technical):** People's desires do not always represent something technically feasible. In this way, Design Thinking inherits this vision of design knowledge to develop technically feasible solutions that satisfy people's needs.
3. **Viability (Business):** The sustainability of a brand necessarily passes through the balance of what is identified as the desire of people or unmet needs, and how much it costs to make this possible. This is the third point of focus in which Design Thinking looks to generate a relevant innovation for people, but that can be sustainable for companies, allowing brands to capture the value they have created and offered.

As discussed at the beginning of this study, Design Thinking structures a research methodology, creation and implementation through the three spaces of innovation. This perspective is in a position opposite to that offered by the scientific management, since:

Design Thinkers Know That There Is "No Best Way" To Move Through The Process. There Are Useful Starting Points And Helpful Landmarks Along The Way, But The Continuum Of Innovation Is Best Thought Of As System Of Overlapping Spaces Rather Than A Sequence Of Orderly Steps. (Brown, 2010, p.16)

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By the way, the Design Thinking develops an understanding of latent needs and opportunities through this iterative process, which navigates in the spaces of inspiration, ideation and implementation, where it is possible to establish solutions more assertively, since these decisions are not compartmentalized in a rigid process and that hinder an organic, holistic elaboration of an idea. A holistic approach promotes the generation of innovative solutions, since a rigid process hinders the expansion of creativity, find the new ways to create a product, service or business model and the collaboration among all members and teams. Teams composed by executives, designers, CEOs in the quest to develop something that is different from what is implemented, but have already become outdated. Thus, the methodology proposed by the Design Thinking is an iterative process with the following structure:

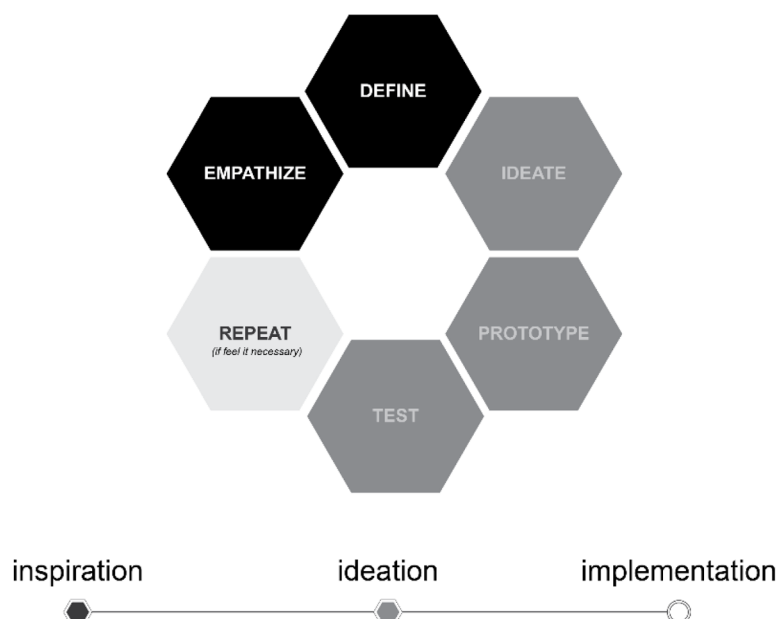
We can verify that this structure offers a methodology applicable to any type of company that want to adopt Design Thinking as a tool to manage its business model and its executive strategies. This Approach has proven efficient when it is used to carry out data surveys, either from the point of view of the consumer or the brands. It's important make sure that the real need for companies to have the resources and time to check at their value propositions and carry out a continuous check with the aim of being always attentive to changes in scenarios and opportunities to be taken advantage of. In this way the management of the business model should not be neglected, and that can be realized with several benefits through the use of Design Thinking.

Starting from the perspective of design Thinking to promote an evaluation of the business model of brands and their deliverables, we can establish a model to implement this evaluation with the following steps:

1. **Planning:** A necessary step to define how this activity of evaluation of the business model will be executed.

Figure 3. Design thinking structure

Source: author



2. **Inspiration (Empathize - Define):** The stage of search and deep understanding of the needs, opportunities and advantages that can be taken by the brands in relation to the necessary adjustments to their business model.
3. **Ideation (Ideate – Prototype - Test):** Stage of creating solutions through creativity and team collaboration.
4. **Implementation:** The stage when the team synthesizes the value proposition and produces the outputs that will be used to format a project plan.

Planning

To make an effort around the evaluation, or re-draw of a business model making, it relevant to people and sustainable for brands, planning the actions necessary for the success of this project is fundamental. In addition, it is necessary for brand executives and CEOs to offer their support to promote the engagement of managers and other employees around the project to evaluate the business model and identify possible gaps and imbalances. This support is important to create a joint effort, noting that diversity of knowledge is present in teams that actually create innovative solutions. A good practice is to establish a map of the competences of all the team members, defining clear roles, but always allowing space for everyone to be comfortable and motivated to share suggestions, visions, even if such opinions are not related to the specific role or knowledge in which it is related.

In every design process, the fuel for the motivation in search of different solutions is the collaboration and the construction of an environment where everyone feels welcomed to participate with their experience, technical knowledge or supporting with financial resources or influence.

Needs

- Engage important stakeholders and generate consensus around the importance of the project. Motivate people to collaborate with the project.
- Establish a multidisciplinary team to develop the evaluation of the business model and other activities related.
- Definition of competencies and roles of team members
- Define an initial work schedule and action plan.

Techniques and Tools

- Storytelling
- Competency Map
- Team term
- Roadmapping
- Project Brief

Inspiration

After establishing an initial planning for the evaluation effort, or design of a new business model, it is necessary to have a deep understanding of the current situation of the brand business model. The pro-

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posed value of the company are aligned with what is determined in your business model? The product or services (deliverables) of the company represent the value propose that the company planned in their business model? The channels used by the company works to communicate clearly a value propose to their client? The inspiration phase should be used to inform about how the consumers perceive the value offer by the company or find out gaps in the operation of the brand. In the process of inspiration, the designers assume an attitude explorer in order to establish a deep connection with the most diverse interfaces that can bring important data to rebalance the forces of a brand, find opportunities that can be used to increase the brand's value proposition. In this search process, is important establish connections through the process of empathy in which the designers and CEOs can understand, through the eyes of their consumer, what is the true value perceived by these customers. Which experience that a CEO or an executive of a brand have when using a product or service of his company? Is it consistent what this company is delivering? As a consumer, does the CEO of a brand perceive that his company and its competitors are actually promoting enjoyable experiences or attend to his needs when a product or service is acquired?

Mapping people's experience in an empathic way, and feeling their pain and their needs are designers' obsessions. A obsession that should be adopted to take this perspective and build with more assertiveness business models that deliver relevant experiences to people. Valuable insights and opportunities can arise through this process of empathy, indicating the gaps between what the brand desires to deliver and what is actually being perceived by people. The adjustment points can become clearer and are defined, being this way an important input of information to be used in the next steps.

Needs

- Take a deep dive into the current situation of the brand: have clarity of the way your business model is structured and what the proposed value proposition.
- Understand, from the perspective of consumers, the value and experiences offered by the company. Also, clarity in perceiving (by the clients' perspective) whether the value proposition offered and the communication of this proposal is really aligned.
- Find a broad understanding and making connections between seemingly disconnected elements can result in major innovations and great business opportunities.
- Find problems and inconsistencies in the company's business model and its delivery, identify desires not satisfied by the company and competitors, analyze the current scenario and watch for opportunities, threats from new competitors, technology or regulatory changes.
- Establish effort to search for information in consistent sources, as well as guide team members to record the sources from which data is extracted. With this the team can have more clarity in the relevance and consistency of the information found.

Techniques and Tools

- Desk research
- Benchmarking
- Ethnographic approaches: video recording, activity log, participant observation, contextual interview, Autoethnography
- Network monitoring (google trends, social mentions,)

- Exercise of empathy
- Pixar Storytelling
- Articulation of need
- Personas
- Participant approaches: Focus groups
- The research wall
- Analyze S.W.O.T
- AT-ONE Method
- Card Sorting
- Five whys
- STEMP Analysis
- Business model canvas
- Business model environment

Ideation

In the ideation stage, the data and surveys collected by the team are used to generate ideas, promote discussion and think about the solutions that fill the gaps and inconsistencies discovered. This effort takes place in co-creation workshops where members come together to create alternative business models. The team can draw of a business model different from the previous. Make tests or build prototypes to better understand this new model. The free collaboration without trial by team members is essential for their creativity . In addition to this aspect, it is necessary that team members be open to giving up visions and ways of working adopted in the past, and having an “open mind” to advance positions were understood as restrictions to the current business model, preventing the identification of new opportunities (Heather, 2010).

With regard to the application of this perspective in the evaluation and design of business models one can arrive at the erroneous conclusion that it is not possible to prototype business models. Prototypes are an important part of the ideation process, and can be applied within the framework of business models, greatly favoring their development since prototypes provide clearer communication among members who are participating in generative sessions. This conversation comes from the strength that visual thinking has in clarify the abstract concepts or with a certain obscurity. In addition, prototyping foster collaboration among team members and the learning. Allows the identify inconsistencies and the exploitation of more possibilities for a business model's design.

Within the ambit of business models, a prototype can be a simple drawing in a flip chart that demonstrates visually how the company creates, offers and captures value. It can be a series of representative photos, drawings and symbols in each Prism Value vector to visualize relevant aspects that team members think are important to the brand. In the co-creation workshop, the participants can use the tool known as the business model canvas to create discussions about various possible business model proposals by varying the elements of the canvas, such as verifying the adoption of one or another value delivery channel, or discussing with the team what is the best segment for the company.

These prototypes of business models that are generated by executives, designers, CEOs can be tested through tools, such as staging, or by running this model in a controlled environment. For example, a new service for selling parking spaces online can be simulated through google docs spreadsheets and links to possible clients impacted by advertising on Facebook. In this way, it is possible to verify different

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views about the viability of the business, the value of the experience that the participant of the simulation perceives, incongruities of what wishes and what is perceived by the consumer, etc. One brand that use this approach is HBO, which provided company executives, through prototypes, to realize customer experience by interacting with its programming through a variety of devices installed in a floor of the company's building (BROWN, 2010). In another prototype, IDEO designers projected the way the brand would deliver a new value through a service that would be known as "HBO on Demand". The designers created a map where it would be possible to visualize relevant aspects in the scope of technology, culture and business, being possible to visualize the evolution of this model. This prototype, developed by the IDEO's designers, is really projected and invites the future management of HBO (Brown, 2010), and represents a synthesis of this new business model. This synthesis will be the main output of the next stage of this framework: the implementation.

Needs

- Organize generative and co-creation sessions among the various members of the company with the purpose of analyzing the data collected and creating ideas, alternatives and solutions to the problems and inconsistencies encountered.
- Encourage the collaboration of the whole team and build a creative environment, promoting the ideas' sharing and visions, objectifying of reaching creative solutions that restore the alignment of the business model of the company with the desire and needs of its consumers.
- Draw and prototype business models that take advantage of the opportunities found.

Techniques and Tools

- Brainstorming
- Brainwriting
- How might we
- Ideation based on analogies and association
- 10 plus 10
- Co-creative workshops
- Investigative rehearsal
- Paper prototyping
- Cardboard prototyping
- Wireframing
- Business model canvas
- Business model environment
- Storyboard
- Ideas menu
- Matrix of positioning
- Exchange of value
- Map of reciprocity
- Experience Mapping

Implementation

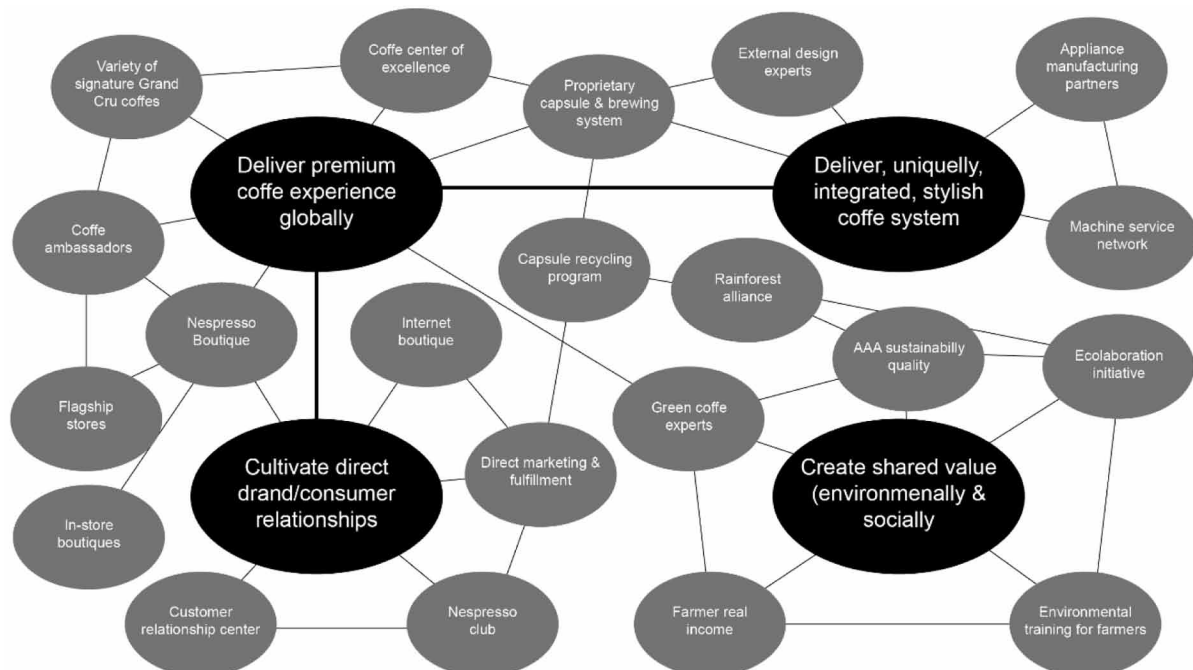
The implementation of a business model involves the activities of making a proposition in relation to what was discovered through the techniques and tools used in the stage of ideation. The deployment of this model and the systems that will build a sustainable value delivery for the brand and people-friendly experiences is a great effort of creativity. (Heather, 2013). This is because it is an act that turns good ideas in strategy and action plans that results in exceeding the expectations of all the stakeholders involved.

In this way, the ideas and solutions generated in the Ideation stage should be synthesized in a new format by which the company started to create, offer and capture value. This synthesis should be communicated clearly, thus providing the consensus of this new business model and its approval by parts of the executives and CEOs of the brand. As in the earlier HBO example, this synthesis can be a map showing the main aspects of the new business model, or even a compendium of artifacts that clearly demonstrate this new proposal, which may include, for example, artifact named of “system of activities”. In this tool, it is possible to visualize the brand strategy and the synergy of the business model offered by it. This approach demonstrates the chains of activities that generate this value for customers, partner and community. An example of this artifact is shown below, and demonstrates Nespresso’s system of activities.

It is important to have a clear proposition of how the company offers value, the activities systems from which the brand accomplishes these deliverables in a sustainable way for the company and consistent for those who wish to acquire their offer. In this sense, the development team should continue to use visual thinking to draw such an implementation, in order to promote assertiveness in communication among all members and to facilitate consensus building.

Figure 4. Nespresso activity system (Heater, 2013)

Source: Design Works (2013)



Needs

- Generate a consistent synthesis of a new value proposition. This synthesis can be created, collaboratively, through co creations' workshops. It is strongly recommended that participants of this workshops have participated in the stages of inspiration and ideation.
- Use tools, such as prototypes, presentations, help build consensus among all team members with a clear understanding of what is the company's new way to create, deliver and capture value. This approach is also valid for situations where deep changes are not made to the business model of the company.
- It is necessary to establish a plan of action, materialized by means of schedules, project plan, roadmaps etc.
- In these artifacts, are contained important guidelines by which the company will execute the implementation of this new value proposition, or the realignment between its business model and its offerings.

Techniques and Tools

- Business Case
- Requirement of resources
- Analysis of financial sensitivity
- Activation planning
- Management system
- System of activities (future)
- Evaluation of the System of activities
- Business model canvas
- Value Prism
- Roadmapping

CONCLUSION

The activity of evaluating and rebalancing the forces of a business model, or even identifying problems in a company forcing it to completely redesign the way that its creates, delivers and captures value is a great creative endeavor, indeed. In this sense, it is important to promote a collaborative position among executives, CEOs, CFOs and others involved in this process. Together with this effort, we can perceive as being positive several experiences and approaches offered by the Design segment that can be adopted by companies' executives. Such approaches can, among others, sustain an environment in which people feel engaged in free and creative participation. In addition, design-oriented management can stimulate a strong culture of innovation in brands and in their teams.

In this way, management oriented by the mindset of Design and by Design Thinking is increasingly useful in the application in the companies' management to build strategies and visions that can offer people pleasant experiences and be relevant in their lives. In addition, design-oriented management provides a search for solutions in a structured way that encourages a deep understanding of the people, resulting in an emphatic process that allows the creation of solutions from the perspective of the user.

This mentality can be used how a new way for executives to create or improve their enterprises and build a better world.

These advantages can be used in order to improve assertiveness within business models, bringing all this knowledge and advantages that are inherited from the design practice and which are perfectly applicable in the evaluation efforts of the brand business models. Brands that perceive inconsistencies between their models and its offerings find, through Design Thinking, a methodology to balance these forces. In addition, a design-driven management can cause a relevant transformation in a business model which is beginning to become obsolete, thus enabling actions to prevent a major deterioration of the brand. Actions wick opposite of the examples observed at experiences of the brands Kodak and Blockbuster, that did not realize the lag in their business models disintegrated their companies' and compromised the continuation of their operations.

It is possible to verify this study that the adoption of managing as designing does not demonstrate like a distant approach of the activities of management. Thus, we can understand that this fact stems from an understanding that demonstrates a proximity to the practice of Designers and corporate executives: Designers and executives draw experiences and shape the relationship that people have with brands, services and products. In this sense, the adoption by executives of visions and attitudes widely found in design professionals has proved very relevant in the professional practice of these executives, providing useful tools and approaches, promoting enhancing their careers. In addition, this study argues the advantages of using a structured methodology to guide the management efforts of the business model of companies, using the approach offered by Design Thinking that bring a methodology that can be applied to the management of business models of companies. This methodology is structured by means innovation spaces named of inspiration, ideation and implementation and has, together with this structure, tools, techniques and methods that can strongly assist executives and entrepreneurs.

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Chapter 15

The Interdisciplinarity of the Information Science

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ABSTRACT

This chapter presents the conceptual evolution of interdisciplinarity, transdisciplinarity, and discipline under information science from a theoretical framework. The text is a research whose primary purpose is to analyze scientific research developed in the context of interdisciplinary information science with participation in more than one area of knowledge. Using the concepts presented and those that contemporary authors studied in different areas for composition of the conceptual framework that presents itself, the results of the research have enabled profiling of research in the area about the use of different approaches and concluded that different forms and levels of interaction are found in information science. It is, therefore, concluded that the concepts have changed and that caused significant changes in their meanings. These changes lead to an ongoing re-evaluation and updating in the context of information science and its implications because it is an interdisciplinary science.

INTRODUCTION

The actual society lives a stage of development that can be described as modern, but it took a character so large, unexpected and complex enough to distinguish its own modernity, overtaking it, so we can call it postmodern.

Definitely, what characterizes our contemporaneity definitely is, *roughly speaking*, the narcissism of the people, the superficiality, recovery of appearances at the expense of the essences, the high technological sophistication, especially in electronic appliances and virtual design, instant and integrated communication (sound, image, text), usually transmitted via internet and captured on screens (lowercase or, on the contrary, enormous) of liquid crystal, the hyper-realism, that is, the transformation and the treatment given to artistic achievements enshrined so far and many others.

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However, the great hallmark of this strange and stunning time is the fragmentation of everything and everyone. If modern man “*stresses*” faced with multiple activities in which unfolds almost to infinity, the Post modernity disrupts the human being by means of an internal Division, often schizophrenic, in multiple subjectivities and identities.

The forgotten man-the story eventually denies and its main concern is focused solely on material aspects of existence and in the attachment to the pleasures of the senses, almost in a childlike way extolling the present moment, making everything precarious and scattering by a thousand possibilities and expending the best human energies.

This is the half-human, socio-cultural and political at all “*hyper and Hypo*”, confusing and undefined, the information science, endowed by while theoretical conceptualizations and limited resources on our own identity and affirmation, is called the intervene and forward the issues that are not a glitch, such as production, storage, organization and circulation of knowledge (the information feeds the knowledge).

The proposed work is to provide a reflection on the emergence and evolution of information science, taking into consideration the context in which it is inserted. To understand an area or topic is necessary, at first, knowledge of its origins and its story. So, it presents a little history of the evolution of science information and its development over the past decades.

The consolidation of a particular field of knowledge is, among other things, the existence of a scientific community. This consists of several researchers and scientists who are anxious to discuss and resolve the problems that arise in the area. Thus, the existence of a shared paradigm by members of a community will result in consolidation of the scientific community.

OBJECTIVES

The information science is a new science and in a structuring phase. This fact is witnessed by Smit et al. (2004), who claim that, in addition to the lack of consensus with respect to its object and delimitation, the field of information science is still under construction. As such, the lack of basic and conceptual structure, still suffers outside influences because scientific institutional capital weighs more on the few renowned researchers in the area.

This article seeks to contribute to the understanding of the importance of the terms conceptual interdisciplinary, transdisciplinary and discipline, under information science from a theoretical framework. The goal is to analyze scientific research developed in the context of interdisciplinary information science that has participated in more than one area of knowledge, the theoretical discussion of interdisciplinary and empirical research about the subareas or disciplines of information science form, the basis for the design of the structure of the area, presented the end gathering subjects according to its nature.

The research focused on the developed research in information science, focusing especially on its interdisciplinary nature from the analysis of its praxis in investigations, involving the participation with more than one discipline. To do so, were studied the main forms of interaction between disciplines currently present in scientific practices, as well as sought to contextualize the area of information science in the context of contemporary science through the analysis of their epistemological characteristics.

METHODOLOGY APPROACH

The method of research and teaching is likely to cause two or more sciences interacting among themselves. This interaction can go from simple communication of ideas to the mutual integration of the concepts of epistemology, the terminology, methodology, procedures, data and research organization.

This is an exploratory study that seeks to clarify and organize the concepts of areas, sub-areas and subjects presented in the literature of information science. This is not a proposal for new terms and concepts, but rather an organization identifying a common denominator between the different concepts already indicated in the literature, in order to enable the group by ID, application/use and relevance/value in the context, in which the terms are inserted. The survey data is characterized by the literature search on terms and concepts related to areas, sub-areas and disciplines.

It is a descriptive and analytic approach seeking to know and analyze the cultural contributions and/or existing scientific on this subject from the review of the existing literature. The survey was structured in modernity based on the systemic approach to the understanding of the post-work problems of Erikson (1998), seeking a practical, operational or problem-solving application of “real-life” organizations.

FUNDAMENTAL CONCEPTS

Origin of Information Science

It is difficult to say when a new science emerges, new science, even in the case of a recent scientific discipline, such as information science. However, Foskett (1969) and Ingwersen (1992), indicate the date of 1958 as one of the landmarks in the formalization of the new discipline when it was founded in the United Kingdom the *Institute of Information Scientists* (IIS). Meadows (1990), describe the origin of the new discipline from the specialized libraries (in industrial and other organizations).

According to Meadows (1990), this discipline has undergone a sharp development after World War II due to the emergence of the mathematical theory of Information described by Shannon and Weaver in the late 40s. This theory was adopted by many other areas because it explains the problems of transmission of messages through mechanical communication channels. The industrialization of commercial press promoted literature phenomenon explosion not less important than the advent of the Gutenberg press which occurred around 1450 with effects were more evident after the Second World War.

Its contribution to the development of information science was small but important to the history of the area, since it attracted attention for two needs. The first, to clearly define the nature of the information with which the professionals of the area were concerned and, second, to set the framework to be applied in the Organization of that type of information.

According to Day (2002), there is consensus of the authors of the area that the information science emerged in the mid-20th century. According to Pinheiro & Lena (1995) Norbert Wiener in 1948, in his book “*Cybernetics or control and communication in the animal and machine*”, and Claude Shannon and Warren Weaver in 1949, in the book “*The mathematical theory of communication*” marked the beginning of what would become the information science. According to the authors, it was in the 60s that are drawn the first concepts and definitions and began the debate on the origin and the theoretical foundations of the new field of knowledge “(Pinheiro & Loureiro, 1995, p. 42).

The authors pointed out several facts in the 60s which meant the true mark of the formation of a new disciplinary field:

- The Conference held at the *Georgia Institute of Technology* in 1962,
- The *Weinberg Report* in 1963,
- The Computer work, Mikhailov, in 1966,
- The study of Rees and Saracevic in 1967 and,
- The definition of Borko, in *Information Science: what is it?*, in 1968.

Borko (1968), defined the information science as a discipline that investigates the properties and behavior of the information, the forces that govern the flow, processing to optimize its accessibility and use. It is related to the body of knowledge pertaining to production, collection, compilation, storage, retrieval, interpretation, transmission, processing and use of the information. This includes the investigation of information representation in natural and artificial systems (...). Has a component of pure science that investigates the essence of the subject without regard to its application and another component of applied science that develops services and products (...).

For Goffman (1970), the objective of information science is to establish a unified scientific approach to study various phenomena that involve the notion of information, if such features are found in biological processes in human existence or machines created by humans. Consequently, the subject must be related to the establishment of a set of fundamental principles that govern the behavior of the whole process of communication and its association with information systems.

Griffith (1980), proposed similar definition that establishes the information science as a discipline that aims the creation and structuring of a body of scientific, technological and systemic knowledge related to the transfer of information.

Saracevic (1991), studied the evolution of the information science and defined it as “a field dedicated to scientific and professional practice issues facing the problems of effective knowledge communication and record-keeping of knowledge among human beings, in the social context, institutional or individual use and information needs. The treatments of these issues are considered of particular interest the advantages of modern information and communication technologies (ICT’s) “.

The information science was born after World War II, it to solve a big problem which was also the major concern of both the Documentation and the Information Retrieval which is to gather, organize and make accessible cultural knowledge, Science and technology produced worldwide. The information science is a recent science and was born of the exact sciences looking to achieve an exact knowledge from the inspiration of mathematical and quantitative models. (Bronowski, 1977, p. 47), based on objectivity sought to formulate universal laws of the “behavior” of information. Strongly influenced by the empirical Sciences intended to establish universal laws that represent the informational phenomenon and hence the need for resorting to mathematical models (information theory), physical (Entropy) or biological (theory for epidemiological investigation).

In the Decade of 70, comes into play a character that redirects the focus of information science: “the man (decision-makers) and as such the humanities and Social Sciences, also contributing with their methods and practices to the composition of this emerging science” (Cardoso, 1996:73-74). Initially, it closes to computation and automatic recovery of information. According to (González de Gomez, 2000, p. 6), from the years 1970s, it makes it effective inscription in the social science as a symptom of the ongoing changes that would affect the production and direction of knowledge in the West. That decade

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can be referred to the “social foundations of information”. Regarding some important issues we face now, which is the branch of science that information science is closest? What are the theories, concepts and methods that feed the information science?

The first studies in information science as a social science were to study the social reality in statistical perspective, i.e. quantitative. Berger & Luckmann (1985) presented the reality as something that is socially constructed rather than as an existence in itself and opened the way to the understanding of information not as thin, something that would have meaning and importance in *itself*, but as a process. That is, something that will be perceived and understood in various ways by people, that according to the definition of Borko (1968), about the behavior and information flows, is something that is out of the people and with the definition of Buckland (1991), who sees the information as “co ISA “outside people.

The subjectivity of the information becomes critical to the understanding of the different planes of reality and of the distinction between the different forms of knowledge and the mechanisms of its configuration and legitimating. People need to be included in information studies and in their day-to-day interactions, forms of expression and language, rites and social processes. Several studies can be presented as an example of the incorporation of these concepts in the context of the study of information science, such as the *dosenmarketing* approach inaugurated by Durbin, Atwood & Palmour, MacMullin & studies Taylor on the values of the people, the studies of cognitive theory-inspired nature of Maturana & Varela of the hermeneutic approach of information science, studies of Capurro (2003) on the information networks based on the theoretical framework of Bourdieu (1983. p. 46-81), as well as the Bibliometric studies and scientific communication and contributions of Archeology of knowledge of Foucault and the Sociology of Science (Latour, Knorr-Cetina, among others).

The information science is a discipline that has a broad field of practices but not yet a theoretical field defined as the case with other areas of knowledge, such as linguistics, anthropology and others. It does not exist a theoretical construction that integrates all its concepts and practices. For this operate based on theoretical constructions more or less fragmented, for example, the representation of the information would be a construct, among others etc. The most important feature of information science is the interdisciplinary nature in it that the magnitude of the problems faced (ecological, demographic and ethnic) is demanding innovative solutions.

The science of information comes from consolidating elements “borrowed” among others, in mathematics, physics, biology, psychology, sociology, anthropology, the semiology and by the communication theory and other sciences that contributed to its rationality and applicability (Cardoso, 1996, p. 74). *“Information science is not to be looked at as a classical discipline, but as the prototype of the new kind of science” (Wersig, 1993, p. 235.*

The information science evolves to new stages of dialogue and inclusion in the social sciences. Reflection on the development of information science, its relations with the social sciences and as a model of science as a whole, it is essential to continue research and incorporate all the knowledge accumulated in this process. Being scientific research one of the main ways to formulate theories of an area, what is realized that research in information science, comes over the past few decades, consolidating and opening new horizons of discussions. Great contribution has been given by teachers and researchers in the various international universities.

One can see that some important steps have been taken to strengthen the theory of information science area and the research in information science is expanding and has scientific community that over the years has been consolidated internationally. Are many and different challenges that present themselves today, for information science. As applied science, needs to respond to the demand for information

society and, as an object of research, has are necessary conceptual fundamental needs in the area. The realization and sociability are the safest paths for creating and sharing new paradigms. Thus, it becomes increasingly important to look for the theoretical, social and philosophical foundation in the field of information science and in particular further strengthen its scientific community.

Interdisciplinary

There are at least four distinct current thoughts that reflect on interdisciplinary and in information science (Fernandes and Cendón, 2009). The first puts the information science, not having a theoretical framework set, capture concepts of other sciences to be based theoretically and interdisciplinary amalgam it comes feature only established within information science. The second states that the research object of information science, **information**, is common to all areas of knowledge, information science is interdisciplinary by nature, being present at the heart of science as a whole. For the third, is only exists when the conceptual discoveries and interdisciplinary practices change both disciplines involved, when concepts and methodologies, shared by both discipline, merge and change each other. Finally, the fourth current of thought States that the interdisciplinary of information science as proposed and discussed does not exist, since there is a mutual influence of knowledge of both disciplines, occurring a mere juxtaposition of concepts.

Borko (1968), lists the following interdisciplinary areas: mathematics, logic, Linguistics, psychology, computer technology, operations research, graphic arts, communication, library science and administration. Merta (1968), Cherni and Gilyarevsky, (1969) and Mikahilov and al, (1969), highlight the following fields of knowledge, in which there is an interdisciplinary dialogue with science, with explanations for each contribution, including methodology: mathematics and mathematical logic; Linguistics and semiotics; Communication, cognitive science, psychology, library science, Cybernetics and mathematical theory of communication; Reprography and theory of Automatic Knowledge; Systems engineering and computer science.

Harmon (1971), synthesizes the thought of Kitawaga, from which identifies the strongest interdisciplinary relationship of the field with the behavioral sciences, and all those who have "... a sharp trend common to construction of models" and concludes that the Information science is an "objective subjective area of research and practice". Wersig and Nevelling (1975), in search of "place" of information science, the reasons for its emergency and what the social needs that fills, considering different guidelines: for the phenomenon, for the media and technology for the purpose.

According to Japiassou (1976), interdisciplinary can be understood as the "dialogue between the areas of knowledge. For Foskett (1980), the field "... arises from a cross-fertilization of ideas that include the old art of librarianship, the new area of computing, the new media arts, and those sciences such as psychology and Linguistics, which in the its modern forms has to do directly with all the problems of communication – the transfer of information "".

Japiassu and Magdy (1991), defines interdisciplinary as: "research and teaching method susceptible to make two or more disciplines to interact with each other; This interaction can go from simple communication of ideas to the mutual integration of the concepts of epistemology, the terminology, methodology, procedures, data and research organization".

Farm (1995) explains that the interdisciplinary movement significantly arose in Europe in the 1960s, period in which it was claimed a new status of University and school that broke with the education in

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parts, it was completely alienated from everyday issues. The evolution of the movement toward interdisciplinary was divided didactically by the author in three periods, spanning the decades from 1970, 1980 and 1990, showing information about the context of the development of interdisciplinary, mainly in the area of education:

- **1st Period – 1970:** Was characterized by the search for a philosophical explanation of interdisciplinary; term definition, with the participation of institutions such as Unesco, in 1961, and the Organization for economic cooperation and development (OECD), in 1972.
- **2nd Period – 1980:** Period of search of a sociological guideline; attempts at explanation of a method for interdisciplinary.
- **3rd Period – 1990:** Search phase of an anthropological project, towards the construction of a theory of interdisciplinary.

There are two main approaches for the study of interdisciplinary: pursuit of unity of knowledge (goal of building a universalization from perspective of knowledge around a particular situation, especially the *know*) and scientific search for specific troubleshooting (private practice and to treat more than specific situations related to everyday existence, especially social problems, than those who own the science, with an emphasis in instrumental issue) (Fourez, 1995, apud Lavaqui; Bailey, 2007).

According to Cardoso (1996, p. 74), interdisciplinary of information science is present as a component of science of today's society, in which the magnitude of the problems faced (ecological, demographic, ethnic) are demanding innovative and plural solutions. The information science will consolidate itself from the elements "borrowed" from mathematics, physics, biology, psychology, sociology, anthropology, semiotics and communication theory and other sciences that contributed to its rationale and applicability.

According to Gomes (2001), the "information science is a contextual, i.e., science is a science applied to contexts and can be characterized as an interdisciplinary science". Often confuses the interdisciplinary with the mere incorporation of concepts, theories and methods of a discipline by another, since it uses terms and concepts from a variety of other sciences, in which demand their theoretical bases, such as for example, information technology, business science, Linguistics, cognitive science, communication, education.

Interdisciplinary is not a simple appropriation of concepts, theories and methods of an area of knowledge. One that. Just from the concrete dialogue between the different areas of knowledge. Interdisciplinary effectively updates in the field of theoretical abstractions, the establishment of methodologies, but also in the speeches that the different knowledge areas promote the social.

For Pinheiro (2004), is the "mutual ownership of methodologies, principles, theories, concepts and constructs among two or more areas of knowledge" (Pinheiro, 2004). Klein (2004), states that the concept of interdisciplinary is linked to that of complexity. The convergence between these two ideas has significant consequences for understanding the nature of knowledge, the solution of scientific problems and dialogue between the sciences and the humanities.

According to Klein (2004), the nature of complex systems offers a comprehensive rationale for interdisciplinary studies, seemingly divergent approaches and unification serves as a criterion for directing the process of integration. The ultimate goal of interdisciplinary research is the understanding of the portion of the world modeled by a complex system. Interdisciplinary is characterized by the exchange of knowledge, the transformation of fields of knowledge and the sharing of objectives.

According to Klein (2004), the interdisciplinary approach has its origin in the need for understanding complex objects, which a single area of expertise would be unable to deal with the appropriate scope. Among these, we can mention the phenomena of explosion of information and cultural diversity, social and technological issues or multifaceted concepts, such as “body”, “mind” and “life”. One can see the development of a significant number of areas of multi or interdisciplinary knowledge since the mid-twentieth century and among them is the science of information.

The interdisciplinary experiences have three basic characteristics, according to Lara (2005):

- Different disciplinary fields approach to the solution of specific problems;
- Sharing of methodology;
- Generation of new disciplines after cooperation and fusion between the fields.

From the many ideas around the term, also many possibilities of taxonomy have emerged to better understand how interdisciplinary occurs. Classifications of interdisciplinary individually or collectively, various proposals have been and continue to be presented by scholars. Lenoir (2003) proposes two categories based on the type of activity in which they occur, i.e. interdisciplinary and interdisciplinarity.

With regard to the scope of interdisciplinary science, OECD (Klein, 1990), has two categories: endogenous and exogenous interdisciplinary to the scientific community, that is, the methodology was adopted by desire or requirement the internal discipline or if this is a requirement of external character to science. Some authors present more specific classification, dividing the interdisciplinary in accordance with how it occurs in the search.

For Heinz Heckhausen (1972, 2006), interdisciplinary can be categorized based on the level of interaction in which it occurs. In ascending order would be: heterogeneous interdisciplinary; pseudo-interdisciplinary; Interdisciplinary assist; Interdisciplinary composite; Interdisciplinary complement; unifying and interdisciplinary.

To Boisot (1972), the level of this interaction on interdisciplinary is divided into: structural interdisciplinary; linear Interdisciplinary; and interdisciplinary. Huerkamp et al. (1978) proposed the following classification: methodological interdisciplinary; conceptual interdisciplinary; interdisciplinary problems; and interdisciplinary, border or interdisciplinary of neighboring disciplines.

The existence and the need of information for almost *all professions, Sciences and cultures* is one of the proofs of the interdisciplinary of information science. In any circumstances the information acts as a propellant of the development of various areas of human knowledge, of Nations and peoples and also as a unification of inter-and transdisciplinary relationship.

On interdisciplinary fields, the authors highlight part of mathematics, logic, philosophy of science, transformational grammar and mathematical theory of communication and recognize that there is connection of information science with some traditional areas, between which “Psychology (psychology of information), sociology (sociology of information), Economics (economics of information), political science (Information Policy) and technology (the Technology information) “.

Transdisciplinary

It is pertinent to address some ideas that advertise or converge on the interdisciplinary philosophy long before the introduction of this concept as, for example, the notion of system, as well as those that succeed, as transdisciplinary. Morin (1997), rethinks the concept of system, as a whole organized “... produces

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or promotes the emergence of a number of new qualities that are not present in the separate parts”, able to connect the parts to the whole.

Japiassu (1976), illustrates the concepts of multi-disciplinarily, multidisciplinary, interdisciplinary and transdisciplinarity based Jantsch (1970.72 apud Japiassu), and describes them as “systems ... with successive degrees of cooperation and increasing coordination of disciplines “. Transdisciplinary is a concept of reciprocity between the specialized research, but it is these calls within a total system, without borders between the disciplines.

For Pombo, (2004), transdisciplinary is a means of promoting the integration of knowledge, to ensure a higher level of interaction, that is, is a fusion that goes beyond disciplinary barriers allowing its transcendence.

The theoretical and methodological approach of transdisciplinary is under construction, being discussed and debated today. Some theories are directly related with the transdisciplinary approach, such as the systems theory and information theory, as well as the terms related with it, as passage, transition, change, transformation, complexity (Nicolescu et Al. 2000).

Transdisciplinary, as the prefix “trans” indicates, relates to what is at once between the disciplines, across the different disciplines and beyond all discipline. The purpose is its understanding of today’s world, and one of the imperatives for this is the unity of knowledge (Ciret Project-Unesco, 1997, p. 4)

Discipline

To understand the interdisciplinary, it takes from the disciplinarily, once the specialties of knowledge are the foundations on which everything is built “(Clerk apud Klein, 1996). To Japiassu (1976), the disciplinarily is the “... Scientific exploration for particular homogeneous area of study, that is, the systematic and organized set of knowledge that present characteristics in teaching plans, training methods, and of materials: this exploitation consists in making new knowledge that replace the old “. The subjects have specific focuses and the reality of each is always reduced to the private viewing angle of the experts, which extends as far as interconnections with other disciplines.

For Morin (2002), the term discipline relates to the academic and scientific knowledge that culminated in the emergence of several branches of science, and under which developed thanks to the progress of scientific research. In a broader view of epistemology, Morin (2002) presents the discipline as a category that organizes the scientific knowledge and the division and specialization of work to respond to the diversity of domains of the sciences they cover. A discipline tends naturally to autonomy for the demarcation of its border, the language that establishes, by techniques that is taken to develop or use and, eventually, by the own theories (Morin, 2002, p. 37).

According to Gusdorf (2006), each discipline tries, “an approximation of human reality according to his own dimension, taking the man as joint research centre”, showing different patterns of formality and organization. Some criteria identified by Heckhausen (2006), help understand the nature of a discipline, characterizing or differentiating it from other aspects not always very well defined, according to the author himself. They are:

- **Field of Study:** Angle its domain-specific material. Vaguely defined concept that depends on the Constitution of a particular discipline;
- **Own Method:** To seize and turn the phenomena. A discipline becomes autonomous when perfected its own methods, which must be adapted to the nature of the field of study, with correspon-

dence between the concrete implementation of the methods and the general laws in the theoretical plan;

- **Analytical Tools:** Rely on logic, strategy in mathematical reasoning and construction of process models. Apply to multiple domains and are neutral criteria;
- **Applications:** Guidelines for the application and practical use in the field of professional activity;
- **Level of Theoretical Integration:** Construction of “reality” of its areas in theoretical terms, i.e. its fundamental and unifying concepts should be comprehensive enough to explain and predict phenomena of its field of study. Sets the maturity and discipline is the most important criterion for identifying a discipline;
- **Historical Contingencies:** Time for discipline in its process of historical evolution, in which interfere with both the internal logic of the field of study as outside forces.
- **Material Field:** Set of objects which occupy. Many disciplines overlap in this area;

The courses consist of groups of researchers who have common intellectual goals. For example, when speaking of “Physics” or “Biology” is not referred to the representation of knowledge of physics or biology of epistemic value, but an institutionalized organizational structure with criteria, interests and goals of the researchers in the scientific policy.

As a practical example of a research discipline, the study of the sound made in different disciplines: Physics-and-vibration amplitude (acoustics); in Physiology-production mechanisms (vocal tract agencies); in Linguistics – significant and generation of meaning; in music-rhythm, melody, harmony and timbre.

Interactions Between Scientific Disciplines

There is a general recognition, based on numerous studies and research, the science of information is more responsible than creditor in relation to contributions from other disciplines. Information science incorporates a vast body of knowledge from various disciplines, downloading relatively little in return. And many papers published interdisciplinary relations between information science and disciplines “without sharing, deepening or theoretical foundation that the appropriate” (Pinheiro, 2008, p. 29).

The inter-and transdisciplinary propose to offer alternatives to ways of thinking and doing science, offering, in addition to the reductionist, analytical thought forms of scientific research that respond to the needs of understanding facts and phenomena in all your complexity.

Levels of integration of disciplines are classified under different perspectives and formats, from simple loans of theories and methodologies the offsets or dilution of frontiers between scientific fields involved, without a distinction very accurately the limits between these levels, within a “conceptual” and growing Pinheiro (2006, p. 1), as successive.

Saracevic (1999), considers the development of information science to its origin and social role, the nature of the object, its information, its structure in terms of issues, trends, information retrieval and the relationship with other areas, issues and educational models.

According to Wersig and Nevelling (1975), under the title of information sciences (in the plural) is systems theory, communication theory, philosophy, science of Science, mathematics, Linguistics, and information science itself, in addition to Librarianship, Archival science, Museum logy, communication and education. This set of disciplines appears linked to information theory, contains areas and theories that relate to the information science, including Cybernetics, Semiotics, theory of computer science.

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The areas are related by General theories, such as the theory of systems, applicable to different Sciences. The interdisciplinary fields of information science are made up by three levels or hierarchies, where this area appears linked to the philosophy and consists of subareas very similar to recognized by Wersig and Nevelling (1975), sociology of Information, information economy and information Policy.

Complimentarily Between Concepts

Under the Epistemology, when studying the interdisciplinary, other related concepts are emerging, including those who are founders, as field and area of knowledge, or complementary concepts, including related applications the professional activities. The interaction between disciplines involves different tasks in many human levels and categories, and the interdisciplinary needs to be searched in the plurality of your Constitution.

Japiassu (1976), mentions briefly the applications-oriented professions and, in information science, this aspect gains importance by another quality of this area, sometimes called horizontality, or better, the information capacity each passing all fields, in its condition of specialized information.

According to Pinheiro (1999) "... The applications (contexts, areas, sectors, organizations), that is, the scientific, technological, industrial information or artistic, or the application in fields of knowledge, such as in the economy (economic information mingled with interdisciplinary itself) are distinct concepts although they can introduce interdisciplinary contributions".

To Amaral (1990) "... field designates the total territory whose investigation if it intends to operate, such as medicine, Philosophy, communication are fields. Area is a subdivision of the field, a cut artificially introduced for reasons of exploratory studies. Theories of communication, culture and image are areas such as philosophy or surgery."

Complements his explanation of concepts, with the line of research, stating that "there will be a line each time, within an area (which is characterized by a certain informality in the sense of the absence of a clear individualization form), certain themes agglutinating form cooperation between researchers. These gather for, working around these issues, deepen and develop the area. (Amaral, 1990).

THE INFORMATION SCIENCE AND ITS RELATIONSHIP WITH OTHER INTERDISCIPLINARY AREAS OF KNOWLEDGE

The Information Science and Social Science

The first studies of information science were about the social reality in statistics (quantitative). The use of vibration according to information flows and the application of questionnaire large samples of users/ decision-makers/managers and research of cognitive invariants for the design of information systems for the management of the organizations are examples of this approach.

According to Cardoso, (1994, p. 111-112), the reality is changing and in construction, and the entire process of knowledge is only a possibility of approximation of the truth, for what is considered as a subject of study in the field of social information:

- **The Historicity:** Cognoscente subjects and objects ‘ cognizable to the explanation of the phenomena (e.g., citizenship studies, informational exclusion, the rural information, scientific communication, information management, etc.);
- All-social phenomena;
- **The Tensionality:** Which is present in society.

For Carlos Araújo (2003), the science of information is based on micro-spotlights and met a deep recasting of interpretative assumptions that changed the meaning of what was understood as “information”. The fundamental theoretical support was the work of Berger & Luckman (1985), to discuss reality as something that is socially constructed rather than as an existence in itself. The authors make way for understanding the information not as a given, something that would have meaning and importance in *itself*, but as a process, as something that will be perceived and understood in different ways, according to the subjects that are in comparison, which contradicts the definition of Borko (1968) about the behavior and information flows, excluding the subject and setting of Buckland (1991) that sees the “information”.

The question of intersubjectivity became central to the understanding of the different planes of reality, the distinction between the different forms of knowledge and the mechanisms of its configuration and legitimating. The subject must be included in studies of information and, above all, needs to be included in their day-to-day interactions, forms of expression and language, rites and social processes. The science of information cannot therefore ever conceive its process of creating information systems the same way.

According to Wersig, (1993, p. 235), “*information science is not to be looked at as a classical discipline, but as the prototype of the new kind of science*”. The way the information science has been overcome their problems (limits and theoretical and methodological dilemmas) sought to encompass a thought with complexity evolves to new stages of dialogue and intersection with the other sciences.

The Science of Information and Knowledge

Although the terms information and knowledge used, there are not the same thing. The information is not the same thing as data, although the two words are confused frequently, so it is important to understand that the subtle distinction between these concepts is essential. The data do not carry any sense or meaning of the facts, images or sounds, since they lack relational elements essential to the establishment of a complete meaning, requiring a relational structure internal to a cognitive purpose. This structure is one of the attributes of information. The data become information when its Creator joins their meaning (Davenport and Prusak, 1998).

Zikmund, (2000, p. 19) defines knowledge as “a mixture of information, experience and understanding which provide a structure that can be applied in the evaluation of new information or new situations “. The information “feeds” the knowledge. Knowledge can thus be defined as the ability of a person to relate complex information structures to a new context. New contexts require change-action, dynamism. Knowledge cannot be shared, although the technique and the components of the information may be shared. When a person internalizes the information to the point that you can use, call it knowledge (Zikmund, 2000). This is a fluid mixture of experience, values, contextual information and expert insight, structured to provide a framework for evaluating and incorporating new experiences and information. Some organizations lie not only in documents and reports, but also, in organizational routines, processes, practices and norms. The knowledge originates and is applied in the minds of knowledgeable (Davenport and Prusak, 1998, William Zikmund, 2000).

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Knowledge is information as valid and accepted, integrating data, actions, information and sometimes hypotheses. The knowledge needs someone to filter, combine and interpret the information. The information can be considered as a “*substance*” which can be acquired, stored and possessed by a person or group and transmitted from person to person or from group to group. The information has a certain stability and may be if faced better as existing at the level of society (Davenport and Prusak, 1998). Although we can store employing multiple media, the information itself is not physics, but rather abstract and purely mental. Knowledge is stored in the memory of the people, but the information is out there in the world. Whatever, it exists somewhere between the physical world around the people and mental human understanding. Knowledge = internalized Information + ability to use it in new situations.

The knowledge is fundamentally and inherently inside of people. These are much more complex and unpredictable individual level than an entire society, so it is not surprising that knowledge work much harder to obtain than information. The knowledge exists primarily within the people is an integral part of the complexity and unpredictability (Davenport and Prusak, 1998). Knowledge presents a fundamental duality: it is storable something (at least sometimes we want to do it) and something flowing (something that communicates from person to person). Is possibly the duality of knowledge (something that flows and storage process) that makes its treatment and its management. According to Dahlberg (2006), the knowledge is organized in units of knowledge (concepts) according to their characteristics (objects/subjects/issues). The Organization of knowledge relates to a conceptual analysis process of a domain of knowledge and, from there, this is structured/Europe is generating a representation of knowledge about such a domain that will be used for the organization of the information about that domain of knowledge.

The Information Science and Education

According to Davenport and Prusak, (2002, p. XV), the only sustainable advantage of organizations is that they can collectively join, the efficiency with which they use what they know and the readiness with which they acquire and use new knowledge. Organizations that learn represent an ideal that is being pursued in the development of intellectual capital. A learning organization is an organization that facilitates the learning of all its members. According to the same authors organizations can be based on intuition and get lucky for a few years, but the most successful are the ones that remain in tune with the information – from the inside out and from the outside to the inside and use them in the decision-making process (2001, p. 124). The knowledge produced or gathered by information science, about the processes of the organizations and the use of information, may constitute a significant contribution to the managers of the organizations as well as for managers of educational systems.

The term “skills” is used as a way of establishing the educational and curricular goals. The concept of “jurisdiction” puts into sharp relief the use and ability to apply the knowledge learned in the various disciplines in concrete situations. According to the informational pyramid of Barreto (2002a) of human needs, the individual moves from the base to the top, passing from one stage to the other, only when all the needs, at this stage, are met. At the bottom of the pyramid are people seeking primarily information of use to the needs of security, order and freedom from fear and threat.

In the following stage people seek the information ensures permanence to them safe in the various contexts in which inhabit and wish to remain. Seeking information for personal gain and the institution in which they work. At the top of the pyramid people are linked to information with appointments of reflection, creativity and accomplishment of your potential. Looking for information can be inferred from that adds quality of the basis for the top of the pyramid. According to the same authors, the supply of

information is an inverted pyramid in quantitative and qualitative terms, setting up situations of rationing and information surplus in the extremes. By analogy, it is understood that the pedagogical information is at the top of the pyramid of the offer. At the base, the utility information: statutes, regulations, school records, communications etc. These, in addition to the diversity, have its feature transience, that can even justify the imbalance between demands and supply Barreto (2002c).

The author considers the existence of three types of information:

- **Basic:** Responsible for the basic needs of individual information in the exercise of your citizenship, such as the need for housing, food, clothing, health and education;
- **Contextual:** Responsible for current transactions of information so that the individual can remain and maintain their living spaces, professional, economic and social policy;
- **The Reflexive:** Geared to think, research, innovate – is the search for information that leads to the creative thinking of redesigning and reformatting of information on new information, allowing innovation in all its aspects.

Considering pedagogical information, it is possible to assume that the problems related to the information on school lies in getting, organize and use that constitutes the base of the pyramid of the offer, i.e. in spite of the offer, no demand is reflective. Searches are basic and contextual. All these arguments refer us to information science, as the area of knowledge with the potential to contribute to education in understanding and overcoming its problems.

The model of McGee and Prusak (1994), involves the recognition of strategic information (the one that makes the difference and enables an above-average return in economic terms), filter, collecting, sorting and storage, processing and presentation, development of products and services, distribution, dissemination, analysis and use of information. Davenport (2001), proposes an ecological approach, with the emphasis on the environment: teams, culture, behavior, work process, informational policy, technology – allows some inferences and analogies with regard to premises and to critical components.

Nonaka and Takeuchi (1997), with its knowledge creation theory in enterprises, launch an adversarial nature, static and non-human knowledge, established by traditional epistemology, showing knowledge as dynamic human process to justify personal belief with the truth. And establish the conditions for the creation of new knowledge, analyzing the possibilities of converting tacit knowledge into explicit. Chun Wei Choo (2003, p. 61) reveals and examines the interdependence between three modes of use of the information of an organization – creation of meaning, knowledge-building and decision-making-demonstrating your complementarily. In addition, propose an approach to analyze and compare the behaviors of the use of information in organizations “. The science of information, as we have seen, has a lot to offer to increase the knowledge and develop the “skills”.

The Information Science and Economics

The world reality is evolving faster than the ability of scientific demonstration is able to systematize its understanding. In the center of the globalizations of technological development with all due respect by Weber (1864-1920), and by force of certain ideologies, it must be recognized that when Adam Smith (1968) (Division of labor) or Marx (productive forces) put the evolution of the techniques as the engine of social change, were strictly certain. Today, we live a deep technological revolution. In the last twenty years accumulated more technological expertise than in the entire history of humanity. This has a posi-

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tive side by significant advances in terms of increasing productivity was achieved, by advances in health information and many others.

Technological advancement has not had a corresponding advancement in institutional terms, making explosive to the society. Industrial fishing is done with huge boats that clean the seas without worrying about tomorrow, the modern transport led to the establishment of a worldwide network of production and distribution of drugs which destroy thousands of people. The laboratories rehearse genetic manipulation without any control or regulation, and so on (Murteira, 2001).

Improve the management capacity has become a survival issue for organizations. The technologies redefine the concepts of time and space. The planet has become a global village. Allow communications today is easier and quicker to perform an operation on the New York Stock Exchange or Tokyo than go a short distance. International financial markets transfer daily more than one trillion dollars without any control of central banks. The Chinese textiles close factories in Europe or in any other country in the world. The economy has become global, while the regulatory instruments continue to be national or regional in scope (Murteira, 2001).

There are international regulatory institutions, such as the UN, Gatt, IMF and the World Bank United Nations and supra-national space. The capitalist Nations reach today a precarious balance between business efficiency and social justice. Global capitalism is not accountable to anyone (Murteira, 2001). This absence of regulatory instruments of the global economy aggravates world polarization between rich and poor. Companies must take your social and environmental responsibility. The reality is that, while the planet “shrinks”, everything becomes closer, the people ” live in topo of each other” increasingly in urban spaces, the cliff between the economic and social population increases rapidly, there is a close proximity between the wealth and the poverty, the luxury and the deprivation and it’s become an explosive mixture and unsustainable in the medium term. The balance of terror is no longer at the level of countries, but at the door of our homes (Murteira, 2001).

Another axis of the institutional transformation is given to us by the process of urbanization that is radically changing the way of life of the populations worldwide, in a few generations. Urbanization is over with the time that Government decisions could be taken by the central Government. Today, with the widespread urbanization, large, medium or small cities must respond to simple problems of citizens ‘ everyday life (school, health, small production, etc.) and becomes increasingly absurd wait endless times in different State bodies.

Another axis of transformation is the structural transformation of the work. The unemployment is not the result of the absence of economic growth, but economic growth itself. Who are waiting for the situation to improve probably will lose the train. It will be of little importance the Division of activities into primary, secondary or tertiary sector, once this technical division complicates understanding of the hierarchy of the social and economic system in different subsystems (Murteira, 2001).

Large companies began to work with multiple spaces. Hire Russian and Indian investigators, transfer the *software* programming for India, outsource production in Indonesia or Thailand, but keep the overall system organization services, the coordination of services marketing and the like, in Europe or the United States. With this reduced the space of formal employment and increase the informal employment and the black economy. While on the one hand the democratization of global management and the world is moving into a process of apparent modernization, on the other hand society will be disaggregated by the base. In terms of completion may be five fundamental trends in this process of globalization: technological development, economic polarization, urbanization and transformation work. Society urgently

needs to pull the reins on its development and establish institutional instruments capable of capitalizing on the scientific advances for human development.

The Information Science and Management

In the last twenty years have seen a major transformation in society, that is, we went from a society based on industry and transport, to another based on information and knowledge. A major challenge for managers is to understand what information is, how ménages, interprets and that decision (s) allows taking, in an era of globe-wide communications, since the information is the bond that unites us. To be able to transmit in large quantities quickly from continent to continent, we transform the world into a global metropolis, by that in the global economy, information and knowledge can be the biggest competitive advantage of organizations (*Thomas Davenport & Laurence Prusak, 1998, p. 13*).

Another problem the managers faced with the challenges is the abundance of information in today's society, whose most obvious sign of the emergence of this kind of society, it is the combination of the production of large amounts of information, the intensive use of information and communication technologies and the process of permanent learning. The articulation of these three aspects suggests that from the information society went quickly to the knowledge society. The symbolic culture of this society implies new forms of learning, of organization and management and information management. In the information and knowledge society there are several hierarchical levels or progressive stages directly related to the learning process of this knowledge, we can consider three stages: data, information and knowledge.

Many people in organizations spend their day-to-day work to gather, analyzing and processing the information; some industries have developed on the basis of the information resource to produce technologies (process technology – the computer, product technology-the software and technology of communication – the communication equipment + software), that is, to store, process, transmit and easy access to information. Managers cannot open a newspaper without reading the term information. Many books have the term information. Many people in organizations have engaged the term information. It seems that it will be easy to say what is. However, when we started thinking about the term information, we have some difficulty in the set. Part of the difficulty in understanding the information managers is that they are so used to dealing with it on a daily basis who do not realize the complexities involved. Only managers realize the difficulties when faced with a new language. The potential for misinterpretation is always present.

Given the importance of communication in organizations who are involved in decision making, manager needs to find ways to reduce the possibility of error. To do this, you need to understand how communication takes place – how information is transmitted from person to person, from computer to computer and between the person and the computer. The need to understand the information – what it is and how it flows – is not limited only to large organizations. Whenever a person communicates with another, we have a flow of information, because communication is a means to provide information from one person to another.

The information that top managers need is of two types: information to identify new business opportunities (built-in on the skills and capabilities of the Organization and external information about the global and immediate surroundings). This is not structured and remains merely consist of data to have meaning needs to be structured, given that not all the information makes sense and it is important. External information is that which each time is more important to support in strategic decision-making, but it needs to be watched and organized for the work of the strategic managers.

The Information Science and Marketing

The Marketing is present in all professional areas and in information science although some rejection. However, it is stated that the marketing of the products and/or services, in order to solve the problem of the lack of its visibility is (information). Information workers seek the teachings of the Marketing for being applied in information management, to ensure better performance and success of organizations. Many reasons can explain this behavior, among them is the limitation of Marketing promotion, which is the visible part of the Marketing (Amaral, 2001).

Make the disclosure to promote the products and/or services is not enough, because the Marketing is more than that. The Marketing is a function of management, that is, is a social function and a set of processes that involve the creation, communication and delivering value to customers, as well as the management of relationship with them, to benefit the Organization and the public interested in it (American Marketing Association, 2004).

Although it appeared in for-profit organizations, since 1969, when Philip Kotler and Sidney I. Levy published their article in the *Journal of Marketing*, it is admitted the possibility of non-profit organizations adopt marketing techniques. The adoption of these techniques depends on the research and study on the adoption of Marketing in the specific context of organizations.

Borko (1968), admits that information science is an interdisciplinary science related, among other areas of knowledge, with the business sciences. As Marketing is a process management approach and, therefore, is related to information science about information management. This association allows to consider the term information Marketing.

According to Amaral (2004, p. 59-60), the study of the information Marketing refers to the Organization and to the systems involved with the processes of management of information relating to the various stages of the cycle of information, in particular, the research, collection, processing, distribution, analysis/interpretation to support in decision-making on the part of managers.

The author believes that the Organization of information and systems involved are considered units of information in organizations with or without profit. Kotler and Keller (2006, p. 6-7) include the information in their studies, when they you consider that marketers involved in marketing products and services, events, personal experiences, places, property, organizations, information and ideas.

If information workers do not awaken to the consolidation of Marketing theory in information science other mind it surely and, as such, are losing the opportunity to highlight to society the importance of its role in the management of Information for the featured deserved and not recognized by our society and the social role of the intelligence units and their managers as agents of society transformers.

Among scholars and researchers of information science resistance, to adoption of marketing techniques is a reality. But despite this strong rejection, paradoxically, it is said, too often, for example, that the marketing of library or the problem of the lack of visibility of the information, results from the lack of marketing.

According to Pinheiro (2005), there are three phases of development of information science. The first, running from 1961 to 1969, is characterized by conceptual and interdisciplinary recognition bias in which most theorists have not yet clarified what would be the interdisciplinary contributions and how these would be. The second, going from 1970 to 1989, is characterized by epistemological information science effort, defining methodologies and theories. The third phase, the early 90 onwards, in which the information science lies its consolidation of principles, methods and theories, turning to further interdisciplinary with other areas of knowledge.

At each stage of development of information science, different interdisciplinary relations manifest themselves with different intensities, since relations with librarianship and documentation (Oddone, 2006, 53-54), features in the creation of the discipline until relations with the management and the economy (competitive intelligence, knowledge management, information management, information economy, among others), typical of the emergence of the information society of knowledge (Patel, 2006, p. 21). As Patel (2006, p. 27):

(...) the interdisciplinary field of information science will move and gradually acquiring new settings, the circularity and like a spiral, in the design of Morin. Disciplines and sub-areas of the field and their problems, which require other solutions areas, promote interdisciplinary transformations and, conversely, these new epistemological relations will be modifying the territory of area.

The American Marketing Association (2004), defines Marketing as a management process that involves creating, communicating, delivering, and exchanging offerings that have value for customers, partners and society in general. The central point in all marketing activity is focused on understanding the needs, perceptions, preferences and interest for satisfaction and behavior patterns of the target audience (customers or users). In practical terms, the purpose is the creation of appropriate products or services distributed in an efficient way with the proper use of communication tools to maximize the value perceived by customers and the profitability of the producer (Amaral, 2008, p. 34-35).

The marketing also involves the management of the relationship between all the parties to benefit the organization service provider (or producer of goods) and its audience interested. There is clearly a space for collaboration between marketing and information science. Due to the dependence of marketing activities in relation to the client's knowledge and being the effective exchange of information the basis for the generation of all knowledge, information science can be considered highly relevant to the practice of marketing (Dan, 2006, p. 42).

The information science, in practical terms, needs to manage processes (in particular the study of information needs of its clients and potential), troubleshoot and provide informational services, balancing the demand for all involved in this great process of scientific and technological communication, essentially for all sciences. This is the symmetric problem (that is, the management of information about customers and the management of informational needs of clients) that the marketing and information science are a common base of expertise.

According to Dantas, (2006, p. 42), the field for the study of information marketing refers to organizations and systems involved in the processes of management of information relating to the various stages of the cycle of information collection, processing, dissemination and use of information. We have to understand points of contact between marketing and information science and the level of complexity that has been giving this relationship.

The Information Science and ICT's

The concept of technology is understood immediately by those who serve and which is referred to constantly. There is unanimity on an implicit concept, but it is essential to clarify, IE technology is a complex set of knowledge, resources and *know-how*, organized with a view to production. So, one can speak of the production technologies of high-density integrated circuits and measure, supported a global network

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of design and manufacturing centers linked by satellites (Jean-Michel Ribaut and Bruno Martinet and Daniel Lebidois, 1991, p. 13). Any technology includes three components:

- **The Knowledge:** Which by itself does not constitute a technology;
- **The Means:** Featuring the technology, but that this cannot be reduced to them; in unskilled hands any technology represents a waste of investment;
- **The Know-How:** Without means is a specialization but cannot get any results and falls quickly into disuse for lack of application.

Organizations to improve their competitive position use two ways, i.e., on the one hand, they observe and analyze customers' needs to be met and this can lead to technological innovations, or analyze the advantages of replacing a technology for other enabling improve your *performance*. Any technology is always appealing to various scientific disciplines, such as *laser* technology brings together knowledge of optics, electronics, fluid mechanics and thermodynamics. Scientific research aimed at acquiring or enhancing knowledge (interim certainty), while the creation of technologies aimed at the production in industrial conditions. The technology only makes sense on the basis of a guaranteed result: a technology only exists when it is validated and when allows production conditions, namely the technology solves a problem.

The information and communication technologies can be defined as the set of knowledge, of material resources (infrastructure) and *know-how*, necessary for the production, marketing or use of goods and services related to the temporary or permanent storage of data, as well as the processing and communication of the same. The appearance and the evolution of the technologies represent a decisive impulse to the appearance of new forms and perspectives to face issues related to how to compete. The use of information and communication technologies has been expanding progressively, the English expression "*Information Systems*" what systems, represent what in Portuguese can be translated by "*computer systems*" represent a systemic form, complete and organized the collection, selection, processing, analysis and dissemination of information.

The information and communication technologies enable the storage, processing, accessibility and transmission of data flows (information), so one cannot confuse the process technology (hardware) and the software product with the product (information). Understand the difference between the information for the management of the business and the information and communication technologies is vital for managers for the simple reason that the information helps managers, to make decisions, whatever several. But the managers also cannot forget that the information and communication technologies, as a support, allow obtaining competitive advantage regardless of market share and the size of the business.

In consideration of this issue, it is important to distinguish support for collection, processing and transmission of the data (technological infrastructure-hardware, software, and communications) and the information resulting from the collection, selection, treatment and analysis of the information, i.e. the information embodied in the system of streams (i.e., between the resource information, i.e. data and product information).

The Era of Post-Shannon's Theory of Communication

The research work of Claude Shannon (1916-2001) led to the definition of the information and communication theory, whose first publication in 1948 was seen as one of the pillars of 20th century science,

having Shannon been compared to Einstein and Darwin in terms of his intellectual impact a significant number of problems and applications of digital transmission and encryption of information in investment theory. The theoretical concepts of information are now penetrating also very quickly in the field of genetic biology, cellular signals and transmission in neuroscience. Shannon's theory was seen as a perfect theory, that is, complete, suitable for all appropriate settings or interesting communications problems-mathematically rigorous that is, produces results that are "heavy" in several useful ways and provides a definition of what is possible in particular with respect to the ability of the sign of the uneven enough communication channels.

Shannon's theory was on the rack for 30 to 40 years and was forgotten by the actual practice of Engineering (to be discussed elsewhere). But in the last ten to fifteen years, the scientific method of engineering broke abruptly with the theory, and even more surprisingly that has exceeded in some fields of research. The push method to many of these fields has emerged in the field of engineering and wireless communications, where the only feature of the wireless channel created several of interesting changes in classical information theory.

The readjustment with the practical problems of the engineering method was clarified, when the theory of Shannon stopped on certain key assumptions, since not all were fully defined or operated (or perhaps more properly understood) in the original development of the research field. While we can understand these assumptions, it also becomes possible to see past them and what we are witnessing is the emergence of the various concepts of architecture Post-Shannon signal in which the conventional theoretical work of Shannon is being extended or even replaced by newer methods of Engineering (many examples can be discussed).

EMPIRICAL RESEARCH TO DELIMIT THE INTERDISCIPLINARY INFORMATION SCIENCE WITH OTHER AREAS OF KNOWLEDGE

Scientific Framework

The debate on interdisciplinarity of information science, involves introducing new concepts, in a chain that conceptual part of disciplinarily and unfolds, consequently, increasing and complex connections between disciplines. The development of information science needs to solve the problems of human and Social Sciences epistemological (Japiassu, 1977, 1994), who's interdisciplinarity is inherent, brought to the center of the discussion the pursuit of understanding of its nature and of the interfaces between disciplines.

The theoretical discussion of interdisciplinarity and the empirical research on the areas/subareas/subjects of information science form the basis for the design of the structure of the areas presented at the end, bringing together the disciplines according to its nature.

For information, the phenomena of interest are all that are involved in the process of informational environments, i.e., are interested, by nature, informational spaces as the world boundaries and the relationship between decision makers/users and informational flows, particularly by methods and techniques for solving practical problems.

The area is concentrated in the field of information that is the subject of study of information science, but this is just one aspect of such a domain, that is, the shared information environments envisioning the viability of information flows. In this sense the interdisciplinarity of information acts in the modeling of information systems and in the modeling of informational content structures.

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In relation to the positioning of the interdisciplinarity of information science can be understood if on those grounds earlier, that the field presents the characteristics of a discipline. By its nature and its methods, models and theories are derived from other disciplines.

How a discipline should seek formalization of its body of knowledge through theories and methodologies which are developed to be applied in solving problems. According to Haverty (2002), theories must submit guidelines for the modeling and the study of generic phenomena, must be enough to be independent of the technological changes that are only, means of information processing, although exercise strong influence at the level of practical implementation.

The existing conceptual gap realizes that approaches mainly “bottom-up” for resolving problems, so there is a need of epistemological and theoretical studies to support the field so that the development of theories and models occur systematically.

According to Borko (1986) the information science investigates the properties and behavior of the information, as well as the forces that govern information flows. Interdisciplinary of information about a specific process “the information interface in space or informational environment” and, as such, can and should be considered a discipline of information science, in that it provides the fundamentals for understanding the “phenomenon of information” which is the subject of its study, while that provides the methods and techniques for the structuring of flows, the subject in informational spaces.

According to the thought of Edgar Morin (2000), the information cycle (production, capture, processing, and communication) notes that the disciplines that are part of information science are involved in one or more of these aspects, namely the cycle of information is at the core of the information science and is present in one form or another, in all disciplines of science.

According to Robredo (2003), the science of information is divided into five major areas and subdivisions:

- **Theory of Information Science:** Fundamentals of information science; information theory; Bibliometrics; information-retrieval models and principles; assessment and metrics; organization and representation information classification; recognition and interpretation/analysis images; multimedia; Hypertext and hypermedia;
- **Communication:** Theories of communication; *media* printed and non-printed; man-machine interaction; design, operation and maintenance of communication networks; models and empirical findings about the transfer of information (knowledge); collective intelligence based on systems of cooperation; innovation processes;
- **Business Sciences (Economics, Management, Marketing, etc.):** Information economy; information models for decision-making; informational resource management; social studies; strategic use of information;
- **Information Science Applied:** Applications of information science, best practices study, management of file systems, document management, archiving and security; management of libraries (digital or not); information systems for the management of organizations (computerized or not).
- **Social and Legal Aspects of Information:** Impacts of information systems in society, ethics and information; legislative and regulatory aspects; the history of information science; education in information science; privacy; intellectual property; rights of author.

In view of the above, it is possible to verify that, in essence, the activities carried out by the information professionals, whose core of the profession is the importance of identification/selection and ar-

rangement of information to facilitate decision making/ access by decision makers/users. The visibility of the interdisciplinary of information has increased in view of the importance given to information society, mainly by the organizations, since their managers realized that many of the key problems were problems of information (Rosenfeld, 2002).

ANALYSIS OF THE LITERATURE

Information Science Disciplines and the Interdisciplinary Areas

The interdisciplinary nature of information science was observed from the earliest conceptual formulations of the area, dating back to the early 1960s. In this phase, the concepts and definitions of this new field that surfaced between the applied social sciences, very naturally to incorporate interdisciplinary, not exceeded the identification of interdisciplinary areas, without, however, sharing.

Mikhailov, Chernyi and gilyarevskiy (1969) expose how come true relations of information science with the semiotics, psychology and librarianship. Saracevic (1992), discusses the connections of interdisciplinary information science with cognitive science, communication, computer science, and library science.

Patel (1997) divided the disciplines of information science in interdisciplinary areas with the respective sub-areas, which made it possible to monitor the development of epistemological area construction, reflected in the disciplines, some consolidated and other emerging, such as competitive intelligence, knowledge management, scientific communication Electronic, digital/virtual libraries, etc. The result is presented in Table 1, ordered according to frequency of subareas, the greater the lower frequency, from information systems.

Considering the greater or lesser presence of interdisciplinary knowledge fields, for each discipline or sub-area of information science, the computer science, present in 8 disciplines, followed by the library and Administration, 5; and Economics and Linguistics, that appear intercrossing with 3 disciplines or sub-fields.

It is observed that the sub-areas that have gained relevance and which have been consolidated based on technological change were the electronic scientific communication, today intensely studied, and Bibliometrics, informetrics / have specific software for the processing of the data. In the light of the development of information and communication technologies-ICT's some new subareas, from the years 1990, as digital libraries, and data mining, or the resulting from globalization and the competitiveness of markets, as intelligence Competitive and knowledge management (Pineiro, 2002.2006).

To end this topic, a new reflection, from Pigeon (2003), about disciplinary reordering, exposed in three types: science, inter-disciplines and inter-sciences. The author exemplifies the inter-sciences with the Ecology, Wersig (1993), to think the information science as a prototype of postmodern science, along with the Ecology. For the author, both differ from the classical Sciences originated from the revolutionary change of the role of knowledge in the contemporary world, in philosophical and technological dimensions, and its creation is driven by the need for troubleshooting caused by science and technology.

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Table 1. Areas/disciplines of information science and interdisciplinary areas

Subareas/Subjects	Interdisciplinary Areas
Information systems	Administration, computer science
Information technology	Computer science
Information retrieval systems	Library science, computer science and Linguistics
Information policy	Administration, political science and law
Information needs and uses	Archival science, library science, museum studies and psychology
Information representation	Archival science, library science, philosophy, Linguistics and Museology
Theory of information science	Epistemology, philosophy, philosophy of science and mathematics
Training and professional aspects	Education, ethics and law
Information management	Administration, economics and statistics
Databases	Computer science
Automatic processing of language	Library science, computer science and Linguistics
Information economy	Administration and Economy
Bibliometrics	Statistics, history of science, mathematics, and sociology of science
Competitive intelligence and knowledge management	Administration and Economy
Data mining	Computer science
Electronic scientific communication	Computer science, communication, history of science and sociology of science
Digital/virtual libraries	Library science, computer science and Communication

Source: adapted from Annual Review of Information Science and Technology (ARIST), 1966-2011. Available at: 15-03-2018 in <https://www.asis.org/Publications/ARIST/vol45.php>

Generic Model of Interdisciplinary Information Science

The practical aspects of the interdisciplinary of information can be understood better with the model proposed in Table 2, which is a practical representation of the concept of the interdisciplinary of information set out above. The objective of the model is to systematize the concept of the interdisciplinary of information through a systemic approach, whose representation is the way in which the theories and methods that can be applied to solve practical problems in any environment of information that is part of the context, content and policy/users, based on epistemological bases mentioned.

In Table 2, are shown the knowledge areas, the areas/disciplines/practical examples of interdisciplinary and basic application information cycle. Each column represents an overview of areas, sub-areas / subjects / interdisciplinary of the discipline. In practice, the interdisciplinary of information can be seen as a set of methods and techniques applicable to any environment.

FINAL CONSIDERATIONS

The information science is a field of knowledge in a constant process of historical transformation, material, epistemological and theoretical practice. It is observed that one of the great advantages to think about the dialectic of knowledge in information science is on its disciplinary and interdisciplinary design, and

Table 2. Areas / sub-areas / subjects / interdisciplinary

Sciences	Area	Sub-Areas/Disciplines	Interdisciplinary	Practical Examples
Business Sciences	Marketing	<ul style="list-style-type: none"> Market Offer of products and services Distribution channels Communication After-sales services Behaviors and patterns of use 	Information marketing about products and services of the organizations	<ul style="list-style-type: none"> Study/Identify the market information (explicit and implicit needs) Create the information on products and services Organize and structure the information on products and services Disclose/Distribute the information by target customers (consumers and managers) Use the information (fonts, choose, treatment, decision) by customers and managers
	Financial	<ul style="list-style-type: none"> Planning of financial resources; Attraction of financial resources; Management of the available resources; Management of insurance; Accounting; 	The information for the economic, financial and legal Management of organizations	<ul style="list-style-type: none"> Identify the needs of financial information about the monetary means of organizations Find economic, financial and information organizations accountabilities Post the info on the monetary means Organize and structure information on the monetary means Distribute the information by the managers and legal institutions Use the information (fonts, choose, treatment decision)
Business Sciences	Human Resources	<ul style="list-style-type: none"> Planning of the needs Recruitment Selection Performance assessment Wage policy Salaries Jobs and salaries Development Training Medicine at work Legislation 	The information for the management of people	<ul style="list-style-type: none"> Identify the needs of information on people Find information about people Record the information about employees Organize and structure information on employees Distribute the information by the managers and legal institutions Use of the information (fonts, choose, treatment, decision) by employees and managers
	Production	<ul style="list-style-type: none"> Planning of needs and abilities Capacity planning and control Nomenclature of the product (s) Purchases Stocks (MP, subsidiaries and materials) Planning and production scheduling Planning and control of loads Production control Production quality control of products Maintenance of equipment and facilities Production technology Cost of production 	The information for the production management of organizations	<ul style="list-style-type: none"> Information needs about products and services of the organizations Looking for information on products and services Record the information on the transformation of raw materials into finished products Organize information about the means of processing Architecture of the Information about the means of processing Distribute the information by the managers Use the information (fonts, choice, decision)
Business Sciences	Logistics and distribution	<ul style="list-style-type: none"> Internal Logistics; Operations; External Logistics; Management of purchases Stock management Storage, Distribution, Transport, Support activities 	The information for the management of Supply chain organizations	<ul style="list-style-type: none"> Identify the needs of information on products and services of the organizations Find the information Record the information about the clients' requests; Organize and structure information on the customers' requests; Distribute the information by customers and managers; Use the information (fonts, choose, treatment decision) by customers and managers

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Table 2. Continued

Sciences	Area	Sub-Areas/Disciplines	Interdisciplinary	Practical Examples
Business Sciences	Management of the organizations	<ul style="list-style-type: none"> Information on the environment (external) and about the capabilities and competences of the organization; Problems and Prospect; Information and communication skills Information for the management (<i>governance</i>) Information architecture Information of dossiers Information and skills 	Information for overall management of the organizations	<ul style="list-style-type: none"> Study/Identify information about the surroundings (explicit and implicit needs) Acquisition of information about the surroundings Create information about the offer of products and services Organize and structure the information about products and services Disclose/Distribute the information by target customers (consumers and managers) Use the information (font, choose, treatment, decision) by customers and managers Information-to analyze the environment and the skills and competences of the Organization (ex: which information to support the formulation and definition of strategy?) Problems and Prospect - evaluate the surrounding developments, that is, the evolution of society in the use of information (ex: socio-cultural change – habits, customs, etc.); Information and communication skills-to determine the information to support the management of competences. Determine the potential for the Organization to differentiate in the use and sharing of information (form a culture of information sharing). Information (<i>governance</i>) -develop guidelines for the appropriate use of information. Decide the “partners” in the sharing of strategic information. Information Architecture -develop information architecture and communications (essentially: who should report/communicate with who and what?). Define the critical processes of information and communication. Communicate through the design Skills and competencies -select and develop the potential of information and communication (for example: the sharing of information in the Organization). Information of dossiers - implement the information and communication processes (e.g. Exchange of information between departments) Information and skills -train people in the use, interpretation of information and decision making
	Information technologies	<ul style="list-style-type: none"> Computer technology Mathematics of computing Computing techniques Computational systems Technology of communication networks Software technology Physical security techniques 	Information for the management of Technological infrastructures	<ul style="list-style-type: none"> Technical architecture Database Storage of data; Data processing; Access to data; Transmission/transfer of data Platforms Networks Operations architecture Security architecture
Computer sciences	Software engineering	<ul style="list-style-type: none"> Applications/systems architecture; Architecture of integration; Architecture of services Data security architecture 	Information systems/management applications	<ul style="list-style-type: none"> Architecture of elements Software architecture/application system Data architecture (logical and physical) Architectural design Architecture of the properties of the elements/components
	Communication technologies	<ul style="list-style-type: none"> Network architecture Architecture of layers Identify the necessary functions Organize and structure the functions Control and synchronize messages 	Information for the management of communication networks	<ul style="list-style-type: none"> Identify the functions necessary for communication. Organize and structure functions in components (decompose or aggregate functions with differences/similarities, relationship/structure the functional components). Define rules of behavior and relationships between systems and components thereof for the purposes of communication and cooperation

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Table 2. Continued

Sciences	Area	Sub-Areas/Disciplines	Interdisciplinary	Practical Examples
Information science	<ul style="list-style-type: none"> Theory of information science Information systems Library science Archival science Museology Information management 	<ul style="list-style-type: none"> Needs and uses of information Sources of information Information content Classification of information Information indexing Documentation Information architecture Competitive intelligence and knowledge management Information systems for the management of the organizations Storage/file information Language processing Communication of information Social and legal aspects of information 	<p>The information as an object and resource people and organizations</p>	<ul style="list-style-type: none"> Information needs of people and organizations Acquisition of information The information industry (producers, electronic and digital storage, museums and libraries, cultural tourism, etc.) Create the information Organize and structure information Intelligence units Store/archive information Retrieve the information Distribute the information Use the information Qualitative information Quantitative information utility information: (ex: status, regulations, school records, internal / external communications, etc.) Information for food of knowledge The information in the management of organizations
Psychology	Information technology	<ul style="list-style-type: none"> Information sources Perception of the signs Information representation Properties and characteristics of information Nature of the information Psychology of Information Communication of information Development of cognitive structures Cognitive skills 	<p>Knowledge</p>	<ul style="list-style-type: none"> Filter, combine and interpret the information Transformation of information into knowledge Accumulation of knowledge Knowledge units Transmission of knowledge; New ways of learning Properties and characteristics of information Nature of the information Think, understand and interpret the world Memory, inference and deduction Value of knowledge Conscience semantics
Education	<ul style="list-style-type: none"> Human needs Learning Apartment rental Reflection, Creativity and realization of potential. Foundations of Education Educational Administration Educational Planning and evaluation Teaching learning Curriculum Guidance and Advice Specific topics of Education 	<ul style="list-style-type: none"> Training Informational skills Use and application of knowledge utility information Understanding and overcoming the problems. Informative ecology Creation of meanings Construction of knowledge Decision-making 	<ul style="list-style-type: none"> Knowledge Competencies 	<ul style="list-style-type: none"> Information needs of people and organizations Sources, filter, collecting, sorting and storage, processing and presentation, development of products and services, distribution, dissemination, analysis and use of information. Search for information: <ul style="list-style-type: none"> Basic- responsible for the basic needs of individual information in the exercise of your citizenship, such as the need for housing, food, clothing, health and education; Contextual- responsible for current transactions of information so that the individual can remain and maintain their living spaces, professional, economic and social policy; The reflexive- geared to think, research, innovate – is the search for information that leads to the creative thinking of re-designing and reformulating of information on new information, allowing innovation in all its aspects. The information industry (producers, electronic and digital storage, museums and libraries, cultural tourism, etc.) Acquisition of information Create the information Organize and structure information Store/archive information Retrieve the information Distribute the information Use the information Teams, culture, behavior, work process, informational policy

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Table 2. Continued

Sciences	Area	Sub-Areas/Disciplines	Interdisciplinary	Practical Examples
Sociology	<ul style="list-style-type: none"> • Foundations of Sociology • Sociology of knowledge • Sociology of Development • Urban Sociology • Rural Sociology • Sociology of health • Specific Sociologies 	<ul style="list-style-type: none"> • Sociology of organizations • Human behavior • social phenomena, • Explanation of the relationship of interdependence. • Understand the different societies and cultures. • Training 	<ul style="list-style-type: none"> • Sociology of Information • Information for solving social problems 	<ul style="list-style-type: none"> • Globalization of economic activities • The information and knowledge society • Studies on the nature and the cognitive development of humans • Perception, comprehension, memory, inference and deduction
Economy	<ul style="list-style-type: none"> • Economic Theory • Quantitative Methods • Monetary and Fiscal economics • Economic fluctuations and growth Planning • International Economics • Home Economics 	<ul style="list-style-type: none"> • Economics of Human Resources • Industrial Economics • Social economy • Economy of Social Welfare • Regional and urban economics • Savings The agriculture and natural resources 	Information economy	<ul style="list-style-type: none"> • Globalization • Economic polarization, • The urbanization • The transformation of the work. • Economic models • Technological development- that surpassed the areas accessible to our organs of the senses and that no one would have thought the overtaking arrived to the point; • Map change of science and scientific disciplines- underdisciplined. • ancient broadened and widened the scope of your business; mergers between disciplines giving rise to new underdisciplined. • Emergence of new products, production processes, activities and companies- that are based on scientific and technical progress
Philosophy	<ul style="list-style-type: none"> • History of philosophy • Metaphysics • Logic • Ethics • Epistemology • Political philosophy • Eshtetical 	<ul style="list-style-type: none"> • Well • Bad • Correct • Incorrect 	Epistemology of information	<ul style="list-style-type: none"> • Study of fundamental problems related to existence, knowledge, truth, moral and aesthetic values, mind and language. • Curiosity about the foundations of reality • Focus on the issues of human existence based on reason.
Political Science	<ul style="list-style-type: none"> • Political Theory • State and Government • Political Behavior • Public Policies • International Policy 	<ul style="list-style-type: none"> • Sources (credible) • Power • Public information (social) • Communication • Disclosure 	Information policy	<ul style="list-style-type: none"> • Information needs of the people and political organizations • Sources, filter, collecting, sorting and storage, processing and presentation, development of informational products, distribution, dissemination, analysis and use of information. • Looking for political information • The information industry (producers, electronic and digital storage, museums and libraries, cultural tourism, etc.) • Acquisition of information • Create the information policy • Organize and structure the information policy • Store/archive the information policy • Retrieve the information policy • Distribute the information policy • Use the information policy

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Table 2. Continued

Sciences	Area	Sub-Areas/Disciplines	Interdisciplinary	Practical Examples
Communication	<ul style="list-style-type: none"> • Communication theory • Journalism and Publishing • Radio and television • Public relations and Propaganda • Visual Communication 	<ul style="list-style-type: none"> • Daily press • News • News description • Message • Disclosure • Data mining • Narrative structures • Forms of speech in terms of time, space and subject 	Exchange of information	<ul style="list-style-type: none"> • Information needs of people and organizations • Sources, filler, collection, classification, storage, processing, presentation, development of informational products, distribution, dissemination, analysis and use of information-Mag. • Looking for info-Mag • The information industry (producers, electronic and digital storage, operators, distributors, etc.) • Acquisition of information-Mag • Organize and structure information • Retrieve the information • Distribute the information • Media • (C) contents of information • Congresses, conferences, oral and written press, etc. • Newspaper/newsticker, magazines, etc.
Social Sciences	<ul style="list-style-type: none"> • Sciences of man and society • Social life of human groups and individuals • The social life behavior 	<ul style="list-style-type: none"> • Social needs • Social information • The historicity of the subject and cognizable objects; • Social phenomena; • The tensionality of society 	Informational culture	<ul style="list-style-type: none"> • Studies on citizenship, deleting informational, rural information, scientific communication, information management; • Studies on the social and cultural understanding;
Linguistics, literature and arts	<ul style="list-style-type: none"> • Theory and linguistic analysis • Philosophy of language • Historical Linguistics • Sociolinguistics and Dialectology • Psycholinguistics • Applied Linguistics • Culture • Literary work 	<ul style="list-style-type: none"> • Semiotics, • Recast, • Paratext, • Morph syntax • Sources (articles, facts) • Knowledge representation • Literary creation • Disclosure • Communication 	The information for understanding, production, analysis and synthesis of the situational model	<ul style="list-style-type: none"> • Semantic encoding, • Acquisition of new vocabulary, • Creation of mental models • Understanding of the ideas of the text. • The Literature is not centered in the contents, in plots or themes of poetry, novels, short stories, novels or plays, but in the way they say, to present and to deal with the words to communicate with those contents

Source: Adapted from
 Arist - The Annual Review of Information Science and Technology. Silver Spring: ASIS & T, 1966-2011. Available in: < <http://www.asis.org/Publications/statement.php> >/ARIST; visited in 15-03-2018
 Agencia Nacional De Evaluación y Foresight (ANEP) Descripción de las temáticas areas. Available in: file:///C:/DISCO%20D/ci/artigos-trab/ci-interdisciplinaridade/Descripción_áreas_temáticas%20ANEP%202010%20sin%20Transferencia%20de%20Tecnología.pdf ; visited in 15-03-2018
 FCT-Fundação for science and technology; Scientific eÁreas Scientific domains. Available at: <file:///C:/DISCO%20D/ci/artigos-trab/ci-interdisciplinary/pdfvisitado in 15-03-2018>
 Domínios_e_Areas_Científicas_C2012.

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that the disciplinary construction of knowledge can be understood in the context of law enforcement/categories of the dialectic.

Studies allow affirming that the interdisciplinary approaches seem to indicate new and appropriate ways to advance scientific knowledge in an innovative way. This statement applies to all scientific disciplines, especially information science and other science arising in the second half of the 20th century. Seemingly paradoxical situations lived by area, such as the need to consolidate its theoretical basis and, at the same time, need to interact with other disciplines, information science requires more attention as to methods that uses in your research, as well as a broader understanding of the terms it uses. A maturing of the area around the terminology adopted about the interdisciplinary approach can produce a better understanding of its meaning, and appropriateness of the methodology adopted in the development of research in the area.

Interdisciplinary of information science is a materializing core of its epistemological configuration in terms of research, teaching and institutional action with other areas of knowledge. Interdisciplinary is a specific context with other fields of knowledge constitutes a dynamic movement of reciprocal action in which both information science contributes to a certain area of knowledge as this area must contribute for the epistemological-theoretical and practical development of information science. This dialectical-interdisciplinary perception can occur, for example, between the information science and psychology; Linguistics; Computer science; Communication; Philosophy; Sociology; History; Directors; Economy; Health Sciences.

This text seeks to discuss briefly, and preliminarily, the interdisciplinary of information science, based on the existing literature. Was come a long way in this methodology, where the analysis suffered an evolution over time, never ignoring the work and classifications used previously.

We tried to be consistent in the use of sources that formed the basis for the analysis, i.e., discussions and definitions offered by Japiassú, the concepts of borders and permeation offered by Klein, the notion of Morin systems or the recent inclusion of Pigeon studies, as well as consistent, keep the accuracy in the form in which these same concepts are presented in their work.

Was taken into account the Pinheiro's study in which not only he envisioned the interdisciplinary character of information science, as identified the disciplines with which is materialized interdisciplinary, in smaller and larger intensity. The limited character of this relationship, indicated by the author, is also found in other works of similar themes in information science.

It is concluded that the analysis of the interdisciplinary can be considered as one of the most important, not only for the limited amount of studies on this topic available within the field of information science, but by the quality and consistency of its approach.

We believe that the dialectic of knowledge in disciplinary information science laws/categories to sharpen and mature disciplinary perceptions of information science presented in this study does not seek to establish a truth, but design elements for discussion on what could be (or become) interdisciplinary in information science, considering that the dialectic as knowledge and construct method can help, especially from its various nuances.

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Section 3

Case Studies on Business Models

Chapter 16

Effects of Demographic Characteristics on Business Success: An Evidence From Turkish Banking Sector

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ABSTRACT

The aim of this chapter is to evaluate the causality relationship between education level of the personnel and profitability of the banks. For this purpose, annual data of 15 Turkish deposit banks, between the years 2002 and 2016, is taken into the consideration. Additionally, Dumitrescu Hurlin panel causality analysis is used to achieve this objective. The findings show that education level of the personnel has a positive influence on the profitability of Turkish deposit banks. Hence, it can be said that Turkish banks should employ more personnel who are university graduate or have master or PhD degree. The main reason behind this issue is that these personnel can work more effectively with the qualification taken from the university. Another important point is that Turkish banks do not have to spend too much money to increase the training level of these personnel at the work because these personnel have taken these qualifications in their university life. Hence, it is recommended that these banks should follow their wages policies to attract the attention of educated candidates.

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INTRODUCTION

In a country, there are some parties that have some savings and they want to increase their wealth. On the other side, some other parties need money for different purposes (Kaminsky and Reinhart, 1999). For example, a company may need some money to make a new investment or this money may be demanded to satisfy operational needs, such as paying the salaries of the employees. As it can be understood, there is a need for a system that meets the need of these parties at the same time (Dinçer et. al., 2016; Admati and Hellwig, 2014).

Banks are the institutions that bring these two parties together. Therefore, all of them can have a chance to satisfy their needs (Claessens et. al., 2001; Yüksel et. al., 2015). For instance, people, who have some savings, can lend their money to the bank as deposit and can gain interest income from the bank. In other respects, parties that need money can reach this fund easier by taking loan from the banks. In summary, banks play an intermediary role between these two parties (Dimond and Rajan, 2001; Dinçer et. al., 2017).

However, banks have to manage different types of the risks during this process. First of all, there is a credit risk which means that customers may not pay the credit amount back to the banks (Jarrow and Turnbull, 1995; Yüksel, 2017). In addition to the credit risk, banks face the market risk because of the volatility in the market (Boyd and De Nicolo, 2005; Banerjee et. al., 2017). Within this framework, high increase, or decrease, in the interest rate and currency exchange rate lead to market risk for the banks (Lustig and Verdelhan, 2007; Paserman, 2017). Moreover, there is also an operational risk which includes the loss from natural disasters, terrorist attacks and hackers (Zengin and Yüksel, 2016; Chavez-Demoulin et. al., 2006).

Because banking sector is the driving force of the economy, the performance of the banks should be higher to improve the economic performance of the country (Levine, 1997; Oktar and Yüksel, 2016). Otherwise, when banks have lower performance, they will be reluctant to give loans and collect deposits. This situation leads to deficiency in the financial system (Demetriades and Luintel, 1996; Kumar et. al., 2016). Due to this aspect, the studies, which aim to analyze the indicators the profitability of the banks, play a very important role for the countries (Demirgüç Kunt and Levine, 2004; Yüksel and Zengin, 2016).

Demographic factors are also important determinants of bank profitability (Dirani and Kuchinke, 2011). Within this context, the ratio of female/male workers in a company may affect profitability (Elizabeth and Baines, 1998). In addition to the gender factor, experience levels of the workers may be a significant factor of the profitability of the banks (Chiliya and Roberts-Lombard, 2012). For example, high ratio of experienced people in a company may have an increasing influence on financial performance. Furthermore, education level of the workers is another significant demographic issue that can affect the profitability of the banks (Kilpatrick, 1997). For this situation, it is accepted that high ratio of educated people has a positive effect of the financial performance of the companies.

Parallel to the conditions emphasized above, the aim of this study is to analyze whether education level of bank personnel has a positive impact on the profitability or not. For this purpose, annual data of 15 Turkish deposit banks, between the years 2002 and 2016, is used. In addition to these aspects, Dumitrescu Hurlin panel causality analysis is used reach this objective. Consequently, it will be possible to make recommendation for Turkish banks to increase financial performance.

This paper consists of five different parts. After the introduction part, the second part analyzes similar studies in the literature. Within this scope, the missing area in the literature about this topic can be understood. Moreover, the third part explains the quantitative information about the demographic

factors in Turkish banking sector over the years. Furthermore, the fourth part includes methodology and analysis results. In the final part, the recommendations by considering analysis results are presented.

LITERATURE REVIEW

The importance of demographic factors attracted the attention of many researchers. Because of this situation, there are many studies in the literature. Selected studies are demonstrated on Table 1.

Table 1 shows that some of these studies underlined the importance of training given to the employees in the company. For example, Blundell (1999) made a general literature review in this study and concluded that training is a factor that increases productivity of the employees. Additionally, Ağdelen and Erkut (2003) also made a study to understand whether there is a relationship between these two different variables in Turkish companies. By using regression analysis, it is concluded that time allocated to education in the company has a positive influence on the financial performance. Lee et. al. (2016) tried to evaluate the importance of training for Australian firms. They used cluster analysis to reach this objective and identified that personnel should get necessary training in order for these companies to increase their profitability. Moreover, Çakmak (2008), Chiliya and Roberts-Lombard (2012), Lee and Sabharwal (2016), Aissa and Goaid (2016), Kerai and Saleh (2017), Zouaghi et. al. (2017), Singapurwoko (2017) and Köknaroğlu et. al. (2017) reached the same conclusions for different countries.

Also, Montgomery et. al. (2017) focused on the importance of the training for farmers. As a result of survey analysis, they defined that farmers should take necessary trainings to have higher productivity. Moreover, Abdu and Jibir (2017) aimed to understand the influence of the training given to the personnel on the financial performance for the companies in Nigeria. Within this framework, probit analysis is taken into the consideration. They reached a conclusion that, when personnel can get efficient education, it will have a positive effect on the productivity of the company. Furthermore, Turan Hot (2017) made a similar analysis for Turkey, by using survey methodology. It is identified that there is a direct relationship between financial performance and time allocated to the training. Also, van Rensburg and Mulugeta (2016) also concluded that when education level of the farmers goes up, there will be increase in the productivity.

In addition to them, some researchers emphasized the importance of the experience levels of the personnel for the profitability of the companies. For instance, Dietrich and Wanzenried (2011) tried to analyze this relationship for Sweden. With the help of regression analysis, it is identified that experience level of the board members has an important influence on the profitability of the banks. Luo and Peng (1999), Bondarenko et. al. (2017) and Coleman (2007) also emphasized this situation by using the same methodology. On the other hand, Ingram and Simons (2002), Soriano and Castrogiovanni (2010), Chen et. al. (2017) and Naoki (2011) defined that there is an indirect relationship between experience level of the personnel and the profitability of the companies.

Furthermore, there are also some studies in the literature that analyzed the relationship between experience level of the personnel and economic growth of the countries. For example, Barro (2013) tried to evaluate this condition for OECD countries. By using regression analysis, it is understood that quality of the education in the country is an important indicator of economic development. Also, Chen and Feng (2000) and Hanushek and Wöbmann (2007) reached the same conclusion by using the same methodology. Additionally, Öztürk (2005), Taş and Yenilmez (2008), Erdoğan and Yıldırım (2009) and Çalışkan et. al. (2013) are the other studies that emphasized the same issue with different methodologies.

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Table 1. Studies related to demographic factors

Author	Scope	Method	Result
Blundell (1999)	Literature Review	Descriptive Statistics	It is concluded that training has a positive influence on the financial performance of the companies.
Luo and Peng (1999)	China	Regression	When the experience level of the personnel is high, it will lead to higher financial performance of the companies.
Ranis et. al. (2000)	35 Developing Countries	Cluster Analysis	It is determined that education of the personnel is very significant for the performance of the company, but it is not enough itself for this purpose.
Chen and Feng (2000)	China	Regression	They reached a conclusion that education level of the people leads to higher economic growth for this country.
Ingram and Simons (2002)	Israel	Regression	There is a negative relationship between experience level and the profitability of the countries.
Ağdelen and Erkut (2003)	Turkey	Regression	There is a positive correlation between time allocated to education in the company and financial performance.
Öztürk (2005)	Literature Review	Descriptive Statistics	Education level contributes the development of the country.
Hanushek and Wöbmann (2007)	6 Developing Countries	Regression	They reached a conclusion that the quality of the education in the country is an important indicator of economic development.
Coleman (2007)	United States	Tobit	It is identified that education and experience level of the personnel is positively correlated with the profitability of the companies.
Çakmak (2008)	Turkey	Descriptive Statistics	When the level of education is high, the productivity of the personnel is increasing.
Taş and Yenilmez (2008)	Turkey	Descriptive Statistics	Education level of the people contributes economic development.
Erdoğan and Yıldırım (2009)	Turkey	ARDL	They identified that economic development of the country is mainly affected by the improvement in the area of education.
Soriano and Castrogiovanni (2010)	European Union Countries	Kolmogorov-Smirnov Test	It is defined that the sector experience of CEO is not correlated with the profitability of the company.
Dietrich and Wanzenried (2011)	Sweden	Regression	Education and experience level of the board members is very effective on the profitability of the banks.
Naoki (2011)	Japan	GMM	It is concluded that experience level of personnel affects efficiency to a certain extent but, after one point, there is not a relationship between them.
Chiliya and Roberts-Lombard (2012)	South Africa	ANOVA	It is identified that experience and education level of the personnel has a significant influence on the profitability of the companies.
Barro (2013)	OECD	Regression	There is a direct relationship between education level of the personnel and economic growth of the country.
Çalışkan et. al. (2013)	Turkey	Engle Granger Cointegration Analysis	Increase in the number of graduated people has a direct relationship with economic growth of the country.
Lee et. al. (2016)	Australia	Cluster Analysis	Personnel should get necessary training in order for the restaurants to increase their profitability.
Lee and Sabharwal (2016)	United States	Probit	Education level of the personnel should have a significant impact on personnel motivation.
Aissa and Goaid (2016)	Tunisia	Regression	Education level of the managers has a direct relationship between profitability.
van Rensburg and Mulugeta (2016)	İrland	Regression	When education level of the farmers goes up, there will be increase in the productivity.
Montgomery et. al. (2017)	Cambodia	Survey	Necessary education should be given to the farmers to increase production level.
Abdu and Jibir (2017)	Nigeria	Probit	If personnel can get efficient education, it will have a positive effect on the productivity of the company.
Chen et. al. (2017)	China	Regression	There is an indirect relationship between the experience level of the personnel and the profitability of the firms.
Bondarenko et. al. (2017)	Russia	VRIO Analysis	Personnel experience affects profitability of the firms effectively.
Kerai and Saleh (2017)	Japan	Survey	Education level leads to higher profitability in the companies.
Zouaghi et. al. (2017)	Spain	Hierarchical Linear Modeling	Higher education level increases financial performance.
Singapurwoko (2017)	Indonesia	ANOVA	Education level of the personnel has a direct effect on the profitability.
Turan Hot (2017)	Turkey	Survey	It is concluded that time allocated to education in the country leads to higher financial performance.
Köknaroğlu et. al. (2017)	Turkey	Survey	There is a direct relationship between net profit and education level.

By making literature review, it is seen that relationship between education level of the personnel on the effects of the performance of the companies or countries is very popular among authors. It is also understood that different types of the methodologies are taken into the consideration in these studies, such as regression and Engle Granger analysis. Therefore, it can be said that there is a need for a new study which focuses on a different sector, like banking. In addition to this aspect, using an original methodology will also contribute to the literature.

QUANTITATIVE INFORMATION ABOUT DEMOGRAPHIC FACTORS IN TURKISH BANKING SECTOR

General Information About Turkish Banking Sector

The banking sector has a so great importance for Turkey's economy that it has the highest performance in comparison with other sectors, such as leasing and factoring. There are 3 different bank types in this sector, which are deposit banks, development and investment banks and participation banks. Deposit banks are the institutions which can collect the money from the customers (Oyefesobi and Alao, 2017; Orji et. al., 2017; Ozkan et. al., 2017). On the other hand, it is prohibited for development and investment banks to collect money. Development banks give loans to the specific sectors to achieve sustainable development (Rau, 2017; Humphrey, 2017). Also, investment banks give consultant to some operations, such as issuing the bonds, mergers and acquisition (Geddes et. al., 2018; Frydman and Hilt, 2017). In addition to them, participation banks make operations according to the rules of Islamic religion (Saif-Alyousfi et. al., 2017; Olson and Zoubi, 2017; Yuliana and Bashir, 2017). In other words, they cannot perform operations which are not appropriate in Islam. Table 2 gives information about the changes in total assets of Turkish banking sector over the years.

Table 2 shows that there is an important increase in the amount of the assets of Turkish banks over the years. For example, while it was 561,171 mil TL in 2007, it dramatically increased to 1,160,712 mil TL in 2011 and 2,595,347 mil TL in 2016. Turkey is the country which suffered from a significant finan-

Table 2. Total assets of Turkish banking sector (2007-2016)

Year	Total Assets (mil TL)
2007	561,171
2008	705,870
2009	798,533
2010	961,876
2011	1,160,712
2012	1,298,142
2013	1,635,370
2014	1,888,308
2015	2,235,995
2016	2,595,347

Source: Bank Association of Turkey

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cial crisis in 2001. As a result of this crisis, a lot of companies went bankrupt and due to this condition, many people lost their jobs. After this crisis, Turkish government took important actions not to have this kind of crisis again. Owing to these actions, Turkey became a country that attracted the attention of the investors. Consequently, the size of Turkish banking sector went up, especially after 2007 (Saldanli et. al., 2017; Rjoub et. al., 2017; US, 2017)

According to Banking Regulation and Supervision Agency's May 2017 report, it can be seen that 52 banks are operating in Turkey. 34 of these banks are deposit banks, while 5 of them are participation banks. In addition to these banks, 13 of them operate as development and investment banks. With respect to the deposit banks, there are 3 different public banks. Moreover, 9 of them are privately owned, whereas 21 of them are foreign banks. There is also one bank which is transferred to Saving Deposit Insurance Fund because of the problems in its core operations.

Demographic Factors in Turkish Banking Sector

Parallel to the changes in the numbers of Turkish banking sector, especially after 2007, it can also be seen that there is an important increase in the number of personnel for this period. Table 3 gives information about this aspect.

Table 3 demonstrates that there is an important increase in the number of total personnel in Turkish banking sector over the years. For instance, the number of total personnel was 158,534 in 2007, while this number increased to 201,204 in 2015. Another important point in Table 3 is that there was a decrease in this number in 2016. This situation gives an idea that the need for the personnel in Turkish banking sector starts to decline because of the technological development. In other words, with the usage of internet banking and ATMs, banks prefer to have fewer branches (Bratawisnu et. al., 2017; Oruç and Tatar, 2017; Sharif and Raza, 2017). On the other side, the summary of demographic characteristic of some Turkish deposit banks in 2016 is illustrated in Table 4.

Table 4 gives information that two state banks of Turkey (Ziraat Bank and Halk Bank) have the highest number of personnel who are university graduate or have master or PhD degree. In addition to these banks, Akbank, Vakıfbank, Garanti Bank and Yapı Kredi Bank are other institutions that have qualified

Table 3. Total number of personnel in Turkish banking sector (2007-2016)

Year	Total Number of Personnel
2007	158,534
2008	171,598
2009	172,402
2010	178,503
2011	181,418
2012	186,098
2013	197,465
2014	200,886
2015	201,204
2016	196,699

Source: Bank Association of Turkey

Table 4. The number of personnel in Turkish banks according to education levels

Bank Name	Primary School	High School	University	Master or PhD
Ziraat	34	3,210	19,663	2,108
Halkbank	62	2,759	12,977	1,158
Vakıfbank	123	1,293	13,104	1,095
Akbank	32	626	12,065	1,120
Anadolubank	5	287	1,400	92
Şekerbank	21	319	3,125	146
TEB	30	1,391	7,582	637
İşbankası	85	4,248	19,389	1,034
Yapı Kredi	24	2,001	15,315	1,026
Alternatifbank	10	135	683	100
Denizbank	271	4,951	7,143	573
Finansbank	59	2,148	9,495	749
HSBC	1	454	2,490	243
ING Bank	20	541	4,340	383
Garanti	26	2,386	16,190	1,087

Source: Bank association of Turkey

personnel. Another significant point in Table 4 is that university graduate personnel have the highest percentage in comparison with the others for almost all banks.

AN APPLICATION ON TURKISH BANKING SECTOR

Data Set and Scope

In this study, the relationship between the educational level of the personnel and the profitability is analyzed. For this purpose, 15 different deposit banks are taken into the consideration. The main reason of excluding other deposit banks in the analysis process is that necessary data cannot be evaluated for these banks. The details of 15 banks, which are evaluated in this study, are given on Table 5.

As it can be understood from Table 5 is that out of these 15 banks, 3 of them are state banks, and 6 of them are private banks. In addition to them, other 6 banks are also owned by foreign investors. With respect to the “educational level” variable, the ratio of “university graduate personnel and the personnel who have master or PhD degree” to “total number of personnel” is considered. It can be seen that when this ratio increases, the educational quality of the personnel goes up as well. Therefore, it is thought that this ratio is the suitable indicator of the educational level of the personnel. Moreover, regarding profitability variable, “return on equity” ratio of Turkish banks is considered. This ratio is calculated as “net profit/total equity”. Taking only profit amount does not give successful results because it should be considered according to the asset size or equity amount (Easton, 2004; Beaver and Ryan, 2000; Easton et. al., 2002; Gruber et. al., 2017; Swain and Kumar, 2017; Raza and Farooq, 2017).

Table 5. The details of 15 banks analyzed in the study

Bank Type	Bank Name
State	Ziraat
	Halkbank
	Vakıfbank
Private	Akbank
	Anadolubank
	Şekerbank
	TEB
	İşbankası
	Yapı Kredi
Foreign	Alternatifbank
	Denizbank
	Finansbank
	HSBC
	ING Bank
	Garanti

Methodology: Dumitrescu Hurlin Panel Causality Tests

Dumitrescu Hurlin panel causality test is the advanced form of Granger causality analysis. In both analyses, causality relationship between different variables is examined. The main difference of Dumitrescu Hurlin panel causality analysis is that it is possible to analyze panel data. Because of this situation, it can be understood that this is main advantage of Dumitrescu Hurlin panel causality analysis over Granger causality analysis. This method has an important requirement that variables used in the causality test should be stationary. Due to this situation, to satisfy this requirement, panel root tests should be performed before applying Dumitrescu Hurlin panel causality test. The details of this test are given below (Dumitrescu and Hurlin, 2012).

$$Y_{i,t} = a_i + \sum_{k=1}^K Y_i^k Y_{i,t-k} + \sum_{k=1}^K B_i^k X_{i,t-k} + \varepsilon_{i,t} \quad (1)$$

In this equation, K gives information about the optimum lag interval. In addition to that, Y and X represent the variables of which causality analysis will be analyzed. That is to say, the main purpose of this analysis is to evaluate whether X is the cause of Y or not (Zhang and Hu, 2017).

Dumitrescu Hurlin panel causality analysis is preferred by many researchers in different areas. For example, Solarin and Öztürk (2016), Destek (2016), Al Irani and Trabelsi (2016), Fang and Chang (2016), Koçak and Şarkgüneşi (2017), Doğan and Aslan (2017), Destek and Aslan (2017), Fang and Chen (2017), Dinçer et. al. (2017), Menegaki and Tugcu (2017), Hasanov et. al. (2017), Kahia et. al. (2017) and Bakırtaş and Akpolat (2018) identified that energy consumption contributes economic de-

velopment with the help of this methodology. Additionally, Alam and Paramati (2016), Zaman et. al. (2016), Dođru and Bulut (2017), Alam and Paramati (2017) and Paramati et. al. (2017) reached a conclusion that development in tourism sector has a positive influence on economic growth. Furthermore, Chen and Fang (2017), Dođan et. al. (2016), Furuoka (2017), Salahuddin and Alam (2016), Shahbaz et. al. (2017), Tonkovic and Hussain (2017) and Zhang et. al. (2017) considered Dumitrescu Hurlin panel causality analysis to understand the relationship between electricity consumption and economic growth.

In addition to these studies, it can also be understood that Dumitrescu Hurlin panel causality analysis is used for financial topics. For instance, Chiang (2016) defined that there is no causality relationship between submarkets of real estate properties. Furthermore, Paramati et. al. (2016) identified that there is a two-way causality relationship between foreign direct investment and stock market development. Also, Sekkat (2016) found no causality between exchange rate and export. Additionally, Latif et. al. (2017), Beckmann and Czudaj (2017) and Adalı and Yüksel (2017) concluded that foreign direct investment is the main cause of economic growth. Furthermore, Pan (2017) defined that unemployment rate is the main indicator of stock market development, and Yüksel and Oktar (2017) concluded that economic growth is the main factor to reduce unemployment. Also, Adams and Klobodu (2017), Adewale (2017), Baklacı et. al. (2016), Kim et. al. (2018), Mahalik et. al. (2017), Wilson (2016) and Wong (2017) are other studies that focused on financial issues by using Dumitrescu Hurlin panel causality analysis.

Analysis Results

In order to analyze the effects of demographic factors on the profitability, firstly, stationary analysis is performed. The main reason making this test is to understand whether there is a unit root in these series or not. For this purpose, Levin Lin and Chu (LLC) test is considered for both variables. Table 7 and Table 8 give analysis results for the variables of education level and profitability. As it can be seen from these tables, the probability of panel unit root test result for education level is 0.0015. In addition to this variable, it is also understood that this value is 0.0004 for the variable of profitability. Because these values are lower than 0.05, it is identified that these variables are stationary. In other words, it can be said that there is not a unit root in these variables. Owing to this aspect, it is possible to use these variables in the analysis without taking the first differences.

After performing panel unit root test, Dumitrescu Hurlin panel causality analysis is performed to understand the effect of education level of the personnel on the profitability of Turkish banks. During this analysis, 3 different lags are taken into the consideration. The details of these results are given on Table 9, 10 and 11. The summary of these results is demonstrated on Table 6.

Table 6 shows that probability value for lag 1 is equal to 0.0000. On the other side, this value equals to 0.0575 for lag 2. In addition to them, probability value is equal to 0.0120 in case of lag 3. This situation indicates that probability values are lower than 0.05 when lags are 1 and 3. It is determined that the null hypothesis of “Education Level does not homogeneously cause profitability” can be rejected

Table 6. Dumitrescu Hurlin panel causality analysis results

Null Hypothesis	Probability Values (lag=1)	Probability Values (lag=2)	Probability Values (lag=3)
<i>Education Level does not homogeneously cause profitability</i>	0.0000	0.0575	0.0120

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for 5% confidence level. On the other hand, it is also identified that the probability value for lag 2 is greater than 0.05, but lower than 0.10. This condition gives information that the null hypothesis cannot be rejected for 5% confidence level. However, it is also defined that it is possible to reject this null hypothesis for 10% confidence level.

According to the results summarized in Table 6, it is concluded that educational level has an important influence on the profitability of Turkish banking sector. In other words, it is identified that there is a causality relationship from the education level to the profitability. It can be understood that banks should prefer to employ more educated personnel to increase their profitability. The people, who graduated from a university, or have a master or PhD degree, can work more effectively in comparison with the others because these people can increase their quality with the education taken from the university life. This result is very similar to the results of some important studies in the literature (Blundell, 1999; Ağdelen and Erkut, 2003; Lee et. al., 2016; Çakmak, 2008; Chilya and Roberts-Lombard, 2012; Lee and Sabharwal, 2016; Aissa and Goaid, 2016; Kerai and Saleh, 2017; Zouaghi et. al., 2017; Singapurwoko, 2017; Köknaroğlu et. al., 2017).

SOLUTIONS AND RECOMMENDATIONS

In this study, it is aimed to analyze the causal relationship between education level of the personnel and profitability of Turkish deposit banks. As a result of Dumitrescu Hurlin panel causality analysis, it is identified that education level is a significant variable of the profitability of banking sector. That is to say, it is identified that education level has a positive influence on the profitability. Hence, it is strongly recommended that banks prefer to work with employees, who are university graduate or have a master or PhD degree. Because they have necessary qualifications, they can work effectively to increase the financial performance of the banks. In addition to this situation, it is also important that banks do not have to spend a lot of money to increase the training level of these personnel at the work because these personnel have taken these qualifications in their university life.

FUTURE RESEARCH DIRECTIONS

This study aims to analyze whether education level of the personnel has a significant effect on the financial performance of Turkish deposit banks. For this purpose, annual data of 15 deposit banks is evaluated by using Dumitrescu Hurlin panel causality analysis. By focusing on an important subject, this paper makes a contribution to the literature. However, many new studies may be performed for this subject in order to make such a contribution.

First of all, while obtaining the data of whole banks in Turkish banking sector, this study may be enlarged. Moreover, there should also a new study in which quarterly data of these banks is used. Therefore, it may be possible to compare the results with this study. Secondly, a study, which makes an analysis according to the ownership types of the banks, will be very beneficial as well. Within this framework, a comparison can be made in order to see this relationship in a deeper aspect.

In addition to them, this study may also be enlarged by focusing on many different countries at the same time. For example, a new study, which evaluates this subject in developing countries, may also be very beneficial. Within this scope, new recommendations may be presented to provide the development of the banking system in these companies. Therefore, it will be possible for these countries to take actions to provide sustainable economic growth.

CONCLUSION

Banks are the institutions that bring together the parties who have savings and who need money. Because of this situation, it can be said that banking plays a very significant role for the economies of the countries. Hence, it is obvious that banks' performance should be higher for sustainable economic growth of the country. Otherwise, banks will be reluctant to give the loans to the companies, and this situation has a negative effect on the investment of the company. It also causes economic performance of the countries to decline. Another important result of this condition is that it leads to higher unemployment rate since the companies prefer to employ fewer workers due to the lower investment.

Owing to the issues emphasized above, the performance of the banking sector should be evaluated periodically to minimize the negative effects. Within this framework, it can be said that the studies, which aim to analyze the indicators of the profitability in banking sector, are very beneficial for this situation. The main reason behind this condition is that by identifying min indicator, it will be possible to understand how to increase profitability. Due to this aspect, many different researchers focus on this topic in their studies.

Education level is accepted as an important variable which may have an influence on the profitability of banking sector. Because of this situation, almost all banks aim to work with highly educated employees. The main reason is that it is thought that employees, who are university graduate, or have a master or PhD degree, have necessary qualifications. Hence, they can work effectively to increase the financial performance of the companies. Another important point of this aspect is that, if a company can employ highly educated employees, it does not have to spend a lot of money to educate these personnel at the work. Consequently, it can be said that educated personnel has a positive effect on the profitability in many ways.

Parallel to these aspects, in this study, it is aimed to understand whether educational level of the personnel has a positive effect on the profitability of the banking sector. Within this framework, 15 different Turkish deposit banks (3 state, 6 private, 6 foreign) are taken into the consideration. Annual data of these banks for the periods between 2002 and 2016 is evaluated by using Dumitrescu Hurlin panel causality analysis. For the variable of education level, the ratio of "university graduate personnel and the personnel who have master or PhD degree" to "total number of personnel" is used. On the other side, with respect to the profitability variable, "return on equity" (net profit/total equity) ratio is considered.

On the first stage of the analysis process, Levin, Lin and Chu (LLC) panel unit root test is performed to identify whether these variables have unit root or not. It is determined that panel unit root test result of education level is 0.0015. Additionally, it is also defined that this value is 0.0004 for the variable of profitability. As a result, it is concluded that probability values of all variables are less than 0.05. These results show that both variables are stationary. Because of this issue, the original series of the variables are used in the analysis process.

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After stationary analysis, Dumitrescu Hurlin panel causality analysis is performed to see the relationship between educational level of the personnel and profitability of the banks. It is identified that the probability value for lag 1 is equal to 0.0000, whereas this value equals to 0.0575 for lag 2. On the other side, probability value is equal to 0.0120 in case of lag 3. It can be said that the null hypothesis of “Education Level does not homogeneously cause profitability” can be rejected for 5% confidence level regarding lag 1 and 3. Additionally, this situation is also similar to 10% confidence level in case of lag 2.

As a result, it is defined that education level of the personnel has a positive influence on the profitability of Turkish deposit banks. That is to say, it is accepted that employing high educated people is the main cause of increasing profitability. By considering these results, it is recommended that Turkish banks should employ more personnel who are university graduate or have master or PhD degree. The main reason is that these personnel can work more effectively with the qualification taken from the university. Hence, this issue has a positive effect on the profitability of Turkish banks.

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KEY TERMS AND DEFINITIONS

Acquisition: It is the process of purchasing one company by another company.

Asset: It means the goods of the companies. The number of total assets is also named the size.

Deposit Bank: It is a type of bank which can collect money from the customers.

Development Bank: It is a type of bank which gives high amount of loans to a specific sector.

Dumitrescu Hurlin Panel Causality Analysis: It is a type of causality analysis in which panel data is analyzed. It is an advanced form of Granger causality analysis.

Foreign Bank: It is a type of banks which is owned by foreign investors.

Investment Bank: It is a type of bank which takes commissions by giving specific consulting services, such as merger and acquisition and issuing bonds.

Master's Degree: It is a type of degree which is taken by a university because of completing of graduate study.

Merger: It refers to the combination of two different companies.

PhD: It means doctor of philosophy.

Private Bank: It is a type of banks which is owned by private investors.

State Bank: It is a type of banks which is owned by the state.

Stationary Analysis: It aims to identify whether there is a unit root in the series or not.

APPENDIX

Table 7. Panel Unit Root Test Results of Education Level

Series: Education Level				
Date: 01/30/18 Time: 16:39				
Sample: 2002 2016				
Method	Statistic	Prob.**	Cross-sections	Obs
Levin, Lin & Chu t*	-2.96661	0.0015	15	195

Table 8. Panel Unit Root Test Results of Profitability

Series: Return on Equity				
Date: 01/30/18 Time: 16:40				
Sample: 2002 2016				
Method	Statistic	Prob.**	Cross-sections	Obs
Levin, Lin & Chu t*	-3.34493	0.0004	15	195

Table 9. Dumitrescu Hurlin Panel Causality Test Results for Lag 1

Date: 01/30/18 Time: 16:40				
Sample: 2002 2016				
Lags: 1				
Null Hypothesis	W-Stat.	Zbar-Stat.	Prob.	
Education Level does not homogeneously cause Profitability	4.49548	6.13634	8.E-10	

Table 10. Dumitrescu Hurlin Panel Causality Test Results for Lag 2

Date: 01/30/18 Time: 16:41				
Sample: 2002 2016				
Lags: 2				
Null Hypothesis	W-Stat.	Zbar-Stat.	Prob.	
Education Level does not homogeneously cause Profitability	4.51632	1.89956	0.0575	

Table 11. Dumitrescu Hurlin Panel Causality Test Results for Lag 3

Date: 01/30/18 Time: 16:41				
Sample: 2002 2016				
Lags: 3				
Null Hypothesis	W-Stat.	Zbar-Stat.	Prob.	
Education Level does not homogeneously cause Profitability	11.4852	2.51170	0.0120	

Chapter 17

The New Financial System: A Revolution Made by Fintechs

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ABSTRACT

This chapter shows the revolution that is happening in the financial system, having as main actor the technological companies—the fintechs—that don't have financial knowhow. The traditional banks didn't structure their business trying to attend the client's needs. The clients always suited themselves to banks' services. The fintechs are changing this reality by putting the client in another baseline, filling the gaps left by the banks, offering new services, and acting in places where banks have never gone before. The fintechs are offering these services with a lower price and more quality for the clients.

INTRODUCTION

This chapter aims to motivate the discussion about a huge revolution in financial system that is happening right now. Banks have always acted in society as the key agents in the intermediation of financial transactions. Since their inception, they have been important pieces for the economic development of the world, ensuring security and care of the money of people and nations.

After the crisis of 2008, generated by the neglect of the current financial system, the supremacy of the banks have become questioned. Moreover, the institutions did not evolve like other economic segments. Banks have continued to be bureaucratic, charging high rates for services and barely meeting customer needs. Most people consider going to the bank an unpleasant activity.

Fintechs are taking advantage of the abyss between the needs of customers and the services effectively provided by the banks to revolutionize the financial system as we know. The chapter will address the beginning of the global financial system, the economic crisis of 2008, followed by the challenges faced by the banks in the current scenario. Subsequently, it will be approached what are fintechs, their different segments, the unprecedented revolution that they are driving in the financial system and traditional banks reaction.

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THE BEGINNING OF FINANCIAL SYSTEM

The banks are fundamental agents in the economic development of the nation. They are the financial intermediation between the population and the Central Bank.

The first banks were created in XVII century, in Europe. Due the expansion of the trade by the bourgeoisie, there was a need to keep the coins in somewhere safe. Since the bourgeoisie traveled for long distances, as they went about selling their wares, they accumulated more and more coins and it was dangerous to travel with large sums of money.

In this way, the bourgeois handed the coins to the bank, which gave them a paper as guarantee. After the presentation of this paper, the banks returned the coins. Over time, this paper began to be accepted as the bargaining chip in financial transactions.

The bourgeoisie restructured trade and integrated the regions which had so far lived only within their fiefs, propelling the end of the feudal period.

The activities of the banks provided security for the bourgeoisie and for people who had money beyond what was necessary for survival. This was paramount for the evolution of the trade and the development of the worldwide economy as we know it today.

Since then, the way that business were accomplished, has changed completely. Banks began to participate in most of the world's commercial and financial transactions, taking care of the money of individuals and nations. Always being considered as secure institutions, and often adding credibility to the transaction itself, just because they are involved in.

BRAZILIAN BANK SYSTEM

In Brazil, the predominant financial institutions are the multiple banks that operate in several segments of the financial market, collecting deposits / savings, and intermediating credit and financial security transactions (Freaza, Guedes and Gomes, 2008).

The profitability of Brazilian banks has grown in recent years, according to Arienti (2007). The author says that the degree of profitability - the proportion of net income to shareholders' equity - that measures the capacity to generate income for shareholders on invested capital has increased in the country, as can be seen in the table 1 below.

Table 1 shows that, in 2002, the percentage of profitability reached the mark of 27%, the record of the period. Despite the fall in profitability in 2003 to 14.7%, this percentage is still higher than the profitability at the beginning of the analyzed period, 14.4% in 1994. In summary, Brazilian banks continue to

Table 1. Percentage of profitability from Brazilian banks*

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Profitability	14.4	11.9	12.3	8.5	16.3	23.0	19.2	19.2	27.0	14.7

*Author's note: Banks selected until 1999 were América do Sul, Bandeirantes, BCN, Boavista, Bradesco, HSBC, Bamerindus, Itaú, Mercantil de São Paulo, Noroeste e Unibanco, after 2000 were Bradesco, Unibanco, Itaú, Safra, HSBC, Bank Boston, Citibank e ABN AMBRO.

Source: ARIENTI F. F. P. Reestruturação e consolidação do sistema bancário privado brasileiro, Ensaios FEE, Porto Alegre, v. 28, n. 2, p. 577-600, out. 2007.

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perform very well even with all competition in the sector and also after the entry of foreign banks into the national market, which took place between 1996 and 1998.

According to the Bank for International Settlements (BIS) annual report, Brazilian banks are the most profitable in the world, even with all the economic problems that the country is facing to, as shown in the Table 2.

In 2016, the net result of the Brazilian financial institutions was 1.99%, the highest percentage among all the countries analyzed. Russia came in the second position with 1.86%, followed by the United States with 1.36%.

The second column of the table shows net interest income: in 2016, Russia led the ranking with 4.4%, followed by Brazil with 3.22%. India achieved interest income of 2.56%, a much lower percentage when compared to Brazil. Reminding that, like Brazil, India is also a developing country.

It is important to note that the high margins charged by banks in credit operations suppress the demand for financial resources, reducing investments and consumption, and increase the financial exclusion of a large portion of society.

Finally, the third column shows data on profits through the fees charged for the services rendered. Brazil, once again, leads the ranking with 1.86%, the second position is occupied by Switzerland with 1.40%, followed by the United States with 1.15%. The bank fees charged by banks in Brazil are the highest in the world.

Table 2. Profitability of major banks* (as a percentage of total assets)

Country	Net income			Net interest income			Fees and commissions**		
	2012-14	2015	2016	2012-14	2015	2016	2012-14	2015	2016
Japan (5)	0.61	0.60	0.52	0.79	0.74	0.68	0.46	0.46	0.45
United States (10)	1.12	1.40	1.36	2.27	2.24	2.25	1.31	1.24	1.15
France (4)	0.25	0.42	0.42	0.87	0.85	0.84	0.35	0.39	0.36
Germany (4)	0.12	(0.12)	0.03	0.92	1.01	0.97	0.62	0.70	0.68
Italy (4)	(0.46)	0.29	(0.67)	1.46	1.30	1.21	0.88	0.85	0.84
Spain (6)	0.06	0.57	0.53	1.97	2.04	2.03	0.67	0.64	0.66
Australia (4)	1.24	1.25	1.17	1.78	1.62	1.73	0.43	0.38	0.39
Canada (6)	1.05	0.97	0.97	1.63	1.51	1.54	0.72	0.72	0.72
Sweden (4)	0.73	0.80	0.78	0.91	0.88	0.87	0.44	0.52	0.51
Switzerland (3)	0.23	0.17	0.11	0.70	0.88	0.78	1.31	1.48	1.40
United Kingdom (6)	0.26	0.27	0.22	1.06	1.25	1.15	0.49	0.49	0.44
Brazil (3)	1.57	0.67	1.99	3.33	2.09	3.22	1.82	1.76	1.86
China (4)	1.65	1.50	1.34	2.41	2.30	1.92	0.61	0.57	0.53
India (2)	1.67	1.57	0.56	2.64	2.74	2.56	0.76	0.76	0.71
Korea (5)	0.62	0.60	0.63	1.92	1.72	1.67	0.41	0.40	0.36
Russia (3)	1.79	0.63	1.86	3.87	2.98	4.44	0.88	0.89	1.04

Author's note: Number of banks in parentheses. The first column per category shows the corresponding simple average over the period 2012–14.

*The calculation of total assets may differ across banks due to different accounting rules (eg netting of derivatives positions).

**Net fee and commission income.

Source: BIS (2017)

FINANCIAL CRISIS OF 2008

The financial crisis of 2008 began in the United States and took such a large proportion, which is considered the biggest crisis since the Great Depression in 1929. This financial crisis, also called the subprime crisis, was generated by the lack of regulation of the banks. People mortgaged their homes and, with mortgages, they bought another property that was often mortgaged, capturing more money. In addition, interest rates were very low during this time, so people became too indebted.

The banks took on low-risk debt plus high-risk debt and made up a new product for the financial market, the CDO (Collateralized Debt Obligation). These CDOs were sold in Europe and the United States. They had a high return and excellent rating from risk rating agencies, ensuring that the CDOs were safe and had a very high quality.

Whereas that, market interest rates were low, these new bonds were very attractive to investors. In addition, they had a high rating from reputable risk rating agencies, such as Moody's and Standard & Poor's, maximizing the product quality.

However, if something is certain in economics, is that as more secure an investment is, the lower its return. Now, if the market interest rate was low, how could a "safe" investment generate such a high return?

In that period, optimism reigned in the financial market and the banks have never made so much profit before, so they paid million-dollar bonuses to their financial managers. That is why many economists say that it was the remuneration policies of managers that generated the 2008 financial crisis. But if the bankers' million-dollar bonuses were not the drivers of the crisis, they certainly were potentiators of it.

On September 15th, 2008, the Federal Reserve (FED), the United States' Central Bank, refused to redeem the Lehman Brothers bank. From then on, the crisis of confidence was established in the world financial system. There was panic in the financial market, the credit was almost extinct and the investors were seeking liquidity. There was a drop in the worldwide production and trade. The crisis spread throughout the world in very few months.

Even Brazil, which was experiencing a very solid economic period at the time, also felt the effects of the subprime crisis. On September 29th, 2008, after a 10% drop in the stock market index, the Bovespa triggered the circuit break, a mechanism that interrupts movements in the stock market for 30 minutes. It had been 10 years since the last time the circuit break was triggered.

In Brazil, credit was scarce, economic activity was reduced. According to IBGE (2007), the Brazilian Gross Domestic Product (GDP) was 6.10% in 2007, after the crisis of 2008, the country closed the year with GDP of 5.10% and in the following year, 2009, the GDP fell to -0.10%.

The governments of the affected nations adopted expansionary fiscal and monetary policies in order to minimize the impact of the real estate bubble. In the United States, there was a reduction of the short-term interest rate in order to encourage consumption and investment. In China, the government has increased public investment. In Brazil, there was a reduction in interest rates, a reduction in taxes, an increase in the minimum wage and an increase in public investment. However, the effects of the crisis were felt aggressively by the productive sector, resulting in a reduction of GDP, as explained in the previous paragraph.

The effects of this crisis have been felt in different ways around the world, putting at stake the structure of the American and global financial system, its risks and the regulation mechanisms of it. It is a fact that the lack of regulation of the financial system, on the part of the FED and the negligence of the agencies of classification of risk, caused this crisis. From that moment, the supremacy of the banks came to be questioned by the society.

CHALLENGES OF WORLD BANK SYSTEM

In recent years, the dynamics of the business environment of banks in the world have been changing. Globalization, together with the rise of the internet and the popularization of access, have made the world connect at a daunting speed.

People know what happens anywhere in the world in real time. Events which happened within a company that have its stock in the stock market, for example, imply changes in the price of its shares, in the actions of its suppliers, competitors and customers, the stakeholders are impacted simultaneously and instantly.

All these factors are creating a new competitive landscape in the global financial system, raising concerns for financial organizations. It is well known that capital has great mobility, especially the speculative one. Geographical boundaries are no longer a hindrance to investing in other nations.

In the 1980s, most of the banking services were carried out only in the cashier, during business hours. Going to the bank was almost a ritual in which you would spend a lot of time waiting in the queue to solve an issue with a cashier help.

However, even with all the technological upgrading the banks have been experiencing in recent years, such as the deployment of internet banking, ATMs and mobile applications, some services can only be performed by the account owner in his own bank branch with his manager, like we were in the 80's.

Most people who work have a hard time going to the bank during business hours. It is a painful task, a lot of time is spent and, usually, the clients feel that these trips to the bank, besides being a disorder, are a waste of time.

People who used banking services in the 1970s and 1980s see that the banks have improved a lot. However, there is a part of the population that does not perceive any improvement: the generation Y. Such a generation is in a hurry to carry out all its activities, they hate to wait, they want to be everywhere all the time. For these individuals, banks are overpast.

The generation Y is made up of adults between 20 and 31 years old, they did not grow with the internet, it became popular when they were teenagers. But, they have learned to use it and, today, they don't live without it. These individuals hate the banking bureaucracy.

From this, it is possible to imagine the shock that the generation Z (young people who are between 12 and 19 years old, also known like generation of the Internet) will have when using the traditional banking system. These individuals are already born with the internet age. This is the generation that, before learning to speak, had already used cell phones and tablets to play. These people will be the future banks' clients.

THE FINTECHS

Banking services have always been fundamental to economic development. However, after the 2008 crisis, bank supremacy became heavily questioned and people reduced confidence in them.

It is a fact that financial services are essential for society and for the economy as a whole, but they should not necessarily be provided by banks. From this idea came the fintechs.

Fintechs are financial startups focused on the application of technology to provide financial services. Generally, each fintech provides a specific service, different from the banks that offer a big portfolio. In this way, fintechs can offer the services at a lower cost than the banks and with higher quality. That is, fintechs provide customers with features and tools that banks do not offer or, when offer, they are obsolete.

Customers sees the fintechs as facilitating companies, without bureaucracy and with lower costs, unlike the experience many people have with banks. For customers, the service options offered by fintechs are viable and even better than those offered by the traditional financial market. The following will address the different types of fintechs.

MEANS OF PAYMENT

The consumers can choose to pay their purchases with the traditional debit / credit card from retail banks or via PayPal - payment company. According to Barberis and Chishti (2017), PayPal has 100 million active accounts, making about \$ 315 million in payments per day. Although the fintech concept looks very modern, Paypal started its activities in 1998.

In turn, RecargaPay is a fintech that has emerged as an application for recharging phone credits and is currently a means of payment platform. The application allows the user to program recharges from time to time in his cell phone. It is also possible to recharge the public transport ticket and to pay the bills through the cell phone, avoiding queues and without the need to have a bank account. These tools work just as well as money or card. Recarga Pay has 5 million users and received investment of R\$16 million in September 2017 from TheVentureCity, an American startup accelerator.

Controly is a startup that offers international prepaid credit card. With a Controly application, the customer checks their balance, checks their spending history and generates a bill to recharge their card. The big differential of this startup is to help the client achieve goals. Through the tools offered by startup, the customer can create a goal and reserve part of their monthly balance to achieve their desire, whether traveling or buying some property or product. Furthermore, with the prepaid card there is no need to prove income. On that way, people who could never get a credit card can enjoy the benefits of it, such as the security of carrying a smaller amount of money, for example.

Nubank is a Brazilian fintech, started in 2013 and acts as a credit and debit card provider. The customer does not pay annuity nor tariffs, therefore, the startup profits with percentage on the purchases and interest of the card. Such interest rates are slightly lower than those practiced by traditional banks. The company has no agency and the card is managed by the customer, who can follow the invoice situation in real time via the application.

This fintech allows the customer to monitor their expenses and be served by the company via the application. Through the application the user can request increase or reduction of the limit of his card and visualize in real time his expenses in the month. The expenses are made available through a time line, including the location on the company map. It is believed that, by this way, the customer has greater control of his expenses, avoiding default at the end of the month.

[...] Nubank has already received 5.5 million credit card applications - of that total, one part was issued, one refused, and a third (500 thousand people) forms a waiting line for credit analysis. [...] Nubank does not reveal the exact number of active customers, but industry experts and startup partners estimate

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something around 700,000 to 800,000, an important number if we take into account the age of the company and the fact that she does not even spend a penny on marketing. (OLIVEIRA, 2017)

According to Oliveira (2017), Nubank has about 800 thousand customers, its base has grown from 20% to 30% per month, and the card has already been used in more than 60 countries. These numbers represent an astronomical growth, even for a startup who are famous for growing exponentially.

Nubank also provides discount to customers who want to anticipated pay their parcelated accounts, something innovative in the credit card market. In addition, interest rates are around 7% per month, versus 14% per month on average in the Brazilian market. The following table shows the credit card interest rates practiced by Brazilian institutions.

As can be seen in Table 3, credit card interest rates in Brazil vary from 154% to 790% per year. The financial institution that charges the highest interest rate is Da Casa Financeira, and the smallest is Pan Bank.

Table 3. Interest rate of revolving credit cards in Brazil

Institution	Interest Rates	
	% per month	% per year
BANCO PAN	8.11	154.81
BANCOOB	8.51	166.50
FIN. ITAÚ CBD CFI	9.30	190.74
BCO SANTANDER (BRASIL) S.A.	9.50	197.04
BANCO BRADESCARD	9.65	201.97
BCO DO NORDESTE DO BRASIL S.A.	9.70	203.82
ITAÚ UNIBANCO BM S.A.	9.95	212.29
BCO DO BRASIL S.A.	10.00	214.01
BCO BRADESCO CARTOES S.A.	10.10	217.15
BANCO CBSS	10.13	218.38
BCO BRADESCO S.A.	10.20	220.63
BCO CITIBANK S.A.	10.20	220.67
PORTOSEG S.A. CFI	10.40	227.80
LUIZACRED S.A. SOC CFI	10.54	232.78
CAIXA ECONOMICA FEDERAL	10.60	235.08
BCO SAFRA S.A.	12.69	319.29
BANCO ORIGINAL	12.71	320.16
BV FINANCEIRA S.A. CFI	13.68	365.59
PERNAMBUCANAS FINANC S.A. CFI	17.05	561.38
BCO LOSANGO S.A.	17.80	614.11
BCO TRIANGULO S.A.	19.99	790.52
DACASA FINANCEIRA S/A – SCFI	20.00	791.18

Source: Banco Central do Brasil (2017)

Generally, those who suffer the most with these abusive rates interests are the poorest part of the population, who cannot afford the full payment of the bill, or only get credit in financial institutions that charge the highest interest rates in the market.

Nowadays, traditional banks come in contact with the customer, insisting to them to parcel the credit card bill, of course with an abusive rate of interest. The banks leave the impression that they want people in debt and with their finances disorganized to profit from it. The customers have the feeling that banks are always against them. Fintechs, in turn, are showing that they can make life easier for clients and help them even with financial management.

As explained, “new” means of payment work as well as money or card from traditional banks. And gradually, they are transforming the form of payment as we know it.

FINANCIAL MANAGEMENT

In addition to fintechs charging less for the services provided to customers, there are fintechs in the market to aid financial management. An example, is the Brazilian startup GuiaBolso, which has a tool for personal financial management.

The app accesses the user’s bank account, showing monthly entries and expenses. The user can categorize the expenses in order to improve the management of the expenses. In this way, the tool consolidates expenses with supermarkets, bars / restaurants, transportation, etc. So, the user can set spending targets for the next month and monitor their performance over the period, in addition, planning investments, travel, etc.

The company guarantees that the information is kept confidential. It is important to point out that all this functionality is available 24 hours a day, via smartphone. GuiaBolso received an investment of around 125 million reais in October 2017 (Prado, 2017), currently the application has 3.5 million of users.

In turn, the fintech Minhas Economias is also a financial management platform, which allows the user to view expenses by category, similar to GuiaBolso. But this application allows to register multiple cards and offers the possibility to export all the information to Excel. However, the user income must be manually entered. Information can be accessed at any time, via computer or smartphone.

The Organize application has 1 million users and also has the purpose to assist in financial management. In this tool, the user informs the balance of his account, credit cards, due dates of bills and, later, informs manually his diary expenses and its revenues. A differential of this application is the SMS reading of the banks in order to monitor the expenses and prevent blows.

In addition, the Organize warns the user when accounts are expiring, regularly post personal finance articles on your blog to “educate” users financially, making them aware of the importance of financial management. Organize has a business version, but for this version the company charges monthly subscription for use of the tool, it is possible to test it for 30 days before signing.

PEER-TO-PEER LENDING (P2P)

The way of making loans has also been altered by financial startups. Traditionally, banks raise money and lend it to the market at a much higher interest rate than they pay to the money owner.

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Peer-to-peer lending (P2P) platforms unite people who want to lend to those who need money. This type of loan has been moving billions of dollars a year around the world.

Peer-to-peer loans represent a market of roughly \$ 65 billion globally. The mode is very successful in countries such as the United States and England, where even public banks invest in small and medium-sized companies. (Merker, 2016)

Those loans have lower interest rates than those charged by commercial banks, and it works as follows: the borrower gets the money with less bureaucracy and the owner of the capital gets a good return on the money. On average, P2P loans cost about 50% less than in banks.

In this way, banking intermediation is no longer necessary for the transaction to take place without any detriment to the provision of the service or customer satisfaction.

Traditional banks raise funds through savings and certificate of deposit (CD in the US, in Brazil it is called CBD) and lend this capital in the market with very high spread. According to Merker apud Gomes (2016), the Brazilian spread is the second largest in the world.

Bank spread consists of the difference between the interest rate on the borrowed capital and the interest rate on the money raised, as can be seen in the following formula.

Bank spread = interest rate - return rate

Commercial banks are profiting from loans in Brazil, due to the fact that the country has the second largest bank spread in the world and low default rates. For this reason, Brazilian banks continue to profit even in times of crisis. Table 4 shows the ranking of Bovespa companies with the highest profits in the third half of 2017. It is possible to observe that banks are the institutions that appear at the top.

In Brazil, this type of P2P loan is still new. Nexxos is a Brazilian and Paraguayan Fintech that operates in the collective loans market. It was founded in 2015 and has already financed 23 million reais in loans. Investors who lend their funds receive the interest monthly in their bank account.

To apply for a loan, the user must sign up for the platform. After reviewing the request made by Nexxos, the request may be approved or rejected. If the loan application is approved, it is made available on the company's platform. Thus, investors visualize every opportunity and choose which they wish to invest in. When 100% of the capital has been withdrawn, the amount will be passed to the application, who will pay interest and the amount received in subsequent months.

Table 4. Companies with the highest profits in the second quarter of 2017 among Bovespa companies

Company	Sector	Net Profit R\$ (000)		
		2016	2017	Variation
ItaUnibanco	Banks	5,518,457	6,013,965	495,508
Bradesco	Banks	4,133,898	3,911,483	- 222,415
Brasil	Banks	2,465,048	2,618,682	153,634
Ambev S/A	Food and drinks	2,046,154	2,013,148	- 33,006
Santander BR	Banks	1,347,366	1,879,466	532,100

Source: G1 apud Economática, 2017.

Interest to owners of capital varies between 15% and 25% per year. However, it is important to note that there is a risk of default, so the investor is advised to evaluate the risks and diversify their investments.

The world's first fintech peer to peer was Zopa, who was born in London in 2005, and has loaned about 1.5 billion pounds since its inception (Fintechnews Switzerland, 2016). The startup slogan is "We believe a loan should be there to help you, do not hold you back."

The English capital is considered one of the best places for fintechs development in the world. The ease with which business can be established is a reflection of government measures to encourage entrepreneurship and innovation.

The Finding Circle is also a significant player in the European P2P market. The startup emerged in 2010 in the United Kingdom and has already funded 1 billion pounds for small and medium-sized businesses (Fintechnews Switzerland, 2016).

Lending Club is one of the largest P2P fintechs in the world, founded in 2007 and headquartered in San Francisco, United States. The startup is considered the largest player in the west and captured about 9 billion dollars in 2014 (Gomes, 2015).

According to Lending Club Statistics (2018), a startup website, until December 2017, it lent 34 billion of dollars. Fintech lends amounts between 1,000 and 40,000 dollars, and loans can be financed in up to 5 years (Jayakumar, 2018).

The fintech that stands out in Israel in the loan segment is Blender, founded in 2014 and already present in several countries.

The fintechs peer to peer played a crucial role in 2008. Due to the crisis of confidence generated by the US housing crisis, securing funds from the banks was a rather arduous task. Today, P2Ps are viewed by customers as partner companies, as well as other types of fintechs. In addition, getting loans with interest lower than those practiced by banks safely and with less bureaucracy is the desire of every client.

The operation is also advantageous for the investor who achieves a higher rate of return on his asset, but it is important to know that there is a risk of default.

In Brazil, there is a fintech that offers almost all the services provided by a traditional bank: The Neon bank. This bank, exclusively online, was founded in 2016 and has 120 employees and 100,000 customers. Access to the account is given via application. There is no monthly fee and there is no physical agency. The bank's slogan is "Like a bank, but totally different." The client has checking account, debit and credit card, possibility to make investments and to make loans, as in any bank.

The neon bank arised because its founder, Pedro Conrade, was dissatisfied with the service of his bank and identified a gap in the market. Unlike traditional bankers, he has only one suit and no business card. It is intended to capture dissatisfied customers with other banks.

The focus of the Neon bank is to attract mainly the young people. To open an account, you must be over 18 years old, have CPF and download the bank application, and to activate the account, you need to deposit 100 reais. The bank does not charge fees as long as the customer makes only one withdrawal and one bank transfer per month. For quantities above these transactions, fees are required. The bank also offers biometric recognition service by digital or selfie. In addition, customers are guided to save to achieve goals, with guidelines through the application chat.

Neon follows the rules and requirements of the Central Bank of Brazil and is covered by the Credit Guarantee Fund. In other words, if there is any problem with the bank and it loses the capacity to honor its commitments, the customer receives up to 250 thousand reais of his money existing in the institution.

The New Financial System

A survey by EY consultancy, made with 55,000 bank customers in 32 countries, shows that only a quarter of them believe managers give unbiased advice on financial products. [...] Bank aversion is partly due to the fact that being a client of them is not a choice but an obligation for any ordinary citizen who needs to pay bills, receive and transfer money, etc. (Bertão, 2017)

Fintechs are reducing the cost of financial products / transactions, making daily financial issues easier for customers, delivering quality services and even financial management platforms.

THE REVOLUTION OF WORLDWIDE FINANCIAL SYSTEM

Fintechs are revolutionizing the way individuals conduct their financial transactions in the world. As described earlier, fintech's largest hub is located in London, a city that provides an environment conducive to innovation.

Switzerland has also created a favorable space for fintechs. The European country encourages them precisely because it is known worldwide for its banks and for the quality of the services offered.

Israel has a significant pole of innovation, matching the other European poles as well as the United States. In Israel, the government supports startups by funding R&D areas and creating a favorable environment for innovation.

The investment of Venture Capital funds in Israeli startups (per capita) is 2.5 times higher than in Silicon Valley and 30 times higher than in Europe. On Nasdaq, there are more IPOs from Israeli companies than from all the countries of Europe combined. (Finnovation, 2016)

Brazil stands out as a pole among the countries of Latin America. It is important to note that in Brazil the fintechs are regulated by the Superintendency of Private Insurance, Securities Commission and Central Bank.

As we have seen previously, the crisis of 2008 was generated by lack of regulation. So, the regulation of financial transactions is essential to keep the financial system healthy and avoid another crisis of confidence in the financial market.

Developing countries with very little financial infrastructure are the target of fintechs. In these countries, millions of people do not have a bank account, they have never been clients of a bank. In turn, in the more developed countries, fintechs fight with banks for customers.

Most of these developing markets are not attractive to commercial banks due to their high operating costs, as well as the difficulty of geographical coverage that a regular bank has. The fintechs, in turn, has a much greater scope because, for an application to be used by an individual, it is enough that he has a smartphone or even a regular cell phone.

According to the International Telecommunication Union, an estimated 95.5% of the world's population has access to a cell phone - which gives SMS a greater impact than the internet. (Barberis and Chishti 2017)

According to Barberis and Chrishti (2017), it is estimated that, by 2020, 70% of individuals in developing countries will have a smartphone. From there, the opportunities for fintechs will be immense. The financial startups can become the agents that allow access and direct financial resources to those who need it most. Generating huge social inclusion for those who have always been excluded by banks.

Over the past 15 years, mobile phone penetration in Africa has gone from zero to 900 million subscribers [...]. More impressive is the fact that about 500 million of these subscribers do not have regular access to electricity. (Barberis and Chrishti, 2017)

An interesting factor is that the fintech market in Kenya is very well developed, even more developed than in rich countries. This happened because the Fintechs in Kenya came up to serve the bankless, who are millions of individuals who never had a bank account and carried out all financial operations with cash. Traditional banks did not reach these individuals, and there was no barriers to fintech's development. The services offered by fintechs were so successful, that people who had banks started using fintechs and asking those same services to their banks.

In poorer countries there is no need to compete for clients, the market is large and very lacking in financial services. Most transactions take place in cash. Fintechs are facilitating the lives of people from these localities and generating social inclusion for the population.

[...] only 50% of the people in the world have a savings account, and only 20% have access to a loan product from a financial institution. There are approximately five billion people that banks do not currently served. (Barberis and Chishti 2017)

It is hard to believe that so many people still do not have access to the banking system, even with all the evolution that we have experienced in recent years. Moreover, among the people who have access to the banks, much of it is not satisfied.

Unfortunately, the percentage of individuals with access to loans is also very low. The loans having the power to transform society and generate social inclusion. Small entrepreneurs, for example, need investment to be able to develop their business. The poorest people need access to credit with fair interest rates but, unfortunately, these people get only financial loans at abusive interest rates.

Muhammad Yunus won the Nobel Prize in 2016 for setting up a bank to offer microcredit to poorer people, the Grameen Bank. The purpose of this bank is the eradication of poverty in the world. The institution offers credit to poor people without the guarantees required by traditional banks. The default rate is negligible, and the vast majority of clients are women. This is just one example of how it is necessary to provide loans to the low-income population. It is important to make it clear that Grameen Bank is not a fintech.

Traditional banks have developed, along with bureaucracy and high rates of services, a certain formality. All the people who work in the banks are always well dressed, they wear suits and tailleur, which ends up intimidating some clients, especially the poorest ones. Many people are ashamed to go to the bank poorly dressed or shortly after they leave work because, sometimes, they are dirty. Bank employees often misbehave these people, and they feel uncomfortable with the looks of customers.

Thereby, going to the bank has become an unpleasant activity, people want to leave the place fast. That is terrible for a place that sells services and needs customers.

The New Financial System

It is a fact that banks have never structured their business thinking about the customer. The customers have always been the responsible for adapting to the services that the banks have offered. Fintechs are changing that reality by putting customers on another level. Fintechs are developed to quickly adapt to the market changes and customer needs.

Another aggravating factor against banks is their opening hours. The banks operate at reduced hours, which makes it difficult for the general public to access, who are working during this period.

Fintechs, however, offer the same services at a lower cost, run 24 hours a day. The access can be made anywhere, via smartphone or mobile phone, providing social inclusion and broadening the scope of services provided. Fintech's focus is on customers. The purpose of these companies is to facilitate the financial transactions in the day to day of customers.

After the financial crisis of 2008, people began to take better care of their finances. Fintechs provide tools for this control. The world economic situation is making people more cautious above their spending. About 200 million people are unemployed in the world (Castro, 2017). Faced with this global situation, it is impossible to stop taking care of finances.

According to a report by Accenture apud Kudinska and Romãnova (2017), investments in Fintech were 15 billion dollars in 2015, against 4 billion dollars in 2013.

Banks will likely lose market share, reduce margins on products offered. Banks are likely to become more efficient, try to add value to products, and seek to adapt to changing market conditions.

RECOMMENDATIONS FOR THE TRADITIONAL FINANCIAL SYSTEM

Faced with the space in the financial market that Fintechs has been gaining in recent years, it is natural to expect a reaction from the traditional banking system. The banks could choose to enter the fray against fintechs, but this would not be a reasonably interesting route. A feasible and smart alternative would be to follow the fintechs in this revolution, taking the opportunity to improve the quality of banking system services.

As the commercial banks have a large database and experience, a possible repositioning in the value chain would open up the possibility that they may become providers of Fintech's financial solutions. Another reason to invest in strengthening a partnership would be to use Fintech's technological know-how to improve banking services. Therefore, banks would remain efficient and competitive players in the global financial market, instead of being obsolete service providers.

Some banks have already realized that the financial market revolution is being written before them and have chosen not to miss the opportunity. They are investing in technological innovations, setting up incubators and partnering with fintechs to participate in this transformation.

A great example in Brazil is Itaú, which created Cubo, a financial services platform developed in partnership with startups. In turn, Bradesco created InovaBra, with the aim of promoting synergy between startups, bank and investors.

However, the responses of the traditional banking system go beyond partnerships. The same banks that partner with fintechs are also creating difficulties for them. Recently, Nubank has accused some Brazilian banks of creating barriers to hinder the issuance of credit cards by new agents. Traditional banks would be hampering Nubank's hiring of banking services necessary for its activity. As discussed in the chapter, since Fintechs specialize in a given service, they must hire services from other agents,

including banks. Nubank filed an administrative proceeding with the Brazilian antitrust agency CADE (Administrative Council for Economic Defense).

On April 2018, the Brazilian National Monetary Council approved a group of rules which turns the fintechs more independent of the traditional banking system. Prior to the adoption of these regulations, fintechs needed to be linked to large banks to offer payment accounts to their customers.

With this regulation, fintechs are now defined as Direct Credit Societies or Personal Loan Companies, which will make it possible to use their own resources for loans, financing, acquisition of credit rights and for the aforementioned peer-to-peer.

According to Matsu (2018), the Central Bank's main objective with such a resolution is to increase competition so that interest rates are effectively reduced. Today, the four largest banks in Brazil hold 78% of the loans.

Without doubt, the regulation will create a favorable environment for the development of fintechs in the country. In return, startups will have to adapt to meet the operational requirements according to their respective profiles.

CONCLUSION

In recent years, technology has transformed the way of people consume, travel, book hotels, communicate, relate, inform, study, teach, and so on. Now, that change has come in providing financial services.

For decades, banks competed only with each other, there were no big news in the financial segment. Now, the banks are competing with innovative organizations that grow exponentially and are revolutionizing the traditional way of delivering services.

Financial startups have a competitive advantage by focusing only on a specific area in the development of a specific service for the purpose of becoming a benchmark in this sector, rather than competing at all levels as traditional banks do.

Fintechs have identified a huge gap in the market, between what banks offer and what customers really want to. And they are turning that customer dissatisfaction into an exponential business opportunity. We are experiencing an unprecedented financial revolution that is not being undertaken by traditional financial institutions, but by technology companies that have no financial know-how but do something that banks never did: they put the customer in the first position.

Over time, the costs of changing financial institutions will be reduced, so the banks will have to compete solely on the prices and quality of services provided to maintain their customers.

It is necessary that governments start to regulate fintechs. Fintechs are not banks, but they are acting like financial institutions. As it was shown in the beginning of this chapter, financial institutions need to be regulamented. The lack of regulation could trigger major financial crisis, that would spread quickly all over the world.

The consequences of this revolution in the financial market are still obscure, but there is no doubt that we are experiencing a period of disruption of the status quo of the traditional financial organization.

For the next studies, it is suggested that more research be done on the evolution of fintechs in the face of the financial market, mechanisms for regulating their activities and interfacing with the traditional banking system. It would be also vital to investigate further the improvement of social inclusion in developing countries, generated by the fintechs.

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Chapter 18

The Business in Orchestras: A Concise Comparison Between Fundraising Methods in Brazil and United States

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ABSTRACT

What many people cannot see is the structure that an orchestra requires to exist. Beyond the whole group of musicians who stand up in front of the audience, there are people working on the orchestra's image, needs, fundraising, organization, programming, management, and taking care of every detail to please the audience and also the musicians themselves. As any organization, orchestras need revenue and experienced professionals to move forward. It's not a one-man work; it has to be done by many hands and brains. This chapter shows how fundraising works in orchestras in the US and in Brazil—with some similarities with European model—including which lessons each country could take from the other when talking about this subject. It also describes some examples of how musicians are being involved in administrative issues and/or solutions, and how music education can result in a better basis to the art's management.

BACKGROUND

It is not possible to discover when music became present in people's lives. But, the orchestra history can be linked with the first signs of instruments as an autonomous part of a concert during the sixteenth-century. Since then, composers started to think out of their comfort zones, driving music through different paths and periods. These new ways of composing demanded orchestra's rethinking and restructuring its musician's formation, quantity and stage positioning.

An orchestra is an ensemble composed by many musicians from different families, including strings, winds, brass, percussion, harp and keyboard section. The number of musicians is various because it depends on the kind of repertoire the orchestra will play. The periods are divided in baroque, classical,

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romantic and modern, and the number of musicians required to play a baroque repertoire is less than a modern one.

When the groups were smaller, the leadership was the concertmaster role or a chord-playing musician on a harpsichord. However, with the sudden expansion of musicians in orchestras, the conductor became an important element. The conductor is the one who directs the whole group and unifies the performance by showing the time and interpretation of each music. Consequently, for a long period of time, most of them were also artistic director of the organization, and some were also important composers, like Gustav Mahler or Richard Wagner. This meant that every artistic decision was based on the artistic director/conductor's approval, programming the musical season as his vision of where the orchestra should be. For many years, decisions were centralized on one person's conceptions.

In the middle of nineteenth-century, some orchestral groups were created in Europe and in the USA, like Vienna Philharmonic and New York Philharmonic, both in 1842. These are not the first orchestras created in history, but are considered two of the greatest orchestras in the world until today. By that time, the artistic initiatives were usually supported by a small group of patrons who were art admirers willing to provide experiences for their community. Both orchestras mentioned above were created by the community and had the aristocracy's support. Following this model, more and more orchestras were created along the nineteenth and twentieth-century. It is possible to affirm that this kind of financial support was the first fundraising method for orchestra's maintenance in history.

After some organizations structuration and artistic improvement, the orchestras were seen as a cultural initiative that could bring to its audience, not only knowledge but social and mind transformation. Therefore, through Europe and some groups in the USA, the government started to support orchestras, and even participate in the foundation of some of them. For a period of time, almost all orchestras were supported by patrons and by the government. These grants could come from a national sphere or by local support. In each way, it was a matter related to public policy, not only as the individual donation or a small group's interest. Through nineteenth-century and early twentieth-century, the orchestras were in a very good financial scenario, promoting a considerable artistic development.

Since the beginning, European orchestras were created to be supported by the government and also by the community. On the other hand, in the U.S., the main structure was patronage. Both ways were being succeeded in providing for orchestras the opportunity of sharing art and music with their communities, and in, some cases, with other cultures - with tours and recordings. By this time, Latin-America imported and implemented the European method of management to create new orchestras. Obviously, the format was adapted, but these new organizations were counting mainly on the government support.

However, the twentieth-century has not ended the same way it started. Unfortunately, an unusual need to justify art with numbers and to compete with other initiatives brought up the first crisis in the orchestra's realm. American orchestras faced a huge cut on their revenues, mostly because of their susceptibility of suffering from society's purchasing power or donation support. Even orchestras tightly bonded with their communities faced a crisis not expected and the idea of being supported only by patrons was no longer enough. In Europe, the crisis arrived in the economy, therefore, the government was affected and, as usual, culture suffered cuts and had to be restructured to survive. Unexpectedly, in Brazil, the few existing groups were growing and being structured to function based on a new model of management, the one which combines government, patrons support and also companies sponsorship. To exemplify this new model, it is fair to mention OSESP history briefly:

The Business in Orchestras

The São Paulo Symphony Orchestra, known as OSESP, was created in 1953 by Maestro Souza Lima (pianist and pedagogue). He lived in Europe for many years, raised a career in France and was friend of Maurice Ravel. As mentioned before, the twentieth-century was a great period for orchestras, although OSESP faced through the 60's an enormous crisis. Fortunately, it was transitory situation and, soon, Eleazar de Carvalho - a great and well respected conductor - took over the orchestra and led it from 1973 to 1996. During his command, the orchestra grew artistically and became recognized. However, all the support designated to the orchestra came from the State of São Paulo government. Therefore, every decision making or artistic need would depend on the governor and the actual political party. After Maestro Eleazar's death, the next leader of OSESP was John Neschling, who agreed to take over the orchestra only if he could restructure the whole organization and if the orchestra could earn its own concert hall. Together with Claudia Toni, the executive director, they started the reestructuracion of OSESP. When they started, the orchestra was composed by 97 musicians. After internal auditions, only 43 musicians were approved to continue in OSESP. Then, around 20 Brazilian musicians who were studying in other countries came back and had the chance to settle in a great job. The salaries grown, the season was improved and a new management was being formed. After 1998, the congress voted and approved the OS (Social Organizations) method, which was the bond with the government support complied with the flexibility to fundraise resources from companies, individuals and other grants programs.

While Brazil is still on the path of many changes and challenges in orchestras which are connected to State and Federal governments, the orchestras in United States have been presenting over the years a solid method of fundraising without direct government participation. On the other hand, even with a structured methodology, some orchestras were close to bankruptcy, were having more expenses than income, and also many labor issues with staff and musicians. Brazil is the fifth biggest country in the world and owns approximately 120 official orchestras, while U.S is the fourth largest country in the world and own approximately 1,200 official orchestras.

On the essay "The Civilization of the Spectacle", written by Mario Vargas Llosa, he says that culture should not depend on politics, otherwise, controlled culture turns itself into government advertising. Besides the lack of originality and truth, the very function of culture might be disconnected of the influence of the arts on the political life. Instead of preserving and maintaining the public critical overview, when the culture influence is controlled to hold on the same patterns, there is no progressive transformation on the people. In other words, culture start to be measured in quantity and delivered as entertaining activities, not to enhance the humanity.

Over the years, the democratization of culture became an important subject and brought many discussions to the surface. There is a share of the society that believes that the best way of maintaining quality is keeping the access to a select group of people. There is also another share which believes that delivering culture to more people would improve the common life in the cities and countries. It is important to stress that appreciate local culture enriches people's lives and make them understand their own history.

Obviously, together with technology, many other initiatives appeared, other styles of music were created and more experiences are being offered to the audience. That does not mean that orchestras can not have their own space inside the new society's cultural needs.

With innovative management and new projects, orchestras as New York Philharmonic and Los Angeles Philharmonic still demonstrate considerable numbers of subscriptions and single tickets sales on their seasons. Maybe the audience attendance is not stable as fifty years ago, but the creation of new ways of presenting classical music is guaranteeing the organization's future.

Indeed, the lack of music education in the U.S. and in many countries in Latin America brought up a decreasing engagement from new audiences, especially the youth. The aging of arts audience is a constant concern of organizations, mainly because the whole solution is not only up to them. Arts (in general) should be introduced in children's lives, but that's not a reality in many countries. Projects to engage audience are practiced in large scale, trying to reach more people at once, with not enough frequency. Orchestras usually perform open door concerts, concerts directed to young audience and educational programs directed to new musicians and composers. The efforts to achieve a new audience are under the ideal scenario wanted and needed by arts.

FUNDRAISING IN AMERICAN ORCHESTRAS

To understand the American model of financial sustainability, it is important to highlight the philanthropic behavior in late nineteenth-century. With the United State's economic growth, wealthy donors created foundations to administer larger gifts and gave Americans large condition to raise a stronger voice to expand social movements, public policies and develop knowledge around the country.

In the book "Philanthropy in America: A History", by Olivier Zunc, he says that, after the World War I, the federal government, with expanded revenue from the income tax, put in place a regulatory structure to support philanthropy by granting all givers a fiscal exemption.

Despite the fact that this model of fundraising is also facing financial turndowns, the relationship between private philanthropy and public subsidies is the major claim in arts organizations in the U.S. The government has almost no interest in supporting orchestras directly. Their participation in supporting art is deducting taxes from who donates to nonprofits organizations. Direct grants are rare when thinking about big organization in metropolitan areas, being mostly done in mid-sized or small cities/organizations. So, since the first sights of orchestral groups at the end of eighteenth and early nineteenth centuries, the groups count on the intense work to guarantee individuals donations.

As quoted on the book "American Orchestras in the Nineteenth Century", by J. Spitzer, the orchestra model was brought from Europe by musicians and also by aristocrats.

(...) viewed America's musical history as a process of cultivation from low aesthetic taste and performance standards in the eighteenth and early nineteenth centuries toward greater audience expectations, higher vocal and instrumental performances standards, and familiarity with masterworks (...)

The New York Philharmonic was created through a Society and was the only American orchestra which had proven itself capable of surviving with a cooperative business model. By that time, the performers were responsible for the management and artistic vision of the group. The success of this specific initiative was reached through faithfulness of subsequent members, the audience connection to the repertoire and to the orchestra itself, besides the founder's vision.

To give power to a cause is the best way to guarantee its durability. If people feel connected to a project, the empathy make them help and feel responsible for keeping the organization moving forward.

Unfortunately, the individual donations are not as stable. The apathy from newer generations, which were not introduced on the "classical world" as older generations, and the lack of familiarity in the art's area are not positive point to orchestras actually.

The Business in Orchestras

The orchestras have the development department, which is composed of fundraisers and people expert in relationships with the patrons, subscribers and donors. The main goal is to find people willing to donate and make enough efforts to their continuity.

The development of attractive programs, where the audience can feel comfortable and welcome, is a job that englobes the whole organization. All the people involved in the orchestra have to be aligned to publish its image. Every group defines what is attractive for its audience, which can go from pop concerts to classical repertoire, or even educational concerts. Each orchestra has to understand its current audience, define which is the new share of public that the organization wants to engage and get closer, by presenting a season full of delighted experiences.

Nowadays, the income portion in the majority of American orchestras is separated in 1. Earned revenues and 2. Contributions (endowment funds and annual fundraising campaign). The difference between these two sources of financial support is basically the source from where the grant is coming from. Earned revenue is a money that the art organization receives in exchange of a service, such as an orchestra's fee, ticket sales, merchandising announcements/posts, concert hall rentals - when the organization has its own venue -, special events, and so forth. Contributions, on the other hand, are gifts made freely of exchange services, considered donation directly to the organization's program. The gifts can be monetary contributions or items that will help the organization - like office furniture, instruments, etc. In these contributions, the donor has the possibility of the tax deduction.

Earned Revenue

The business model of orchestras is composed by selling season concerts (single tickets, group sales or subscriptions), broadcast, selling records, touring, special concerts - like pops or "light concerts" -, outdoors concerts, gala dinners and many other ways to show its music to people. Following researches made by the League of American Orchestras, the earned revenue represents around 35% of the total income portion of an organization. According to the study "Reimagining the orchestra subscription model", by Oliver Wyman for the League of American Orchestras, over the past decade, subscriptions models are under pressure to be reinvented. In orchestra's history, subscriptions were always responsible for its main financial sustainability and over the past years, the high decrease of subscribers are making arts organizations change the way of handling this matter. Compared to single tickets sales, which surprisingly had increased, subscriptions have dropped even more quicker than expected. It turns out that new generation (the millennials) is not interested in being attached to one single project. The approach has to change, so arts organizations can reach this new audience and count on their loyalty, even if it means sells more single tickets.

Dealing with new generations will be risky and some projects may not succeed. But, to find a new model, changes have to be done and some risks have to be taken. In this matter, orchestras have the obligation to readapt its communication approach and also offer new ways of presenting their product. One of the most used word, nowadays, is "customization" which means that the organizations are in a process of cultural appropriation and have the alternative services to attend this new audience. Many U.S. orchestras are already accommodating this new format into their subscriptions. The usual way of selling subscriptions is programming the season, separate the bundles and sell the exact way it was created by the artistic director. The format that is being used is to offer all concerts and the audience choose which one they want to attend. There is a minimum number of concerts and there are discounts

planned to people who purchase more concerts. The process of creation and action is not simple as this explanation cited, but is the basic idea.

So, the revitalization of subscriptions mode is completely connected to the power of adaptation of the organizations from what is being done until today and what can be done from now on. Blending and transforming the traditional with the new. It can be with flexibility on subscription sales, or maybe with the advertising/announcing format of the season. There are many options that were not considered or tested yet. The main point is that if the orchestras are open and available to rethink their strategies to reach their objectives, their progress and longevity.

Some studies believe that orchestras are dealing with the phenomenon named “cost disease”. This was first described by William Baumol and William Bowen in the 60’s. In art’s organizations, it represents the impossibility to get gains from labor, while there is an increase in expenses towards revenue. In other words, a Beethoven or a Brahms composition requires the same number of musicians as 100 years ago, therefore there is no way to improve productivity if you don’t have enough musicians. Over time, if the revenue becomes insufficient for the organization to keep enough number of hired artists, it can starve the orchestra of labor supplying, and overload employees of arts; it will need much more patronage and will count on it to continue producing; or it will diminish the quality of musicians for paying less and, consequently, gaining less than expected. Unfortunately, the extreme result of the cost disease is to make this sector shrink away. But fortunately, there are some initiatives being taken to conquer new audiences and to pursue on this field. The idea of divorcing the membership from attendance frequency is a promissory idea that is making orchestras reinvent their service offer.

Another way of earned revenue fundraising is hosting special events, which can be gala dinners, lunch parties, exclusive concerts, etc. Usually, orchestras have been helped for volunteering associates. Early 30’s women who could not work, could spend their time volunteering to art’s organizations to help fundraise exchange for self-gratification. They felt useful and were, in a certain way, working. They donate their time and usually money - from their families/husbands. Nowadays, these volunteers still remain, but the group is no longer exclusively made from women, actually, men can be part of it. It is inevitable to compare the amount of donation that orchestras receive and the amount that it currently that they get with gala dinners and special events. Even though, those events are still an important part of fundraising, mainly when is possible to count with the conductor’s presence or musicians participation. On those opportunities, the board and possible donors can be reached and, from them, is possible to bond relations with the organization.

In the U.S., orchestras usually schedule yearly tours to make money through fees, ticket sales, and product sales. It is also very common summer special concerts in many cities, usually organized by local producers, sometimes with the city hall support or even sponsorships initiative. In summer festivals, the orchestra can be one of the attractions and share stage with many other projects. There is an infinity of types and formats for these concerts. When the orchestra present outdoor, and specially in its hometown, it demonstrates the importance of the group for its community and reinforces the link between the general audience and classical music.

At last, orchestras which have their own venues can rent it to different groups, even for distinct types of art, like dance or theater. The rental is not considered as a major part of orchestra’s income, but it can often help.

Contributions

On the Internal Revenue Code (IRC) of the US, the section 501(c)(3) is for nonprofit organizations. This section was incorporated and applied to evaluate whether the organization can be exempt from federal income tax. The arts organizations are considered part of this section, therefore, they are allowed to receive contributions, like charity.

A charitable contribution would be the one that provides relieves to an area when it has some trouble, whereas philanthropic contributions aim to support the base of the organization.

Since late sixteenth and early seventeenth-century, the U.S. has been studied and applied philanthropy as a way to help people and public initiatives, such as colleges and orchestras. Many organizations in the US have been studied by contributions, which can be endowments, individuals, corporations or foundations.

In the United States, there is a significant amount of money in foundations and endowments. The endowment history started with John Harvard in 1638, when he left his library collection to a recent university which received his name as a tribute on 1718 (Burlingame, 2004). On the other hand, the foundations were created in the nineteenth-century and the major influence for their beginning was Andrew Carnegie. He believed that becoming a philanthropist was a matter of duty for the new self-made rich class. On his article, named "The Gospel of Wealth" (1889), Carnegie defended that the wealth people should spread their money and invest in net benefit to society. The upper class of Americans should return to the society what they had taken from it and focus on more serious and difficult tasks than their heirs.

The rise in disposable income among the middle and working classes dramatically increased the number of Americans who could join such cases. Over time, the Americans realized that the accumulation of small gifts enhanced the life of the nation, and the sense of responsibility is what still keeps philanthropy traditionally practiced throughout the United States population.

A man who dies rich, dies disgraced. (Andrew Carnegie | 1835-1919)

Through the annual fundraising campaign, the arts organizations receive pledges or contributions. In all cases the amounts received are legally due to non for profit organizations, usually made by donors (individuals or foundations) and identified as: 1. unrestricted, 2. temporarily restricted and 3. permanently restricted. No matter which one is received, all three offers tax deduction to whom is donating.

The differences between these gifts are: 1. unrestricted can be used without requirements on how it is supposed to be spent or invested; 2. temporarily restrict can be used on some conditions imposed by the donor (time or special requirement); and 3. permanently restricted cannot be used differently from what the donor required when the donation was made, and most times, are held for indefinable time in some investment.

Endowments funds are usually permanently restricted gifts, which are donated with the condition of investment. The money from this fund have to be spent with parsimony. This is the reason why the endowment draw policy exists in each organization. It defines how endowment will be invested, the terms of the future recovery and for which purpose it will be used. Usually, it also includes the percentage that organization is allowed to take (per year or bi-year) to cover its expenditures. Without the government support, the endowment fund is what endure organizations through period of crisis.

As individual donations, it is possible to consider every amount given from general public to the organization. This is by far, the largest source of fundraising in the United States. Orchestras have been focusing on online approaches, face-to-face fundraising, board members donations and networking.

Contributions are also given by foundations, which are independent legal entities created by one person, a family or corporation, to donate money with special tax deduction. There is about \$660 billion in foundations in US. The charitable giving can continue as long as the foundation exists, and it is usually created to pursue on existing for long time. In some cases, the foundations are transferred from one generation to another.

Developing a bond relation with donors - individuals, corporations or foundations - can guarantee longevity and prosperity to the arts organizations. In most orchestras, it is common to find the development department, which is responsible for taking care of all earned income, including contributions and the relationship with the people who are contributing.

FUNDRAISING IN BRAZIL

According to Cristiane Garcia Olivieri, writer of the book “Neoliberal Culture”, new projects which are not related to the cultural trends are destined to collapse. This means that the cultural market in Brazil is extremely limited, not because people do not like culture, but because most of them do not have money to pay for it. Unfortunately, the purchase power in Brazil is very low and the successfulness of great projects depends on the attendance and approval of the richer share of the society. Together with the insufficiency of people as audience, there is also the inability to form and educate new audiences.

The completely exemption of providing cultural experiences, which would circulate and be enjoyed by the population, develop great social inequality that characterize the capitalism. (Machado, 1984)

The main idea in Brazil is that the government has the duty to encourage and provide culture to the population (together with many other necessities, as health, security, education, etc.). This philosophy makes cultural organizations depend less on direct income, forcing them to submit more cultural projects to the government taxes deductions programs.

In Ranalli’s research line, he believed that the government would support culture as the amplitude of its outreach. To measure that, he differed this participation in four different directions:

1. **Facilitator:** Creation and implementation of fiscal policies and investments funds to support culture, besides the responsibility to engage the society and empower people to participate of new creative projects;
2. **Patron:** Indirect support with financial resources;
3. **Architect:** Directly involved, controlling the organizations and inserting bureaucrats in the culture field and;
4. **Engineer:** Total control in politics and culture with straight rules.

In almost 75 years, Brazil already faced the four ways of government participation in cultural field. Nowadays, the “Facilitator” is the closest of what Brazil is practicing. However, in all these years, the

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government had not designated enough attention to the culture and social projects because of economic and political processes.

In Brazil, arts organizations are still supported mainly by the government. Even with some exceptions, most organizations depends on politics to exist. In a country with so many changes and almost none stability, orchestras have been facing difficulties to grow and to maintain the activities as it should be.

As in many other countries, Brazil has a tax deduction federal policy named popularly as Rouanet Law. Unlike in the U.S., where the section 501(c)(3) in the IRC gather all nonprofit organizations, the Rouanet Law is exclusively for culture and arts.

The Rouanet Law was created in December 23rd, 1991. The intention of this law was to support cultural projects and encourage organizations to provide culture. As pointed before, this law allows individuals and companies to deduct a percentage of their income taxes, directing this amount to culture. While companies deducts 4%, individuals can deduct around 6%. All projects are carefully analyzed by the Brazilian Ministry of Culture, which provides an online system to organizations login and fill the extensive form asked to guarantee that the project deserves the support provided by the government, companies and individuals.

After the creation of this law, companies started to support social and cultural projects as never before. The Group of Institutes, Foundations and Companies, known as GIFE, did a research and discovered that, after the 90's, the concepts of corporate citizenship and the social responsibility turned to be appreciated by the population. So, the popularity of a company was directly connected with its care and return to the society. The number of companies which were involved in a cultural project that period summed up almost to the same amount as the addition of all companies between the 60's and the 80's. In a certain way, the companies support was covering the lack of government attention to social programs. Brazil has culture as the second area most sponsored by companies and individuals, just behind education and both are absolutely connected to the enhancement of people.

Even with the tax deductions, there are some exchanges allowed by the Ministry of Culture. This way, companies and individuals can be related to the organizations they donate.

In orchestras, the sponsor's image is directly connected with cultural support, and to improve the bond between the organization and the sponsor, some concerts can be offered in exchange of money: a season can be supported mainly - or only - by one sponsor; logos and slogans can be introduced on programs, website, banners, etc. All sponsorship - including those which are not related to Rouanet law (direct money or donation) - is based on contractual obligations between the sponsor and the sponsored party. At this point, transparency and clear conditions are extremely important to define the future and the results of this relationship. Before signing a contract, both parts should aware about their expectations, about boundaries and limits, and define some strategic plans to accomplish what will be agreed.

The agreement with individuals is as complicated as sponsorships with companies. In this case, as much as donations are supposed to be given without any return consideration, people keep donating if they feel truly connected to that specific organization or project. So, the importance of creating an environment of trust and proximity to its donor, the best will be for the future. In exchange, the organization may book some presentations exclusively to this audience; provide special and easier access to the venues and orchestras facilities; transparency policy; and newsletters written and directed to this audience who helps the organization with money or services. As explained before, philanthropy is not an usual practice in Brazil and as long as arts organization needs people to support it, appealing proposals has to be created and special connection has to be established thinking on perpetuity of the donation for many years.

In Brazil, many orchestras are supported by the government. On one hand, it is very helpful. The government supporting the orchestra, even partially, guarantees that certain amount of money each year or month to the organization's basic maintenance. On the other hand, it becomes more difficult to ask people to donate. As explained before, donation is not common in Brazil as in the U.S., and when people notice that the orchestra has the government support, it turns to be a public policy matter and no longer an individual issue for every citizen. Those who believes in the organization's work and understand the orchestra's needs, donate and instigate others to also help. However, the majority portion of Brazilian community believe that the government should do its part and maintain itself the arts initiatives. This behavior is understandable, once Brazilians has so many taxes to pay and so much corruption on government. Establishing that Brazil's reality is this, arts organizations must reinvent themselves to attract and convince people that culture is important and that it can be treated either as government or citizens responsibility.

While the subscriptions are being flexibilized and reinvented in the U.S., in Brazil it is finally getting people's attention. Subscriptions are responsible for a big portion of the total earned revenue of arts organizations, though not bigger than sponsorships through Rouanet Law and government grants.

Another difference between Brazilian and American's business model in arts is the board. Usually, American arts organization's boards are composed by donors or patrons. They get the chance to be on a board if they donate money, service or their time as volunteers. In Brazil, boards are usually composed by important people who can help the organization. Although, in several cases the board has small voice and participation on the daily work of an organization. Except some cases, most organizations maintain its boards to be a refugee in moments of crises. Normally, there are no committees joined by staff and board members, there are no direct interaction between musicians and board members, and there is no financial help from the board members to the organization as well. It works more as a consultative group, instead a group which interact in managing, in administrative matters or in any results regarding the orchestra, the conductor acceptance by musicians and audience, conductor's behavior and staff development.

MUSICIANS AND ORCHESTRA PERSONNEL

In the early years of orchestras, the popular format of administration was musicians' cooperatives (e.g. New York Philharmonic). This means that musicians created orchestras, divided their time into artistic commitment and administrative cooperation, and still had all the decisions on their hands. So, the components of the orchestras were supposed to put on practice their arts skills, plan the orchestra's season, choose the conductor, rent venue for rehearsals and concerts, share the responsibility of all details with co-workers, and accepting a percentage of the net profit of the concerts as a compensation. By that time, musicians used to care less for the orchestra then to concomitant jobs, such as teaching, chamber music concerts, weddings, etc. Over the years, a change of personnel was the priority for the artistic, structural and financial growth of the organization. The cooperative method was no longer a positive and profitable way of managing orchestras.

Somehow, the artistic programing was no longer supported only by tickets sales and fees. So, donors became very important for the orchestra maintenance and growth. The initiative began with citizens pledging funds to help with the deficit and the donation programs raised as explained before.

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With this financial help, orchestras could hire more musicians, guarantee weekly or monthly salaries and program a whole season with new artistic projects. Then, the volunteers who were helping the orchestra, were invited to join the staff and work in this new format of organization, where musicians could be focused in playing and the staff in managing the organization.

While the administrative staff was being changed and, in a certain way, professionalized, the cooperative method was declining. So, musicians created unions and committees to represent themselves legally in labor negotiations bargaining salaries, insurance, pension plan, work hours, average of concerts quantity along the season and minimum structure to excellent artistic results. Usually, higher positions inside an organization was taken by a person who helped the orchestra somehow. Most of them were not musicians and some differences became clear during this “innovative” way of managing an art organization.

In the U.S., the American Federation of Musicians (AFM) was created in 1896 for artists who played in theater, dance or parade music. So, the relationship with classical musicians wasn't that easy at the beginning. Together with local unions, the AFM bargained salaries, quantity of vacancies for Americans and foreigners - prioritizing Americans - travelling, musician's rights, etc. The AFM role became less notable when it stopped to work constantly with radio, movies, music, and theaters. Around 1964, when musicians were frustrated with AFM representing them in driving their complainings to orchestras and arts organizations and returning with unexpected (and not good) results, musicians from several places, together, founded the International Conference of Symphony Orchestras and Musicians (ICSOM). The ICSOM was responsible for local negotiations through a legal council. Later, AFM decided to affiliate with ICSOM. By 1984, musicians from smaller organizations created the Regional Orchestra Players Association (ROPA) which was also affiliated with ICSOM. The work of those associations - together with local unions - was to guarantee the adressedment and provide solutions for musicians needs inside their own orchestra without ruining the relationship between the players and administrative personnel.

It is important to clarify that, a non profit organizations, orchestras have free management. This means that if the board and directors agree with some financial process or with a detailed labor agreement, they do not have to justify for owners or shareholders. Usually, the boards are composed by donors and they represent the donor's wishes inside the organization. What, in a certain way, stop the management personnel to make decisions on their own, but guarantee the freedom in the operational work, artistic programming and financial prospctions. Still many mistakes remain and, sometimes, bankruptcy occurs due to bad negotiations, bad prospctions and bad management over the years without the board or the personnel notice.

The creation of these organizations which guarantees musician's rights brought to the orchestras a secure environment, but also occasioned a division between musicians and staff. Over the years, musicians learned how to blindate themselves from mistreatment and also how to guarantee a minimum governance structure for their work. This separation brought many issues for the maintenance of orchestras because became harder to settle a unique line of work between the personnel and musicians.

In United States, many strikes and lockouts happened. It is hard to tell if, in most cases, the management really could not consent musicians requirements, or if musicians were understandable about the financial situation of the organization. In fact, the argument of working as one time would be pleasurable in cases of labor negotiations. In general terms, when employees are empowered to participate of internal situation and the management works with transparency, is easier to go further.

The usual method of payment in the US orchestras hire their musicians is per service, but there are some orchestras practicing full-time scale and calculating the salary per year.

In Brazil, some orchestras hire their musicians by doing temporary contracts and others are covered by Brazilian labor laws in a legal framework with work permit. The history of arts unions is not so complex as in the US. The unions in Brazil which take care of arts labor negotiations are not composed by people specialized in orchestras. The union is responsible for every kind of musician and the ones who play folk music are more represented. The same happens with orchestra's management personnel. They are represented by unions which don't understand their work inside a performing arts organization or a nonprofit organization.

The quickest solution is to solve the problems and issues inside the organization. Musicians are represented by their committee, or in some cases, their association. To exemplify, see Minas Gerais Philharmonic case:

The orchestra has connection with unions because it is a mandatory labor law in Brazil; but musicians are represented by one committee and one association. The difference between these two representative groups is that the committee can talk for the whole group, it can be seen as the easy way of communication between the organization and the orchestra itself. The committee has its participation in some artistic decisions (e.g. fees for the orchestra musicians who play as soloists, layoffs or new projects). The association can deal with establishment of new rules or the change of old ones, they can represent some inconvenience from the orchestra to the management in general, and participate of the decisions taken from the board / directors / management. On the other hand, the association cannot represent the whole group, once the musician has to pay monthly an amount to maintain the association running. Therefore, they can be part of programs and decisions which involves only the associated musicians, such as private pension plan, strategic partnerships (e.g. discounts in some services such as car insurance, car maintenance or schools), creation of an exclusive place for musicians rest inside the concert hall, chamber music season to gain revenue for the organization, participate actively in development planning and create connection with people who can help the orchestra. Also, it is important to mention that the committee is directly connected with the organization. And the association otherwise, does not depend on the organization to exist. That's why association can do more projects and be free to develop strategies that can be related only for the own benefit of musicians.

In certain way, US are advanced in union matter, but in the case of Brazilian orchestras, the musicians are more flexible to expand their way of dealing with the organization.

Despite any labor process, it is important to highlight that musicians are what the audience sees during the concert - the real product of an orchestra - and they also are the connection of a donor or sponsor with the organization itself. Henry Fogel - known all over U.S. for his efforts in promoting classical music, he is the former president of the Chicago Symphony Orchestra and the former CEO of the League of American Orchestras - uses to say that nobody pays to see people managing, the audience pays to see artists playing great music.

MUSIC EDUCATION AND MANAGEMENT

Over the years, musicians were taught that they would succeed if they became orchestra players, and that is not true. Musicians are people who learned how to be disciplined, sensitive, to work in group, and to value art as an agent of transformation.

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Orchestras have their mission statement to follow, a product to sell and an organizational environment to take care of. But without an overwhelming artistic programming and artistic guideline, it won't be complete. That's why this chapter conclusion will point the importance of teaching musicians the art of business.

When the season of an orchestra is programmed, a lot of professionals are involved. There is the soloist, the soloist's agent, the conductor or guest conductor, the conductor's agent, artistic committees, artistic director, board, CEO and many other departments of the organization which are involved.

In the U.S. is more common to find professionals working in orchestra's management who are also musicians - not necessarily musicians from the orchestra itself. People who sees music as a way of life. The whole process of managing the organization is easier in orchestras when professionals who understand about the "machine" are there as employees. In fact, being a musician does not mean that you have to exclusively be inside the orchestra, it means that the person learned about music and can decided to play their role as component of the personnel or as a professional musician.

In Brazil, music education has never been directed for a significative number of people. So, the orchestra management is largest composed by non musicians and professionals who learned art's work. Many professionals were involved with other arts initiatives, as dance, theater or cinema, but some starts working in orchestras without having any earlier contact with this field. In Brazil, the contact with classical music is divided in: 1) the person was born in a family that is composed by musicians or consume classical music and support music education, or 2) the person is associated to a church or a social project to learn music. Therefore, in most cases, the performing arts organizations have to hire employees who knows the needed areas of an orchestra - such as marketing, operations, development, finance - but not necessarily have knowhow of what is an orchestra and how it works. These professional's experience in orchestra management depends on how much time they will work on it and if they truly understand how to contribute with it. An important fact that influences directly the improvement of management personnel, is how people are hired. When orchestras count on government support, even partially, the organization might have to consent the designation of high positions to nominated people by the government itself, and the recommendation is usually independent of the person's proficiency and skills to accept the job.

Obviously, being an artist inside an orchestra take a lot of musician's effort and they may not have time or interest in participating of the management. But, sometimes, instead being on stage, some musicians might prefer to work backstage. All this choice will depend on how he was taught. Did anybody told him that he could do it? He will keep being a musician if he decides to manage and will be a great participation in the music world.

When musicians are being instructed, they should understand that whatever they decide to do, will be worthy and valued. If they want to teach, to manage, to play chamber music, to be soloists, to become conductors, to be orchestra players, there are places for everyone who does enough effort to succeed and they are all needed.

The most important matter is that a group of people should work together for a common goal and to spread music. Music has the power to unite, to heal and to transform people. The audience contributes to an orchestra because they feel connected and, probably, the experience of watching concerts contribute positively in their lives.

CONCLUSION

In the contemporary world, arts organizations are social agents to society's enhancement. An orchestra, in regard to its repertoire, musicians and new initiatives, has great potential to contribute with the development of human beings and the society. For this reason, orchestras must exist and be supported, in order to take risks and reach a constant increasing number of communities.

Every country faces ups and downs in their economies, and the arts budget could not be different. Several crisis have occurred and many projects were interrupted consequently. However, there is a positive aspect, the innovation which helped these organizations overcome their crisis created a knowledge that could be used by other arts projects to move forward and achieve their goals.

It is simple to compare fundraising methods between two countries with different history and cultures. It is clear that there is no recipe for raising a strong financial foundation to an organization or to accomplish all the results desired, but the comparison is important to understand that everyone is trying to succeed on their culture model. The comparison may bring up ideas to mutually help the trajectory of the organizations, otherwise, countries and organizations could be stuck in one model, standing still financially, without movement and improvement plans.

This machine named orchestra is very complex: several people to deal with; wishes and needs to accomplish; lots of music to select and choose for an audience not only willing to be pleased, but still to be reached; and so many other things to be mentioned.

For a long period of time, the distance between the orchestra's management and musicians was understandable, but the time to approximate both parts and focus on a unified path has come, a way in which the whole organization will think and proceed as one. The concept of horizontal management, where, somehow, all people who works in the organization have their own voice and power of decision, is the new and desired format that has been adopted by great orchestras, like the Berlin Philharmonic.

Significant changes can be done in orchestras. It will be hard to do it, however will probably last for many years. The problem discussed here is not what orchestras are doing and if the management philosophy has to be changed, but how they are doing and, mainly, how people are responding to it.

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Chapter 19

Integrated Municipal Markets in Central America: A Model of Cooperation for Local Development From Honduras

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ABSTRACT

By its very nature, the characteristics of the informal economy are largely negative, since it can hold people and companies into a spiral of low productivity and poverty. A coherent national strategy to facilitate the transition to the formality has to recognize that the costs of informality of work are high for companies, workers, and the community. From the point of view of workers without protection, the negative aspects of work in the informal economy outweigh the positive aspects. Workers are not recognized, registered, regulated, or protected under labor and social protection legislation and, therefore, cannot enjoy their fundamental rights, exercise, or defend them. As they are usually not organized, collective representation before employers or public authorities is insufficient or non-existent. This chapter explains the informal economy in Honduras and Latin America, the problems of municipal markets, and its transition into the formal economy through the plan of cooperation for local development between the various participants in the country.

INTRODUCTION

The emergence of large trade and the subsequent birth of capitalism and the subsequent consequences of dynamic triggered in an informal economic system that refers to a set of economic activities developed

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that, both in law and in practice, are insufficiently covered by formal systems or not. They are not at all. From an economic point of view, “the informal sector can be characterized as modern, or non-capitalist sector of the economy, where the use of capital is relatively low, in small-scale economic activities predominate. In addition, features such as: use of rudimentary technology, little capital available, without access to finance, low skilled labor, low level of productive organization, low pay, little or no distinction between capital and labor, the family estate, without the GDP accounting.

“The informal economy in Latin America: the case of Honduras in accordance, the concept of the informal economy” refers to all economic activities by workers and economic units, both in law and in practice, are insufficiently covered by formal systems or in any way. The activities of these people and companies are not covered by the law, which means that they work off it; or they are not covered in practice, that is, although they operate within the law, it does not apply or is not respected; or the law itself does not encourage compliance because it is inappropriate, heavy or imposes excessive costs.

OBJECTIVES

By their very nature, the characteristics of the informal economy are largely negative, since they can hold people and companies into a spiral of low productivity and poverty. A coherent national strategy to facilitate the transition to the formality has to recognize that the costs of informality of work are high for companies, workers and the community. From the point of view of workers without protection, the negative aspects of work in the informal economy outweigh the positive aspects.

Workers are not recognized, registered, regulated or protected under labor and social protection legislation and, therefore, cannot enjoy their fundamental rights, exercise or defend them. As they are usually not organized, collective representation before employers or public authorities is insufficient or non-existent.

This document explains the informal economy in Honduras and Latin America, the problems of municipal markets and, their transition into the formal economy, through the plan of cooperation for local development between the various participants in the country.

Methodology of Approach

This is a descriptive and analytic approach of case study of the informal economy in Latin America and Honduras looking for cultural or scientific contributions that exist on this subject from the existing reality. The survey was structured based on the systemic approach to the understanding of the problems of post modernity, seeking practical, operational or troubleshooting application of “people’s real life” and the organizations of Honduras and Latin America.

THEORETICAL FRAMEWORK

Different manifestations of social economy, cooperatives, companies, foundations, nonprofit organizations and the third sector; predictable collaborate in projects of development cooperation at international level with the presentation of innovative actions; and, for many, it is known that cooperation between

business and strategic alliances in its various forms can be measured to guarantee the success and the entrepreneurship of some companies.

Research on international cooperation assumes prior knowledge in lines of action for rural development and territorial, and / or reconciliation of different approaches (sex, sustainability, human rights, collective and institutions, complementarily with the previous cooperation policies, etc.), taken into account in sector projects and strategies for planning international cooperation Spanish.

Description of innovative solutions, the profile of the groups who benefit from social, economic, environmental problems or development group, indicators of success, co-financing, training, etc. are parameters to take into account the feasibility of projects of cooperation that make positive and appropriate the applicability on the Social Economy entities that eventually participate.

On the other hand, two are the main causes that give rise to negative experiences in the field of cooperation between enterprises. First, the absence of a monitoring of the agreements, since all the emphasis is on having the first contact. And secondly, the lack of personal recommendation which it's provides additional confidence to the Social economy entities (EES).

Similarly, in order to respond to these challenges in the social economy, cooperatives and the third sector correct these deficiencies, make a research on inter-organizational relations, realize cooperation between enterprises and create the creation of strategic alliances measures strategic that facilitate external growth and the formation of social capital. Its development through social relations and inter-organizational links is a starting point to consider cooperation in its threefold dimension; as an economic exchange of resources and strategic activities or associated with the value produced and social networks based on trust established by the actors involved.

In this sense, we can analyze the nature of cooperation between companies through models of supply agreement, highlight the determinants for the establishment of agreements, the advantages and disadvantages, various types of collaborative relationships as well practice during the process of formation of agreements, success or failure of planning, management and management of agreements, strategic alliances, design and experimentation of a methodology for monitoring of inter-organizational relationships and collaborative projects and/or highlighting the results achieved.

The Informal Economy in Latin America: The Case of Honduras

According to the ILO, the term “informal economy” refers to all economic activities by workers and economic units that are insufficiently covered by the systems, both in legislation and in practice, formal or not at all. The activities of these individuals and companies are not covered by the law, which means that they throw away or they are not covered in practice, that is, as long as they operate within the law, this does not apply or is not fulfilled; or the law itself does not encourage compliance being inappropriate, cumbersome or impose excessive costs.

In Central America, “where even though cases are given as Costa Rica that have indexes of informality of 36%, there are also cases of Honduras with the Dominican Republic, with rates of 78% and 72%. These disparities are due, in part, to the fact that regional integration bodies have not taken as their own problem. By their very nature, the characteristics of the informal economy are largely negative, since they can hold people and companies into a spiral of low productivity and poverty.

A coherent national strategy to facilitate the transition to the formality has to recognize that the costs of informality of work are high for companies, workers and the community. From the point of view of workers, without protection, the negative aspects of work in the informal economy outweigh the positive

aspects. Workers are not recognized, registered, regulated or protected under labor legislation and social protection and, accordingly, cannot enjoy their fundamental rights, for exercise or defend them. As they are not usually organized, collective representation to employers or public authorities is insufficient or non-existent (Bachetta, 1994).

The following challenges are overcome by the informal economy in Honduras and Latin America in General: Non-functional Buildings and, without any type of project, aims at social approach or people with special abilities, undue occupation of public spaces, unsanitary conditions, waste in buildings, boulevards and streets, physical and social insecurity: theft, illicit businesses, accidents, etc.

Local Market: The Case of the Comprehensive Municipal Cooperative Markets (MERCIOIM)

The long cycle of growth of the European Union late medieval nourishes itself, initially modest return carried out in local markets. This original function and generating local markets is readable from the own form of medieval cities. Barcelona, where there will be a market around the year thousand, can serve as an example to see the effect of the market as a shaper of urban form and illustrate its ordering on traditional City (guard and Oyón, 2007).

Trade journal that forms the core of the public procurement system offers powerful opportunities to transform cities and regions around the world in places, sustainable and socially cohesive dynamics. The public markets are considered indispensable local systems of power centers and, therefore, to provide equitable access to affordable food, preserve and protect consumers. Finally, markets are also engines for entrepreneurship and spaces of encounter and relationship with the Community (Declaration IX International Congress of public markets-Barcelona, Spain, March 2015).

The strategy formulated by the municipal comprehensive cooperative markets (MERCIOIM) for the solution, and not only for the problems mentioned above, but also for the transition from informal to formal, has several key participants: Central Government, Local Government (municipalities) childhood production and Housing Bank (Banhprovi), intermediary banks, MERCOIN, the Groove construction group, cooperatives, as representatives of the social economy and micro-entrepreneurs.

The scheme is to develop and build a network of comprehensive public markets throughout the country, which is aimed at markets in major cities of the country, with more income; support to small markets of the towns considered as complementary sites; cooperative play, a factor vital in this dynamic, as well as the addition of advertising on the part of providers and large country with the objective of generating income that producers can work together to create a fund to buy the sustainability of market and capital funds.

MERCIOIM took into account aspects, theoretical, institutional, legal, institutional, administrative, financial, technical and environmental professional, with a socio-economic approach very marked and special care with the children in the Honduran reality. This flow diagram in which the arranger “binomial” is composed of MERCIOIM and the cooperative will actually make the transition from informal to formal. We can observe a cooperation plan between the different agents involved: Central and Local Government, delegated administration and economic agents.

The Chair of the Social Development Economic Growth

In this paper, economic development is articulated as a material process and characterization capabilities that support it, is a strategic local development perspective. Here, conceived as a process of structural change, consisting in the transformation of the economy and of society itself, both in terms of media (instrumental component) with weekends (values and goals), based on the deployment of strategic resources, extra-economic and economic nature. The vectors-furze this process of change are: a) the accumulation of capital; (b) innovation of process, product, organization and marketing and distribution system; (c) the institutional change and the mechanisms of regulation of the economic system; (change of (d) and social and cultural) in power relations and political change.

Local development policy has been sustained so far in the following strategic areas (Vázquez, 2005 and Fernandez, 2006): (1) promotion of domestic and foreign investment and job creation; (2) mobilization of endogenous development potential, as a guarantee of autonomy and economic sustainability of the growth process; (3) dissemination of innovations and the knowledge of the production system as a vehicle for competitiveness and adaptation to environmental change; (4) training, recycling of human capital and employability, as a vehicle of economic adaptation and social stability; (5) more efficient articulation of urban space and improving the attractiveness of cities to attract companies; (6) the establishment of the coalition of development between public and private actors and different interests, in order to increase the effectiveness of policies and the governance of the adaptation processes; (7) promoting the internationalization of business to increase export, business skills and the integration of the local economy into the global economy; (8) development of information and communication technologies and their use by business and citizens.

In this regard, there are several strategies for improving the economic development in the poorest regions of the world. Development strategies that were laid down as the solution to the problems of underdevelopment in Latin American countries can be classified in two main groups, depending on the orientation of the economy: “inside” or “out”. The base of economic growth development strategy “inland” focuses on the development of the internal market, while, the “day out” development strategy focuses on the development of foreign markets. To elucidate the basic fundamentals of these development strategies, Franco (1989), employ an array of three sectors: agriculture, industry and services. The evolution and distribution of the economically active population is characterized the growth of the economy.

The strategy of development “into”, based on the production of primary goods for the domestic market, was the basis for the emergence of human society and the great empires of antiquity and, to this day, continues to be the maintenance of many countries underdeveloped. It is based on a deliberate policy of producing manufactured for the domestic market and not for export of goods. On the one hand, there is the lack of dynamic comparative advantages in the production of manufactured goods and, on the other hand, in the belief that protectionism of countries developed is an insurmountable obstacle.

Plan of Cooperation for Local Development in Honduras

The current economic context of greater interdependence between economies that are heavily impaired the ability of the companies to face alone a growth strategy, will allow their development through the creation of coalitions in markets increasingly open and competitive (Fernández and Arranz, 1999). The need to establish alliances charge more difficult. Globalization advised that growth strategies should be taken through cooperation as a measure to improve competitiveness (Morandeira et al., 2010). Indeed,

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in an effort to be more competitive, enterprising and flexible, the most innovative companies are establishing a wide range of cooperation agreements (Nair et al., 2010). In fact, partnerships are critical for most business models.

Several authors (for example, García-canal, 1993; Casani, 1996; Muñoz and Montoro, 2007), coincide in defining business cooperation or cooperation agreements between companies, as such agreements, through which they share resources or activities with the aim of carrying out an exchange of knowledge. This allows them to innovate in order to improve their positions in the market and strengthen their competitive advantages, since these companies are not merged.

Inter-cooperation business is seen as one of the growth strategies for the accessibility of features and capabilities, creating structures and agreements that generate synergies and added value in the field of the social economy to produce (Briones, 2009;) Morandeira et al, 2010). Otherwise, cooperation, through democratic participation, is considered measures to facilitate the internal growth and ensure cooperative survival in the competition (Baez, 2011).

The logical consequence of global and simultaneous processing framework for sustainable development, if given, is not only a change in the social division of labor, threats and unprecedented opportunities in different territories, but also the need for a new type of economic, social and political relations between local, national, regional spaces and economic blocks (Tomas Carpi, 2008). A relationship in which trust and cooperation, is based on solidarity will enter into articulator par excellence and the success of the process. A path to a sustainable economy to an economic and social it is a convergence process where cooperation is a necessity for the articulation of relations between companies.

In the case of SMEs, cooperation and collaboration measures are considered a tool of strategic importance to business growth. Companies are increasingly aware that share resources, resources or activities will allow them to innovate in order to improve their positions in the market (Martinez et al., 2011). This is because what can be implemented actions that tend both to improve the performance of enterprises in the market, how to promote economic and social development. That is why cooperation between SMES was erected in recent times as one of the most appropriate strategies to respond effectively to a new business environment which allow, on the one hand, the flexibility of individual companies and, on the hand, give advantages of the resources and the knowledge in the company's partnership.

MERCOIM/MERSOL of Systematization, Program

A History and Origin

The informal economy has been an obstacle to the development of institutions and a catalyst for pernicious and immediate problems in nature, such as the exploitation of children, the degradation of public spaces, tax losses, sexual exploitation, usury and pollution, among other things.

These are the products of poverty that affect directly the 68% of the population in Honduras. For years, studies and initiatives have been launched in order to address the issue of the informal economy, which failed due to unjustified factors.

After an exhaustive investigation, we were able to identify the conditions and values useful in developing an effective and sustainable initiative; then, we would be implementing strategies to achieve clear objectives.

In Honduras, there are a large number of abandoned former markets and others that operate as bombs due to substandard construction of quality and functionality, leaving an unsatisfied demand by markets.

During the investigation, we identified the need to create collaterally productive markets in rural areas with the aim of providing a link between rural and urban areas. This link will generate employment that will decrease migration to urban centers and saturated with foreign countries.

In addition, the rural markets would promote a sense of community.

Initiative and Development

This program was born out of a chance to reconstruct two lost markets in electrical fires in 2011. During the rebuilding process was brought face to face with the many difficulties that local people were forced to endure daily. The realization that these people were in need of assistance developed the idea of the Mercoim and Mersol projects.

Mercoim is not only a response to the demand of insurance markets with an explicit goal to guide the formalization of an economic sector, but a way to promote sustainable social progress and positive. In addition, Mersol is a company that will behave in a complementary manner, acting as a link between the commercial activities in rural areas for activity in urban areas to combat the intermediation that affects this sector of the economy.

During the investigative process and the implementation of our project there we find a series of difficulties, from the initial stages and throughout the remaining phases.

Listed below are some of these difficulties:

- Internal controlling monopoly within the existing markets of farmer´s
- The involvement of political actors and their conflicts of interest.
- Organizations or unions that manipulate and charge fees for informal traders, turning its activity in a lucrative business by promising protection from authorities that supposedly wish to remove them from public streets at the same time.
- The inability to acquire licenses and other documents needed for the operation.
- Lack of financing programs available for this sector. organizations with negative influence on beneficiaries of the program
- The political differences between the actors involved in the approval process, not being able to find a bank willing to act as an intermediary to support the social market economy.
- Lack of education with regard to many aspects or simply lack of information.
- Slowness or inconsistency of the local financial sector.
- Lack of incentives to stay in the formal economy and no return to old habits.

After confronting these issues during our pilot project, many lessons were put in practice to overcome such situations.

Due to negative experiences associated with attempts by other programs to address the problems, people have created negative narratives related to the success of this type of programs. Among the most frequent questions about the solution to these issues and prejudices, we could mention the following:

- Will these people are operating legally?
- Is there a real political interest in this type of projects?
- Will they be able to assume responsibility for their financial obligations?
- Is this a long-term sustainable program and functional?

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- Once the market is built, will lead to a new group of people to sell on the streets?

Note: This is a summary of the most frequently asked questions during our pilot project.

The research process and the implementation of the programmer involve many actors listed below:

- Develop, design and build the project with the overall objective of producing functional, environmentally conscious and handicap accessible structure.
- Creation of financial products, tax laws and other laws that give preferential treatment to the sector.
- Facilitate the transfer of property for the construction, provide necessary permissions, as well as create regulations and ordinances that help establish the appropriate governance for the project.
- Non-governmental organization, certified by USAID that intend to collaborate in the process of socialization.
- Develop and implement communication strategies and community outreach for the project.
- Promote their leadership through communication or cultural resources.
- Configure the access to communication, education technologies and space to affect the culture in a way that promotes peace, community and self help.
- Facilitate access to designated areas for communication, art and culture for the youth; using the market as a multicultural Center.
- Develop a web page.
- Implement a transparent system to manage accounts and sales.

Promote a peaceful culture through the arts, education, community development and integration, especially food safety, environmental responsibility, human rights and family values.

It provides safety of programs, initially, and organizations interested in financially supporting the program.

- Provide life insurance against accidents, natural disasters and insurance for the construction
- Create pension program and health insurance for traders.
- Intermediary bank that manages credit processes and Rediscounts in favor of the beneficiaries of the program or any management banking with interest in the project.
- Financially administered in conjunction with Mercoim / Mersol
- Protect human relations on the market
- Remain vigilant to make sure market regulation is respected.
- The integration of all the entities referred to above, focusing on positive socialization, environmental responsibility, communication, education, culture and health with extra attention to the youth and social solidarity involved in cooperative.
- Foundation that promotes the socio-economic dynamics of the beneficiaries.

There were a lot of negative and positive experiences. We would say that the negative experiences allowed us to learn lessons that will be our guide for solving issues as the project continues to develop.

If it was to analyze a list of pros and cons that we have facing the list of program, it will be clear to discern what is needed for this type for these programs in order to grow the formal economy, as well as foster social mobility. People are looking for an opportunity to live a decent life.

Three distinct phases must be considered:

- Find mechanisms to encourage people to successfully operate within legal parameters. It is reaching the people who need more an effective and complete program more on your way very complete and effective.
- Be unable to encourage local people enough to enter the formal economy.
- Be unable to find legal and financial programs willing to adapt to this sector of the economy.
- Be unable to encourage and provide security to financial institutions in Exchange for support to this sector of the economy.
- Do not receive real political support.

At the moment, it would be advisable to make a judgment regarding the ultimate goal and the success of this initiative, since the markets built recently opened and there are many actors involved, although an important key to the success of mention here would be sustainability. Having considered all the factors and dynamics, mentioned earlier, dramatically increases the chance of success and sustainability.

The inclusion of environmentally friendly is building practices and spaces for education, the arts, health and culture.

It is building the recognition of disability by building an accessible. It support private companies through the purchase of advertising spaces, the involvement of franchises and other forms of support, especially for the purpose of benefiting the community.

Innovative Elements

In comparison with other initiatives that have failed in their ability to address social issues that we're hoping to affect, you could say the innovative elements that add to our program to make it viable successful. Listed below, are these elements.

- Link between rural and urban areas.
- Mixed strategic alliances
- True social welfare

Functional construction with safety and environmental responsibility in mind is:

- Inclusion of spaces for education, health and culture.
- The integration of different types of savings as the sharing economy, circular economy, collaborative economics, economies of scale and auto Managing
- The inclusion of the Bank within the structure, including a counter that serves exclusively the merchants.
- The creation of outside companies or alternatives to accompany the commercial activity in the market

Some of the most important impacts of this program are listed below:

- Help formalize the economy
- Release of public areas
- Fair Markets with equality in mind

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- Job creation, both in rural and urban areas.
- Commercial Activity in underprivileged areas.
- Beneficiaries will own property that can be inherited by their children.
- Stop the migration, both internally and internationally.
- Environmental responsibility.
- Sustainable Market that can serve the public.

Mission

Generate social and environmental well-being, with the creation of a sustainable production and commercial centers to improve the quality of life through the expansion of markets and supply chains more efficient, which will enable a transition from the informal to the formal economy for many people.

Vision

Become a cooperation network markets and production centers in Central America and the Caribbean to positively transform the lives of vulnerable populations with Commerce and social solidarity, as well as a certified brand of products produced by the rural populations without capital to improve their business.

One of our new goals is to have this initiative operate at regional level, in order to increase the sustainability of the program. As the program spreads, it becomes more attractive to other organizations and foundations that are willing to support this type of initiative.

CONCLUSION

Given that the vast majority of informal economy workers and their families don't have protection and are particularly vulnerable to several risks and contingencies. The transition for reliability, not only in the markets, is essential for the advancement in the field of equity and competitiveness. It allows workers the full enjoyment of their rights and access to essential facilities to develop their talents. Companies provide them with a more favorable ecosystem for growth, reducing also the negative effects of unfair competition. The State receives, for its time, the recipe that allows the people to improve the quality and coverage of public goods needed to promote a more inclusive development.

The relative importance of each of the sectors of economic activity in total output of goods and services of a company must be used as an indicator of the level of economic development. It services, through the municipal market has a role in national production, when there is the presence of the informal economy, since corresponds to facilitate productive activity in the food sector and in the industrial sector. Despite the tertiary sector is considered a production sector, its main join in this case, municipal integrated markets is in the process of distribution of wealth and economic activity of the most disadvantaged. In this case, the domestic services industry consolidated itself as a link between the primary and secondary sectors and their growth, which usually will be equipped with the growth of other sectors, being a source of employment.

The economic development of poor countries is because of their magnitude and complexity, one of the issues of concern and discussion in the international community. For this reason, acquires particular relevance to cooperation and strategy analysis of fundamental characteristics of strategies for economic

development, “in” and “out”. They were prescribed as the solution to the structural problems causes of underdevelopment in Latin America countries and determine if they really contributed to the modernization of production, technological innovation and diversification of their exports, reduce imbalances to achieve a balanced economic development, equitable and sustainable.

In the case of municipal markets of Honduras (MERCIOIM), the transition to the formal economy with an integrated strategy called “cooperation plan for Local development, between agents of Social Economy” Note that it is possible thank to the strategies of growth and quality employment generation, in a regulatory environment, including international norms and the fundamental rights of people in an organization with representation and social dialogue through the cooperative, where is this equality of opportunities (gender, ethnicity, race, age, disability, etc.), where entrepreneurship is present, enhancing skills and access to markets, there is an extension of social protection systems. All is made possible through development strategies where the more general rural and urban value for tenants

In conclusion, our program is one that provides a sustainable way to improve the lives of those who are most vulnerable in society, making it a truly positive force.

- The main objective of this project is to help promote economic activity that addresses the basic human needs of the local population.
- We recommend that local governments cooperate with Mercoim / Mersol in order to promote a local sustainable and inclusive economy, because that would lead to this program, having a real and positive impact.
- Within our future goals is to provide an economic link across the Central America and Caribbean, respecting the internal politics of each region, because that will generate growth and sustainability in our project.

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Chapter 20

People Management and Its Relationship With Business Models

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ABSTRACT

The purpose of this chapter is to present a study that provokes a reflection and understanding about the importance of people management in the corporate world as a strategy and a fundamental resource for the success of companies and institutions. In practice, many new-company projects focus on business modeling and business plans as an initial and sufficient condition for the success of these companies or organizations that they intend to create. Little is seen about the actions concerning the importance of the human capital dimension to the desired success in a business project. Organizations cannot be successful only because of failures in the business model or in their business plan, but in the fundamental link of value creation and supply, which is boiled down to the human resource they have. People have come to occupy a place where they are seen as key elements of the value-based management model, as Kaplan and Norton in 1997 conclude, showing us that the problem of human resource management could be addressed under the strategic perspective through the balanced scorecard (BSC). It means that it becomes necessary to use organizational strategic planning as the basis for the strategic planning of human capital essential to the business.

INTRODUCTION

Organizations have come to know and adopt new tools that have emerged in the hope of improving their performance in the market in which they operate, in view of the competition and the constant changes in the competitive environment, the macro-environment, and the characteristics and behaviors of their target audience. Over the years, one can observe the adoption of several models, which are divided, respectively, into strategic, tactical and operational. As an example of a strategic model, we have the BCG matrix of the Boston Consulting Group (1970s) for product portfolio planning, based on the product life cycle and

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the interrelationship between market growth and market share; as an example of a tactical model, we have Benchmarking, which is a systematic comparison of processes and organizational performance based on previously defined indicators, aiming to find the gaps between best practices and the performance of the organization, in order to create new standards and / or improve processes; and as an example of an operational model, we have the Balanced Scorecard (BSC), developed by Kaplan and Norton, in 1992, as an alternative to traditional approaches to performance measurement that focus exclusively on financial indicators and are based only on the past performance of a company. It is a “top-down” method, whose intention is to define organizational goals and objectives, having, within each perspective studied, the mission reference and organizational vision that evidence its long-term perspective.

It can also be observed that, as happened with Quality in the 1980s, the Processes in the 1990s and the Strategy in the following decade, Innovation became the key word in the world of management in the present times (Osterwalder et al., 2011) . Luís Eduardo de Carvalho, one of the 470 co-creators of “Business Model Generation - Innovation in Business Models” in his introduction recalls CK Prahalad who said that we live, and will continue to live, in a new era of innovation where the great innovations will be in products. Innovation in value creation, management and business models will play a key role in this context, whose forms have been called the New Frontiers of Innovation.

But it's no use in excellent, innovative business models, or trusted business plans, regardless of how people will be led and managed within an organization. Organizations can fail not only because of some mistakes in the business model or in their business plan, but in the fundamental link of value creation and supply, which is boiled down to the human resource they have. It means that it becomes necessary to use organizational strategic planning as the basis for the strategic planning of human capital essential to the business. The focus is on investment in the development of essential and differentiating competencies that are fundamental to business success and growth, and the investment of a flexible culture capable of dealing with the constant changes in the macro-environment, the competitive environment and the characteristics and behaviors of public- involved.

Within this introductory direction, we present below a series of concepts related to the theme, culminating in the description of the competency model as a proposal for a necessary complementation of the business plan and model, for its enrichment, with the purpose of creating a solid perspective for business success.

MODELS OF BUSINESS MANAGEMENT AND PEOPLE MANAGEMENT

Souza, M.Z.A. & Souza, V.L. (2016) published an important study about the relationship of people management with competitive advantage, from which the content of this item is based, as follows.

Frederick Winslow Taylor (1856-1915), Henri Fayol (1841-1925) and Max Weber (1864-1920) were the theoretical references of the rational foundations of organizations. The goal of the rational foundations of organizations was to ensure maximum efficiency gains through a mechanistic view. They were called rationalist models of management, which aligned efficiency and productivity as directly proportional.

The globalization of the economy eventually influenced the distancing of management models from traditional organizations, with a reductionist view of man's role in organization, top-down control, hierarchy and bureaucracy. A new organizational vision was required, with models oriented towards a level of performance capable of keeping up with the changing demands of the market, where speed of change turned out to require flexible management strategies to guarantee competitiveness.

According to Souza, Souza - 2016, people management was not immune to the impacts of these transformations. The rationale behind the flexible management models, especially the theoretical framework developed by Lawler (1996) and DiMaggio (2001), presents the assumptions of the new model of human element management in 21st century organizations. Lawler (1996) pointed out that contemporary approaches to management can be viewed from two different perspectives:

1. Strategy of lower costs, including personnel. They are not organizations that compete for talent, do not prioritize innovation, product knowledge and customer orientation. That is, the human element is not seen as a competitive differential. The work maintains competitive advantages obtained with the standardization of activities and its bases of support originate in the Taylorist-Fordist model of production. They are examples of organizations that operate in relatively stable environments that tend to adopt this model, such as service, cleaning, janitorial, food processing and agriculture companies. The characteristic is that the demand for products and services do not present significant oscillations.
2. Strategy through management models that seek competitive advantage through the reaction to global competition. They argue that the individual is the key element in the process of generating value and, therefore, they are characterized by the search of the employees' involvement with the business, which considers the management of the human element as strategic. It follows that the HR function and the HR area are gradually replacing their operational roles with other strategic roles aimed at capturing, developing and retaining human capital that adds value.

In addition, Di Maggio and Powel (2001) point out that a significant number of 21st century organizations fail to meet the challenges posed by contemporary competitiveness due to the lack of distance from the fundamentals of the Taylorist-Fordist model, such as the separation of person and function by means of formal job descriptions; the excess of universally applied norms and rules; the stimulation of the long-term employment relationship in the same company; the promotion of rewards based on seniority. According to these authors, the organizations of the 21st century present some assumptions that distance them from traditional models of organizations, such as: emphasis on the differentiation of products / services; emphasis on innovation; emphasis on business knowledge; customer orientation; human element considered as a competitive differential because it generates value; Emphasis on employee autonomy. Wood Jr. (1995) analyzed the recent organizational changes through three key categories: job characteristics, organizational structures and business management, respectively: flexibility, continuous learning, multispecialization; reduction of hierarchical levels, autonomy, outsourcing, matricity, instability as a factor of evolution; focus on information management, common vision, collaboration and participation. It is clear, according to the thinking of these authors, that the organizational response to the 21st century business environment is flexibility. But the new way of doing business is not limited to the mantra of flexibility. The logic of the capital market, represented by the financialization of the economy, turns the organization into the "master" of business, prescribing goals and directions for the real economy. The consequence is the influence on the business functions in order to promote changes in the other areas and functions of the company guided by the logic of financialization. The HR function should contribute to the changes in the work relations, the work organization and the scope of the individual. In relation to these changes, Souza, et Souza (2016) add:

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- **Changes in Labor Relations:** Flexibility is necessary because of the constraints of the turbulence in the current organizational context, and is expressed by “two perspectives” that guide the policies and practices of people management: functional flexibility and numerical flexibility of the workforce. Functional flexibility refers to the ability of companies to reorganize so that workers can employ them through a large number of tasks. Numerical flexibility refers to the ability of firms to adjust the number of workers, or working hours, according to changes in demands, through workers with no permanent employment relationship. From the short-term perspective, this mechanism is associated with the search for cost minimization which, given the uncertainty and volatility of the markets, becomes necessary. The focus is on increasing productivity and financial return. Souza, et Souza (2016) cite Furnham (2000) when he states that these “two perspectives” can be used simultaneously with respect to insertion in the labor market, as follows: a) Maintain a central group composed of permanent and skilled workers, which contribute to the flexibility of the company by having competencies demanded by the functional flexibility. They take care of the central functions and more relevant to the activity of the organization, enjoying relative security in the work; b) Invest in a peripheral group, composed of temporary workers, who work part-time and carry out secondary tasks and functions or support the main activity of the organization. Examples: trainees, people working part-time, etc. This system allows the company to contract and expand the number of workers. This allows for the numerical flexibility of the company; c) Invest in outsourcing and in autonomous.
- **Changes in Work Organization:** The new management logic seeks to ensure “organizational flexibility”, where the people management base is no longer the restricted position, which is replaced in the first instance by the broad position, the people management model is based on the logic of competence. Instead of employees who perform activities through detailed descriptions of their tasks, the new logic requires individuals acting according to elastic parameters when performing their activities. Job modeling ceases to be, in a “first moment”, based on the “restricted position” and begins to use the perspective of the “broad position”, which is characterized by: variety of tasks (multifunctionality); autonomy of the individual (empowerment to plan and perform their work); meaning of the task (to enable the individual to identify the impact of their work and other people in the organization); identity of the tasks (work as an element of personal fulfillment); feedback (sharing of information so that the individual can evaluate their efforts in producing results). In a “second moment”, the “logic of the broad office” has been gradually replaced by the “logic of competence”, where work is not restricted to the fulfillment of a set of prescribed and described tasks; rather, it is the direct extension of an individual’s ability to mobilize his knowledge and skill in a specific, changing, and complex situation. In this sense, the management of the workforce is no longer based on the concept of position, and the concept of competencies gradually takes its place. Although “competence” is still a concept under construction, this construct has as contemporary meaning the set of knowledge, skills and attitudes. Brandão (2007) cites Gonczy (1999) and Carbone et al (2005), who consider that competence has the character of associating personal attributes to the context in which they are used, that is, the environment and the work that the person performs.

Competence is understood, therefore, not only as a set of knowledge, skills and attitudes necessary to exercise a certain activity, but also as the performance of the person in a given context, in terms of behaviors adopted in the work and its achievements.

- **Changes Within the Individual:** Individuals have reached a significant degree of importance insofar as they are the ones who carry out and sustain the competitive advantages of organizations. The challenge of each one, placed in this scenario, is to become a coveted profile by the corporate market and ensure its employability. Analyzing the impacts of organizational changes on the individual, it is observed that since the end of the twentieth century, the economic scenario has contributed to the classification of individuals into two categories: permanent (workers essential to the business) and contingents (peripheral workers, ie, “Disposable”). The logic of flexible management, therefore, requires that the individual maintains continuous proof of his ability to meet the demands of the business, which demands from the area of HR, management technologies capable of assessing whether or not individuals have profiles that add value through performance appraisals. We conclude that the valuation of the profiles is historical, and that profiles valued at one time may devalue at a later time. In the new economy, the greater the contribution of the individual, the greater his employability. The corporate reality imposed by the global economy transfers the individual responsibility for his success or failure, and he is forced to face the contemporary paradoxes. The individual has become more autonomous, but has to strive to overcome increasingly audacious goals. External control has loosened, but, at the same time, it demands greater self-control and discipline. It can be seen that the consequences of organizational changes with the advantages of replacing the physical (industrial society) with the intellectual (post-industrial society) are clear and occur in different directions: accelerated changes in competence profiles; raising the level of structural unemployment; reduction of jobs; reduction of work with permanent employment, increase of contingent work; threatening work environments. Faced with these facts, quality of life at work has become a growing concern in organizations. It signals the relevance of the role of managerial leadership in reducing the damage that organizational changes resulting from competitive pressures can cause in the individual. This puts managerial leadership in a relevant situation in view of the need to reduce the damages that all the changes generated by the competitive pressures can cause in the individual. In this way, the importance of people management becomes clearly important insofar as it is these professionals who guarantee the creation and maintenance of competitive advantages. It is clear that organizations must respect and consider the individual interests of their employees in their own interests, in a reconcilable way, through their management models and practices. In this direction, it is feasible to believe and ensure that employees are committed to the business of the organization.

According to Souza (Souza - 2016), since 1990, strategic management of people emerges as an organizational response to an unpredictable and highly turbulent business environment, a year in which the pace of change has become more and more accelerated. They cite the book *Competing for the Future*, where Hamel and Prahalad (1995: 147) highlight the relevance of people's role as agents of competitive advantage: “Money is not the travel fuel for the future but the emotional and intellectual energy of every employee “. After the work of Kaplan and Norton (1996), the question of human element management is approached from a strategic perspective, with the design of a management tool called the Balanced Scorecard (BSC), aimed at integrating measures derived from strategy. The BSC has provided a perspective that demonstrates that the management of an organization should not rely exclusively on indicators linked to the financial perspective. The BSC makes it possible to translate the strategy into specific objectives, measures and targets, and allows monitoring of its execution. The proposed set of measures serves as the basis for the strategic measurement and management system. The BSC authors emphasize

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that companies, desiring to grow beyond current levels of financial performance, should implement continuous improvements in their internal processes and in customer relationships. As a result, they say, it is impossible to overlook that the origin of business results lies in the performance of the employees who work at the front line because they are the ones who are closest to the company's clients. On the basis of this assumption, keeping employees committed to the business is an indispensable condition for achieving organizational goals. Kaplan and Norton (1996) argue that "satisfied employees are a precondition for increasing productivity, responsiveness, quality and customer service improvement." Otherwise, employee productivity, according to these authors, is the result of the impact of higher morale and skill levels of employees, and is measured by innovation, improved internal processes, and customer satisfaction. This reasoning leads us to conclude that people can be the source of competitive advantages in that they have the motivation and know how to use the resources. In this context and focus, Souza & Souza (2016) point out that people management gains new status: it becomes strategic. Considering that strategic planning is the major organizational reference, the management of people in a strategic way occurs with the alignment of individuals' actions with the corporate objectives established in this planning. Walter (1980) proposed the direct linkage of HR policies to the strategic planning of the organization, even without using the BSC. He envisaged actions of the human element in two dimensions: immediate action, where technical vision prevails (based on the needs of obtaining, developing and retaining people) and future action (the technical vision is subordinated to the new demands of the environment and external influences and changes). Later, Ulrich (1998) outlined a model of human resources management based on four perspectives, considering a competitive organization: administration of the company's infrastructure; administration of employee contribution; management of transformation and change; strategic HR management. Noting that: the administration of the company's infrastructure corresponds to the activities necessary to manage the flow of employees through HR techniques to ensure the administrative efficiency of the company; employee contribution management aims at resolving grievances and employee problems (a role of "managerial leadership"); management of transformation and change is related to the change in organizational culture, which demands from the HR area efforts in the development of managerial competencies necessary to mobilize employees' commitment to the business. According to Ulrich, HR professionals gradually become strategic partners, or consultants' internal management leadership, a condition that ensures the company's ability to achieve its goals by adjusting HR strategies and practices to business strategy. People management logic is no longer an attribute of an area but a responsibility of everyone who has direct reports. Through the support of the HR area, management leadership must manage its teams through the definition of the parameters for obtaining, training, development, vertical and horizontal mobility actions, such as promotions, as well as layoffs. This performance of the HR area, as an internal consultant of the management leadership, enables the alignment of the individual actions to the corporate actions and structure and application of the HPWS (High Performance Work System) model. This high-performance work system takes the place of the managerial model for control, and control, as its purpose, is to link HR processes to business strategies. By enabling this approach, the orientation adopted in HPWS is "Management by Competencies". Becker, Huselide and Ulrich (2001: 34-36) point out that:

HPWS is a strategy implementation system, embedded in the broader enterprise strategy implementation system. [...] In our view, such a process of alignment should begin with a clear understanding of the value chain of the company [...] With this shared understanding of the value creation process, the company then becomes capable of designing a strategy implementation model that specifies the competencies and

behaviors required across the enterprise. Thus, it is possible to direct the people management system to the generation of these competences and behaviors.

HPWS is a model of people-focused skills management, and is concerned with creating and establishing favorable conditions for executing business strategies. What has been observed before is that the people management models prioritized the detailed description of the set of tasks that occupy the occupants of the positions. In this direction, the focus was the job, the task. At present, the focus is on skills. It means: knowledge, know-how and, above all, wanting to do. It is not enough knowledge (knowledge) and ability (know-how) to achieve results. Motivation is fundamental and indispensable, which can be translated into “wanting to do”.

THE BUSINESS MODEL

Anthony et al (2011) state:

There is no broadly accepted definition of Business Model. Many definitions are now too broad to be put into practice at any time too limited to be useful. However, these authors attempted to create a concise, yet comprehensive, definition that could help executives actively pursue, execute, and transform their firms and business sectors: A Business Model is the fundamental architecture of a business, in short, describing how a number of key elements of the business system fit. The business model should be seen as part of a global business strategy, but it is also a unique category of management discipline - related to, but different from, competitive strategy, product and process innovation, operations and organization. At its most basic level, a business model consists of four related and interdependent components: The customer value proposition that defines the service offering (s) and / or product (s) a business offers to their customers at a given price; The profit system or value proposition of the company that a company employs to provide economic value to its shareholders; The fundamental resources that a company employs to create value; Critical processes that guide and model operations; how the company organizes and acts to create and deliver the value proposition to the customer and to itself.

The work of Osterwalder et al (2011) was to present a deep vision about the nature of business models, describing traditional and innovative models and dynamic and innovative techniques, aiming to find a position in a competitive environment and how to lead the redesign of an organization's business model. The authors investigated and verified that innovation in business model is not new, giving examples dating back to the 1950s, and stating that business model innovations can be traced back to the fifteenth century through the example of Johannes Gutenberg. What they highlight is a matter of great concern and pressure of the present day: the unprecedented proportion and speed with which innovative business models are transforming the industry today. In the end, the issue is about creating value for business, customers and society as a whole, as it replaces outdated business models.

According to Osterwalder et al (2011), a Business Model describes the logic of creation, delivery and capture of value by an organization. We can conclude that the business model should explain, make it clear, logically and reliably, how a given business will generate value for the target market, the society and the stakeholders of the organization, in order to ensure adequate financial return investment and a desired cash flow compatible with the entire project. In a simple way: the business model should indicate

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how the company will make money and ensure its continuity, or a long life cycle, by generating and offering value to its target audience. The authors present nine basic components to describe a Business Model. These components evidence the logic of how an organization intends to generate value. These are: Customer Segments; Value offer; Channels; Relationship with customers; Sources of Revenue; Main Features; Key Activities; Major Partnerships and Cost Structure. These nine components cover the four main areas of a business: customers, supply, infrastructure and financial viability.

These authors propose important questions in relation to the nine basic components of the Business Model, which, answered, allow a complete and reliable understanding of what it is proposed to create. Some of them are: For whom will we create value? (Customer Segments); What value will we effectively deliver and to meet what need? (Value offer); How will we reach customers in terms of communication, distribution and sale of our products and / or services? (Channels); What kind of relationship should we build with our clients? (Relationship with customers); What value are customers actually willing to pay and what does this amount represent for revenue? (Sources of Revenue); What are the main physical, financial, intellectual or human resources required by our value proposition? (Main Features); What key activities are needed for our value proposition? (Key Activities); What are our key partners and key activities? (Principal Partnerships); What are the most important costs? (Cost Structure).

The authors argue that the Business Model is a scheme for strategy to be implemented through the organizational structures of processes and systems. They also emphasize that each Business Model requires core capabilities to create and deliver value, reach markets, maintain customers, and ensure financial return. Different Business Models require different physical, financial, intellectual or human resources.

THE BUSINESS MODEL AND PEOPLE MANAGEMENT

Once again, it is clear the importance of preparing a Business Model as an integral and complementary part of a Business Plan, for a good understanding of how the business should work, proposing and delivering value to the segment of clients in order to guarantee the return that justifies the effort and risk of investors. However, we understand that it is not enough to study and elaborate business models and to prepare business plans to analyze their logic of generation and delivery of value, as well as their viability, as ways to minimize risks or that are sufficient for success of the enterprise. It becomes necessary to understand, in a clear and detailed way, the importance of the human capital dimension to the desired success in a business project. This dimension begins with the understanding that the human element is a fundamental factor for the generation and aggregation of value.

Given that the larger goal of a business model is to build a unique view of value creation and delivery, we agree with Kaplan and Norton (1997) that put people as the key elements of the value-based management model which ensure the success of the business. These authors allowed the problem of human resource management to be addressed from the strategic perspective through the Balanced Scorecard (BSC), a managerial resource that allows measuring and managing the organization's strategic objectives.

If we take into account the new metaphor of organization, from machine to brain (Morgan, 1996), where there is a high relation between its constituent parts, we can verify that new techniques elucidate man being the center of the change of the companies to dominate all the value chain. This is exactly what happens in the Japanese model of production, known as the Toyota Production System, or even "lean production". In this model, employees of any area or hierarchical level relate to contribute efficiently and effectively to the results of the organization.

It is verified, post industrial era, the understanding that the creation of value in a stable and permanent way occurs with the development and management of strategies focused on knowledge. This implies the investment in intangible assets that are represented by the intellectual capital, built through the members of the human capital of a company or organization.

In the current conception, a new management of people is necessary, preparing them for solutions to the unforeseen, a deep understanding of how it is done and how communication should be carried out and the perception of the importance of providing good service to the people, internal and external customers.

It is people, through their knowledge, skills and attitudes that guarantee the “core competencies” to the business. Thus, the construct “competence” and the role of managerial leadership as a necessary and indispensable element to transform skills into desired results. It implies that business models for the full success of their proposals need to model flexible, flexible people-based companies.

Understanding the competency model from the perspective of people management and the importance of aligning them with the business, mission, and vision of organizations is of paramount importance in shaping a business and planning its implementation.

CONCEPT OF COMPETENCE

On the concept of competence, Gramigna (2007) cites some definitions of several authors, and then presents his study on the theme:

According to Levy Leboyer (1997), competence “is the repertoire of behaviors that some people or organizations dominate better than others, which makes them effective and competitive in certain situations”;

According to Montmollin (1984), competence “is the set of knowledges, practices, behaviors, procedures and types of reasoning that can be accessed in a new learning”.

Valerie Marback (1998) defines competences as a set of elements that are in dynamic interaction and make the differential of a company or person. They are the knowledges (knowledge), the know-how (abilities), the behaviors (attitudes) and the cognitive faculties (personal qualities).

For Gilbert and Parlier (1991), “Competencies correspond to the set of knowledge, capacity for action and structured behaviors, placed in the availability of a goal or goal, in the search for results”.

For Gramigna (2007), the common point between the different definitions is the recognition of the contributions of the people differentiating the business results.

According to Fleury, Fleury (2001):

Competence is a common sense word, used to designate a qualified person to accomplish something. Its opposite, or its antonym, does not only imply the negation of this capacity, but it maintains a pejorative, derogatory feeling. It even signals that the person is or will be briefly marginalized from the circuits of work and social recognition. Webster's (1981, 63) dictionary defines competence in the English language as: “quality or state of being functionally adequate or having sufficient knowledge, judgment, skills or strength for a particular task.” This very general definition mentions two main points linked to competence: knowledge and task. The Portuguese-language dictionary Aurélio emphasizes, in its definition, similar aspects: capacity to solve any subject, aptitude, suitability and introduces another: legal capacity to judge litigation. In recent years, the subject of competence has entered into the agenda of academic and business discussions, associated with different levels of understanding: at the level of

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the person (the competence of the individual), the organizations (core competences) and the countries (educational systems and training of skills). The concept of competence, which emerges in the French literature of the 1990s, sought to go beyond the concept of qualification. Zarifian (1999) focuses on three major changes in the world of work, which justify the emergence of the competence model for the management of organizations: The notion of incident, what happens in an unforeseen, unscheduled way, disrupting the normal development of the system of production, surpassing the routine ability to ensure its self-regulation; this implies that competence can not be contained in the pre-definitions of the task; the person must always be mobilizing resources to solve the new work situations. Communication: communicating implies understanding the other and yourself; means agreeing on organizational goals, sharing common standards for their management. Service: the notion of service, of serving an external or internal customer of the organization needs to be central and present in all activities; for this, communication is fundamental.

Competence for some authors means the set of qualifications that the person has to perform a job with a higher level of performance. These authors are mostly of American origin, and developed their works during the 70's and 80's, with McClelland and Dailey (1972), Boyatzis (1982) and Spencer and Spencer (1993) as their main exponents, whose concepts formed the basis of the works of McBer, an important consulting firm in competence, later Hay McBer. According to these authors, competency is the set of qualifications or praiseworthy characteristics that allow somebody to perform better in a certain job or situation (Dutra, et al, 2000).

Also, according to Dutra et al:

Competence can be predicted or structured in order to establish an ideal qualifying set, so that the person presents a superior achievement in his work. Parry (1996) summarizes the concept of competence as a set of correlated knowledge, skills, and attitudes that affect most of some task, role, or responsibility that pertain to the performance of the assumed function, and which can be measured by well accepted parameters; such predicates are likely to be better trained through training and development. For LeBortef (1995), for example, competence is not a state or knowledge that one has or is not the result of training. Competence is actually putting into practice what is known in a given context, usually marked by labor relations, company culture, unforeseen, limitations of time and resources, etc. One can, therefore, speak of competence only when there is competence in action, that is, knowing how to be and how to mobilize knowledge in different contexts. Nowadays, the authors try to think of competence as the sum of two lines, that is, the delivery and characteristics of the person that can help them deliver more easily (McLagan, 1995; Parry, 1996). Another important line is that of authors who seek to discuss the issue of competence associated to the person's performance in areas of professional comfort, using their strengths and having greater possibilities for fulfillment and happiness (Schein, 1990; Derr, 1988).

Deluiz (2001), in turn, identifies as constituents of new management practices in the competency model in the world of work, are: hiring standards valuing the high levels of schooling; individualized career guidance and mobility promotion; evaluation criteria focused on the competencies related to employee mobilization and commitment to the organization; encouragement of continuous training; non-use of hierarchical classification systems; career link to training and performance. Given the new demands imposed by the pattern of flexible capitalist accumulation or toyotista focused on competitiveness, productivity, agility, cost rationalization, it can be understood that the model of professional competences,

when adopted by organizations, becomes the resource and the medium to allow the use, control, training and evaluation of the employees' performance, necessary in this context.

Deluiz (2001) adds:

The structuring notions of the skills model in the world of work are flexibility, transferability, versatility and employability. For capital, competency management implies the availability of flexible workers to deal with changes in the productive process, to face unforeseen events (incidents / events) that can be transferred from one function to another within the company, the polyvalence and constant updating of their skills, which gives them the correct measure of their "employability". In defining their competitive strategy, business organizations identify the core competencies of the business and those required for each function. From these competencies of the workers necessary to the organization are defined. In the competency model, the knowledge and skills acquired in the educational process, in the school or in the company, must have a "practical and immediate utility" - in view of the company's objectives and mission - and the quality of the qualification is evaluated by the "final product", that is, the worker instrumented to meet the needs of the process of rationalization of the productive system. The "human capital" of companies needs to be constantly mobilized and updated to guarantee the differential or the "competitive advantage" necessary for the unbridled competition in the internationalized economy.

Examples of Skills and Indicators

Generic Competencies for the Management Area

- Planning and organization; Delegation; Ability to solve problems; Verbal and written communication; Ability to train teams; Sensitivity; Persistence; Ability of analysis and synthesis; Acceptance of risks; Initiative; Decision; Technical knowledge; Negotiation skills; Leadership; among others.

Indicators of Managerial Competences

- Expression of leadership; Respect for organizational goals; Quality of internal and external contacts; Training of employees; Evaluation of employees; Personality / charisma; Stability in the face of stress; Creativity; Honesty / integrity; etc.

Breakdown of Competences

Supporting skills are those that support the technical skills required to fulfill specific functions in the organization. In this group of competences are included the essential, basic and basic competences, conceptualized as:

- **Differentials:** They are considered strategic because they establish a competitive advantage of the company and are constituted by a set of capacities that help the company reach its results and to make the differential in the market.
- **Essential:** They are identified and defined as the most important to the success of the business and must be perceived by customers.

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- **Basic:** They are necessary to keep the organization functioning, are perceived in the internal environment and stimulate and support the productivity climate.

COMPETENCY MANAGEMENT MODEL

Gramigna (2007) presents a detailed work on the model of skills and management of talents, whose main points will be presented in this item, below.

The Basis of the Competency Model

It is necessary to review and align the organizational indicators represented by the definition of the business, definition of the mission, definition of the vision of the future; and organizational values or principles. The experience of values gives rise to beliefs and forms the principles and cultures of organizations.

We can understand, from the above, that working on competencies, focusing on organizational flexibility, requires a work based on solid foundations. It means that the values, beliefs, policies and, ultimately, the culture of the organization require special attention. Culture, in turn, enables the practices designed by managers, reinforcing the security of investment in skills, which, in turn, reinforce the culture itself, through the direct and coherent action of properly trained professionals.

Premises of the Competency Model

- Awareness that each type of business needs people with specific profiles;
- Belief that each existing job in the company has its own characteristics and should be filled by professionals who have a certain competency profile;
- Recognition that those in managerial positions are responsible for providing opportunities to develop and acquire new skills;
- Perception that there will always be demand for the development of new skills and that what is essential today for the proper execution of a job may add new requirements tomorrow.

Implementation Methodology

The management by competences is a program that is installed through blocks of intervention that follow each other simultaneously or step by step.

First Block: Sensitization

The success condition is to get the involvement and adherence of the key management and jobs people whose awareness should generate commitment and is part of the initial strategy of the process. This awareness should happen via: presentation meetings and discussion of the model for probable adaptations to the company culture; discussion forums in order to detect flaws in the current model; provision of seminars for managers and opinion makers to clarify objectives, milestones, responsibilities and expected results; lectures and external courses on the subject; use of internal communication vehicles (newspapers, etc.) to disseminate stories about topics published in the media; encouraging managers to

participate in discussion and study groups on the internet; involvement of the power map components in the company as spokespersons for the area of human resources (people management).

Approved the project by the board and key people, begins the preparation phase of the terrain or data collection, with the following actions: certification if the guidelines and sector missions are compatible with the mission of the company and promotion of realignment meetings, if applicable; verification that the units (jobs) have their activities described objectively; evaluation of project risks: costs, profitability, reactions and restrictive factors, possible failures, discussion of results; definition of strategies to deal with risks, in order to minimize or eliminate them; negotiation of responsibilities, direct participation and management support, clarifying the role of the HR area as facilitator of the process.

Second Block: Definition of Profiles

It means defining the core and essential competencies required by each function group and delineating the profiles. The most common strategies are: Mapping and definition of competency profiles through meetings guided by external consulting, carried out with directors and some opinion makers; meetings guided by internal consulting, with the presence of directors and key people; Workshop and seminars given by external or internal consulting, focusing on the conceptual and methodological aspects, as well as aspects related to commitment, responsibility and roles. The performance of the external consultancy brings as advantages the impartiality, objectivity and rationalization of time. The performance of the internal consultancy brings as advantages the knowledge of the corporate culture and the valuation of the internal personnel. Workshop and seminars have the power to raise awareness of the target audience more intensely. Once the competency profiles have been defined, it is necessary to assign weights according to the requirements of each business unit through the knowledge of internal professionals who have information about the company.

Third Block: Evaluation of the Potential and Training of the Talent Bank

Interviews, diagnoses and potentials identification seminars are carried out, which result in the talent identification database (BIT). The main strategies used are: self-evaluation; traditional performance assessment; workplace observation; specific potential mapping tests; personal interviews; face-to-face assessment through test situations that simulate reality. The following tools can also be used in the competency check: competency mapping interviews with key people in the company, with the aim of tracing the desirable profiles by functions or jobs; individual or group interviews with those assessed for potential probing; search for individual data; performance verification seminar, through tests simulating real situations; specific mapping tools (questionnaires, software and scripts); feedback to the assessed; feedback to company managers via report; training and guidance for use of data as a managerial tool for decision-making. From the formation of the talent database, it is necessary to monitor and use these results in decision-making. Some possible actions are: allocation of potential talents in significant and challenging projects, motivating and stimulating the search for new competencies; offering training and development programs to increase the level of competence of those who stayed in the expected average; follow-up and advice to employees who perform below expectations, with a search of the causes for the search for alignment.

Fourth Block: Capacity Building

The philosophy of the competency model is anchored in the belief of the unlimited human development potential. The data obtained in the information base allow the distribution of people into four distinct groups: AM (Below Average): it is recommended to study each case in detail, searching for data and references about the professional in question. Find out the reasons for low performance, check whether the person fits other functions available in the company, provide feedback on the current situation and advise, before thinking about turning off the professional. After all, poor performance in one area does not imply the same result in another area; M (Maintainers): people with potential below expectations, but dedicated and with good performance. They must be objects of development program; FT (Futures Talent): people with high potential and performance below expectations. They should be the target of specific diagnosis to find the reasons for their poor performance, which may be in the work climate, demotivation and poor management, jobs incompatible with their potential, lack of recognition, etc.; T (Talent): they are people of high potential and performance corresponding to the expected. They are the great wealth of organizations. To keep them, you need to leverage their potentials. Must participate in challenging projects; have their responsibilities expanded; realize that the organization invests in your career; participate in trainings; have public recognition; have the opportunity to work as coordinators or team leaders.

Fifth Block: Performance Management

This block closes the competency program cycle. After all the actions of the previous blocks, the results should be evaluated through specific tools and methodologies. It is through the evaluation of the individual performances that the manager verifies the evolution or involution in the performance of the people of his team. The evaluation maintains the focus on the competencies defined in the profiles, added to the attitudes and behaviors that are observed in the work routine. One tool used today is the 360-degree network evaluation, where there is feedback from those that are part of the internal and external productive chain (customers and suppliers). This block should be avoided: link performance evaluation to promotions or financial advantages; to adopt the performance evaluation as another norm of the company, failing to use the data collected to leverage the development of people; implement the process without preparing the company for feedback culture.

REFERENCES OF REAL CASES

We can report in a simplified way, based on our professional experience as an executive or consultant, some situations in which the valorization and attention dedicated to the way people are managed in the organization, considering the elaborated business model, had a direct influence on the success or failure of the organization.

In a first situation, based on a case of creation of a new company of a major Brazilian industrial group, to act as the Group's Central Purchasing Center, motivated by the maxim that "a percentage gain in purchases is more important than the same percentage gain in sales", we can highlight:

- Buyers have had to deal with a gigantic expansion of the financial amount of purchases;

- Buyers had to deal with a representative expansion of the universe of shopping items;
- Buyers had to deal with the fact that many items required great knowledge of their manufacturing process, the materials used in their composition, or certain technical details;
- Buyers had to understand that, in general, the items required good knowledge of the main suppliers and their characteristics and / or supply policies;
- Buyers had to understand that many items could be purchased on the domestic market and others would have to be purchased through importation;
- The buyers would have to know the main negotiators of the suppliers;
- Buyers would have to master trading techniques;
- Buyers would have to have sufficient knowledge of financial mathematics;
- Buyers would have to have good command of the Portuguese language and good verbal ability, alternating verbal and written communication;
- Buyers would have to have high ethical sense and serious, dedicated and mature professional commitment by defending the interests of the central purchasing authority and deciding to close acquisitions, with technical and price reasons prevailing in line with the interests of their organization.

The buyers did not have the same degree of importance and preparation. Buyers were divided into groups of supply items with characteristics similar to each other and different from other groups. Some groups of numerous items were low value-added and required little technical knowledge, approaching commodities. Other groups of items were more sophisticated and more expensive, requiring a greater and even more complex technical knowledge.

The business model of the Central de Compras was well elaborated, it was simple and there were already on the market similar, very successful examples. The value added to the suppliers due to the high volume of purchases of each item, in each transaction, with good options for negotiating delivery logistics in the FOB and CIF modalities, were attractive that aroused the interest of the supplier market. On the other hand, the attention generated by the good prices obtained generated significant gains for the Purchasing Center and its customers. However, the execution of each transaction required high training and proven competence of the professionals involved in the acquisitions. Some items were imported, which, in itself meant a high level of specialization of the professionals involved in the negotiations and the process as a whole, in order to guarantee the entry of goods and items purchased in a timely manner. It became clear that the success of the Central of Purchasing was linked directly to the specialized preparation and performance of its body of buyers.

In this context, some aspects of the skills profile required for the position of buyer, drawn in a simplified way, considering the need for business success, was outlined as follows:

1. Generic Competencies:
 - a. Negotiation skills;
 - b. Ability to analyze and compare;
 - c. Tenacity, persistence;
 - d. Decision-making capacity;
 - e. Technical knowledge;
 - f. Autonomy;
 - g. Ethic;
 - h. Orientation to results.

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2. Interpersonal Skills:
 - a. Persuasion;
 - b. Interpersonal sensitivity;
 - c. Oral communication.
3. Technical Skills:
 - a. Knowledge of the manufacturing processes of the items;
 - b. Knowledge of the materials involved;
 - c. Knowledge of the composition of costs of the items;
 - d. Knowledge of similar offers on the market.

Each competency can be described in terms of Knowledge, Skills and Attitudes. Considering only the competence “Orientation for results”, which means ability to work under the guidance of goals and targets, we can, by way of example, describe some of the knowledge, skills and attitudes that constitute it:

1. Knowledge
 - a. Of business;
 - b. From the market;
 - c. Of work processes.
2. Skills
 - a. Maintain the quality standard at work;
 - b. Pursue goals;
 - c. Analyze the context and conditions of offers, identifying aspects / indicators;
 - d. Obtain results;
 - e. Achieve goals.
3. Attitudes
 - a. See yourself as “business owner”;
 - b. Present a posture of “commitment to results”;
 - c. Keep focused on goals and results and value them.

In this way, from the profile of the purchasing function, the competencies profile required for the job was established.

In a second situation, referring to another real case of the creation of a reseller of materials for medium and large engineering works, whose business can be considered as “logistics” in the acquisition and delivery of these materials, we can highlight some aspects present in the organization at the outset:

- Typical Business to Business (B2B);
- Strategic axis supported by “quality” and “punctuality of delivery”, sufficient to attract a group of medium- and large-sized purchasing companies, due to the execution of expressive projects and strict schedules, accompanied by strict contractual requirements;
- Direct action of the founding partners in the external negotiation and sale processes and internal processes;
- Internal logistics developed for the reception of several trucks and materials, with maneuvering yard and intermediate stock; etc.
- Initial training sufficient for the low transaction turnover.

However, as the company was growing, the following aspects appeared:

- Absence of a human resources management policy;
- Only a few buyers had full control and advanced technical knowledge on the various items;
- Absence of professionals with profiles close to those of the founding members;
- Displacement of the action of the founding members for constant visits to large clients in the market;
- Limited internal communication, not uncommon;
- Control of the arrival and departure of items, made through an information system that allowed flaws when using and integrating papers and annotations in color scheme, besides some functions of the software, that was not a tool without problems.

In addition to the attributes of the purchasing professionals as described in the previous case, the company's performance required other skills profiles related to logistics positions for delivery and receipt of goods, intermediate maneuvers in the yard, management of temporary inventory with perfect identification of items and buyers, expedition with high command of the processes of packing, addressing and documentation, including with photos. All this should be sustained by a culture based on clear and coherent values and principles, culminating in a transparent and fair program of positions and salaries.

The organization was initially successful in filling a market gap. The initial years were of growth. The profitability was high, supported by the strategic axis "quality x punctuality of delivery". The founders were professionals with a broad command of the sector, who initially worked at the managerial and operational level of procurement and delivery logistics. Support for the main software used in the operations and integration of the activities of the various sectors was sufficient in the early years, despite the problems presented, perhaps due to the relatively low volume of transactions.

The growth brought the need to hire new employees and, of course, shifted the founders to work exclusively in the direction of the company and in constant visits to large clients. However, despite the growth, the board's view was restricted to the financial aspects, nothing internally investing in the management of human resources. There was not really a policy for the area of human resources. The profiles and competences required for the work functions of its various professionals have not been studied and previously determined. The hirings did not follow criteria of experts in people and the company did not have a system of management of human resources implanted. The observed turn-over was already representative. The contracted people came by appointment of the employees themselves and learned directly in the sectors, watching and experiencing the practice of former employees. There was no training program, no person-setting tool in the organization, no clear career proposal.

The organization had no values, beliefs, principles and philosophy worked on. There was no clearly defined culture. There the owners earned money and secured a job to meet or minimize their present needs.

The consequence is that, even before the crisis in the country, the gap created by the absence of a human resources management strategy has led to the inclusion and retention of professionals without the proficiency profiles required in the various functions. The problems ranged from functional incompetencies, generating problems in the target market to the various frictions between people in the various internal sectors. The frictions took time from the proprietors, who continued in constant meetings where the culprits by the problems were looked for. The internal climate deteriorated. Competition among employees dominated the environment and was naturally marked by lack of collaboration. The consequences were drastic, culminating with representative cost layoffs stemming from inefficiency and conflict.

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Already, with the foreshadowing of the arrival of the crisis in the country, it was clear the need to improve and adapt the profiles of the professionals of the company, in addition to the need to reorganize processes and sectors. The lack of focus on sales helped the difficulties significantly, as buyers did not have the ideal profile for the role and still had to perform internal bureaucratic services to follow the acquisitions of several customers. It was evident the need to implement the internal strategy of survival, aiming at reconstruction or institutionalization. On the other hand, the development of a competitive strategy without the adoption of a strategy of managing people by competence, duly aligned with the organizational view, would not be enough to take the company out of its difficulties. The company did not break, but there was no way to avoid a natural decrease in its size and market share.

What is observed in the case presented is the presence of a reliable Business Model, a good beginning of activities, but having as a great absence the implementation of a human resources management policy adequate and coherent with the strategic vision of the founding partners. Without investing in people, in their skills, the company could not act with the aggressiveness and productivity needed in times of crisis.

CONCLUSION

The theoretical aspects from the literature and the real examples presented allow us to affirm that it is useless to count on excellent and innovative business models or reliable business plans, without considering how people should be led and managed within an organization.

In order to have an idea of the importance of the dimension of the study of the competency model presented, considering the components of a business model, we can ask: What competences should the key activities people have in order to understand the correct dimensioning of the main resources physical, financial, intellectual or human, required by the value proposition? (Main Features); What competencies should the main managers and leaders of the organization have in order to design or adjust the key activities necessary for the value proposition? What skills should be developed to be sure about the value that customers are really willing to pay and their representation for revenue? What competences should the professionals that will act in the various channels (communication, distribution and sale) have? What skills will be needed to define and build the types of relationships needed with customers, suppliers and stakeholders? What skills should those who will interact with the various entities of the macro environment and the competitive environment of the company have? What competencies should the managers and leaders of the organization have?

It is important to elucidate that the management by competences does not mean the creative engagements of the people in the companies. On the contrary, people with the right skills and training, in a challenging and motivated organizational climate, are better able to act creatively within their business areas. The talent is present, from the information, knowledge and training, to release the creative imagination that enables intelligent solutions for operational and strategic problems.

As discussed in the text, working on competencies, focusing on organizational flexibility, requires that it be an architecturally based work. It means that the values, beliefs, policies, and, ultimately the culture of the organization require special attention. Culture, in turn, enables the practices designed by managers, reinforcing the security of investment in skills which, in turn, reinforce the culture itself, through the direct and coherent action of properly trained professionals. Investing in skills is investing in people, ensuring their fixation and continuity of the intellectual and cultural capital of the company. This makes it important for the business models and the elaborated plans to succeed in a highly com-

petitive, internationalized market with constantly changing scenarios and clients with ever less stable profiles and behaviors. There are three points to consider in this direction, not explored in this chapter, but worth mentioning because of their direct relationship with the need to manage people effectively and dynamically in an organization: the speed of change (instant communication; face); the depth of changes (behavior, culture, politics, social structure, technology, etc.) and volatility (instantaneous and passenger culture). The company has to deal with these realities. A direction pointed out and studied here is that obtained by the flexible company, which is possible with people constantly prepared, in coherence with the business and the strategic vision.

In conclusion, we can see that many organizations that were born of ideas that constitute good market opportunities, with well-studied, operational business models, viable considering the market, competition and critical uncertainties, may perform insufficiently to remain in the market or to ensure a good slice of it, by the lack of focus on the fundamental aspect of the organizations that are the people that constitute them. As stated, organizations can not be successful not only because of failures in the business model or in their business plan, but in the fundamental link of value creation and supply, which is boiled down to the human resource they have.

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Chapter 21

Orquestra Filarmônica de Minas Gerais: An Artistic Business Model Which Enlightens Business Complexities, Challenges, and Affirmation

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ABSTRACT

The lights gradually dim. Like an army of warriors dressed in black and white, one hundred musicians enter the stage under the applause of the public. They take their positions awaiting the entrance of the concertmaster, who solemnly advance to the first chair acknowledging, one more time, the applause. A sound from the Principal Oboist is heard, followed by the other musicians, looking for a common understanding, each one searching to meet the proposed “A.” Then, all stay quiet. With a determined and resolute pace, the Maestro enters the stage moving to the podium, warmly greeted by an expecting audience. The Symphony is about to start. Could it be that this moment, though, is much more than an experience of bringing to life a musical work from the past? Could this also be the utmost symbol of an ideal demonstration of society’s quest for organization, functionality and purpose?

INTRODUCTION

Can a symphony orchestra be valuable as a viable contemporary example of business models that can be applied to areas outside the scope of artistic endeavors?

Not many people associate the existence and function of symphony orchestras in plural societies as a sign of economic health and wealth of the communities they serve. They are often perceived as living dinosaurs insisting in justifying their existence in a world that, more and more, distances itself of all sorts of consumption of that which is regarded as “high culture”. Their product seems to be unappealing to most people, particularly the younger generations, who are brought up without any exposure to their

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message, much less their institutional relevance. Nonetheless they persist, some of them even thrive, while others, depending on their ways of sustainability, perish.

From their first signs of life in seventeenth-century Europe, orchestras (and music creation in general) were always supported by a group of few interested people that not only appreciated music as an art form, but also responded to society's quest for "emancipation" through knowledge, cultural absorption and the exploration of artistic and spiritual matters. These patrons were, for the most part, aristocrats who commissioned works and maintained, in some cases, symphony orchestras in their communities, with the intent of making their realms more progressive and representative of the ideas of the Age of Enlightenment. To have an orchestra in their midst was a sign of prosperity and development. It was during this era, particularly in countries where the aristocracy was truly knowledgeable and relatively broad-minded, that music and orchestras flourished.

Although there were examples of occasional use of instrumental groups in late seventeenth and early eighteenth-centuries, perhaps the first organized ensemble with the goal of performing regularly in its community was the orchestra of Mannheim, formed mainly by composers and accomplished instrumentalists. They became responsible for establishing a concept of what a "symphony orchestra" should be, but also demonstrated, thanks to the talent and singular virtuosity of its members, the potential of what that sort of ensemble could accomplish. Its influence was felt immediately in other centers in the Austro-Hungarian Empire, as other courts, like in Berlin, Vienna and other smaller cities, followed its example, and eventually surpassed its dominance.

Throughout the nineteenth-century, and with the increasing participation of the state in supporting symphonic and especially operatic activities, orchestras became more established and fully professional. Their presence and existence were now seen not only as a sign of prosperity and local status, but as an extension of a general will for reflecting the Romantic ideal that Art was able to transform people and had a profound effect in the advancement of the mind and spirit of those they served. The dynamics of this relationship between creators, performers, supporters and society, led to an era of great artistic and institutional progress around Europe. Many orchestras were created and flourished. Almost all of them state supported.

With the Industrial Revolution a new middle class was formed, eager to partake of the "advantages" of nobility and with the economic means for it. Composers and Musical Societies started to promote regular series of concerts, making the access to classical music relatively more democratic. The figure of the virtuoso soloist helped even more the advancement and consolidation of the concert experience as a well-accepted form of cultural fruition and entertainment. Figure like Paganini, Liszt, Chopin, became international celebrities, adding to the cult of respected composers, such as Mozart, Beethoven, Schumann and many others.

At the end of the nineteenth-century, as the New World develops and starts to participate in a more "global" economy, sharing material and spiritual goods and emulating the cultural norms of the day, countries in the Americas imported the concept of symphony orchestras, but not necessarily their models of sustainability. While in Latin-America orchestras were established directly mirroring their European counterparts in terms of state funding, orchestras in the United States relied exclusively on patronage.

The first American orchestras, like those of New York and Boston, started as community projects and not as a matter of public policy. Their source of funding was not government, but wealthy patrons or philharmonic societies, whose members were amateur musicians or dedicated music lovers. As orchestras developed around the country, that model became the norm, creating a direct bonding between institution and community. The lack of dependence on government funding proved to be less of a challenge

than could be thought, allowing that, at a peak in the second half of last century, there were hundreds and hundreds of professional orchestras of high quality in the US, many of them comparing favorably with the more traditional and respected European orchestras.

In South America, and in particular Brazil, the increasing number of immigrants at the latter part of the nineteenth-century and earlier decades of the twentieth-century, especially the influx of the Italian and German cultures, significantly contributed to the establishment of opera houses, not only in major cities, like Rio de Janeiro, São Paulo and Buenos Aires, but even the notorious example of the Opera House built in the middle of the jungle in Manaus, Amazonas. In all these examples, the model of sustainability and administration was that of Europe, always directly attached to the city or state where they belonged.

This model remained, and still remains, as the predominant model until quite recently, when an alternative form of administration was introduced.

This chapter aims to address the experiences of a successful initiative of an artistic project, the Orquestra Filarmônica de Minas Gerais, created in 2008 and playing, nowadays, a leading role in Brazilian musical scene. Their example on composing a strategic business model which allowed to survive difficulties, enabling for monetization, marketing development, branding creation and, mainly, artistic and culture national leadership is remarkable, and can help understand its history as opportune for any business planning and projection.

Orchestras Business Models: At First Glance

We have, therefore, two basic models of sustainability for orchestras and other kinds of cultural organizations. The first, the European model, that relies on state funding. Another, the American model, that depends exclusively on patronage.

As we closed the 20th-century, however, we noticed that both models began to show signs of wear and tear. With increasing budgetary challenges facing European countries, and the shift of society's interests from culture to entertainment, it became clear that many cities, states and countries could not continue to support symphony orchestras as they have had done in the past. Even in countries where there had been constant and undisputable public support for the arts, like Germany, Italy and France, this pressure was felt. In the case of Germany, the re-unification of Eastern and Western Germany, and the economic consequences of it, and in others, the galloping increase in public expenditures, forced the fusion or even elimination of several established symphonic groups.

In the United States, American orchestras were always susceptible to economic downturns, which became more and more predominant during the last quarter of the previous century. Many American orchestras had to cut their budgets, reduce their seasons, and some even close their doors. Those experiences in Europe and the US, coupled with a real decline in attendance and overall interest in the Arts by modern society, showed that unless new business models were developed, orchestras would face real financial stress and, possibly, bankruptcy.

Even though facts show that the majority of today's orchestras still follow the two independent principles described above, it has become more common to find examples of hybrid models that combine the stability provided by the European model associated with the communities' responsibility to participate in their local orchestras cultural activities. Traditional orchestras, like the Berlin and Vienna Philharmonics have been for some time dependent not only on their local government funding, but also in private sponsorships, ticket sales, and other sources of income. In the US, where there is an engrained aversion for government support for the Arts in general, such a combination of private and public money is less

visible, but it can be seen, particularly in orchestras based in mid-size cities, where their local counties or states, understanding the social and economic impact of maintaining viable cultural organizations in their midst, provide them some help.

According to the League of American Orchestras (LAO, 2018), there were 1,224 orchestras spread out in all 50 states in America. In all of these professional orchestras in activity in 2014, an average of 40% of their income was classified as earned income (ticket sales), 43% as contributed income (through individual subscribers and private sponsorships), and 17% as investment income (direct investments or long-term endowments). In almost all of them there was negligible or no state funding whatsoever. On average, government participation in the overall budgets of symphony orchestras in America corresponds to less than 3% of their total contributed income.

In the same study, we learn that over a five-year period (2010-2014) earned income fell 1% below inflation and it continued to reflect a constant decline in overall attendance. It also shows that individual ticket buyers are now superior to regular subscribers, which adds to the uncertainty in which management must operate every year.

Furthermore, it shows that reliance on investment income, particularly in the form of endowments, is becoming more and more important for the health of these cultural organizations. Orchestras with larger endowments can navigate downturns in the economy easier than smaller orchestras with small or no endowment at all. To a certain extent, endowments, within the “American Model”, replace the function of state funding in the “European Model”. As smaller orchestras strive for survival, it becomes clearer the need for some sort of stability that, in the case of European or Latin-American orchestras, governments provide. As a conclusion to the study mentioned above, the following statement is made: “...orchestras’ reliance on investment income — and, consequently, their financial vulnerability during leaner times — is an ongoing cause for concern.”

Brazilian Orchestras Models

Brazilian orchestras have, for the most part, followed the European model of funding. The more traditional symphonic organizations in the country have always been “supported” by their cities or states. Until recently, all musicians and employees in Brazil were public servants, with their inherent benefits and problems, and that continues to be the reality for most orchestras in the country.

Brazil has a long and meaningful musical history, characterized by the talent of composers, such as Carlos Gomes, Villa-Lobos, Camargo Guarnieri, or international soloists such as Guiomar Novaes, Magda Tagliaferro, Nelson Freire, Arnaldo Cohen and Antonio Meneses. But it took the country almost 500 years (Brazil was discovered in 1500) to have its first orchestra of recognized international quality. During the 20th-century, Brazilian orchestras experienced ebbs of growth and, more frequently, crisis, caused primarily by the lack of incentive and continuity in public policies towards Culture in general.

In a country marked by political shifts, characterized by constant and contrasting movements to the left and to the right that have kept the largest nation in the Americas striving for real economic growth and social stability, it is hard to imagine that focus would be given to an area perceived to be so distant than that of the primary needs of its people. However, at the end of last century, an opportunity arose: some political leaders started to finally realize that government could not support, and much less administer, all things. It was important to let those who were specialists in specific areas do their jobs and, with the help of local governments, but with autonomy and the goal of producing palpable results.

Orquestra Filarmônica de Minas Gerais

Through a federal law created in 1986 (Lei Sarney), and, more recently, its relatively improved variation (Lei Rouanet, 1991), Brazil finally joined other countries in offering tax deductions for corporations and individuals to invest in cultural activities in the country. Even though this law has been modified several times since, and not always for its betterment, it is unquestionable that it is responsible for allowing the Arts in Brazil to finally develop its full potential. This important law coupled with the Social Organization model of public funding/private administration structure is what explains the belated development of cultural organizations in Latin-America's largest country.

Since its implementation, Brazil has seen the advent or the renaissance of several of its orchestras, museums, theaters, and an overall stimulus to artistic creativity in all sectors.

This is how, for instance, The São Paulo Symphony Orchestra (OSESF), which at the time (late 1990s) was in institutional and artistic shambles, found the way of rediscovering itself, combining the advantages of a model of administration recently adopted in Brazil (OS – “Social Organization”), with the rare understanding by political leaders at the time, that Culture was also worthy of investment.

This OS model combines the stability provided by government funding to maintain the payroll of musicians and supporting staff and, at the same time, gives incentive for the private sector to invest in something of quality that quickly transformed a harsh and decadent city, like São Paulo, into a culturally attractive and economic dynamic hub, helping it acquire a recognition both nationally and globally. Thanks to this model, and the competence of those who were there to implement it, São Paulo finally had an orchestra that was seen by its population as a source of pride and joy, that would represent favorably the city in comparison to other large metropolises around the world, and that would generate real economic benefits to its community.

The “Orquestra Filarmônica de Minas Gerais” (OFMG) Case

At the end of 2006, I was invited by the government of the state of Minas Gerais to adapt this experience in Belo Horizonte, with the task of restructuring an existing orchestra (Minas Gerais Symphony), according to the model adopted by OSESF in São Paulo. Skeptical at first, since other previous invitations offered before had led to nothing, I was faced with a very viable proposal, that would make it possible, in a reasonable short time, to build another orchestra of high-quality. The first series of meetings with political leaders and administrative personnel gave me enough confidence to accept the challenge.

The task, however, was not as smooth as originally expected. There was resistance by many musicians of the existing orchestra, who were reluctant to risk their “protection” and “acquired rights”, when deciding to venture themselves into a new reality: one that would exchange stability for better working conditions, better salaries, better artistic accomplishments, better future, better results, but no guarantees. The resistance and non-acceptance of the majority of that orchestra's musicians led to the decision by the state government to create a new orchestra under the new hybrid model, while preserving the other group as it was.

Knowing that that decision would be viewed with criticism and political opposition, it became imperative that we were prepared to answer some important questions. Why do we need another orchestra? What would be its mission? How would it be funded? What would be its role in the cultural fabric of its community? Eventually, those questions were satisfactorily answered, and in February of 2008, the Minas Gerais Philharmonic played its first concert to a full house with a standing ovation. These questions are example on how business, in general, could receive experiences from our case, as it is always

a demand to justify plans, actions, decisions and perspectives for customers, public and private agents, investors and other stakeholders, who want, above all, results they can perceive.

Why Do We Need an Orchestra?

Even in countries where there is prosperity, constant economic growth, political stability, well-established institutions of government, plural and reasonably educated societies, if the question above were to be asked to a sample of the general population, chances are that the answer would be, at best, “I don’t know”, or even “I don’t care”. Orchestras are not, and will never be, part of the popular forms of entertainment of the general population. They are expensive. They seem not to reflect the tastes and priorities of present time. They are intimidating, formal, out of reach, representatives of imperial or autocratic times. And, “God forbid”, elitist.

In countries still facing enormous inequality, slow or negative growth, political instability, and a high percentage of people who have limited or no access whatsoever to an education of quality, that question is even harder to answer. With so much poverty, lack of basic health and education, high unemployment and lack of opportunities to climb the social and economic ladder, is it justifiable to invest public resources to maintain something so far off the general radar screen of society such as a symphony orchestra?

This is a legitimate and frequent question that orchestras face from those who perceive them to be elitist and out of touch with the real needs of society. Notwithstanding the fact that governments’ expenditure in Culture is, generally, less than 0,5% of their overall budget, and even if we eliminated every orchestra and other cultural organization supported by the state, poverty and famine would still exist, there is a misconception that one thing excludes the other.

Many times, orchestras fail to adequately answer that question when they choose to argue from a political stance, instead of resorting to their own inherent value.

We need orchestras of excellence, (and here I always make a point of qualifying with the term “of excellence”), exactly because they are symbols of what society could be and should strive for. They should be seen not as a mirror of the status quo, but of what a well-functioning society can do in order to produce the best possible results. From an economic prism, they can be used as a means to help their communities financially, since every cent invested in them generate a fourfold return. From a managerial point of view, they can be used as examples of business models of simple, but effective results. From an anthropological angle, they also can be seen as an organizational system that teaches us how to work and evolve together. In other words, we need orchestras because they represent the best of what we are, and how much better we can always be when working together.

Let’s see case by case how cultural organizations really impact the communities they represent. First of all, let’s concentrate on their financial impact.

In a recent study done by Americans for the Arts (2018), cultural and artistic organizations had an overall impact of \$135 billion in economic activity in the US during the year 2010. That industry was also responsible for 4.13 million full-time jobs and generated \$22.3 billion in revenue to local, state and federal governments every year. Of course, these numbers reflect the influence of these organizations in the United States, the largest economy in the world, and it is understood that not all of it comes from symphony orchestras. But when studying these numbers and how they were obtained, it becomes clear that, independent of the wealth of a particular community, the measurable average of the impact of economic return of cultural organizations locally is tremendous. In some areas, it is larger than that of well-established industries that are perceived to be more “productive” than arts in general.

According to official data – IBGE (2018) - Belo Horizonte, capital of Minas Gerais state, has a population of 2.523.794. There are yet no particular studies to judge the direct impact of the Minas Gerais Philharmonic (OFMG, 2018) in the local and state economies, but if we were to apply the same principles and equations used in the study above, we would certainly see, if not the same numbers, the same averages. In practical terms, OFMG's annual budget of approximately US\$ 10 million, of which 60% comes from state government, reverts in at least US\$30 million to the local economy.

Some data is already in place. Since its inception, in 2008, the OFMG has created, besides its almost 150 internal jobs, over 60,000 indirect jobs through its activities in the city of Belo Horizonte and the state of Minas Gerais, through its indoor and outdoor performances in regional and national tours. Also, it has contributed to the local transportation, printing, hotel network, restaurant, technology and marketing industries. Expenses directly related to the production of concerts, with a direct impact in the local economy, reach almost US\$ 1,000.000 annually.

It also creates enormous visibility for a city that until recently was perceived to be an underperformer both culturally and economically. Now, with the international exposure that the orchestra has given to Minas Gerais, and the frequent presence of soloists of international stature, Belo Horizonte is gradually becoming an alternative center (in relation to the larger capitals of São Paulo and Rio) that provides to its citizens and to national and international tourists a vibrant offering of something appealing, affordable and representative of what the best Minas Gerais has to offer.

It is important to note, however, that the numbers above are only possible, not necessarily because arts and cultural organizations in general are dynamic economic vehicles of investment in communities. If that was the case, it would be easy to fix financial distress in localities where there are economic challenges: just build more orchestras, theatres and dance companies. Coupled with the numbers reflected in the study above and empirically projected in the case exemplified by the Minas Gerais Philharmonic, these results can only be fully reached, when the existence of cultural organizations in communities is associated with the quality of their product. The simple existence of an orchestra or an opera company in town does not guarantee in itself an economic impact if they are artistically irrelevant to that community.

When the OFMG was created, it became a basic tenet to justify its existence, the emphasis on producing a “high quality” product, in constant search for excellence. And it has been proven, after ten years of existence, that it has been this notion of excellence that has elicited the continued and growing support from subscribers, patrons, and sponsors alike. It is the sense of community pride that has allowed the orchestra to beat records of attendance and consequent revenue year after year. What is the point of spending public money on a project (cultural or otherwise) that shows no positive result? As the OFMG became synonymous of quality, efficiency, ethics, it also became synonymous of relevance, engagement and pride.

A well-run orchestra is also a symbol of how communities can successfully operate. As society itself, musicians are professionals who specialize in their respective instruments. Individually, they accumulate a gamma of particular qualities that are not unique and can be seen in other areas of the population: talent, dedication, commitment, preparation, focus. But it is exactly on applying themselves to utilize these qualities for the benefit of the group that the overall impact can be felt. An orchestra where each musician is well trained, fully prepared and highly conscientious of its responsibility to perform to its potential is certainly better than an orchestra where those things do not occur.

Each section of the orchestra, like an organ in the human body, is expected to have a role in the whole, contributing through the sum of its individual players towards the final result. The different “colors” that instruments can provide correspond to the different sectors that a productive society depends for

its operation. When a musician plays out of tune or a wrong note, it affects the entire acoustical result. The better the orchestra, the less wrong notes it will have, and the quality of its sound will be “in tune” of what the actual musical message should be. A healthy body is one where all the organs are operating in synchrony and balance. In other words, an orchestra shows us that a more successful society depends on the competent and committed participation of each one of its individuals. The technical or artistic deficiency of weaker players in the process puts an onus on others who need to “compensate” for it, in order to produce a good result.

The concept of teamwork can also be easily connected to the orchestra structure. An orchestra has a goal, a mission: the performance of a musical work of a relevant composer who used music to express ideas, emotions, thoughts to listeners. The “constitution” is the musical score, with all of its “laws, articles and amendments, (notes, rhythms, dynamics, articulations)”. A better performance is that, in my opinion, that reaches the closest to the composer’s original intentions. Therefore, following the “constitution”, respecting faithfully the information provided by the composer, is what guarantees the certainty of its message. Fidelity, not necessarily fundamentalism, to the score is a unifying force when dealing with many individuals who are imbued with the professional duty and the artistic drive to, through their unique talents, contribute to transform those who are recipients of this endeavor. An orchestra that has members who are musical “activists” when treating the “constitution” end up defacing the message, causing misunderstanding on those affected.

Finally, an orchestra can also illustrate the role of “leadership” in society. It is true that an orchestra, just like a community, can function without direct guidance. But the larger the group, and the more challenging the job to be done, the harder it is for its members to work together within the same thought process. Therefore, we have the figure of the conductor, who is responsible for organizing all these forces towards a common goal.

A good conductor, like a good leader, is not one who imposes his or her will, but someone who uses its position of prominence to garner the energy and talent of many to reach a common result. The baton doesn’t make a sound. Beating the air in constant movement, even if the choreography seems to be extremely plastic and fluid, may not achieve any result if those being led do not trust and respect his or her leadership. It is through the combination of competence, talent, commitment, ethical treatment of the “constitution”, that a conductor can inspire musicians to follow him/her. The conductor’s authority cannot be imposed, it has to be earned. So, should be society’s expectation of its leaders.

If orchestras are not representative of the times and tastes we live in, why are they remembered when something remarkable needs to be expressed?

- In 1962, to commemorate the reconstruction of the Coventry Cathedral, in London, destroyed twenty years before during World War II, an orchestra (the London Symphony), led by Benjamin Britten conducting his own War Requiem, was used. They were joined by three solo singers, one German, one Russian and one British, once enemies and now fellows, to convey to the entire world the power of music to transform people.
- In 1989, to celebrate the fall of the Berlin wall and the symbolic end of the Cold War, an orchestra (the Berlin Philharmonic) was invited to perform, under the leadership of Leonard Bernstein, Beethoven’s 9th Symphony, the maximum symbol of brotherhood and communion of all people.
- In 2015, an American orchestra (Minnesota) went to Cuba, in an effort to thaw diplomatic tensions that has lasted for than 50 years between the two countries. It was received with standing ovation by a packed house.

Orquestra Filarmônica de Minas Gerais

- In 2018, during the Winter Olympic Games in South Korea, an orchestra (composed by members of North and South Korea) showed, better than any diplomatic or military effort in the last 50 years, that music, and not the force of rockets, can unite people.

For organizations that “are often perceived as living dinosaurs insisting in justifying their existence”, it is comforting to know that much of the world, from the Far East to the Caribbean, sees them as vehicles that can, as a mirror of the world itself, unified by the universal language of music, remind us of what we can and should be.

CONCLUSION

Besides their obvious artistic impact and cultural quality, orchestras can be symbols of well-controlled and efficient organizations. Within their inherent structure, lies the potential of achievement produced by the combination of individual and collective talents working towards a common goal. Therefore, the music-making process within an orchestra, can be seen as an example of any well-integrated mechanism of production when:

- An objective is clearly defined (the performance of a certain musical work).
- The rules are well established and understood (notes, rhythms, dynamics, articulations, well expressed in the score).
- Those who are called to perform the task are imbued of competence, authority and encouragement to perform it well.
- The effort, in terms of pacing, speed and direction, is overseen by a well-respected leader.
- The focus is not on the process itself but on the final result (performance).
- The appreciation of the “consumers” is not only connected to the “product” itself, but also with the manner in which it was delivered.
- The consistency and constancy that a product of high quality is offered, gradually transforms the quality of life of its customers, not only contributing to their personal gratification, but to the emancipation of all those reached directly or indirectly by “the product” in search of a better society.

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Chapter 22

Business Models: An Illustrative Study of E-Commerce Businesses in India

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ABSTRACT

The concept of business model is not new now, but organizations construct, identify, and innovate their models from the beginning of the business itself. The purpose of this study is to understand the importance of e-commerce business models and explore their connections to provide an overview of the concept of business model. In this study, the authors describe the business model concept in an organization, how the same works as the blueprint of how a company does business. Further, it provides an insight to understand the importance of e-commerce business models and explore their connections with various e-commerce businesses prevailing currently in India.

INTRODUCTION

The thought of a business model may be new, but the fundamental of business model found its roots since the inception of the organizations. The East India Trading Company and Henry Ford had good business models, whether they were called business models or not (Muehlhausen, 2013). Similarly, the development and complexity of the e-commerce sector has increased the demand for companies to grab and develop their business models, as well their credit risk management activities, so as to be profitable and create value for their long term survival. Therefore, in the line of entering the Digital Economy, the competitive landscape had change, making companies to face new challenges (Ghaziani and Ventresca, 2005). As for the time, being the small startups became quickly able to compete with well established organizations, even on a global level. (Jetter, Satzger and Neus, 2009).

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Business Models

A business model is not just essential to secure financial support at the start-up phase, but is an essential aid to manage the business more effectively. A model can facilitate in setting up specific objectives and goals along with the resources required to achieve these goals. By understanding business and the market through its model, will help in providing an environment to ensure long-term success of the organization. During their life cycle, most businesses face investment decisions during the course of their lifetime, and many of these opportunities cannot be funded by internal funding alone as the business also need external funding. Although in spite of the fact that the market for funding is highly competitive, the potential lenders require access to the company's recent income and financial statement, along with their current business model. A good number of the recent research on business models in the strategy area shows the business model as something real. Most of the articles investigates the associations between choice of business model and competitive advantage linked with the business (Amit and Zott, 2001; Zott and Amit, 2007). Further, some of the studies are not in sync to the prominence of the competitive advantage may be because the claims are not validated enough or can be criticized (Durand and Vaara, 2009; Durand et al., 2008). The business model is, in addition, an imperative strength of character for technological artifacts, because it leverages their accomplishment and assists the achievement of planned aims together with economic value. Therefore, to endure and to be successful, business organizations must develop a business model that makes sure the synchronization among business strategy and the business processes. Furthermore, a business model for a digital business organization is supposed to be evaluated repetitively, so that it will be in shape with the multifaceted, uncertain and swiftly varying external environment.

With India having a population of more than 1.2 billion people having numerous challenges is also a promising economy which offers billions of opportunities. The growth prospective in e-commerce business in India has caught the attention of not only several regional players, like Flipkart, Snapdeal, Urbanladder, Olx etc., but also of global giants like Amazon, Alibaba, Ebay etc. So, for an e-commerce business, a well defined business model can assist in building prospective investors, making them feel confident and in the thoroughness in the future scenarios. Therefore, for the e-commerce sector, the business model can be a useful representation of how the organization builds itself through transforming and transferring substance, by depicting on available factors that is also managed by the economic engine associated with the business. The social and economic value of business model is personified in matter that may be digital in terms of information, analog in terms of tangible assets, private, public, or other categories of factors which may consist of resources, capabilities, interdependent networks, structures or governance choices (Arend, 2013). In this study, we study the business model concept in an organization, how the same works as the blueprint of how a company does business. Further, it provides an insight to understand the importance of e-commerce business models and explore their connections with various e-commerce businesses prevailing currently in India.

Business Model: Conceptual Overview

The concept of Business model was given in 1994 by Peter Drucker, who never used the expression. His theory was based on the assumption of what are the things that a business will, or not, do in the market, including the technology and its dynamics, about a company's strengths and weaknesses (Ovans, 2015). A business model is a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific organization. As a result, the organization should consider which concepts and relationships allow a uncomplicated description and representation of what

value is provided to customers, how this is done and with which financial consequences (Osterwalder et.al., 2005). Business model mainly shows the idea behind the organization as of how it functions and creates value. Also, defined as ‘stories that explain how enterprises work’, to find the logic by which the organization earns money (Magretta, 2002). The term business model basically shows that it is the way of doing business by any organization while some author shows that it is the model (Galper, 2001; Gebauer and Ginsburg, 2003; Gordijn, 2002; Osterwalder, 2004). Both the aspects reflect different scenarios as the former shows the way a company normally does business, On the other hand, the latter refers to the theoretical aspect of the way a company does business, so as to deal with the prevailing scenario around it. Instead of the popularity of the concept of business model, there has not been any commonly established definition of it (Shafer et al. 2005). Although now the business model concept has arisen as specifying as the way a firm creates and captures value (Zott et al., 2011). Further, it includes the architecture of revenues, costs and profits connected with the business organization delivering that value (KBC Saxena et al., 2017).

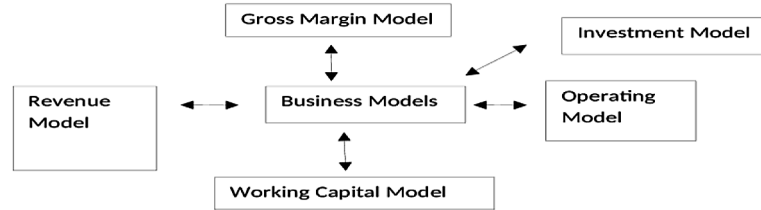
With regard to the terms ‘strategy’ and ‘business model’, some people use them interchangeably, but the difference between strategy and business model is that the business model shows how different aspects of a business fit together, whereas the concept of strategy also embraces competition in it (Magretta, 2002). Moreover, business strategy shows how to implement and adapt the business model and financial realities in a continuously changing world. Business strategy is how you grow your business, what do you do when your business model isn’t working. Therefore, business strategy is adding up of other business models that work in parallel with the main business model. Even though organization’s business model is a simplified demonstration of its business concept, it is rarely described clearly in its conceptual way. This shows that, in many situations, people are not always able of communicating their business model in an apparent way (Linder and Cantrell, 2000).

John Mullins and Randy Komisar (2009) provided five pillars on which successful business model stands on, First one, is the revenue model, where the money that comes from a customer, who is willing to buy what the company sells. Revenue models at times get exhausted, when the products on which they are based are simply copied. Second one, is the Gross margin model which is the difference between revenue from sales and cost for production, basically the money which remains after the payment of direct costs. Third one, is the Operating model which includes fixed costs that are indirectly paid for production. Fourth one, is the Working capital model which is about the cash that should be available to ensure fluent operation until the customer pays for the goods. Working capital is basically the cash a company requires having on hand in the short term to remain their business running in the form of payments to be done, such as to employees, suppliers. The hard truth regarding working capital is that, it doesn’t matter how innovative product or devoted customers you are dealing with, if you have scarcity in terms of cash on hand to keep the business running, the organization will be out of business, as the situation has been faced by various organizations during financial crisis. In reality, running out of working capital drives various infant organizations to shut down initially. Finally, the investment model, which is about the usage of money, that the company wants to invest for the further development of business. It is all about how much money an organization require to get into business, together with some extra money for the hard times in the initial stage. The authors said that, to be successful, organizations must look for harmony in all the five models (Figure 1). Other than the above model, various authors also provided some more models, explaining the concept of business model. Business is, by no means, so simple, as in reality they have multi-faces. So, to provide balance and stability, the five elements of business models should be well synchronized and work together for the development of the organizations.

Business Models

Figure 1. Five pillars of business model

Source: Prepared by the author based on John Mullins and Randy Komisar (2009)



In the Business model concept, the Business Model Canvas (BMC) also holds an important place, which was developed by Alex Osterwalder and Yves Pigneur, and was created with a group of 470 practitioners from around the world. It presents a simple, visual, one-page canvas on which we can design, innovate and dialogue about our business models. This framework is not the only one to define business model, there are others as well (Figure 2) (www.businessmodelgeneration.com).

The Industry Life Cycle theory perceives that the new radical or architectural innovations are generated through opportunities which are created by the changes in technological possibilities, customer inclination or government policy (Abernathy & Clark 1985). The industry surfacing is also a product or an opportunity that may be because of technological change, encourages the entry of a large number of organizations, and the introduction of various other kind of product or service innovations were developed (Klepper 1996). And therefore, the emergence of e-commerce organizations is may be of this technological shift.

According to Osterwalder & Pine (2013), the changes in the classical business model which includes placing the store at the location of potential buyers and exhibition of goods and services for sale to them, started in the 20th -30th century itself, called bait-hook (also known as 'razor-blade' or 'related products'). Examples of such products are razors and blades, mobile phones and communication services, printers and cartridges, cameras and photography. Further in 1950s, new business models based on organiza-

Figure 2. Business model canvas

Source: www.businessmodelgeneration.com

<p>Key Partners </p> <ul style="list-style-type: none"> Who are our key partners? Who are our key suppliers? Which key resources are we acquiring from partners? Which key activities do partners perform? 	<p>Key Activities </p> <ul style="list-style-type: none"> What key activities do our value proposition require? Our distribution channels? Customer relationships? Revenue streams? <p>Key Resources </p> <ul style="list-style-type: none"> What key resources do our value proposition require? Our distribution channels? Customer relationships? Revenue streams? 	<p>Value Propositions </p> <ul style="list-style-type: none"> What value do we deliver to the customers? Which one of our customer's problems are we helping to solve? What bundles of products and services are we offering to each customer segment? Which customer needs are we satisfying? 	<p>Customer Relationships </p> <ul style="list-style-type: none"> What type of relationship does each of our customer segment expect us to establish and maintain with them? Which ones have we established? <p>Channels </p> <ul style="list-style-type: none"> Through which channels do our customer segments want to be reached? How are we reaching them now? How are our channels integrated? 	<p>Customer Segments </p> <ul style="list-style-type: none"> For whom are we creating values? Who are our most important customers?
<p>Cost Structure </p> <ul style="list-style-type: none"> What are the most important costs inherent in our business model? Which key resources are most expensive? Which key activities are most expensive? 		<p>Revenue Streams </p> <ul style="list-style-type: none"> For what value are our customers really willing to pay? For what do they currently pay? How are they currently pay? How would they prefer to pay? How much does each revenue stream contribute to overall revenues? 		

tional, managerial and marketing innovations was developed by McDonald's and Toyota. In the 1960s, the innovators were Wal-Mart. Since then, various business models have been discovered, and e-commerce business models are one of them. The business model provides an integrative term for reducing complications, particularly in newer e-businesses (Zott et al., 2011). Further, the business model can be a source of competitive advantage that is distinct from the firm's product market position (Christensen, 2001). Therefore, it helps in simplifying the networks of complicated interdependencies into rational stories for the long term success.

E-Commerce Business Models: Some Illustrations From India

The e-commerce business model is like architecture for the product, service and the information flows, together with a description of the various business actors and their roles, as well as a description of the potential benefits for various business actors and the sources of the revenue. (Timmers, 2000). In terms of main activity, a business model for e-businesses can focus on creation of money by selling goods or services. Or it can shape out a role in order to be profiting through customer-management services that envelop around providers offerings with the help of highly valuable sales techniques, suitable or exciting buying experiences, or guidance about the product or service (Linder & Cantrell, 2000). Various researchers argued that there have been differences between the traditional economy and E-commerce (Table 1). According to some of them, there is a paradigm shift in nearly every area of strategy, whereas others claims that internet, mobility etc. are just technological changes, as they are not something which can be related with the change in economic structure (Eisenhardt and Sull, 2001; Fjeldstad and Haanæs, 2001; Lorange et al., 2003; Porter, 2001; Venkatraman and Henderson, 1998).

In 21st century, the concept of e-commerce, e-business and digital economy is not new; but, today, they hold an important place in any economy. According to Kelly (1998) & Wirtz (2001), the concept of an Internet economy is based on three key characteristics: on digital technologies, intensively inter-linked, and global. The expression "Internet economy" highlights the networking of economic actors and processes through means of electronic communication media and the associated change in structures of value creation, mechanisms of market function, professional life, and consumption patterns (Fichter, 2003). A business model that aims to make use of and utilize the distinctive qualities of the Internet and the World Wide Web is known as e-commerce business model. E-commerce business has been classified into Business to Business (B2B), Business to Consumer (B2C), Consumer to Consumer (C2C) and Consumer to Business (C2B). Further, Afuah and Tucci (2003) also identified four profit-formulas for e-businesses: Commission, Advertising, Mark-up and Production.

In the recent years, there has been noteworthy transformation in the way India shops and trades. And in this the role of E-commerce is the prominent one, as it has taken the world of retail by storm and fascinated the thoughts of an entire generation of entrepreneurs with various business and commercial models in this field. The E-Commerce business in India was worth Rs. 351 billion in 2011, grew at a Compound Annual Growth Rate of 37% to touch Rs. 1257 billion in 2015, and is estimated to reached at Rs. 2,110 billion in 2016 (UNIDO, 2017). This growth is attributed to various factors, such as rapid adoption of technology by Indian consumers, large increase in the number of internet users, new enabling technologies, innovative business models and alternative payment options offered by E-commerce companies.

Business Models

Table 1. Strategy approaches in traditional vs. E-commerce economy

Organization's Environment Forming Process	Strategy Approaches in Different Economies	
	Traditional Economy	E-Commerce
1. Domain selection	Competitive strategies Domain claim Strategic alliances Internationalization	Virtual organizing Networks – Relations – Trust Resource based view Cooperative strategies
2. Service delivery processes and technologies	Distribution chains Logistics	Service management Value networks Quality Internet
3. Organization structure and resources	Socio-technical school Human resources	Knowledge and learning Intellectual capital Knowledge management Temporary and virtual Organizations Dynamic capabilities Strategy as simple rules

Source: Adopted from Eisenhardt and Sull, 2001; Fjeldstad and Haanaes, 2001; Hagel III, 1996; Lorange et al., 2003; Miles and Snow, 1978; Porter, 1985; Porter, 2001; Tapscott et al., 2000; Venkatraman and Henderson, 1998) and Pynnönen, 2004.

Table 2. Current ecommerce business models in India

E-Commerce Models	Leading Organizations
B2C E-Commerce marketplace	Snapdeal.com, Amazon.com, Flipkart.com
B2C E-commerce inventory led	BigBasket.com, FirstCry.com, Zovi.com
B2C E-commerce aggregator	Uber.com, olacabs.com
C2C E-commerce	Cloudacar.com, quickr.com, olx.in, Fxchng
B2B E-commerce	mjunction services limited (metaljunction, coaljunction, buyjunction, cloudBuy.com, tolexo.com, industrybuying.com, power2sme.com, Amazonbusiness.com
Omni-channel Retailers	Shoppers Stop Ltd., Infiniti Retail Limited, Croma, Raymond Limited
Vertical Specific E-Commerce Companies in India	
Online Travel	Makemytrip.com, yatra.com, cleartrip.com, goibibo.com
Online Real Estate	Magicbricks.com, 99acres.com, commonfloor.com, Housing.com
Online Fashion	Jabong.com, Myntra.com, Zovi.com, yepme.com, limeroad.com, Fabfurnish.com, Pepperfry.com, Ajio
Online Furniture	urbanladder.com, pepperfry.com, woddenstreet.com
Online Education	Purple Squirrel Eduventures, Placess.com
Online Food and grocery	Zomato.com, Foodpanda.in, TinyOwl.com, BigBasket.com, Grofers.com
Online Self Drive Car Rental Services	Zoom Car, Myles, MyChoize, Drivezy
E-Wallet Services	PayTm, PayUMoney, Mobikwik, State Bank Buddy, Momoe

Source: UNIDO, 2017 and Improvised by the author

A flourishing ecommerce business needs an insight and understanding of the market. Further, it should be supported by a firm business plan and research into the ecommerce business models. Table 2 above represents some of the major current e-commerce business models running in India. Flipkart, Amazon and Snapdeal function on a B2C e-commerce marketplace business model. Where they charge sellers to list products on their website, upon successful completion of a transaction they charge the seller a commission depending on volumes. Further, revenue is generated from logistics/shipping charges from end users, sellers or both, in addition to convenience fees, personalization and so on. Snapdeal is a pure marketplace. Flipkart is a managed marketplace via its in-house retailer, WS Retail. Amazon is a courier company of its in-house retailer, Cloudtail retail. Therefore, Amazon and Snapdeal are poles apart, whereas Flipkart is a mixture of the two.

Bigbasket works on B2C inventory business model. In e-commerce, there are following inventory based business models: *Dropship model* – which is based on zero inventories of the products, just pack and ship product as per order is received from the customers; *Inventory model* – in which large scale warehouse to small storehouses are used to procure or store the products, packed and shipped as per customer orders from the warehouse itself; *Hybrid model* – This model is the mix and match of above two models and is based on the demand for products on the basis of which the inventory and margins are decided. In procuring and placements, the organizations adapt very serious process for well margins. Also, the bigger brands participate through various promotional techniques to increase their sales, so as to keep generating revenue in the business. On the other hand, Firstcry works on a hybrid business model. So, apart from the online presence, Firstcry also has over 100 franchise stores across India, and they also incorporate various promotional activities to increase their share.

Moreover, Ola and Uber is based on B2C e-commerce aggregator business model that is revenue sharing of rides provided by these aggregators to drivers registered to their app based customer attraction service. Both the organizations do have different promotional schemes to attract more customers and drivers to get their service which varies from time to time in both the firm, sometimes even city to city. Further, online classifieds business model is based on C2C e-commerce business model in which both buyers and the sellers are consumers. Examples of such Business Model classified sites are Olx, Quikr, Fxchg and others. These businesses work only as “medium”, and both Buyer and Seller are Consumers. The website just connects the possible Buyer with the possible Seller, and it has no function related to any Payment or Product/Service delivery associated with the deal. And finally, the Vertical e-commerce business model, which is different from horizontal one, as the former players are specialists. So, an on-line retailer that only sells fashion products is a vertical e-commerce business. So, is one that only sells furniture. As they focus on one, or few product categories, they can persuade the user experience in a way that highlights the special features of the product category. The examples of these category businesses in India are Jabong, Myntra, Azio, Urbanladder, ZoomCar, PayTm etc. Therefore, till now, doing business through the Internet was profitable and, consequently, there has been a considerable interest in defining how it formed part of new business structures.

CONCLUSION

In this outset, it is now clear when and how business model thinking can support entrepreneurial start-ups, like e-commerce gain resources, or explore more profoundly how different business model can operate as a restraint or an opportunity for managerial thinking in established organizations. This will definitely give new insights into how organizations innovate their business models, become accustomed to new technological, environmental and market challenges. Further, business model structure has an integral assumption of certain amount of uniqueness and, therefore, this makes it clear that a single business model can't be generalized. Also, the digital era has made it necessary that the accessibility of suitable levels of information and knowledge has become vital for the success of an Organization. Therefore, organizations should acclimatize, in order to go on and succeed in a world of increasing complexities related with the changing environment scenario (like innovation, technologies, processes). Through improving their capacity to react rapidly to quick environmental changes with high eminence, business, business decision with the help of competitive business model will make organizations survive for a long term.

In India, the E-commerce business from being worth just about \$3.9 billion in 2009 has grown upto worth \$38 billion in 2016, and it is anticipated to generate about \$100 billion in revenue by 2020 (We Are Social, 2016). Cash on Delivery or Online payment, Cyber attacks on customer data, Lack of internet connectivity, Legal regulations, Return and Refund issues are some of the biggest challenges for e-commerce business in India. So, the organizations must develop their business model, keeping in view these challenges. Further, various initiatives by government of India, such as Digital India project and the modernization of India Post, will also affect the E-Commerce sector and, therefore, will lead to some new innovations and developments in the business models. The Digital India project aims to offer on one-stop shop for government services that will have the mobile phone as the backbone of its delivery mechanism. Therefore, such programmes will give a strong boost to the E-Commerce market by bringing the internet and broadband to remote corners of the country. And, further, this will give rise to an increase in trade and efficient warehousing, providing growth and development of the organizations.

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Chapter 23

Firm Performance and Business Models Based on Exports: Can This Shy Flirtation Become a True Love Story?

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ABSTRACT

This chapter aims to contrast if internationalization is a key element to explain the performance of a company, especially focusing on small and medium-size enterprises (SMEs), and to identify if a business model (BM) based on exports leads to more successful companies. There is a broad theoretical body and a representative set of methodological approaches in this area of knowledge; however, the conclusions reached are very different and in many cases hardly comparable, being limited to a specific temporal and geographical scope. For the purpose of giving a step further in the investigation of BM based on exports, the SMEs from the Autonomous Community of Galicia (Spain) are analyzed through an exploratory research over the 2002-2013 period. The empirical analysis takes into account a range of firm variables linked to both firm management and fixed factors, such as the type of sector, the location, and the economic situation.

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INTRODUCTION

The link between corporate performance and the firm's ability to export or to take international dimension is a recurrent topic in the economic literature related to business models (BM) and it has been addressed from different approaches over recent decades (Li, 2007). However, it is clear that this is a complex issue in which no consensus has been reached and there are still many research questions to be answered (Glaum & Oesterle, 2007; Kamakura, Ramón-Jerónimo & Vecino, 2012; Majocchi, Dalla & D'Angelo, 2015).

Throughout the last decades the world economy has undergone a vertiginous internationalization process and international trade has grown faster than global GDP. Faced with this situation, the important segment of small and medium-sized enterprises (SMEs) has known a rapid international expansion and many governments have played an active role in developing policies for their companies to increase their geographical scope and serve as a lever for economic growth.

Therefore, the internationalization of enterprises, especially SMEs, has been one of the issues that has been investigated in greater depth in the literature focused on international business in recent decades. This study has been approached from both empirical and theoretical point of view, by taking into account an important range of modeling and approximations to explain the phenomenon of internationalization.

There is a wide variety of objectives (that also intermingle with each other) behind the internationalization of companies outside the domestic markets. These objectives can range from the excessive maturity of the national markets and their saturation to the profitability offered by international projects, or even by the possibility of generating economies of scale that strengthen the competitiveness.

One baseline study in this field of work was carried out by the so-called Uppsala group (Johanson & Vahlne, 1977). They started with the assumption of considering the process of internationalization as gradual and evolutionary. Thus, through a nested set of phases, companies are learning and generating the necessary resources to develop their activities outside their domestic home market. They suggest that companies accumulate experience and knowledge in the international arena as they carry out more operations in it. In this way, they are weaving, at the same time, a dense network of relationships.

The investigations undertaken subsequently are based on very heterogeneous theoretical basis (Glaum & Oesterle, 2007), though many authors consider internationalization as an evolutionary process (Johanson & Vahlne, 1977) in which businesses increase progressively their interest in international operations as a driver of growth (Kamakura et al., 2012). The criterion of geographical and cultural proximity is usually a key factor when the first export destinations are chosen. As the knowledge of international markets increases, businesses take the leap to more direct export methods.

This reality is justified on the hypothesis that companies that have an international presence develop important skills when they undertake their activity in foreign markets and on the hypothesis that the competitive success of a company is what enables it to export. Thus, the international expansion allows the company to compete with other companies, sell to new customers and learn new work methodologies. This reality will serve to improve the competitiveness in a process of continuous growth over time. Nevertheless, an approach based on businesses that are born global or become global is being carved out since the last decade of the 20th century (Oviatt & McDougall, 1994).

It is common to consider a positive relationship between innovation and export intensity. Innovation is a complex concept. If we stick to the technological level, different studies have considered that this is a relevant factor to explain the internationalization of SMEs, and that high technology companies are more internationalized than low technology companies. In fact, a strategy of rapid internationalization

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can be the key to achieve the volume of turnover necessary before this technology or innovation can be imitated or lose the innovative character. Thus, the fact that a company is born global can be a direct consequence of its own nature based on high technology products and the company has no other viable strategic option.

Difficult local environments that hinder the survival due to the increase in competitive intensity are also a reason why a company launches into foreign markets. In these cases, domestic economic policies can direct their efforts towards the creation of programs that encourage the process of expansion on foreign markets for both traditional companies and entrepreneurs who have recently started their activity.

When the research focuses on companies, the different characteristics of them are usually taken as benchmarks to study their competitive advantage and the implications that would have for both the company managers and the economic policy authorities. Some of the distinctive features considered are size, age, experience, organization, structure, innovation, and a host of issues usually grouped into a limited set of factors. There is no unanimous evidence about which aspects define the entrepreneurs that operate internationally and which aspects exert a greater influence on both the export process and the company global performance. However, size and age are some of the factors that have usually been used as indicators of the international activity of a company. The theory of phases indicates that companies start from the domestic market to gradually move to the international arena by always looking for the less risky scenarios. Thus, achieving a critical mass, in financial, technological and human resources, is a matter of great importance so that the internationalization process can occur. This is why the approach that initially holds that larger companies have more capacity to compete successfully in international markets is based on the fact that most SMEs suffer from significant resource limitations.

The basic aim of this work is to determine to what extent export together with a set of firm characteristics are relevant elements to explain the corporate performance of the SMEs in the Spanish region of Galicia in the period 2002-2013, and how the economic conditions may influence the relationship between these variables. The proposed analysis is exploratory. This research focus on analyzing the dependency structure between firm performance and other quantitative firm variables (such as existence of exportations, turnover, location, number of employees, etc.) for the purpose of studying whether a BM based on exportations help companies achieve better business results. To this end, companies from the Autonomous Community of Galicia (Spain) with fewer than 500 employees and belonging to all sectors are considered. Data is obtained from the database ARDAN which contains data of Spanish and Portuguese companies.

Based on the above, this chapter will be structured as follows. First of all, some of the most relevant issues developed up to now in the literature on this subject are developed with meticulousness. Then, the research is initially built upon a descriptive analysis and an analysis of variance and it pursues by proposing an explanatory model through a multiple linear regression. After explaining the methodology and data used, a descriptive analysis is carried out for the 2002-2013 period with the objectives of (i) studying the geographical and sectorial distribution of the companies surveyed, and (ii) analysing the return on assets (ROA) evolution of exporting and non-exporting SEMs over time. Subsequently, an analysis of variance is made to discover what the variables driving changes in the ROA are. Additionally, the relationship between performance and other quantitative variables, which defines the Galician SMEs, is modelled using multiple linear regression. Finally, the most relevant conclusions are summarized, including the limitations of the model, and a door is open to new research on the basis of the results observed.

BACKGROUND

A General Overview of Internationalization

Literature on the relationship between firm performance and export capacity shows a lack of consensus and great heterogeneity in conclusions. In fact, while many authors find evidence to support a positive relation between performance and exports, based on the idea that exporting companies strengthen its competitiveness (Bernard & Jensen, 1999; Ling-Yee, 2004; Annavarjula & Beldona, 2000; Pangarkar, 2008; Ellis, Davies & Wong, 2011), other authors conclude that this relationship may have the form of an inverted U, according to the economic principle of the decreasing marginal return (Gomes & Ramaswamy, 1999; Li & Qian, 2005); the form of an S according to a process of convergence, deterioration, reorientation and return to convergence (Contractor, Kundu & Hsu, 2003; Lu & Beamish, 2004), and even not a significant relationship (Ramírez-Aleson & Espitia-Escuer, 2001).

Bernard and Jensen (1999) demonstrate that export is not the immediate cause of increase in productivity, although it generates expansion opportunities for companies with highest productivity, which, in turn, could lead to more stable employment. Yi and Wang (2012) or Serti and Tomasi (2014) show that (i) the variables business size and productivity are positively related to the chances of exporting, and (ii) geographical location and closeness to other exporters also help companies reduce costs and start to export. Giovannetti, Ricchiuti and Velucchi (2013) demonstrate that in the small Italian businesses there is a clear link between the socioeconomic context (geographical location, closeness to infrastructures, etc.) and performance, and the same applies to export propensity. Nevertheless, this relationship is much smaller in the case of large Italian companies.

Another example that illustrates the heterogeneity of conclusions is the Serra, Pointon and Abdou (2012) investigation. These authors analyze the companies from the textile sector in the UK and Portugal and they show different results for the two countries: e.g. firm size is important in Portugal, but not in the UK. To this heterogeneity, it should be added that there is a large literature on making deep analysis of a small number of companies over a not very long period of time (e. g. Pangarkar, 2008; Majocchi et al., 2015; Boehe, Qian & Peng, 2016) which, according to Kamakura, Ramón-Jerónimo and Vecino (2012), it is not always helpful to capture the dynamic character of exports. It should also be noted the abundance of works related to large listed companies (Gourlay & Seaton, 2004; Li & Qian, 2005; Annavarjula & Beldona, 2000; Glaum & Oesterle 2007), although more and more authors are interested in what happens with SMEs (Westhead, Wright & Ucbasaran, 2001; Kalinic & Forza, 2012; Majocchi et al., 2015).

Gourlay and Seaton (2004) found that firm size, innovation or human capital were essential attributes in gaining access to export markets. In the same vein, Kamakura et al. (2012) conclude that key factors for the international development of a business are: human capital, technology and managerial relationships. Javalgi White and Lee (2000) noted the importance of including characteristics linked to management to forecast with more accurately the exporting behavior. They also conclude that the contribution of firm characteristics to the export propensity varies by industry. In this line, Kalinic and Forza (2012) deduce that the decisive factor that explains the successful change in the internationalization of traditional SMEs is based on a specific strategic approach.

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Other works in this area have focused on the institutional support perspective. For example, Westhead, Wright and Ucbasaran (2001) conclude that economic policy-makers get better expectations of success by encouraging exporting companies to redouble its efforts than boosting the increase of potentially exporting companies.

The main theories on the internationalization of SMEs suggest a gradual evolutionary process marked by a set of stages with a defined order. However, studies in this field of knowledge, for both methodological and approach issues, are biased and only partially explain the sequence of export decisions. The models that deal with the internationalization process and the export decisions are not a recent trend in the literature. The seminal paper by Johanson and Vahlne (1977) already proposed a step-by-step model focused on the progressive acquisition, integration and use of knowledge of international markets.

Nevertheless, companies that were born with an international perspective since its inception are an increasingly frequent reality and that clashes with the traditional conception of the characteristics that a company should have. In recent years, it has been common to see how SMEs that did not export began to internationalize and invest abroad. More than two decades ago, Oviatt and McDougall (1994) became interested in the phenomenon of new companies with an international vocation since birth. In their work, they brought together a classic vision of internationalized companies with a perspective based on entrepreneurship and non-conventional organizational structures within the company. However, they came to the conclusion that companies with an international vocation from the beginning were based on a competitive need determined by an insufficient internal market.

Years later, Contractor, Kundu and Hsu (2003) made a theoretical contribution that started from the conceptualization of international expansion in three different stages. The sample to verify this theory integrated two hundred service companies for a period that spanned from 1983 to 1988. They concluded that a greater degree of international presence increased the performance of companies. However, they left evidence of an interesting fact. In an early phase of internationalization, a decrease in company performance could occur. This fact was considered to be caused by the costs associated with the learning curve, the lack of experience in the markets they were directed to or an insufficient size at the international level. Another interesting conclusion of their work is that excessive international expansion towards many countries can lead to a negative effect on performance. This is due to the increasing coordination and management costs that would be higher in proportion to the income obtained from the internationalization process.

It is usually assumed by the literature that company performance improves with the internationalization process. However, recent studies conclude that U-shaped and even inverted U-shaped relationships can occur. In this sense, a multitude of empirical studies tried to deepen the connection between multinationality and company performance (Gomes & Ramaswamy, 1999). In this sense, Annavarjula and Beldona (2000) conclude that it is necessary to give a new dimension to the concept of multinationality through a new multidimensional approach.

The conclusions reached by the different investigations on this subject have led to contradictory results on the relationship between internationalization and business performance. Annavarjula and Beldona (2000), through the revision of more than twenty empirical studies between 1971 and 1998, come to the conclusion that the effects on the profitability of companies are especially complex.

Different Purposes and Approaches

The relationship between the business model and export has been approached from many points of view. This is why this review will start by looking at a general perspective, from studies that use samples from companies that are not specifically SMEs and, subsequently, it will continue with an analysis from the perspective of SMEs.

Bernard and Jensen (1999) used a regression in their work for the period 1984-1992. The aim was to analyze the causes of the superior performance of exporting plants as opposed to those that were not. Li and Qian (2005), using a sample of large US Fortune 500 companies, set out to investigate the joint effects of diversification on the performance of the company by country, region and product. On the other hand, Giovannetti et al. (2013) studied how Italian-based companies depend on both individual and geographical and institutional characteristics.

Taking into account the decision of companies to export, authors such as Javalgi et al. (2000) tried to verify if the decision to export is influenced by the characteristics of the company. To do this, they applied a logit model on data from US manufacturers. In turn, Gourlay and Seaton (2004) also investigated, by applying logit and probit models, the determinants of the propensity to export. In this case, the study focused on companies in the United Kingdom for a temporary period ranging from 1988 to 2001. Ling-Yee (2004), based on a sample for the People's Republic of China, evaluated the existing relationship between knowledge of international markets and export intensity. He developed a model based on the characteristics that determine the knowledge of non-national markets, making special emphasis on how the relational and structural social capital affects that knowledge.

Likewise, Yi and Wang (2012) applied an econometric model to evaluate the decision of companies to enter international markets. To do so, they used a sample of the largest exporting regions of China for the period ranging from the year 2001 to the year 2003. Serti and Tomasi (2014) investigated the specific characteristics of both the country of birth of companies and the companies themselves. They wanted to know what the factors that influence the decision to expand into new international markets are and what the level of intensity is. For this reason, they focused on both exports and imports from Italian manufacturing companies in the period from the year 1989 to the year 1997.

Boehe, Qian and Peng (2016), using export data from Brazil for the period 2001 to 2010, studied the relationship and characteristics between the institutional environments of the countries of origin and destination, and concluded that differences can be amplified by the scope and variety of countries exported.

Concerning the research focused on SMEs, there is also a wide range of approaches in literature when the objective of study, methodology and data used are taking into account. As was the case in the investigations that do not specifically deal with SMEs, many of the studies have focused their objectives on investigating the business model chosen by the companies to start in a foreign market and the evolution undertaken. This is usual in the approach that maintains that company evolves through different stages based on variables such as market knowledge, kind of activity developed and commitment to internationalization.

A relatively recent article by Kamakura et al. (2012) used an empirical model, based on data of Spanish companies from the year 1991 to the year 2005, to analyze the elements that define the internationalization of a SME. They identified a series of stages in the evolutionary process: Domestic, Early Exporter, Advanced, and Global. Kalinic and Forza (2012) applied, instead, a qualitative approach with five cases of companies to investigate the mechanisms that lead traditional SMEs to a fleeting internationalization in totally new markets. They observed that the process of internationalization can accelerate in this type

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of SMEs and reach the goals in an increasingly global and competitive environment. On the other hand, Serra et al. (2012) tried to find out the management and organizational factors that contribute to increasing the propensity to export. In this case, the study included data from the textile sector of Portugal and United Kingdom, and the methodological approach was based on anova and main components analysis as well as multiple regression.

Lu and Beamish (2001), in a period covering from the year 1986 to the year 1997, started from the strategic approach used in the beginning of the activity to investigate the effects of internationalization on the results of the company. Pangarkar (2008) used data from Singapore to conclude that the degree of internationalization positively affects the performance of the company. Majocchi et al. (2015), using as a methodological approach a regression and a sample of Italian manufacturing SMEs for the period from the year 2000 to the year 2005, concluded that internationalization in itself is not synonymous with better performance on the part of SMEs.

On the other hand, Freeman, Styles and Lawley (2012) proposed an approach to this issue based on how localization, and the dilemma between regional and metropolitan area, affects both resources and capabilities as well as the company's export performance. This study included qualitative data from a panel of experts set up by government business advisers and managers of SMEs in Australia. Freeman et al. (2012) suggested that localization is a relevant element that influences access to networks, services, and infrastructures related to export in SMEs that perform export activities. As a consequence, it also affects the export performance.

Falk and Hagsten (2015) studied the relationship established between the status of the SME in terms of exports and its growth. To that end, they used a sample with data from nineteen European countries. They concluded that (i) there is evidence of this relationship, and (ii) the growth rates of production and employment in exporting SMEs are notably higher than in non-exporting companies. Love and Roper (2015), meanwhile, made a synthesis of this theme from the innovation, export and growth of SMEs, paying special attention to the effect that the relationship between innovation and export has on growth.

Love and Ganotakis (2013) studied the effect of export on innovative performance from a sample of companies from the United Kingdom. Ellis and Pecotich (2001) investigated, by using the case methodology, the impact of social ties on the decision to export from a sample integrated by different industries in Australia. The study concluded that the profile of the decision-maker is an essential element when the company starts its export process.

In turn, Chowdhury (2011) proposed an investigation on the impact of the financial crisis in two specific geographical areas. On the one hand, the US, Canada and Europe, and, on the other, China and India. He noted that in addition to the region where the crisis was born, countries with greater dependence on international markets, both commercially and financially, suffered an effect that was earlier in time and had greater intensity. Hilmersson (2014), using a sample of Swedish companies, also approached the issue of internationalization against the backdrop of the economic crisis. He studied the relationship between the different strategies applied by SMEs for expanding their activities outside the national scope and performance. He concluded that both the scope and speed of internationalization have a positive effect on the company.

Main Findings

Most of the works related in literature to the link between performance and BM based on exports, without focusing specifically on SMEs at this point, aim to contrast a set of hypotheses about the relationship

between the characteristics of companies and the effect they have on their performance or ability to internationalize. Li and Qian (2005) concluded that the effect of product diversification on company performance is positive at low levels of regional diversification. However, at high levels of regional diversification, this effect becomes negative. In the case of low levels of diversification by country, the effect of product diversification has a negative effect on business performance. On the other hand, at high levels of diversification by country, the effect does not go necessarily in the opposite direction.

Yi and Wang (2012) found that both investing abroad and larger companies base their external expansion on the superiority related to productivity. However, local SMEs consolidate their competitive advantage on the basis of the direct effects and the accumulation economies that arise. Boehe et al. (2016) showed that in the face of different institutional environments, the relationship between the performance of the company and export performance becomes negative. The results of Yi and Wang (2012) showed that sunk costs, quality of work, foreign ownership, industrial competition and special concentration are elements that affect the decision to export positively. However, state ownership has a negative relationship with the decision to export.

Boehe et al. (2016) found that there is a relationship in the same direction between export performance and intensity when the exporting companies belonging to an emerging country increase their exports to other emerging countries limited in number. Boehe et al. (2016) argued that it would be appropriate to use three dimensions when researching marketing strategies and territorial diversification. These dimensions would be the intensity of export, scope and destinations. The resources of each company together with the characteristics of the destinations can be used to calculate the extent to which the former becomes competitive advantages in international markets.

Bernard and Jensen (1999) concluded that export companies have higher employment, wages, productivity and capital intensity than non-exporters. It could be summarized by saying that good companies become exporters. In this sense, Bernard and Jensen (1999) found that the benefits derived from exporting are less obvious. Likewise, the growth of employment and the level of survival are greater for those companies that export. On the contrary, productivity and wage growth are not higher, especially if longer time horizons are taken into account. It is also concluded that export companies pay their workers higher salaries.

Javalgi et al. (2000) observed that the effect of the distinctive features of each company on the probability of export varies in each sector. Gourlay and Seaton (2004) pointed out that internal factors, such as the size of the company, human capital, innovation and product diversification, are very important to undertake the disembarkation in international markets. Gourlay and Seaton (2004) concluded that the exchange rate is not an important explanatory factor when it comes to jumping into export markets, but that the change in this rate does have a positive effect.

Giovannetti et al. (2013) concluded that the two basic variables for the result are the companies themselves and the diversity of the province. SMEs are positively influenced by social capital. In large companies, where their own characteristics predominate, success in international markets can still occur even if the economic situation in their provinces is unfavorable. In this sense, Giovannetti et al. (2013) showed that having a high percentage of target markets at the provincial level has a remarkable favorable effect in those firms that stand out as solid exporters. Based on this provincial vision, it follows that the companies that are part of the same areas reach a higher yield than the companies in the environment. However, other companies that are also in favoring environments do not manage to reach profit expectations.

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Serti and Tomasi (2014) concluded that those characteristics that support both the participation and the value of the exportations of a company are also a driver of imports. They deduced that changes in the variables that make up the market affect imports more than exports. Thus, Serti and Tomasi (2014) showed that some characteristics of the company, such as productivity, size, skill level or capital intensity, have a positive relationship with its participation in international trade. In this same vein, the characteristics of each country play an important role in shaping the participation of businesses in international markets.

Concerning the SMEs, the studies show that internationalization is, in the way as the strategic orientation and the business model, a complex issue that has been approached from very different angles. The results of the different empirical and theoretical studies suggest that the positioning of a company in the international arena should not be approached from a single perspective.

Whesthead, White and Ucbasaran (2001) proposed a statistical analysis to corroborate that the existence of previous experiences in international markets was a key element for exporting. They also concluded that companies with more experienced founders, i.e. with more resources, information, contacts and management knowledge, were more likely to be exporters. In this sense, the specific knowledge of the sector is also an important element.

Serra et al. (2012) found that, in Portugal, the size and training level of the managers were the essential factors to determine the probability of becoming an exporter. Thus, the size factor of SMEs is a key element. With a larger size, greater is probability of being an exporter. In contrast, for the United Kingdom, the most important factors are the age and costs. Concerning the attitude of the company's managers towards the organizational elements of exporting (planning, advertising and promotion), they are determining factors to explain the probability of exporting in the textile and clothing sector.

Yi and Wang (2012) showed that larger companies consider that sunk costs of export will be compensated with gains in production. In the case of SMEs, even if they have lower productivities, they can use grouping resources and new networks to surpass sunk costs and locate themselves in markets beyond their local scope. Ellis and Pecotich (2001) concluded that export companies do not usually choose foreign markets by making market research, but trying to use their contacts to minimize entry risks. Lu and Beamish (2001) concluded that, when companies start direct investment abroad, their profitability diminished. However, higher levels of direct investment in these markets result in higher returns. Majocchi et al. (2015) observed the important consequences for SMEs of the management and selection of new markets to internationalize, demonstrating that the selection process of the market is much more valuable than the degree of internationalization. Thus, the performance of the company is influenced by the location, with the characteristics of the market being relevant.

Lu and Beamish (2001) found that partnerships with partners who have a good knowledge of local markets can be an adequate internationalization strategy to overcome the shortcomings that SMEs face due to their limited resources and capacities. They also concluded that, given large differences in the consequences of export and foreign direct investment in the performance of the company, foreign direct investment can be a more useful tool from the competitive point of view than export. Pangarkar (2008) observed that the magnitude of internationalization positively impacts the performance of the company. This result is in line with a large part of the literature. There is also evidence, although with less intensity, that those companies that direct the resources towards higher potential environments obtain better yields. Likewise, the capabilities of companies also have an impact on the performance of those ones that have made the leap to internationalization.

Freeman et al. (2012) found the importance of the link and the effect that localization has on the export performance. Localization is a characteristic that affects the access of SMEs that export to networks and infrastructures linked to export activity and its performance. They also conclude that those companies located in metropolitan areas have a superiority over those located in regional zones. The export results of companies located in regional zones are not negatively affected by the lower relative competition in these areas. In turn, Whesthead et al. (2001) observed that the companies in the service and urban sector have a clear lower probability of exporting. A finding that they considered very relevant is that the variables very associated with the probability of exporting are not the same as those very associated with size, size and yield. Love and Ganotakis (2013) found that the companies in the service sector have greater facility to make their internationalization profitable in earlier phases than the manufacturing companies.

Chowdhury (2011) concluded that the companies with a greater international vocation in the field of trade and finance receive a more virulent and rapid influx of the global crisis. Concerning SMEs, they are more sensitive to the financial crisis and this effect increased. Chowdhury (2011) argue that although SMEs are not so related to foreign markets, they are more susceptible than large multinationals to the effects of external shocks.

Kalinic and Forza (2012) reached the conclusion that even though SMEs start, in an unfavorable context, without an international vocation and belonging to mature industries, which is another way of saying that usually they are traditional, they are able to overcome these barriers and carry out a process of accelerated internationalization. Kamakura et al. (2012) found evidence of a tendency toward stability with respect to their status from one year to the next over time. However, companies start in a state with a lower degree of internationalization and time they evolve, assuming more intensity in their links with the outside world. Thus, classic factors, such as distance, culture and international policies, affect the decision to expand into markets outside the national scope. In this case, for example, the jump to export by Spanish companies is mainly focused on the European Union market and, then, progress gradually towards new challenges (such as the OECD, South America or other countries).

Kalinic and Forza (2012) argued that a defined strategy is the most important factor to ensure that internationalization is a success. Other important factors that promote international commitment are: the capacity to structure networks in the place of international reception, a vision based on actively taking control and making decisions, and taking into account future events, together with an adaptable strategic vision. Kamakura et al. (2012) started from the fact that there is a lot of literature describing the importance of the partners or the connections that an international network offers to cover those cultural and spatial differences in the internationalization process. However, they concluded that the main way to internationalize was through the own resources and capabilities in combination with the own subsidiaries. This suggests that the current situation of a company, taking into account the potential of the markets in which it operates, diminishes the possibilities of becoming fully global, probably discouraging the search for new markets.

Love and Ganotakis (2013) observed that those companies that innovate the most have different entry and exit patterns in international markets than those that are less innovative. Thus, the consequences of exporting are also different. Kamakura et al. (2012) confirm the existence of essential factors, for the internationalization, such as those associated with human resources, technology and management. Love and Ganotakis (2013) found empirical evidence that continued exposure to international markets over time encouraged companies to overcome the problems linked to innovation, and that there is a positive effect of internationalization that makes innovative companies sell more of the new products.

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Falk and Hagsten (2015) showed that the intensity of the relationship between a company growth and its exporting character shows very high variations. For example, manufacturing SMEs have higher magnitudes. They obtained the conclusions that the exporting SMEs have higher growth rate of production and employment than non-exporting SMEs. Based on these conclusions, they support the approach of the policies to promote the exports implemented in the EU countries. Majocchi et al. (2015) highlighted the effect of institutional features, with special emphasis on political risk, even though the scarcity of resources has been one of the arguments pointed out in literature.

Implications for Managers and Policy-Makers

The process of internationalization affects both the management of companies and the managers. In this vein, Contractor et al. (2003) highlighted the importance for the managers of bearing in mind the negative aspects of early internationalization to adopt the necessary measures to reduce the initial costs of internationalization. Also, when dealing with highly internationalized companies, managers could temper growth if they were aware that they are reaching their optimum point. Li and Qian (2005) showed that managers must prioritize training, language proficiency and cost analysis. It is also very important to provide the necessary resources and give priority to planning and promotion.

In contrast, Gourlay and Seaton (2004) confirmed two issues of great relevance intended to the elaboration of public policies in face of those responsible. On the one hand, do not ignore the particularities between the different sectors and industries. On the other hand, the policies focused on promoting exports are recommended to be separated by distinguishing those that aim to encourage the presence of companies in international markets of those designed to encourage the propensity to export.

Concerning the SMEs, Love and Roper (2015) suggested the importance of policies based on improving skills and supporting R & D projects. Likewise, improving the access to financing is another vital issue. Pangarkar (2008) suggested that, in order to internationalize with certainty in a better performance, companies must have the necessary capabilities. Therefore, they suggested that SMEs keys to achieve this goal go through the development of a strong brand and technology, as well as providing the necessary financing and other skills on the part of the responsible for the company.

Regarding the implications that internationalization can have for the SMEs managers, Pangarkar (2008) noted that the costs associated with this process are lower than the benefits generated for the company. Other authors, such as Oviatt and McDougall (1994), suggested that companies should be internationalized with determination. According to Freeman et al. (2012), the implications for decision-makers, although assuming a challenge, are based on establishing networks and taking advantage of them as well as on accessing to infrastructures and services. Networks can be used for different purposes, such as achieving emerging market opportunities, increasing the available information, weaving links with other agents in the sector or promoting the brand image.

Hilmersson (2014) highlighted that internationalized SME managers should take into account the possibility of steering the sales to several countries, in order to diversify risk and attenuate the variations in sales during times of crisis. Pangarkar (2008) suggested that determining whether it is convenient to acquire the capacities first and then export, or vice-versa, is an important question. In this sense, certain evidence has been found that international expansion helps develop these capabilities.

Freeman et al. (2012) determined that SMEs need the support of government institutions to promote exports. In this sense, the knowledge of markets and the identification of the most appropriate networks or opportunities in specific markets are considered relevant elements. Thus, Freeman et al. (2012) high-

lighted how important is that public officials properly understand the different types of companies to develop effective programs in the field for the promotion of internationalization. A particularly relevant issue is the promotion of the necessary skills.

Hilmersson (2014) concluded that, at an international level and in times of crisis, the physical scope of a company's sales is more important, as a forecaster of its performance, than the scale of these operations. In this sense, Hilmersson (2014) suggested that, in companies that begin their internationalization process, managers should decide on a strategy of rapid internationalization. Thus, in times of crisis, the companies that do not lay eggs in the same basket have better prospects for better performance.

GALICIA: A CASE STUDY FOR SMEs

Methodology and Data

In order to study the relation between the SMEs performance and the BMs based on exports in the Autonomous Community of Galicia (Spain), the ARDAN database is used. This database includes data from more than 10,000 companies. Since the study focuses on SMEs, it is important to clarify what are the factors that determine when a company is considered as small, medium or large. In the European Union (Commission Recommendation of 6 May 2003) the main criteria to determine whether an enterprise is a SMEs are as follows: having a staff headcount less than 250 employees, generating an annual turnover below €50 million, or having a balance sheet below € 43 million. However, the figure that is usually considered as a cut-off point outside Europe is 500 employees (Lu, & Beamish, 2004; Majocchi et al., 2015). That is why the study is focused on all sectors Galician companies with fewer than 500 employees.

Concerning the performance of companies, it should be noted that it can be expressed with several measures such as the sales turnover (Gourlay, & Seaton, 2004), the ratio of profitability on sales (Contractor et al., 2003, Boehe et al., 2016), the Q of Tobin (Pantzalis, 2001), the return on assets (ROA) and the return on equity (ROE) (Lu, & Beamish, 2004, Thomas, & Eden, 2004, Annavarjula, & Beldona, 2000; Majocchi et al., 2015). ROA is the most used in practice, followed by ROE, and this is why ROA is used in this work as a measure of performance.

In this research, a descriptive analysis is initially carried out for the period 2002-2013, in order to study the geographical and sectoral distribution of the companies considered, and see the ROA evolution of both exporting and non-exporting SMEs over time.

The main aim is to analyze the dependency structure between the ROA and several factors and quantitative variables that define the Galician businesses. Some of the factors considered are the sector of economic activity, the location of the businesses, the time (in years) and whether the businesses export or not (0 or 1, depending on whether the company in question does not export or does export, respectively).

An analysis of the variance is subsequently conducted to discover the factors that cause changes in the ROA. It will be evaluated if the impact of the economic sector, or the location of the business, significantly influence the response (profitability). Finally, multiple linear regression is used to know to what extent the sector of activity (sector), the number of employees (employees), the turnover (turnover), the location (location), the export (exporting), the time (time) and the GDP (GDP) influence the economic profitability of Galician SMEs (Table 1).

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The multiple linear regression model used is described in (1). Robust linear adjustments (against outliers) and generalized additive models (GAM) were tested, with soft effects of the regression variables (X), but the result was not better.

$$\text{ROA} = \text{Sector} + \text{Exporting company} + \text{Employees} + \text{Turnover} + \text{Location} + \text{Time} + \text{GDP} \quad (1)$$

Results

Descriptive Analysis

Galicia is an Autonomous Community with a clear exporting vocation. Among the 17 Autonomous Communities of the country, it ranks sixth in terms of export volume (reaching 7.5% of the total value of the country's exports), and in the thirteenth position, taking into account the proportion of exporting companies among its business population. This indicates that with a smaller number of exporting companies than other communities, it is capable of carrying out a greater activity. This export capacity is not homogeneous among the 4 provinces that make up the Community; the provinces of A Coruña and Pontevedra have the most companies and the best position by volume of exports (Table 2).

With regard to SMEs, the proportion of export companies is around 10%, and that is the sample of companies analyzed. The distribution of these companies varies according to the sector of activity, being higher in the sectors of manufacturers and wholesalers as also happens in the case of non-exporting companies (Figure 1). In addition, Figure 2 shows the sectors of activity with more than 2% of the overall number of companies.

Table 1. Elements of the model

Economic Performance					
Management Dimension		Fix Dimension		Environment Dimension	
Employ	Billing	Export	Sector	Location	GDP

Source: Prepared by the authors

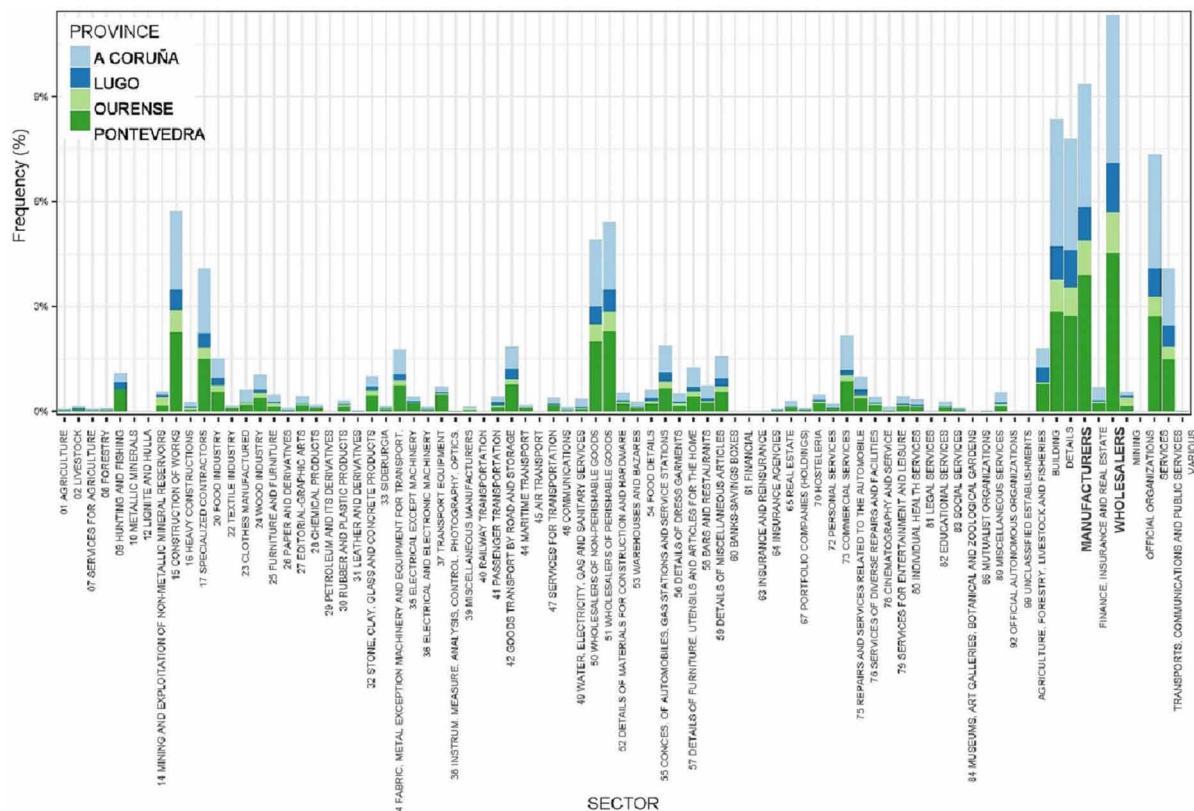
Table 2. Export capacity of the provinces of the autonomous community of Galicia

	Position (by export volume)	% exporting companies / total country
A Coruña	5	1.5%
Lugo	42	0.5%
Orense	40	0.5%
Pontevedra	6	2.5%

Source: ESTACOM Data Base (ICEX)

Figure 1. Sectoral distribution of Galician SMEs

Source: Prepared by the authors from ARDAN



When studying if there are differences in the ROA generated by the exporting and non-exporting companies, a quite similar behavior is observed among them, being the probability that the company has an average ROA between 4 and 5 slightly higher in the exporting companies. Figure 3 shows the comparison between density functions, estimated using kernel methods (with Gaussian kernel and optimal window obtained by the method of Seather and Jones (Venables & Ripley, 2002)), which allows us to highlight the soft superiority of export companies.

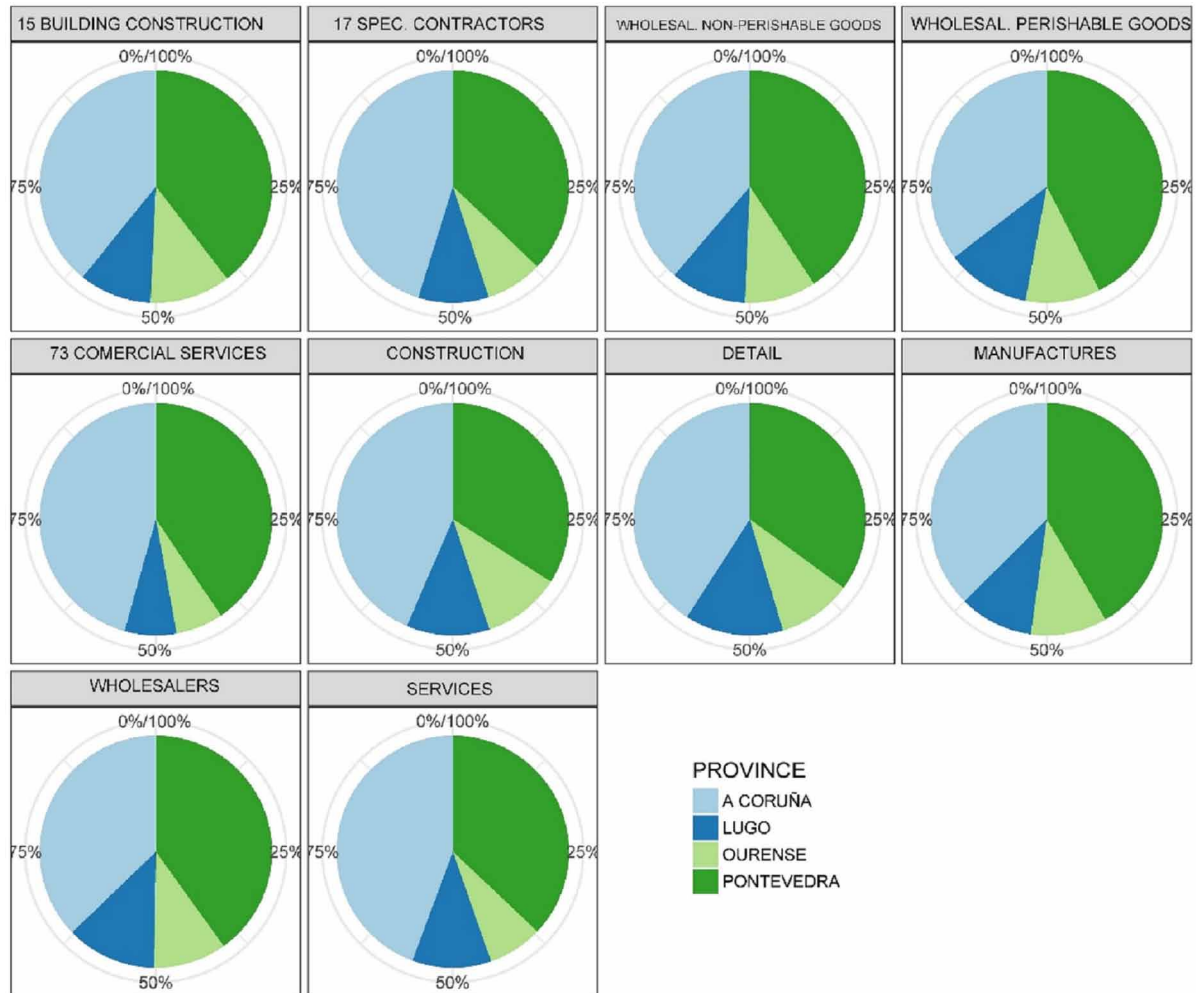
To analyze in detail how the ROA of Galician SMEs has evolved over time, distinguishing between exporting and non-exporting companies, the histograms of each year have been obtained since 2003. Figure 4 shows the effect of the economic crisis as of 2008: the right tail of the histograms (proportion of companies with very high returns) is becoming less heavy, while the area under the left tail increases. The axis of symmetry of the histograms moves towards lower profitability, both in exporting and non-exporting companies.

Likewise, the variations in the average profitability, according to the year and the exporting or not of the company, have been calculated (Figure 5). The confidence intervals for the 95% mean are included. In this case, some very interesting conclusions are obtained about the effect that the crisis has had on companies. Before the crisis, export companies had a higher average profitability. During the first years of the crisis, the profitability of the exporting companies was slightly lower, until 2011, when the profitability of both types of companies was equalized. As of 2012, there is a tendency for export companies

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Figure 2. Sectors of activity with more than 2% of the overall number of companies

Source: Prepared by the authors from ARDAN



to show higher average profitability, although with very slight differences. Profitability fell from 6 to less than 3.5 during the worst years of the crisis. As of 2012, there is an upward trend.

This different behavior of the Galician exporting SMEs during the crisis can be explained by their greater difficulty in adapting to changes in the market, or even by their greater exposure to uncertainty and financial constraints as they depend to a greater extent on the evolution of the markets international. These results are in line with what was previously explained by authors such as Chowdhury (2011) or Hilmersson (2014). Chowdhury (2011) points out that the impact of the crisis has not been uniform across the globe and the firms with higher dependence on external markets had more immediate and larger impact. On the other hand, Hilmersson (2014) shows that a higher level of internationalization does not have to positively affect the level of profitability in times of market turbulences and instability. In fact, this author points out that the level of internationalization is not a good predictor of SME performance in times of market turbulence. However, this observed evolution contradicts the results of authors like Falk and Hagsten (2015), who study the behavior of the exporting companies of 20 EU countries dur-

Figure 3. Density function
Source: Prepared by the authors

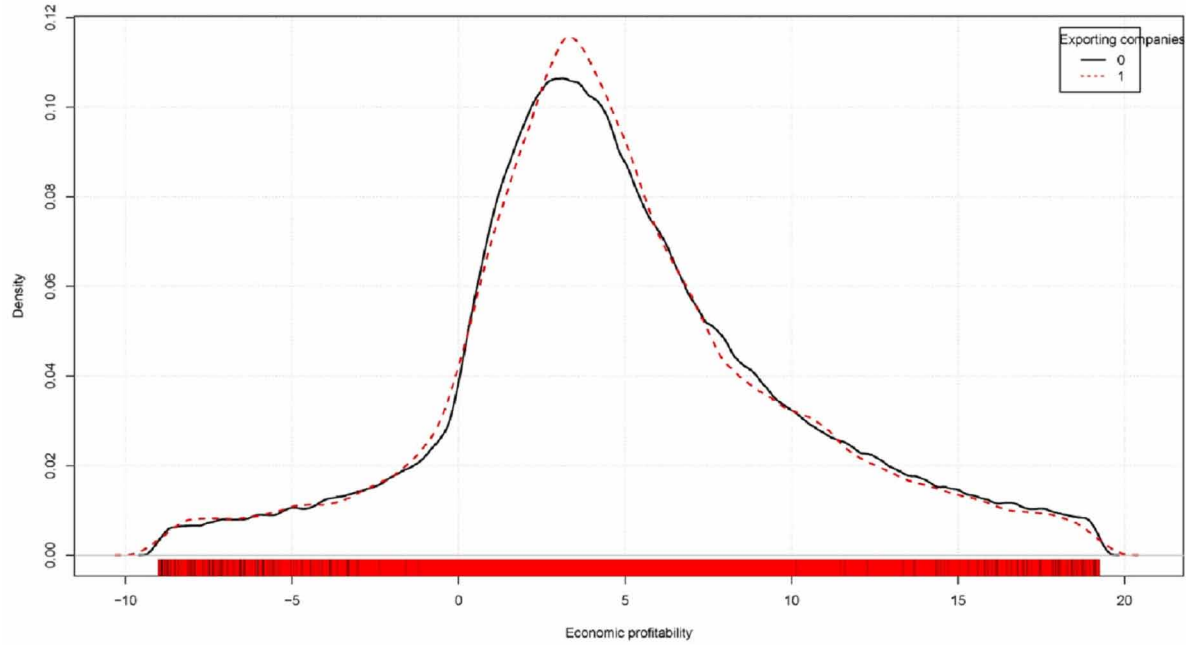


Figure 4. Profitability histograms
Source: Prepared by the authors

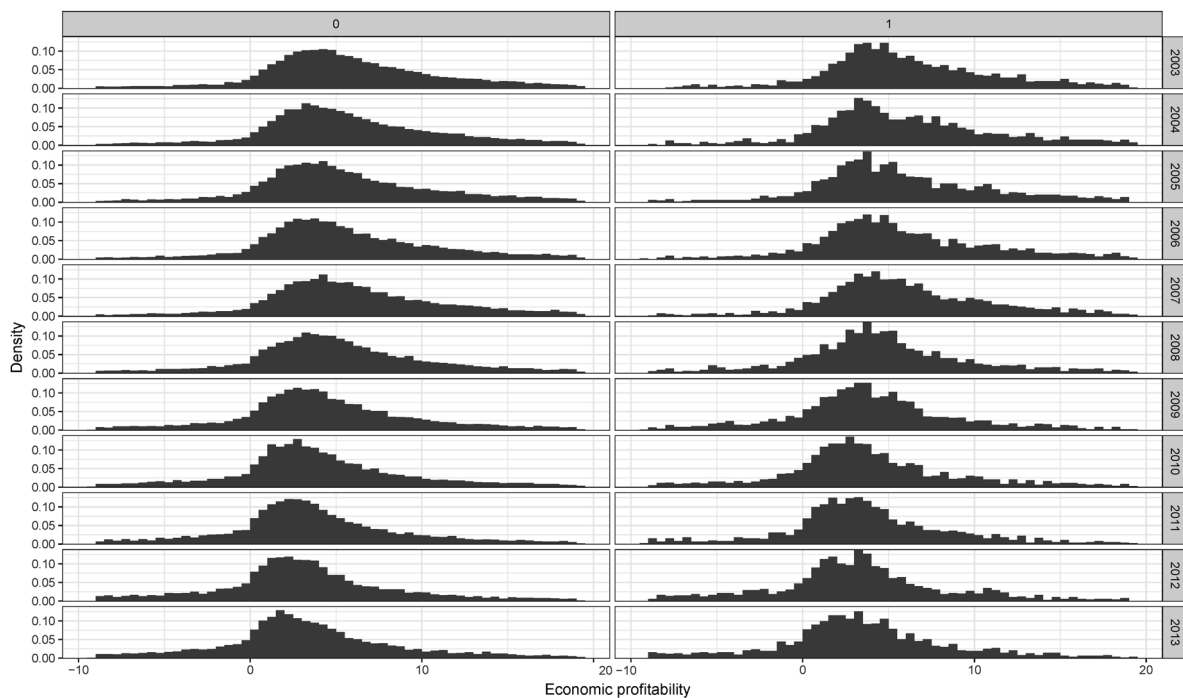
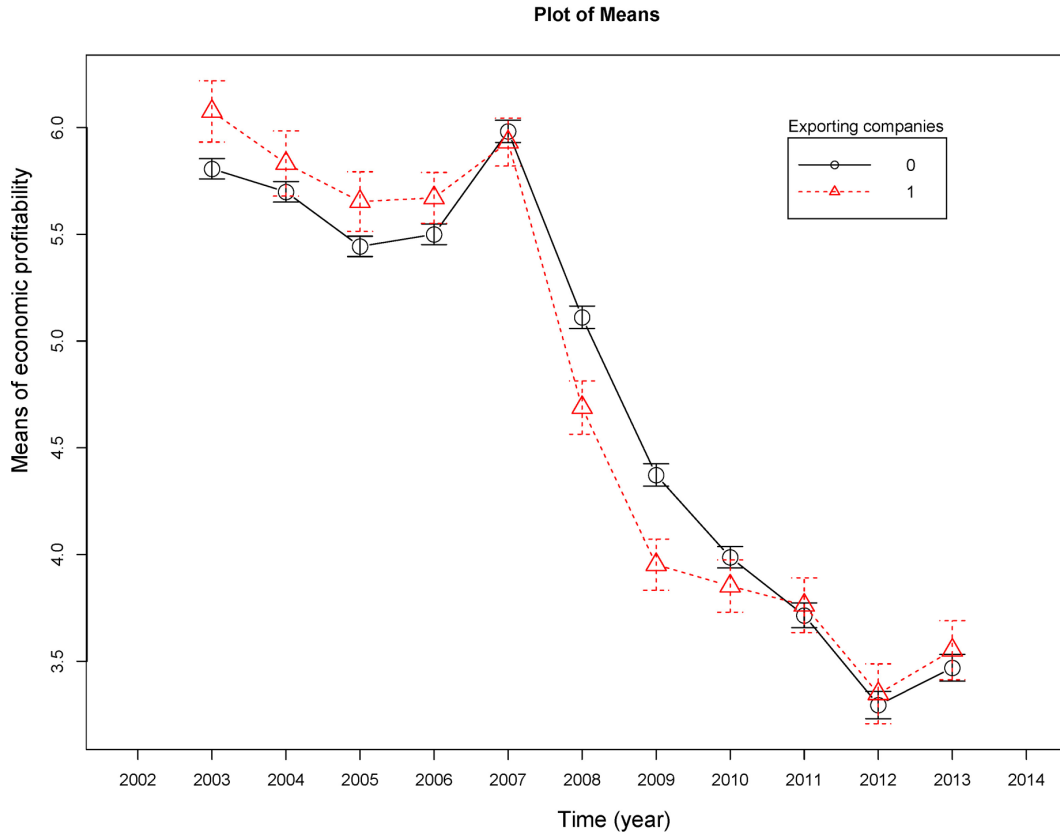


Figure 5. Average profitability variations

Source: Prepared by the authors



ing the period 2008-2010 and find evidence that the growth rates of both output and employment of the exporting SMEs are significantly higher than those for non-exporting SMEs, specifically exporting SMEs have a 0.9 percentage points higher average output growth rate.

Analysis of Variance

After having observed that the fact that an SME exports or cannot affect its profitability, and also the economic-financial context, it is intended to answer the following question: what factors cause significant changes in the value of profitability?

Table 3 shows the results of the applied F test. The null hypothesis that is contrasted is that the average of the profitability is the same for any level of year, export, location or sector. If the resulting p-value for each factor is less than a significance level of 0.05, it is assumed that the variations in the factor significantly influence the average of profitability. Therefore, it is concluded that all factors, except export, significantly influence the value of profitability.

Table 3. Results of the application of the F test

	Df	Sum Sq	Mean Sq	F	Pr(>F)=p-value
Year	10	102465	10246	416.929	<2e-16
Exporting company	1	8	8	0.316	0.574
Location	380	39623	104	4.243	<2e-16
Sector	78	50009	641	26.088	<2e-16
Residuals	118003	2900051	25		

Source: Prepared by the authors

However, if instead of studying the main effects, the interactions between factors are also studied, a complementary result will be obtained which indicates that export does influence the value of profitability. Thus, it is shown in Table 4, ANOVA corresponding to the analysis of the influence of exports, the year (crisis effect) and the interaction between year and export on profitability.

The interaction between year and export causes significant changes in profitability (p-value = 0.0016 <0.05). This result is in accordance with the average chart that measured the relationship between profitability, year and export: before the crisis, the effect of the export was the increase in profitability, during the first years of the crisis was the decrease in profitability and, in recent years, again the increase. The effect of the export is different according to the year.

These results are in line with other previous works by authors such as Freeman, Styles & Lawley (2012), that provide support for the proposition that location make a difference to the performance of SMEs (firms in metropolitan areas have an advantage over those in regional areas), or Love and Ganotakis (2013) that observe different behaviors in companies of different sectors.

Modeling Using a Multiple Linear Regression

The model resulting from the analysis would be the following:

$$\text{ROA} = \text{Sector} + \text{Exporting company} + 1.61 \cdot 10^{-3} \text{ Employees} + 1.04 \cdot 10^{-8} \text{ Turnover} + \text{Location} - 0.21 \text{ Time} + 3.28 \cdot 10^{-6} \text{ GDP}$$

The relationship between profitability and the rest of the variables is very weak. Although there is a statistically significant dependency, the resulting linear model would not provide reliable estimates of profitability for a new company.

Table 4. ANOVA Analysis

	Df	Sum Sq	Mean Sq	F	Pr(>F)=p-value
Year	10	102465	10246	406.061	<2e-16
Exporting company	1	8	8	0.307	0.57926
Year: Exporting company	10	712	71	2.823	0.00166
Residuals	118451	2988971	25		

Source: Prepared by the authors

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All the variables have been significant (with respect to the factors, at least one of the levels has been significant), with the coefficient of determination $R^2 = 0.062$. Time has been included as a quantitative variable, not as a factor.

Particularizing in the quantitative variables, it is obtained that increases in the GDP, the number of employees and the turnover are related to increases in profitability, while the increase in time (appearance and advance of the crisis period) corresponds to a decrease in profitability.

FUTURE RESEARCH DIRECTIONS

This chapter has illustrated that the relationship between firm performance and BMs based on exports is a complex phenomenon that has been largely analyzed in literature over the past three decades. Additionally, the chapter has shown a comprehensive review of the literature distinguishing between the purposes and approaches, the main findings and, also, the implications for managers and policy-makers. In the empirical part of the chapter, the mentioned relationship has been explored for the SMEs of the Autonomous Community of Galicia and a global interesting conclusion has been reached. Nevertheless, this research has opened several new lines of work that should be addressed in the future.

After having analyzed the Galician SMEs, without any distinction between different sectors of economic activity, the first future line of research would be to focus the efforts just in one sector, and to compare the results achieved. The two sectors with more international activity, at the moment, in Galicia are the sectors of manufacturers and wholesalers. This is why they would be adequate choices for future work on this issue.

The second line of research is related to the possibility of making a comparative empirical analysis with other regions of Spain, or even with the north of Portugal because Galicia and the north of Portugal have many similarities in relation to their business structure, and these two regions are close to the same air and land infrastructures.

CONCLUSION

The exploratory approach of this study starts from a reality: only 10% of the companies in the sample export. The difference in profitability between exporting and non-exporting companies is very small.

Before the economic crisis, export companies had a higher average profitability and, with the crisis, this relationship was reversed, changing the trend again from 2012. It seems to observe a pattern of behavior linked to the economic cycle.

All factors, except export, significantly influence the value of profitability. However, if the interactions between factors are also analyzed, export does influence the value of profitability.

Given that multiple linear regression modeling would not yield reliable estimates, it opens the possibility of evaluating the use of SVM models, neural networks or other machine learning models, which are only suitable for predicting but do not offer an expression where the dependence of the variables is observed.

This work lays the basis for a detailed study by sectors and geographical sub-levels, both from the evolution of the causal relationship proposed, and analyzing the factors that would be behind the propensity to export, opening the possibility of using logit models.

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KEY TERMS AND DEFINITIONS

Analysis of Variance: It is a set of statistical methods and procedures that are based on decomposing the total variance of some characteristics of a population in portions that are correlated with other characteristics and residual variations.

Economic Sector: Part of the economic activity of a country. Traditionally, it was divided into primary, secondary, and tertiary sectors.

Exports: Goods and services sold in foreign countries other than where they are produced. One could distinguish direct and indirect exports.

International Company: Company that has established and conducts business in more than one country through branch companies.

Model: Simplification of reality, commonly using mathematics, which aims to obtain relevant conclusions about the relationships of the variables that compose it.

Multiple Regression: It is a linear regression where two or more explanatory variables are included.

Performance Indicator: Measure to control the long-term success of a business or company. They can be subdivided, for example, into strategic, operational, or behavioral.

Small and Medium Enterprise: Categorization that usually starts from the level of income, assets, and number of workers.

Chapter 24

Creating Shared Value (CSV) and Creating Competitive Business

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ABSTRACT

Shared value concept could reshape capitalism and its relationship to society. It's not just about corporate social responsibility or philanthropy. It's a new approach for business strategy regarding social issues. It could also drive the next wave of innovation and productivity growth in the global economy as it opens managers' eyes to immense human needs that must be met, large new markets to be served, and the internal costs of social deficits—as well as the competitive advantages available from addressing them. But our understanding of shared value is still in its genesis. Attaining it will require managers to develop new skills and knowledge and governments to learn how to regulate in ways that enable shared value rather than work against it. A big part of the problem lies with companies themselves, which remain trapped in an outdated, narrow approach to value creation. Focused on optimizing short-term financial performance, they overlook the greatest unmet needs in the market as well as broader influences on their long-term success. Why would companies ignore the wellbeing of their customers, the depletion

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of natural resources vital to their businesses, the viability of suppliers, and the economic distress of the communities in which they produce and sell? Companies could bring business and society back together if they redefined their purpose as creating “shared value”—generating economic value in a way that also produces value for society by addressing its challenges. A shared value approach reconnects company success with social progress. Firms can do this in three distinct ways: reconceiving products and markets, redefining productivity in the value chain, and building supportive industry clusters at the company’s locations.

BACKGROUND

In the past, companies rarely perceived themselves as agents of social change. Yet the connection between social progress and business success is increasingly clear. (Kramer & Pfitzer, 2016). The focus of the first generations of business persons and early companies were just making money and get profit from business. The British proverb that “Business is business, nothing else!” was a popular business thinking. But some company owners and entrepreneurs, after getting rich and making wealth, tried to have philanthropic helps for solving social issues. We see this tendency in most of wealthiest company entrepreneurs such as Bill Gates or Warren Buffet and even Jeff Bezos of Amazon.

After some bad social and environmental consequences of business activities, a tendency for corporate social responsibilities raised. Society was more sensitive about these results and companies, mostly large corporations, determined some resources for fixing social problems. When companies do not understand or rigorously track the interdependency between social and business results, they miss important opportunities for innovation, growth, and social impact at scale. (M. Porter, Hills, Pfitzer, Patscheke, & Hawkins, 2012)

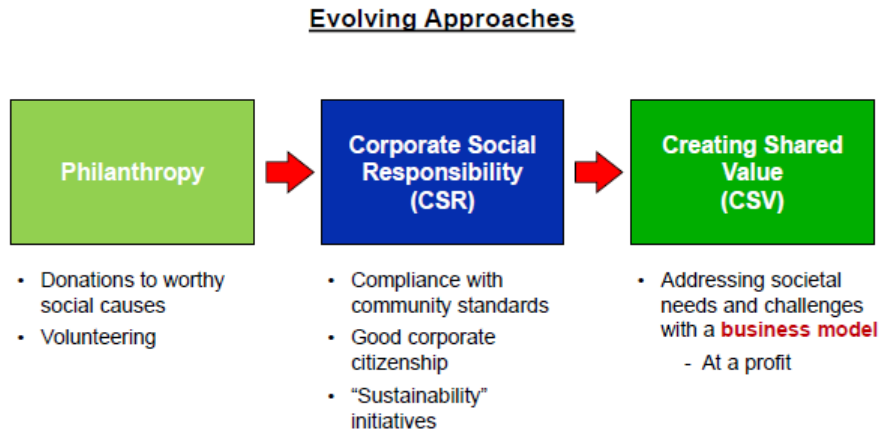
Creating shared value (CSV) should supersede corporate social responsibility (CSR) in guiding the investments of companies in their communities. Philip Kotler and Nancy Lee exposed CSR as a “new way of doing business,” linking value creation to a responsible attitude towards stakeholders (Kotler & Lee, 2005). Furthermore, corporations should embrace practices that are morally right or fair, and avoid those that are of questionable value for society. (Carroll, 2008)

Society does not require but rather expects corporations to be ethically responsible and merge philanthropy into the ethical responsibilities of a firm (Schwartz and Carroll,2003). CSR programs focus mostly on reputation and have only a limited connection to the business, making them hard to justify and maintain over the long run. In contrast, CSV is integral to a company’s profitability and competitive position. It leverages the unique resources and expertise of the company to create economic value by creating social value. (M. E. Porter & Kramer, 2011)

Frequently, though CSR efforts are counterproductive for two reasons. First, they pit business against society when, in reality, the two are interdependent. Second, they pressure companies to think of corporate social responsibility in generic ways instead of in the way most appropriate to their individual strategies (M. E. Porter & Kramer, 2006).

As shown in Figure 1, the third approach in this journey, named Creating Shared Value (CSV) in the article in the January 2011 issue of Harvard Business Review by Harvard Business School’s Michael E. Porter and FSG’s Mark R. Kramer. In this article, they debut the shared value concept and the new approach for linking strategy and society.

Figure 1. The role of business in society



A New Approach for Linking Business and Society

In recent years, business has been criticized as a major cause of social, environmental, and economic problems. Companies are widely thought to be prospering at the expense of their communities. Trust in business has been new lows, leading government officials to set policies that undermine competitiveness and sap economic growth. Business is caught in a vicious circle.

A big part of the problem lies with companies themselves, which remain trapped in an outdated, narrow approach to value creation. Focused on optimizing short-term financial performance, they overlook the greatest unmet needs in the market as well as broader influences on their long-term success. Why companies would ignore the well-being of their customers, the depletion of natural resources vital to their businesses, the viability of suppliers, and the economic distress of the communities in which they produce and sell?

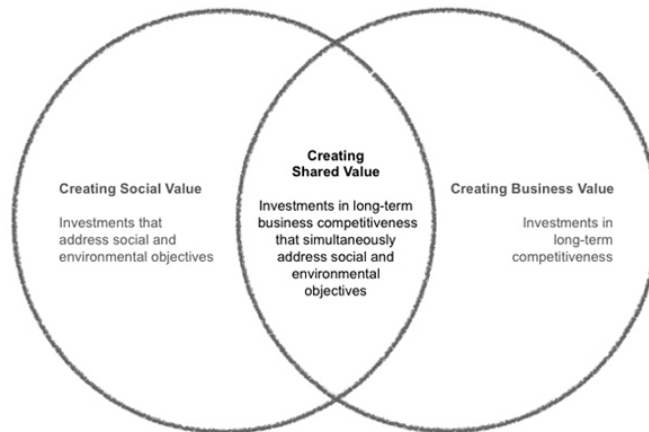
It doesn't have to be this way, say Porter, of Harvard Business School, and Kramer, the managing director of the social impact advisory firm FSG. Companies could bring business and society back together if they redefined their purpose as creating "shared value"—generating economic value in a way that also produces value for society by addressing their challenges. A shared value approach reconnects company success with social progress. (M.E. Porter & M.R. Kramer, 2011)

Creating Shared Value (CSV), the model for corporate social responsibility developed by Michael Porter and Mark Kramer of Harvard Business School, has been surprisingly controversial. On the surface of it, the proposition is fairly straightforward: that businesses can create the most value by working where investments in long-term competitiveness, simultaneously, address social and environmental objectives (Figure 2).

The CSV model offers an outstretched hand to the followers of Milton Friedman – who dominate the world's banks, economics faculties and governments – who taught that the social responsibility of business is to maximize profits with which create reinvestment and growth discussion to jobs. By shifting the focus from profit to value, Porter and Kramer have opened the discussion to new topics without alienating the more conservative thinkers. Rather than placing business in opposition to social benefit, they suggest that the interests overlap (Pinkhasov, 2011).

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Figure 2. FSG model of shared value



Advocates for sustainability and social responsibility typically have a mistrust of business in the social sphere. It is perhaps because of CSV's lack of social activism that its critics charge that, at best, it has little more to offer than a repackaging of the familiar environmental, social and economic pillars of sustainability or, at worst, a cover-up for business as usual. They are right, but they are also wrong.

While the CSV model we know today creates a single molecule from the business and social atoms, we know from experience that the commercial-collective tension between these atoms tends to push them apart. In order to bind these atoms, we need a third atom that shares complementary properties with both. That atom is the individual (Figure 3).

Because companies and communities are nothing more than collections of individuals who go back and forth between them as they form the component parts of each. Tension arises when the same individuals are asked to behave according to different values and work towards different goals in their roles as employees, as consumers and as citizens. The individual is thus the key to reconciling the competing business and social pressures (Pinkhasov, 2011).

The fragmentation from institutions to individuals is one outcome of the technological revolution. Another, more potent, is transparency, which has revealed the extent to which public policy is influenced by and for corporate interests. This has led to the decline of trust in multinational firms, CEO's, governments and politicians. Business is now being forced to recognize that the marketplace is the whole of the community, not just the exchange, and that well-being is replacing wealth as the ultimate value (Pinkhasov, 2011).

In fact, shared value is a management strategy in which companies find business opportunities in social problems. While philanthropy and CSR focus efforts on "giving back", or minimizing the harm business has on society, shared value focuses company leaders on maximizing the competitive value of solving social problems in new customers and markets, cost savings, talent retention, and more ("About Shared Value | Shared Value Initiative," n.d.).

A growing number of companies known for their hard-nosed approach to business—such as GE, Google, IBM, Intel, Johnson & Johnson, Nestlé, Unilever, and Wal-Mart—have already embarked on important efforts to create shared value by reconceiving the intersection between society and corporate performance. Yet our recognition of the transformative power of shared value is still in its genesis. Real-

Figure 3. Three-dimensional model of shared value



izing it, will require leaders and managers to develop new skills and knowledge—such as a far deeper appreciation of societal needs, a greater understanding of the true bases of company productivity, and the ability to collaborate across profit/nonprofit boundaries. And government must learn how to regulate in ways that enable shared value rather than work against it (M. E. Porter & Kramer, 2011).

Moreover, further companies are now building and rebuilding business models around social good, which sets them apart from the competition and augments their success. With the help of NGOs, governments, and other stakeholders, business has the power of scale to create real change on monumental social problems. (“About Shared Value | Shared Value Initiative,” n.d.).

The bottom line is that “what is good for society is good for business with making profit”

HOW TO CREATE SHARED VALUE IN ORGANIZATIONS

Firms can do this in three distinct ways: by reconceiving products and markets, redefining productivity in the value chain, and building supportive industry clusters at the company’s locations. These three ways are:

Reconceiving Products and Markets

Meeting societal needs through products and addressing unserved or underserved customers. (“About Shared Value | Shared Value Initiative,” n.d.). Offering new products and services regard to meeting social needs is a primary way of creating shared value. Sometimes, businesses ignore the bottom of pyramid’s needs.

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The billions of people living on less than \$2 per day is the definition proposed in 1998 by C.K. Prahalad and Stuart L. Hart. It was subsequently expanded upon by both in their books: *The Fortune at the Bottom of the Pyramid* by Prahalad, in 2004, and *Capitalism at the Crossroads* by Hart, in 2005 (Prahalad, 2005).

Prahalad proposes that businesses, governments, and agencies stop thinking of the poor as victims and instead start seeing them as resilient and creative entrepreneurs as well as value-demanding consumers. He proposes that there are tremendous benefits to multi-national companies who choose to serve these markets in ways responsive to their needs. After all the poor people today are the middle class of tomorrow. There are also poverty reducing benefits if multi-nationals work with civil society organizations and local governments to create new local business models (Prahalad, 2005).

So, companies can focus on middle class or poor people needs and make profit from these segments. For example, Novartis, in rural India, has a project that reach customers without health access by offering a portfolio of affordable and appropriate medicines tailored to common regional health issues, which is increasing regional sales and doctor visits.

Also, some new products and services concentrate on inefficiencies in economy. For example, because of traffic jam in large cities, such as Tehran or Jakarta, startups for offering ride sharing with motorcycles, reach new markets and make profit. Also, the results of their operation is reducing traffic and creating part time or full job for drivers. AlloPek or Snapp Box, in Tehran, and Grap, in Jakarta are good examples for this business model.

Redefining Productivity in the Value Chain

Changing practices in the value chain to drive productivity through better utilizing resources, employees, and business partners. In every part of business value chain, from inbound logistics to marketing & Sales services, we can find opportunities for eliminating wastes, enhancing quality, and better resource consumption. Reaching better, cheaper and accessible raw materials and reducing inbound logistic costs are popular CSV opportunities during the input part of value chain. Companies should recognize how can achieve better resources for our business process. Reducing energy usage, direct access to raw materials and eliminating costly channels, HR training, Internship programs between companies and universities are known CSV projects that companies can apply clearly.

For example, Walmart, by reducing packaging and improving delivery logistics, saved \$200M in distribution costs while growing the quantities being shipped.

Enabling Local Cluster Development

Improving the available skills, supplier base, and supporting institutions in the communities where a company operates to boost productivity, innovation, and growth is the third approach in CSV. Most large companies have different opportunities for shaping a cluster around their core business. These developments strategies can create different job opportunities, and lead to reducing inefficiencies and wastes and increasing company profit.

For example, Chevron, to build prosperity in the region and improve its operating environment, Chevron's "Partner Initiatives in the Niger Delta", uses a data-driven approach to identify new market opportunities and local solutions to unemployment in the region.

CSV AND LACK OF SKILLS IN SOCIETY

In some ways, the outlook for youngers in today's world is better than ever. An unprecedented number of young people around the world are enrolled in some form of schooling child. Maternal mortality rates are plummeting, and people are generally living longer.

Yet as many as 75 million young people are finding that increased educational opportunities are not necessarily leading to steady employment. Nearly 75 million of the world's 1.2 billion young people, between the ages of 15 and 24, cannot find a job. They represent 40 percent of unemployed people globally. And 87 percent of young people live in developing countries, which mean the majority of unemployed youth are in low- and middle-income countries. In fact, in almost all developing and emerging economies, youth unemployment is higher than the global average of 13.1 percent.

This is a problem not only for the youth but also for employers: nearly 40 percent of employers cite lack of skills as a top reason for entry-level vacancies going unfilled for months. Youth unemployment is a global problem, especially in developing and emerging markets. One of the reasons for this is the mismatch between employable skills and current approaches to education.

Companies create shared value in education when they address unmet educational needs as they generate economic benefits for their businesses. They can reconceive products and markets, increase productivity in the value chain, and strengthen the regional clusters where they operate. Education is also an area where entrepreneurs are offering new solutions to improve education and training programs around the world.

The most important thing corporations looking to hire next-generation employees can do is to build partnerships with education providers and the entrepreneurs who are trying to help bridge the education-to-employment divide. Whether you increase the amount of internships, apprenticeships, or take a leap into the world of education yourself, voicing your needs can go a long way. For example, through its Skills for Africa program, SAP SE has created scholarship and dual-study programs, as well as alliances with local universities, to address the Information and Communication Technology (ICT) skills gap, boost local talent, and provide job opportunities for young graduates so that countries, like Kenya, can become ICT hubs.

In another case, Coca Cola Company, provide Coltevitto program for Brazilian people. Coletivo was first designed in 2009 to equip young people throughout Brazil with the technical and life skills required to access employment. Today, Coletivo Retail operates across 126 communities in Brazil, reaching 60,000 youth. More than 70 percent of program participants are women, as part of the Company's global 5by20 initiative. Among all program graduates, 30 percent find a job within six months of the program, resulting in an average 50 percent increase in household income.

The Coletivo platform has also evolved to include other models across the Coca-Cola value chain that address various social problems. Coca-Cola Brazil has learned that the more they connect this work to core business, competencies, and DNA, the more social problems we can solve at a larger scale.

Also, Avakatan Company, with partnership with Rose academy, provide Avaye Danesh Program for train life and business skills for Iranians. Avakatan is a fashion retail company and owners of Jeans west, Jooti Jeans and Banimode brands in Iran, and Rose academy is a training institute operates in Iran. Avaye Danesh is ongoing program and every month, have free workshops, seminars and training classes.

Supply and demand do play a role. In some cases, the amount of youth searching for employment outstrips the supply of jobs.⁴ In Sub-Saharan Africa, for example, high population growth is one factor that contributes to this mismatch in supply and demand for jobs. Additionally, volatile economic

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growth in developing market economies also matters: during times of economic downturn, the least skilled or least experienced workers are the most likely to find themselves without work. This often includes young people. But, economic cycles and population growth, alone, do not explain the high rates of youth unemployment in emerging markets. Evidence suggests that, especially in middle-income countries with thriving industries and service sectors, a major part of the equation is a gap in skill sets. Nearly 40 percent of employers cite lack of skills as a top reason for entry-level vacancies going unfilled for months.⁶ The majority of youth enter the workforce after completing secondary education.⁷ While those with secondary degrees still are likely to have more earning power than their less educated peers, a secondary degree is not synonymous with gainful employment. According to the World Bank and the International Labor Organization, those who have, at least, some secondary education (but no tertiary) make up a greater proportion of unemployed youth than their counterparts who are either less or more educated. These trends indicate a failure in the education system to prepare students with the kinds of skills they need to find and maintain employment. What is clear from in-depth research spearheaded by organizations that are pioneering skill development programs is that solving the challenge of moving young people successfully from education to employment cannot be accomplished with a single intervention. It requires ongoing efforts from education providers, employers, policymakers, and students. And, often, there are needs to be innovated not only from within education systems, but also from without. This is where entrepreneurs and small and growing businesses have unique opportunities to help bridge the gaps.

Employers can also work hand-in-hand with organizations that train students and connect them to the job market through internships. These enterprises play an important intermediary role and can help tailor instruction towards employers' needs. Corporations can choose to take advantage of the expertise that education focused entrepreneurs have with technology, curricula, and more, to develop new training programs, expand old ones, or create digital platforms to reach more people.

Identifying skills gaps that keep youth from securing jobs is an important part of the equation and has been researched extensively. But the role of how education-focused entrepreneurs in emerging markets can help bridge these gaps has gone under-explored.

Common Gaps Found Across Countries Studied

- Soft skills like communication, critical and analytical thinking, and problem solving often top employers' lists of lacking skill sets. Soft skills are also the most helpful in ensuring youth remain employable. Technical and cognitive skills are important, but soft-skill development should begin from an early age (as young as primary school), and be reinforced through training programs as youth get older and seek more specialized training.
- There is a massive coordination gap between education providers and employers, as they often do not communicate with each other. This is, in part, because employers do not always see the incentives for investing time and resources into education or basic training programs. Yet successful education to employment schemes often requires that employers take an active role.
- Geography and gender also matter in unemployment gaps. Youth in rural areas may not want to leave their homes for a training program in the city that comes with no guarantee of a job. And, in some places, cultural expectations and gender stereotypes make it more difficult for women to enter the workforce.

As a result, the global unemployment rate for young women is higher than for young men. Bridging these gaps takes coordination from the public and private sector. It also requires innovators and disruptors, which is where education-focused entrepreneurs come in.

- The greatest opportunities for education focused entrepreneurs currently lie in using technology to help companies reduce the cost of training programs, improve content, and improve delivery to reach more young people. Technology makes it easier to build upon existing models, adapt training programs to each company and user, and even mitigate the challenges of geography and distance. These digital platforms can be combined with in-person training efforts, incorporate soft-skill development, and even reach marginalized or at-risk youth.
- Entrepreneurs play a role as connectors, bridging the coordination gap. Many of the enterprises examined in this report build connections between educational institutions or training programs and employers to make the transition from education to employment go more smoothly. (Buck, 2015)
- They act as innovators to bring in new ideas and solutions. New training and education methodologies targeting marginalized groups and using innovations in digital games to complement apprenticeship programs represent just some of the ways that education focused entrepreneurs are making a difference.

While the opportunities for these entrepreneurs are great, they also face a distinct set of challenges:

- **Getting Started:** Access to finance, developing an in-depth understanding of the education and skill-development market (including the needs and realities of working in education), and finding the right price point for products or training programs were all identified as key obstacles to getting started.
- Scaling up programs while maintaining the quality and personalized aspect of training programs is a perpetual challenge.
- **Measuring Impact:** Many education-focused entrepreneurs struggle with knowing what to measure and how to do it. Yet it is important for understanding what works and what does not, as well as being able to scale models effectively.
- **Managing Government Relations:** Because education is often seen as a public good, federal and local governments usually manage its design and delivery. It can be difficult for entrepreneurs to work with these institutions or break into the education space. Each country where the roundtables took place has a different set of constraints and opportunities with regards to its government.

The recommendations outlined in this report offer ideas for how corporations, governments, NGOs and investors, and entrepreneurs can all work together to reduce youth unemployment:

- Corporations should build partnerships with education providers (public and private) and entrepreneurs who are trying to fill these gaps. The most successful education-to-employment initiatives are the ones where employers are involved from day one.
- Government agencies and public schools should embrace private-sector voices when it comes to designing curricula that will serve youth in their future careers.

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- NGOs, investors, and capacity development providers should consider supporting education-focused entrepreneurs and working with them to directly tackle the challenges they face.
- Entrepreneurs should pay attention to the challenges outlined in this report, do their research, and think of ways to mitigate these challenges before they even launch their businesses.

That said, education-focused enterprises are a part of the solution, but they alone are not THE solution. They play an important role in helping bridge the gaps in education to employment, but solving youth unemployment requires concerted efforts from corporations, government, civil society, and entrepreneurs (“How Businesses Can Create Shared Value with Education-Focused Entrepreneurs | Shared Value Initiative,” n.d.).

CSV AND POVERTY IN SOCIETY

According to World Bank report on world poverty, we can portray poverty as shown in Figure 4.

Poverty and Shared Prosperity

The poverty headcount ratio—also referred to as the extreme poverty rate—is the share of the population living on less than \$1.90 a day in 2011 purchasing power parity terms. The \$1.90 a day poverty line reflects the value of national poverty lines of some of the poorest countries in the world. Consumption and income data used for estimating poverty are collected from household surveys. This map shows the country-level poverty estimates used to generate the 2013 regional and global poverty estimates, which draw on data from more than 2 million randomly sampled households, representing 87 percent of the

Figure 4a. Geography of poverty

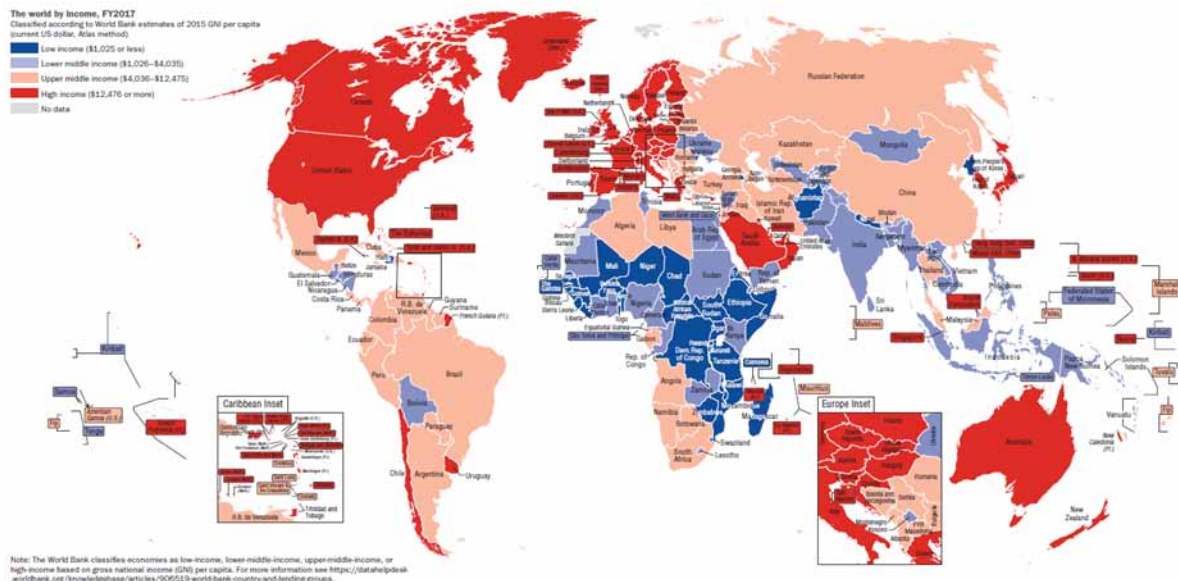


Figure 4b. Geography of poverty

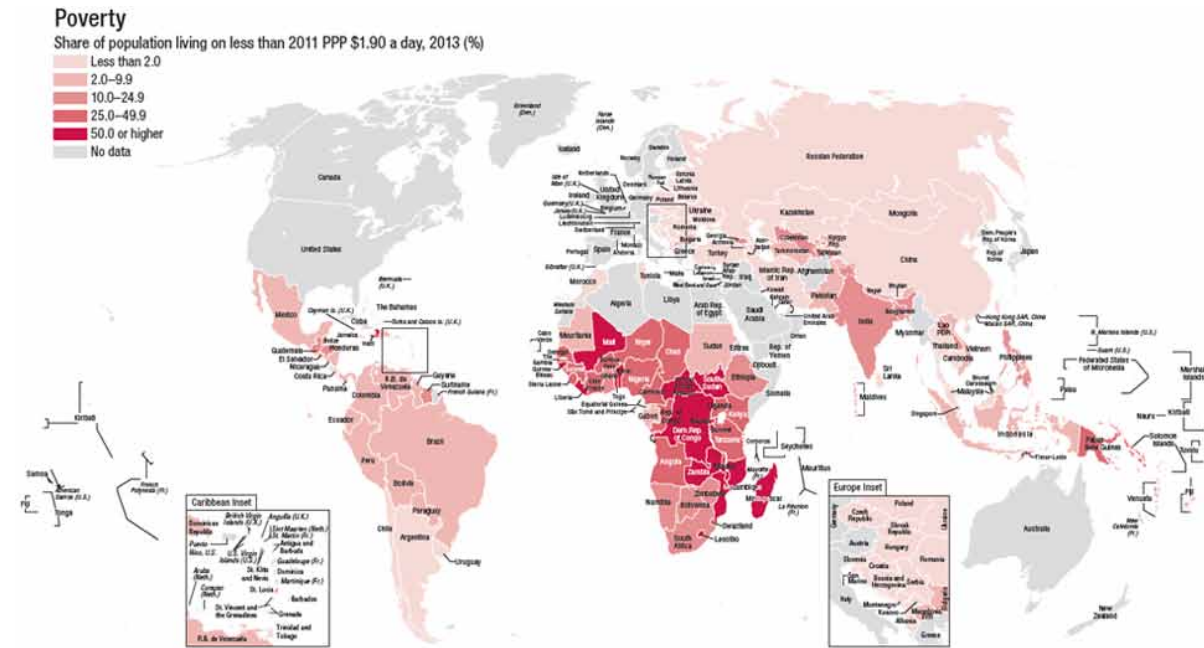
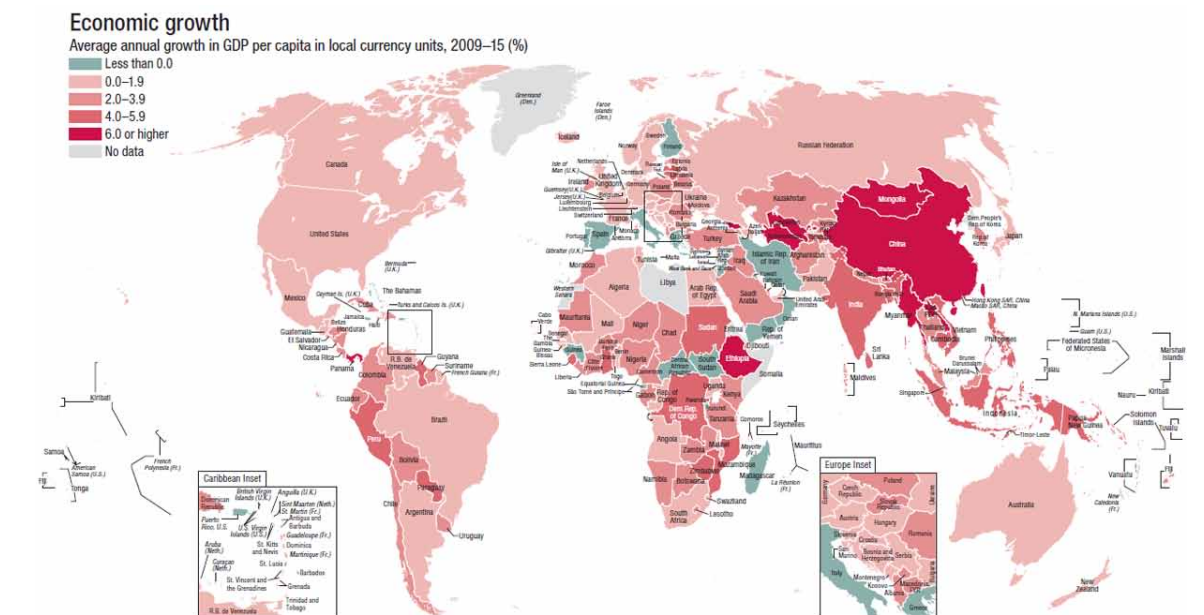


Figure 4c. Geography of poverty



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total population in 138 low- and middle-income countries, high-income countries eligible to receive loans from the World Bank (such as Chile), and recently, graduated countries (such as Estonia).

Economy

Economic growth reduces poverty. Fast-growing middle-income countries are closing the income gap with high-income countries. But growth must be sustained over the long term, and gains must be shared to make lasting improvements to the well-being of all people. The 2007 financial crisis spread from high-income to low-income countries in 2008. A year later, it became the most severe global recession in 50 years and affected sustained development around the world. The average annual growth of GDP per capita in low- and middle-income countries, while still faster than in high-income countries, slowed from 5 percent over 2000–09 (the pre-crisis period) to 3.8 percent over 2009–15 (the post-crisis period). The low- and middle-income countries in the Middle East and North Africa saw the largest drop: Average annual growth of GDP per capita fell 3.3 percentage points, from 3.1 percent to –0.2 percent.

Global Links

Over the past decade, flows of foreign direct investment (FDI) to low- and middle-income economies have increased substantially. It has long been recognized that FDI flows can carry the benefits of knowledge and technology transfer to domestic firms and the labor force, productivity spillover, enhanced competition, and improved access for exports abroad. Moreover, they are the preferred source of capital for financing a current account deficit because FDI is non-debt-creating. Global inflows of FDI declined 20 percent, in 2014, to \$1.6 trillion, due mainly to a 30 percent decrease into high-income economies. Low- and middle-income economies continued to prove more resilient, with FDI inflows decreasing only 1.4 percent.

The Landscape of Poverty

The extreme prevalence of poverty in today's world calls us urgently to action. Of the world's 6.4 billion people, about 2.6 billion live on less than US\$2 a day.¹ More than a billion lack clean water, 1.6 billion lack electricity, and 5.4 billion lack access to the Internet.³ Yet the poor harbor a potential for consumption, production, innovation and entrepreneurial activity that is largely untapped.

Poverty is multidimensional: it cannot be determined by measuring income only. Its complexity encompasses multiple, essential areas of human life. Poor people are often also denied good health, education, material goods as well as opportunities to enjoy dignity, self-respect and other basic rights. The vulnerable groups and marginalized communities typically at risk of being excluded from equal participation in mainstream society often include the youth, the elderly, the long-term unemployed, ethnic minorities, people with disabilities, internally displaced persons (IDPs) and returnees.

People with low incomes as well as society at large benefit from business models that use environmental resources sustainably. Increasing access to markets for those currently excluded does not mean that there will be an increased use of non-renewable resources. New technologies and business models make them a possibility to provide energy, water, sanitation, food and other services without damaging the environment. Environmental sustainability, poverty alleviation and business development can often go hand in hand.

People with low incomes that are included in broader value chains can improve their standard of living.

Poverty is multidimensional: poor people are often denied good health, education, material goods as well as opportunities to enjoy dignity, self-respect and other basic rights.

BUSINESS SOLUTIONS TO POVERTY

People with low incomes can benefit from being included in business models as consumers, employees, producers and entrepreneurs in various ways, as experiences show. The three main benefits are gaining incomes, meeting needs and increasing productivity. In addition to these very tangible and direct benefits, inclusive business models also create broader benefits for the whole community.

The three main benefits that people with low incomes can enjoy through inclusion in business models are:

- Gaining incomes by finding employment or through the demand for one's products and services;
- Meeting needs for essential goods and services such as water, sanitation or health care and improving the standard of living;
- Increasing productivity through the provision of access to financial services, ICT and energy as well as the provision of training.

In addition to the above, inclusive business models offer two other types of benefits: Empowering individuals and communities by raising awareness, providing information and training, including marginalized groups, offering new opportunities and conferring hope and pride. Also, business models can give people confidence and new sources of strength to escape poverty using their own means. In some cases, business models are built on organizing community groups or networks, for example, when groups of credit takers are responsible for a loan. Organized communities can coordinate better to achieve joint goals and represent their interests.

This chapter shows how entrepreneurs can serve the poor as clients and customers and can also include the poor as producers, employees and business owners. It gives many examples of firms that—by doing business with the poor—are generating profits, creating new growth potential and improving poor people's lives. The chapter's main message: Business with the poor can create value for all.

The opportunities are vast, and so are the obstacles. Rural villages and urban slums are challenging environments for doing business. Systems rarely exist for collecting and delivering goods and providing services. Essential market infrastructure is limited or nonexistent. Without working financial systems, the poor inhabit a cash economy. Without reliable police and legal systems, all market actors can find it difficult or impossible to enforce contracts. For most firms, business with the poor will not be business as usual.

What Are Inclusive Business Models?

Inclusive business models include the poor on the demand side as clients and customers, and on the supply side as employees, producers and business owners at various points in the value chain. They build bridges between business and the poor for mutual benefit. The benefits from inclusive business models go beyond immediate profits and higher incomes. For business, they include driving innovations,

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building markets and strengthening supply chains. And for the poor, they include higher productivity, sustainable earnings and greater empowerment.

OPPORTUNITIES TO CREATE VALUE FOR ALL

Doing business with poor people brings them into the marketplace—a critical step on the path out of poverty—and, for entrepreneurs and firms, it drives innovation, builds markets and creates new spaces for growth. Inclusive business models both produce and reap the benefits of human development.

The poor participate in the private sector. All are consumers. Most are employees or self-employed. Yet fragmented and informal markets prevent too many of them from obtaining the resources they need and from using their resources productively. Among the poor, much business is informal. Friends and family often provide credit. Small and unregulated businesses often deliver bottled water in trucks. As a consequence, competition is stunted and goods and services can be expensive.

Market heat maps reveal the fragmentation of these markets. They show how widely access to goods, services or infrastructure can vary in a country. For example, in Guatemala's western regions more than 13% of people living on less than \$2 a day have access to credit, but in its eastern regions fewer than 8% do (figure 4). That contrast reflects other differences between market conditions in the two areas, such as differences in road access. (In poor markets such constraints often overlap, compounding the challenges for business.)

OPPORTUNITIES FOR BUSINESS: PROFITS AND GROWTH

Business with the poor can be profitable. It can also lay the foundations for long-term growth by developing new markets, driving innovation, expanding the labor pool and strengthening value chains.

Generating profits. Business with the poor can sometimes yield higher rates of return than ventures in developed markets. Some microcredit institutions have earned more than a 23% return on equity.⁴ Smart Communications, a company providing prepaid phone services mainly to low-income consumers in the Philippines, became the most profitable of the country's 5,000 largest corporations. Sulabh, a low-cost sanitation facilities provider in India, had a \$5 million economic surplus in 2005.

Developing new markets. The 4 billion people at the bottom of the income pyramid (defined as people living on less than \$8 a day) have a combined income of about \$5 trillion, similar to the gross national income of Japan.⁵ They are willing and able to pay for goods and services, but too often they suffer from a 'poverty penalty'. Sometimes, they pay more than rich consumers for essential products and services. People in the slums of Jakarta, Manila and Nairobi pay 5–10 times more for water than people in high-income areas of those cities—and more than consumers in London or New York. The 'poverty penalty' is similar in credit, electricity and health care. Business models that offer better value for money—or entirely new products and services to improve the lives of the poor—can reap pioneer profits in return.

Driving innovation. The challenge of developing inclusive business models can lead to innovations that contribute to a company's competitiveness. For example, to meet the poor's preferences and needs, firms must offer new combinations of price and performance. And the pervasive constraints that businesses encounter when doing business with the poor—from transportation difficulties to the inability to enforce contracts—require creative responses. These forces drive the development of new products,

services and business models that can catch on in other markets, giving innovative companies a competitive advantage in poor markets.

Expanding the labor pool. The poor are a large source of labor. The advantages of hiring them as employees go beyond cost savings. With adequate training and well-targeted marketing, the poor can deliver high-quality products and services. Or their local knowledge and connections may place them well to serve other poor consumers in their communities.

Strengthening value chains. For firms that procure locally, incorporating the poor in business value chains—as producers, suppliers, distributors, retailers and franchisees—can expand supply and lower risk. That allows them to reduce costs and increase flexibility, especially as the local businesses move into more specialized or higher-skill activities, such as component production and business services.

OPPORTUNITIES FOR THE POOR: ADVANCING HUMAN DEVELOPMENT

Businesses can also improve the lives of poor people, contributing broadly to what is the UN terms ‘human development’—expanding people’s opportunities to lead lives they value.

Meeting basic needs. Food, clean water, sanitation, electricity and health-related services all meet people’s basic needs. In the Philippines, Rite Med sells generic drugs to more than 20 million low-income clients at prices 20%–75% less than leading brands. In South Africa, Amanz’abantu provides clean water and sanitation to periurban and rural populations in the Eastern Cape, where a quarter of people lack potable water.

Enabling the poor to become more productive. Access to products and services— from electricity to mobile telephony, from agricultural equipment to credit and insurance— improves people’s productivity. In Mexico, Amanco provides small-scale lemon farmers with water-efficient drip irrigation systems that allow for continuous production 8–10 months a year. The systems are expected to increase the farmers’ annual yields from 9 to 25 tons a hectare. In Morocco, Lydec provides water and electricity to Casablanca’s shantytowns, increasing the share of people with electricity and water services by 20%.

Increasing incomes. Including poor people in value chains as customers, employees, producers and small-business, owners can increase their incomes. In the Amancocasein Mexico, productivity increases are expected to nearly triple the farm incomes. In China, Huatai provides alternative income sources for local tree farmers and significantly adds to the incomes of about 6,000 rural households. In Tanzania, A to Z Textiles employs 3,200 people (90% of them women) producing insecticide-treated bednets and pays them 20%–30% more than competitors.

Empowering the poor. All these contributions support the empowerment of poor people, individually and communally, to gain more control over their lives. By raising awareness, by providing information and training, by including marginalized groups, by offering new opportunities and by conferring hope and pride, inclusive business models can give people confidence and new sources of strength to escape poverty using their own means.

CONSTRAINTS STANDING THE WAY

With the opportunities so great, why haven’t more businesses taken advantage of them?

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Simply put, market conditions surrounding the poor can make doing business difficult, risky and expensive. Where poverty prevails, the foundations for functional markets are often lacking, excluding the poor from meaningful participation and deterring companies from doing business with them. Five broad constraints:

Limited Market Information

Businesses know too little about the poor— what poor consumers prefer, what they can afford and what products and capabilities they have to offer as employees, producers and business owners. This was a significant constraint when Barclays Bank started to offer financial products to the poor in Ghana.

Ineffective regulatory environments. The markets of the poor lack regulatory frameworks that allow business to work. Rules and contracts are not enforced. People and enterprises lack access to the opportunities and protections afforded by a functioning legal system. For example, Sadia, a food processing company, faced undeveloped domestic carbon credit regulations when it began using improved environmental methods to dispose of pig waste.

Inadequate Physical Infrastructure

Transportation is constrained by the lack of roads and supporting infrastructure. Water, electricity, sanitation and telecommunications networks are lacking. For example, Tsinghua Tongfang, a computer manufacturer seeking to distribute its products in rural China, had to overcome the lack of telecommunications infrastructure and internet service providers in those areas.

Missing knowledge and skills. Poor consumers may not know the use and benefits of particular products, or may lack the skills to use them effectively. Poor suppliers, distributors and retailers may lack the knowledge and skills to deliver quality products and services consistently, on time and at a set cost. For example, because rural farmers in Brazil did not know how to grow pripioca—a plant used for perfume essence—Natura had to train them.

Restricted access to financial products and services. Lacking credit, poor producers and consumers cannot finance investments or large purchases. Lacking insurance, they cannot protect their meagre assets and income against shocks such as illness, drought or theft. And in the absence of transactional banking services, their financing is insecure and expensive.

CSV AND ENERGY PRODUCTIVITY IN SOCIETY

Energy is undergoing the biggest changes since 50 years ago, when universal access to electricity transformed how we all live.

Forces of Change

Pushing and pulling at all this are markets, policies and social needs, prodding and shaping the sector as it reinvents itself.

1. We have new, better technologies at-the-ready to replace ageing assets.

There is a fork in the energy technology road we are staring down right now. Developed in and for the industrial age, many of our power plants – mostly coal-fired – are reaching the end of their natural lives. So the market is asking: what do we replace them with? Payback periods are decades-long, leaving investors, standing at the aforementioned crossroads, deeply pondering what will be the technologies still around and still profitable in 20, 30 or 50 years time.

Technological advances mean there are new avenues for growth available across the sector. Whether we are talking about generation, transmission, distribution, or storage, there are a multitude of new tech solutions vying for demonstration and commercialization.

2. Investment hurdles are heightened by political uncertainty.

Governments, markets, investors and industry are still at odds about the best way forward. See-sawing energy policy over the last decade has meant markets are hesitant to invest, knowing, at any day, the stroke of a Minister's pen may fundamentally change the penalties or incentives for their choices. The world has spoken – in Paris, forging a vision for the way forward – but Australian national and state policies send mixed signals. A sector that was once a much-loved beacon of the Australian economy has been left waiting, confused about its future, unable to predict if a policy break-up or last-ditch rekindling might be on the cards. It's made it reluctant to invest. As assets have aged, the supply system is shrinking, driving up prices. Socially and environmentally, we share the costs of the broken relationship between government(s) and the energy sector.

3. A changing climate and motivated people.

Science, climate change and the quest for a healthier environment are a part of the change as well – albeit not as centrally as it might, at first glance, appear.

The global Paris agreement plots a course for a cleaner world, which energy markets – as some of the world's largest polluters – would be foolish to ignore, even if some nation-states do. Concern about climate change, and a sense of environmental protectionism, are responsible – at least in part – for accelerating advances in cleaner energy technologies. People have advocated for and against it all, with power prices and jobs often pitted against pollution and progress. Most of us find it difficult to resist the idea that cleaner energy – that poses less harm to our world – will be the future; we remain nonetheless concerned that costs– to communities, businesses and individuals – are also being carefully and fairly managed.

4. Fair access to an essential service.

In spite of it all, none of us wants the power turned off. We agree that even the poorest among us should be able to afford it. It's an essential service, not a discretionary one, and regulated as such, with mandatory consumer hardship provisions to boot. The drive to deliver power to all, at the lowest possible prices underpins much political rhetoric. But stalled investment, due to mixed signals and policy uncertainty, is part of the culprit in their recent hikes (reducing supply, while demand has stayed steady, with economic logic doing the rest).

Opportunities for Change

The energy sector's current reinvention is a springboard for the creation of shared value – with burgeoning opportunities to benefit people and profits. Here are three ideas to how.

1. Co-designing new markets.

Technologies create opportunities for energy companies. And they do the same for energy consumers. But what, of all the gadgets, data, insights and control, consumers will want or use and at what cost? Who will use them and how? And will this empower them to make better choices, all-round, on energy in their lives?

Solar panels have made deep inroads across Australia's rooftops. Sparkling in the sun, they have further sparked a growing interest in more knowledge, more control, more power at home, or for business. Energy retailers and distributors have a unique opportunity to listen to customers, become purveyors of ingenuity and solutions, forging new markets for themselves and defining new consumer demands to drive the next wave of energy transformation in home. Some have already started.

2. Bridging the divided debate.

While a failure of government policy has been roundly decried by many, a failure of us all to demand more, to know what we want, as a community, to debate and ultimately reach a consensus, is not helping.

It's fairly unusual for companies to agree they want a tax, to beg for more regulation, to plead for government intervention. But that is fundamentally what is now happening among the biggest players in our energy sector. After a decade of toing and froing, some commercial operators are taking it upon themselves to talk to the public, and bring them along for the ride, filling a government communication and policy void, and advocating for the changes they want to see – in their own business interest, but also to address climate change, and if delivered affordably, of benefit to the hip pocket and livelihoods of us all.

Not many people would be expecting big energy companies to voluntarily make the switch to renewables. Their voice explaining why this is happening may be the only one that can bridge the chasm between governments, the public, environmental advocates and climate deniers.

What a powerful business and social imperative a narrative for change can address.

3. Innovating for equitable access (and cheaper bills)

Technologies now exist that can enable new pricing structures, which can act to make power cheaper for everyone. I'll try not to make you cross-eyed: essentially, with incentives to flatten peaks in demand, consumers can have a hand in cutting their own individual bills and, at the same time, reducing the wholesale cost of power for us all (essentially reducing cross-subsidies, and helping stymie the steep, but rare, "peaks" in demand that are a major contributor the overall cost of making us power). It also helps cut infrastructure spend, reducing the need for power stations only switched on the few days a year when it gets very hot, we all want air-conditioning and demand skyrockets.

Both consumers and companies stand to benefit from lower costs, and the lower capital investment needed to keep the lights on. Especially when the object of much of this investment (peaking plants) generally sits, idle, for more than 350 days of the year. A potential niche product, for special type of

customer, first mover benefits await the brave company that delivers take-up of new pricing models – that nudge or direct better demand-side energy supply management.

A bit slippery to explain. But with very real social benefits in improving affordability of an essential service. With that comes better access for anyone for whom an energy bill takes a major chunk out of the weekly pay check.

CSV and HR Healthcare in Society

For only the second time in history, the UN held a high-level meeting on health issues. Unlike last year's meeting on HIV/AIDS, this meeting is on the deceptively mundane category of non-communicable diseases: heart disease, cancer, diabetes and respiratory illness.

Surprisingly, non-communicable diseases are now responsible for more deaths worldwide than all other causes of death combined. Once the affliction of wealthy nations, these egalitarian diseases have now embraced poverty, where lack of a good diet, basic education and adequate healthcare has greatly magnified their devastating impact. As a result, non-communicable diseases have spread rapidly through the developing world and are now the leading causes of death on every continent except Africa.

What is strikingly different about the UN meeting, however, is the role that many healthcare companies have chosen to play. In the past, many companies stonewalled responsibility for the fate of poor populations that are unable to pay for the medicines and medical devices that were designed and priced for US and European markets. This year, however, many companies have embraced the business opportunity of serving low income populations with specialized products, new distribution models and affordable pricing. What is even more striking, however, is the shift we are seeing from companies as suppliers of pills and devices to active participants in shaping efficient and effective healthcare systems. Novartis, for example, discovered that they could not distribute their drugs in remote Indian villages unless people were first taught health-seeking behavior, local providers were given basic medical training and rural clinics established more reliable supply chains. Rather than accept these fixed constraints, Novartis decided to address them, hiring hundreds of people to provide health education and developing a mobile phone-based system to monitor clinic inventories.

Medtronic is launching a major initiative to design medical devices that meet the needs of lower income populations in India, but also includes interventions to improve the entire eco-system of healthcare, including training, diagnosis and financing. And just last week, Eli Lilly & Co announced a \$30m (£19.3m) initiative to educate healthcare providers and patients about non-communicable diseases, working with governments to improve conditions for chronic disease care in four emerging markets.

These companies exemplify the principles of shared value creation that professor Michael Porter of Harvard Business School, and I, articulated in Harvard Business Review earlier this year. They are reconceiving products and markets, re-inventing their value chain, and strengthening local healthcare clusters in ways that contribute both to the profitability of the business and the welfare of society.

To be sure, not all corporate activities create shared value – companies can and often do harm society in their efforts to maximize short-term profitability. But a growing cadre of companies is choosing to align their competitive strategies with the immense business opportunities hidden in the world's urgent social and environmental problems.

Health care, pharmaceutical, medical devices, and other companies in which health is seen as core to business have identified shared value opportunities to promote and improve health globally (FSG, 2012). Within the health sector, some companies are leading the way and demonstrating shared value

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creation by addressing and improving the health of individuals and populations around the globe. GE, Medtronic, Eli Lilly and Company and BD have invested in developing and marketing products that are low cost and high quality, and provide expanded access to consumers in low- and middle-income countries and underserved communities (FSG, 2012). The insurance company Discovery has focused on promoting wellness and positive health behavior change within its consumer base through the health promotion program, Vitality (Porter et al., 2014). Through these initiatives, health-sector companies are realizing financial benefits along with positive impacts on health. However, as recognized by the World Economic Forum, to tackle the current complex global health challenges, “the mobilization of social forces and people outside of health systems is critical, as it is clear that chronic diseases are affecting the social and economic capital globally” (WEF, 2010, p. 3). Outside of the traditional health sector, health has not been a major focus in shared value discussions. This is despite opportunities for all companies to positively impact health through, at least, if not several of the following domains: their core products and services, their employees, and the communities in which they operate and have a consumer base. Although limited, the examples of companies outside of the health sector that are focusing on health through shared value creation are notable. PepsiCo’s Performance with Purpose strategy includes improving the nutritional profile of their products while reducing operating costs in the process. Eleven companies from diverse sectors—AIG, Anheuser-Busch InBev, AT&T, Chevron, Ericsson, Facebook, IBM, iHeart Media, PepsiCo, Ryder, and Walmart—have individually recognized their shared interest in improving road safety globally and have come together to establish Together for Safer Roads, a private-sector coalition dedicated to using their core capabilities and resources to make meaningful changes in road safety through initiatives aligned to the United Nations (UN) Decade of Action on Road Safety (Goldberg et al., 2015).

In addition to limited inclusion in shared value discussions, health also has not featured prominently in sustainability and integrated corporate reporting and the development of related indices. Sustainability reporting is used by companies to report on their nonfinancial performance, typically focused on environmental, social, and governance (ESG) factors. Integrated corporate reporting is used by companies to integrate ESG factors along with financial information into business and investment decisions. A recent review of the literature has shown that the integration of ESG factors into company performance and investments has yielded either neutral or stronger long-term gains (Vanderseil et al., 2015). Sustainability and integrated reporting also serve as tools for companies to publicly communicate their ESG impacts. Companies producing such reports cut across sectors and industries, for example, the technology company Intel and the consumer product company Nestlé both have robust corporate reports to communicate their performance on ESG factors. Reporting on health metrics has been largely absent from sustainability and integrated corporate reports, despite the impacts of workplace health on employee productivity and corporate performance across all sectors and the impacts of the core products and services produced by many sectors on the health of consumers and communities. Some companies, such as Discovery, have started including health in their corporate reporting and are encouraging uptake by others. The evidence linking health and productivity to corporate performance is summarized in the following section as well as the potential for companies across sectors to influence health through their products and services, illuminating the value of including health in sustainability and integrated reporting along with ESG factors.

CONCLUSION

New business model generations, should focus more on offering solutions for social problems. With this new approach for strategy, business can create sustainable competitive advantage. With CSV approach, companies can make their markets and ignore some disruptive competitive wars.

Entrepreneurs should more concentrate for innovative ways for helping to solve social problems for profit. The next research can find new ways for SMEs for involving them in CSV ecosystem and offering customized advices for each industries for different countries and regions.

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Chapter 25

How Multinational Companies Create and Capture Value From Innovation Through Business Model Dynamics

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ABSTRACT

Willing to answer to the research question of how multinational companies succeed in creating and capturing value from a new technology, this chapter aimed at filling the gaps in the existing literature with regards to defining business model dynamics and demonstrating business model dynamics in practice. Through a case study of Monsanto, and of the way the company's subsidiary managed to successfully adapt and innovate in Brazil, this chapter showed that external pressures such as new technology, the need to respond to the customers' demand for information concerning the company's new value proposition, existing regulation (among other external pressures) forced the multinational company to implement changes and create new elements in some of the business model components. Results also showed that to capture part of the value created with a new technology it might be necessary to complete business model design and evaluation with the analysis of the external environment.

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INTRODUCTION

Innovation and new product development as major drivers of competitive advantage have been well studied in a variety of sectors (Porter, 1985; Tidd, Bessant and Pavitt, 1997; Tushman, Anderson and O'Reilly, 1997; Gault, 2018; Prange and Schlegelmilch, 2018). Innovation requires transformation of new ideas or technologies into value (Chesbrough & Rosenbloom, 2002), and an understanding of how to adapt the company's business model to a new idea or technology (Teece, 2010).

A company which has managed successfully to stay atop its market, continuously innovate, and adapt to competitive environments is Monsanto - which was the first agrochemical company to enter the genetically modified seed market and which, in little time, became a leader of its sector. In Brazil, as in the rest of the world, Monsanto is a leader in the genetically modified (GM) seed market, with proprietary ownership of many products that have been approved by the Brazilian regulatory institution - the Biosafety National Technical Committee (abbreviated as "CTNBio" in Portuguese) (CIB, 2018). In 2017 Monsanto - on its own - invested US \$1,607 million on research and development of new seeds (Monsanto, 2017). Until 2017, Monsanto had registered 32% of Brazil's commercially approved GM seeds (CTNBio, 2018). On the other hand, despite this positive scenario for Monsanto in the present, historically the company has faced many problems throughout its path to innovation - problems such as the difficulty it faced in communicating the value of the technology present in the RoundUp Ready seeds in the 1990s, and the several years it took the company to collect on its technology present in the genetically modified soybean seeds in Brazil.

According to Mariante, Sampaio, and Inglis (2009), over the past few decades, Brazil has achieved significant results in agriculture-related research due to high investments in science and technology. The country is a world leader in tropical agricultural research and is a reference in forest breeding programs. It is one of the few countries in the world that can probably double food production, using relatively less energy than other commodity-producing countries. Another relevant measure is related to agricultural research, research which, from 1990 to 2005, was responsible for the development of 529 new plant cultivars - commercial plant varieties, including sugar cane, soybean, wheat, oranges, rice, and coffee - adapted specifically to the different climate and soil conditions of Brazil's food-producing regions (Teixeira, 2010).

Brazil, for many reasons, is a promising market for companies working in the genetically modified seed sector. The speed with which producers have adopted biotechnology has been quite impressive lately.

During the 2017 crop year, Brazil planted 50.2 million hectares with biotech crops (26% of the global area) (ISAAA, 2017). Besides Brazil's being the second-largest producer of biotechnology crops in the world, some other aspects of the country have attracted multinational companies' attention, such as Brazil's biodiversity, scientific competences in plant breeding, and seeds that are already adapted to the country's different regions. Brazil has from about 44,000 to 50,000 species of plants - which represents approximately 18% of global plant diversity (Mariante, Sampaio, & Inglis, 2009).

In that context, we pose the research question of 'how multinational companies succeed in creating and capturing value from a new technology'. We propose that business model dynamics and evolution, which involve changes in the business model components to allow adapting a new technology to a new competitive environment, might help answer that question. A company's business model can be understood as the logic used by a company to make money through its value propositions (Teece, 2010).

We adhere to Teece (*ibid.*), stating that a business model is composed of all the elements involved with transforming a new technology into value, delivering that value, and capturing part of the value created.

This chapter intends to fill two gaps identified in the literature:

1. To better explain business model dynamics (Demil & Lecocq, 2010), and
2. To show examples of the practice of business model dynamics (Hacklin & Wallnöfer, 2012).

To this end, business model dynamics is illustrated through a case study of Monsanto and of the way the company's subsidiary managed to successfully adapt and innovate in Brazil (Figueira, Luchesi, Silva, & Calegario, 2017; Figueira, 2013; Figueira, 2008). The analysis includes longitudinal and cross-sectional approaches of Monsanto's historical trajectory, focusing the time period from the 1970s (which marks the beginning of biotechnological research that would result in the first transgenic plant) up to 2006 (when the company had already approved genetically modified soybean and cotton transgenic seeds to be planted and commercialized in Brazil). Through that analysis, this chapter intends to tackle the research question.

The chapter is organized as follows: After this introduction, we present the business model's definition and key components. The third section defines business model dynamics, whereas the fourth section presents our case study on Monsanto. The fifth section presents the study's main conclusions.

THE BUSINESS MODEL CONCEPT: DEFINITION AND KEY COMPONENTS

For innovation to happen there has to be a new idea that represents value for a certain group of customers or users. Nevertheless, a new idea is not translated into value unless it is delivered to the market through a good business model (Chesbrough, 2010; Teece, 2010). Despite the lineage that goes back to when societies engaged in barter exchange, business models have only recently become a popular concept, beginning in the mid-1990s—when leveraged by the emerging knowledge economy and by e-commerce (Magretta, 2002; Osterwalder, Pigneur, & Tucci, 2005; Shafer, Smith, & Linder, 2005; Teece, 2010). The origins of the business model concept within the literature have been related to communication and information technologies, especially the Internet (Osterwalder et al., 2005; Al-Debei, & Avison, 2010; Zott, Amit, & Massa, 2010).

In accordance with this, we define a firm's business model as being the logic that exposes how the company creates and captures value from its value propositions (a company's bundle products and services that are of value to the customer), and those business components related to the strategic choices employed to develop that task¹. To explain the usefulness of this concept, let us turn to the example of information communication and technologies (ICTs). One of the impacts of ICTs is the growing number of possibilities of a company's businesses configurations, allowing the development of new ways to create and deliver value (Amit&Zott, 2001; Osterwalder, 2004). On the other hand, reengineered organizational forms imply a larger number of stakeholders and more complex businesses, which might hamper the intervention of managers and strategists (Osterwalder, 2004). It is in that context that the business model concept has been employed as an alternative management tool – if compared to more traditional management tools, such as strategic planning and customer relationship management – to allow the understanding and communication of business decisions and to explain new value creation mechanisms.

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Osterwalder (2004) has designed and proposed a rigorous conceptual model of business models. In a first step, there are four main areas that constitute the essential business model components of a company:

- Product;
- Customer Interface;
- Infrastructure Management; and
- Financial Aspects.

In a second step, those areas are broken down into a set of nine interrelated building blocks that allow conceiving a business model (see Figure 1):

- Product (value propositions);
- Customer Interface (customers, distribution channels, and customer relationships);
- Infrastructure Management (capabilities, partnerships, and value configuration);
- Financial Aspects (cost structure, and revenue model).

In addition to that, Chesbrough and Rosenbloom (2002) added a new element in the business model discussion:

- The need for searching, learning, and adaptation for effective business models.

Osterwalder's model stresses the role of the business model in expressing the logic of a company for creating value, but it does not describe how value is captured. Chesbrough and Rosenbloom (2002) contribute to this issue by discussing how latent value from a new technology or from technical inputs is translated into economic outputs through a specific business model (see Figure 2).

In some instances, an innovation can successfully employ a business model already familiar to the firm; but in other cases, such a business model will not fit the circumstances of technological or market opportunity. In the later cases, managers will need to expand their perspectives to find the right business

Figure 1. Business model ontology

Source: Osterwalder, 2004

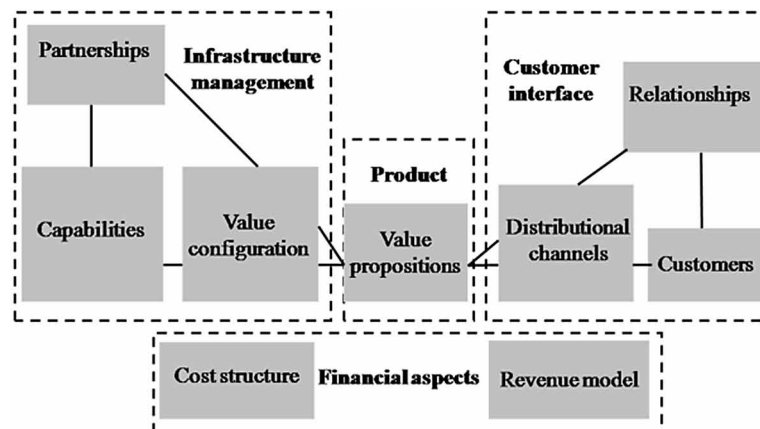
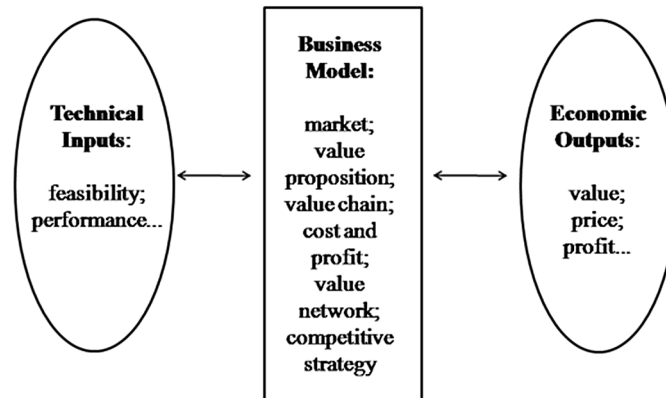


Figure 2. The business model mediates between the technical and economic domains

Source: Chesbrough & Rosenbloom, 2002



model – or, as they called it, the ‘right architecture of revenues’ – in order to capture value from that technology. The authors, noting incumbent firms’ failure to manage effectively in the face of technological change, connect this to the difficulty those firms have in perceiving and then enacting new business models when technological change requires them to do so.

BUSINESS MODEL DYNAMICS

Even though there seems to be a consensus that – to remain competitive – firms must continuously develop and adapt their business models, relatively little is known about how managers can actually go about achieving this transformation (Wirtz, Schilke, & Ullrich, 2010). Much of the literature which has developed around the theme of business models sees the construct through a static approach—that is, as a snapshot and a description at a specific moment in time of how a company creates value (Osterwalder et al., 2005; Reuver, Haaker, & Bouwman, 2007). Usually a model, being a simplified representation of a real physical system, is something static. However, a company’s business model is continuously subject to external pressures that oblige that company to adapt. In accordance, some scholars have stressed the need to make the business model construct dynamic, so that it can help explain success throughout innovation processes (Cavalcante, Kesting, & Ulhøi, 2011; Saebi, Lien, & Foss, 2017; Bojovic, Genet, & Sabatier, 2018).

The authors agree with Demil & Lecocq’s (Demil&Lecocq, 2010) understanding that the business model can be seen through two different approaches. One of them is the *static approach* – a blueprint for the coherence between core business model components. The second one is a more *transformational approach* that allows addressing change and innovation in the organization or in the model itself to enable the analysis of business models and properly adapt and make changes in the business models when necessary. Reuver et al. (2007) add that companies have to adapt their business models over time to maintain alignment with technology, regulation and market development. The scholars tackle the question of how external forces drive internal business model design choices. Indeed, external factors – such as socio-economic trends, technological developments, and political and legal changes – are important

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to the understanding of how business models are used in practice. Linder and Cantrell (2000), and Osterwalder (2004) have listed some of the pressures that affect business models:

1. **Technological Change:** Changes in technology force managers to reflect on how new technology can open new business opportunities and change the logic of the firm. For instance, in the early 2000's, 2.5 G and 3 G technologies and technological advances in hardware and software led to different concepts of mobile phone use – it is becoming the combination of a camera, an iPod, a PlayStation, and even a credit card (Vecchiato, 2012).
2. **Competitive Forces:** Competitors represent an external pressure placed on business models. An example would be the Compaq-versus-Dell battle. Compaq (now HP), being threatened by Dell – which was extremely successful with its direct-to-customer Internet strategy – was forced to rethink its strategy and introduced its own direct Internet distribution channel. However, Compaq did not align the new business model with its business organization and faced a hostile reaction from its resellers, who argued that Compaq was competing with them (Osterwalder, 2004; Christensen, 1997).
3. **Changes in Customer Demand:** For instance, changes in consumption patterns; revenue flows; and fashion styles. The way consumers shop for music via disruptive services, such as iTunes, which offers the ability to buy a single song instead of buying a whole album, is a good example of a change in customer demand.
4. **Changes in the Social Environment:** For instance, if a company's business model is centered around low-cost production in developing countries, it might draw the attention of non-governmental organizations which could mobilize public opinion against the firm. This is happening to famous fashion brands being produced in Asian countries (Cavusoglu & Dakhli, 2016).
5. **Changes in the Legal Environment:** The introduction of new privacy laws can make the use of some business models illegal; for instance, if a company has relied on customer information without the customer's explicit accord (Osterwalder, 2004; Zhao, Chang, Hwang, & Deng, 2018).

In accordance with this, we state that *business model dynamics* can be defined as the process of change in at least one of the components of a company's business model to address the necessary response by the company in face of strategic problems caused by external pressures (such as technological change, competitive forces, public acceptance, changes in customer demand, changes in the social environment, and changes in the legal environment). The new business model will rearrange strategic choices to allow new value creation and capture.

THE CASE STUDY

The Company Analyzed

The company Monsanto was founded in Saint Louis, United States, in 1901, to produce saccharin and supply pharmaceutical companies. Soon, it began to expand its business—and in 1919, it became a multinational company with the acquisition of RA Graesser Chemical Works in Ruabon, Wales (Monsanto em Ação, 2001). It settled in Brazil in 1951; and, during the years that followed, the company grew both through the success of its products and through the acquisition of established companies in

specific fields within which Monsanto wanted to expand (Monsanto em Ação, 2001). It was already a company operating in various sectors (chemical, pharmaceutical, agricultural, and food businesses) in 1997, when it decided to separate itself from the chemical field. In the 1980s, Monsanto began to develop research with genetically modified plants; and its first product derived from agricultural biotechnology was Roundup Ready soybeans—genetically modified soybean seeds tolerant to the glyphosate herbicide which had been launched in the U.S. market in 1996. With the approval of the Biosafety Law in Brazil in 2005, Monsanto released that product into the Brazilian market.

Thus, the Monsanto of today is an agricultural company (Monsanto, 2018). It is a technology-based company which develops conventional and genetically modified seeds, biotechnology traits, and herbicides. The company's customers are farmers or crop producers. Monsanto concentrates the vast majority of its R&D efforts on new biotech traits, elite germplasm, breeding, new variety and hybrid development, and genomics research. Other R&D projects support the company's current products, including improved formulations of the Roundup herbicide (Monsanto 2018). Since the 2006/2007 harvest, Bollgard cotton – a genetically modified pest-resistant cotton – obtained approval from the Biosafety National Technical Committee on Biosafety (CTNBio) and was released for commercial planting. The company has received approval for planting and commercializing additional corn and soybean GM varieties in Brazil since then.

Business Model Dynamics in Monsanto

Based on a thematic analysis of the story of Monsanto's development, we have identified four strategic hurdles and Monsanto's response to these (see Table 1).

These hurdles, which emerge from external pressures and other issues and from the company's own responses, cause changes in the business model components. In this way, the business model framework helps explain how a multinational company, such as Monsanto Brazil, could respond to these hurdles in such a way as to succeed in transforming a new technology into value.

Shifting to Investments in Agricultural Biotechnology

In the late 1970s and early 1980s, Monsanto looked for alternative businesses that were not so dependent upon the chemical industry. At that time, Monsanto faced two major problems. The first one was related to the restriction on the amount of oil-based product for most of Monsanto and the other chemical companies' products that entered the United States. The second problem was \$20million in losses due to a ruling from the Food & Drug Administration, which prohibited the sales of a plastic soft drink bottle (produced by the company), made of styrene-acrylonitrile copolymer, claiming that unpolym-

Table 1. Strategic hurdles and Monsanto's responses

Strategic Hurdle	Monsanto's Response
<i>Legal restrictions leading to losses</i>	Shifting to investments in agricultural biotechnology
<i>Developing products from agricultural biotechnology</i>	Building new core capabilities and preparing for delivery
<i>Gaining public acceptance of transgenic plants</i>	Communication, social responsibility, and transparency
<i>Challenges to creating and capturing value from transgenic seeds</i>	Completing the new architecture of revenues

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ized acrylonitrile remaining in the plastic might cause cancer and birth defects (Gorman, Werhane, & Mead, 2001).

In the 1970s and 1980s – a period in which large part of the agrochemical molecules were synthesized – companies, such as Bayer CropScience, DuPont, and Monsanto worked with R&D to develop insecticides, fungicide and herbicide molecules, and other products for agriculture. By the late 1970s and early 1980s, Monsanto – the fourth-largest chemical company in the United States at the time – initiated a major change in its products and focus (Monsanto em Ação, 2001). The change in the organization's focus was and is, in large part, due to the synthesis, in 1970, of the glyphosate molecule – the base for the Roundup Ready herbicide – by one of Monsanto's researchers. This discovery led to the expansion of Monsanto's investments in businesses related to agriculture. Roundup was launched in world markets in 1974 and, soon, became the company's most profitable manufactured commodity. The fact that the herbicide – aside from being very potent – broke down quickly in the soil and did not leak into the water supply accounted for the product's huge popularity and profitability. This meant that Monsanto could afford to research new technologies. Particularly interesting is that Monsanto's researchers – such as Ernest Jaworski, Ph.D., who was studying how Roundup was non-toxic to animals and yet still lethal to plants – were passionate about biotechnology (Gorman et al., 2001). Jaworski believed the next agricultural revolution would go beyond chemical approaches. He envisioned a plant that would be able to protect itself not through herbicides, but through its own genetic configuration.

On the other hand, all the other chemical companies developing solutions to farmers had portfolios to offer their customers – but Monsanto only had glyphosate. A relevant issue at this point is that for the development of agricultural products, companies need to have a line of research. They have to be working in partnership with university research teams, for instance—and Monsanto was not an agricultural company.

In the late 1970s, the company started the molecular biology program (Monsanto em Ação, 2001). Looking at the beginning of the 1970s, Monsanto's board of directors decided to create a firm called Advent, with the intention of ensuring that Monsanto had good research in the various fields in which it worked. In 1976, it acquired a holding of Genentech, one of the first biotech firms, as its first entry into the genetics businesses. Other joint ventures, such as Biogen and Genex, followed.

In the 1980s, Monsanto had a vision which was that with the start of genetic engineering, there were two alternatives: either to take money from the mineral commodities with which Monsanto worked and to invest in molecules of agrochemicals, or to perhaps think in line with the new biotechnology tool and make some sort of investment in the kinds of plants that would not need agrochemical molecules.

Monsanto was the first company to invest in agricultural biotechnology and the first to identify genes that – if inserted into plants – would determine characteristics in those plants which would make them need fewer molecules developed by Monsanto's competitors; and the plants could then use some of Monsanto's own molecules.

Once the company, in the late 1970s, made the decision to invest in biotechnology and create new value propositions (Osterwalder, 2004), some challenges had to be methodically approached and thoroughly studied. One of the major problems Monsanto faced in the path to innovating in the agricultural biotechnology field was related to finding the answers to basic questions, such as how to transfer cloned genes into plant cells and then how to regenerate healthy, fertile plants from those cells. To develop those tasks, the company had to build new core capabilities (Prahalad & Hamel, 1990).

Building New Core Capabilities and Preparing for Delivery

Facing the strategic hurdle of developing products from new agricultural biotechnology and of answering scientific questions that would lead to the development of final commercial products (questions, such as “Is it possible to insert new DNA into a plant cell?” or “Would the modified single-plant cell grow into a whole new plant that exhibited the new trait?”) (Gormanet al., 2001) – Monsanto had to make changes in the core capabilities component (Osterwalder, 2004) of its business model.

The company faced new challenges related to research—the solutions to which would prove crucial to the development of transgenic plants that would follow. Monsanto was used to selling plastics and rubber. High volume and low costs, like any commodity producing company, characterizes the goals of companies that sell such products. When Monsanto convinced its shareholders that their business was agricultural biotechnology, it faced completely different technological requirements. In line with the arguments of Linder and Cantrell (2000), Osterwalder (2004), and Reuver et al. (2007), technological change unleashed business-model change. The company had to assemble laboratories, hire researchers from different areas of expertise, and establish research initiatives in different parts of the world.

In 1979, Monsanto began to assemble its molecular biology team; hiring gene cloning, DNA transfer, plant-cell and tissue culture researchers. The group, which had begun with two scientists and one secretary, numbered 36 people in 1981 (Gormanet al., 2001). Besides the research team that firmly established Monsanto’s strategic research focus on biotechnology, the company established a new research laboratory in Saint Louis in 1980 (Monsanto em Ação, 2001) and the Life Sciences Research Center in Chesterfield, in 1984 (Monsanto em Ação, 2001).

Monsanto’s researchers succeeded in genetically modifying a plant cell by the end of 1982—a first in scientific history (Monsanto em Ação, 2001). In 1985, they developed tomatoes that were tolerant to the Roundup Ready herbicide.

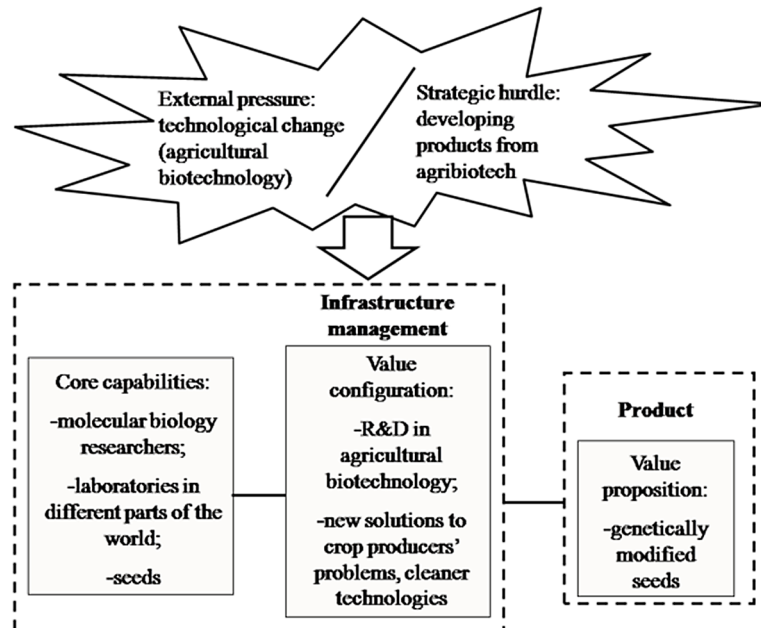
When the company’s researchers answered the questions that hampered them from creating products from biotechnology, other core capabilities still had to be mastered. Monsanto had discovered the gene that made plants tolerant to herbicides. However, the company did not have the vehicle through which it would deliver that technology to the farmer. In that context, another important asset the company had to acquire was the seed.

In arable agriculture, as Kloppenburg (2004) explained, it is the seed that provides the essential material link between research and the market. It is in the form of seeds that new plant varieties become commercial products. To access the seed vehicle in the 1990s, Monsanto engaged in a number of acquisitions. From 1996 to 1998, Monsanto acquired companies such as Calgene, Dekalb, and Cargill. In Brazil, it acquired Agroceres, Asgrow, Braskalb, and Monsoy—thus renewing part of its core capabilities component (Osterwalder, 2004) in its business model (see Figure 3).

Communication, Social Responsibility, and Transparency

In the late 1980s and the early 1990s, Monsanto’s researchers focused on the commercial application of the first products based on biotechnology. After the creation of plants that were herbicide-tolerant, Monsanto’s next project was to create plants which were resistant to insects.

Figure 3. Changes observed in the infrastructure management of Monsanto's business model



The first plants developed by Monsanto are called first-generation biotechnology products (Kalaitzandonakes, 2000). These have been crops with improved agronomic properties such as herbicide tolerance or resistance to insects. Second-generation biotechnology products are crops with enhanced quality traits, such as corn containing high oil and lysine content (Kalaitzandonakes, 2000).

In the debate concerning the marketing of genetically modified plants, to ignore public acceptance is not an option for companies working in the GM seed sector. With the release of GM crops in the 1990s, many conflicts started developing between agribusinesses and many activists in developed countries. Activists protested against the new technology and the agribusiness companies' genetic modification of crops and food (Pringle, 2003).

The second strategic hurdle Monsanto faced in the path to developing new products from biotechnology that could be commercialized was related to gaining public acceptance of transgenic plants. Monsanto had to admit that it had been mistaken in the 1990s, regarding the lack of communication and information exchange with the public about GM products. To respond to that problem, the company had to make more changes in its business model's core capabilities.

Monsanto had not been very careful when it did not prepare itself for the way the public would receive the news about transgenic crops. Societies demanded information; and the company communicated the novelty of the transgenic plants very poorly. In the beginning, the company did not know how to deal with this issue. Monsanto's managers were more concerned with receiving the requisite regulatory approval for its products, which, in the United States, meant approval from the EPA and the USDA. Besides that, Monsanto's researchers were so certain the company's products were good that, once the regulatory institutions approved it, Monsanto didn't think of discussing the new product with social sphere.

In that context, the company learned that an image and customer relationship based upon transparency would be the best way to act with respect to the new technologies. Furthermore, the company implemented changes in the communication department—a department which had to grow, hiring and training more employees, and which had to move on to consider not only the farmer, but society as a whole (see Figure 4).

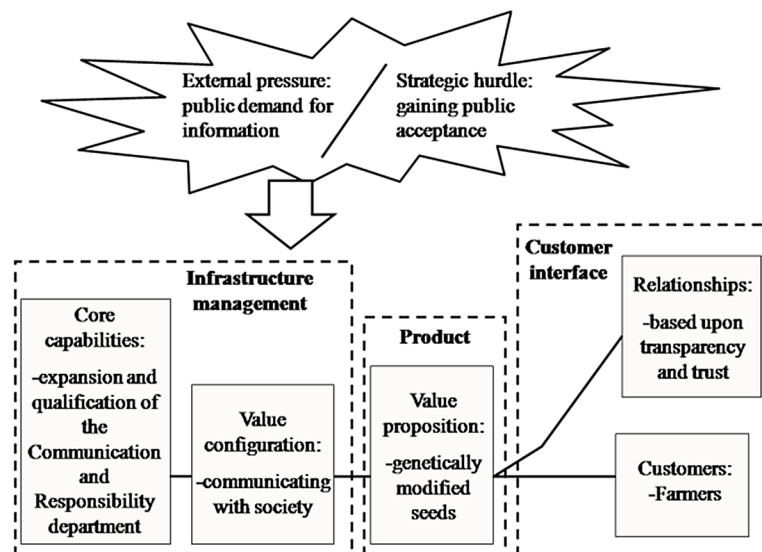
Completing the New Architecture of Revenues

With the technological innovation of GM seeds, Monsanto changed its way of creating value for farmers. The company decided to focus on the seed and, therefore, could see beyond its competitive environment. At a first moment, the value from the agrochemicals was transferred to the seed. For instance, from the moment the farmer had a gene that made the plant resistant to insects, he ended up having seeds with a higher value, due to reduced insecticide applications.

At first, genetically modified seeds reduced the farmer’s expenses with production inputs; and besides that GM seeds involved benefits that had not been previously offered to farmers—benefits, such as a lower risk of toxicity and greater security, because the number of applications of pesticides and trips to the field for the applications had been reduced.

In addition to those benefits, society and the environment also benefited from the new products. By reducing the amount of pesticides, there was a reduction in the amount of water used in the dilution; and there was a reduction in the amount of CO₂ emitted due to the reduction of trips of the machines to the fields for pesticide applications. Another benefit is the reduction of toxic substances released into the environment.

Figure 4. Changes in the infrastructure management of Monsanto’s business model in response to the public demand for information and the impact of this on the business model’s customer relationship component



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When the new product was launched in the U.S. market, in 1996, Monsanto – despite the benefits of transgenic crops – struggled to explain to the farmer that the research the company had developed had resulted in a new technology and benefits, and that the company had the right to receive for the value delivered by those new seeds.

In Brazil, other strategic hurdles Monsanto faced with the development of GM seeds were related to the perpetuation of genetic information in the RR soybean seeds and questions over the right of Brazilian farmers to save their own seed from one year's harvest to the next.

If we focus on soybeans, the RR genetic trait – which makes the plant tolerant to the glyphosate herbicide that Monsanto inserted in the plant – is a dominant gene—the patented glyphosate resistance is a genetic trait that is passed on from Roundup Ready seeds to the harvested soybeans. So, if the farmer saves his harvest, next year he can plant the saved seeds again, and, consequently, Monsanto's technology – without purchasing new seeds.

Therefore, one of the strategic hurdles Monsanto faced was to solve the question of how to sell seeds that contained the RR technology if farmers did not have to purchase seeds every year.

The Brazilian Plant Variety Protection Law (Law 9.456 of April 28, 1997), enacted by Decree 2.366 of November 05, 1997, establishes the right of farmers to store and plant seeds for their own use within their properties. In Brazil, under this law, the farmer has the right to save his harvested seeds to be planted in the future.

According to Bell and Shelman (2006), in 1997, Monsanto had applied for approval of Roundup Ready soybean seeds for commercial planting in Brazil. However, the company took seven years to start collecting on its technology. The battle for the release of transgenic crops began in 1998 with an injunction placed on the government forbidding RR soybean seeds based on the fact that no environmental impact report had been presented. Farmers in the south of Brazil ignored the law and aggressively adopted the RR soybeans. Those producers were facing severe competition from Argentina, which had already approved the RR seeds, causing a black market to arise in Brazil as the seeds were smuggled in from Argentina. The seeds began to be saved and used later in the year.

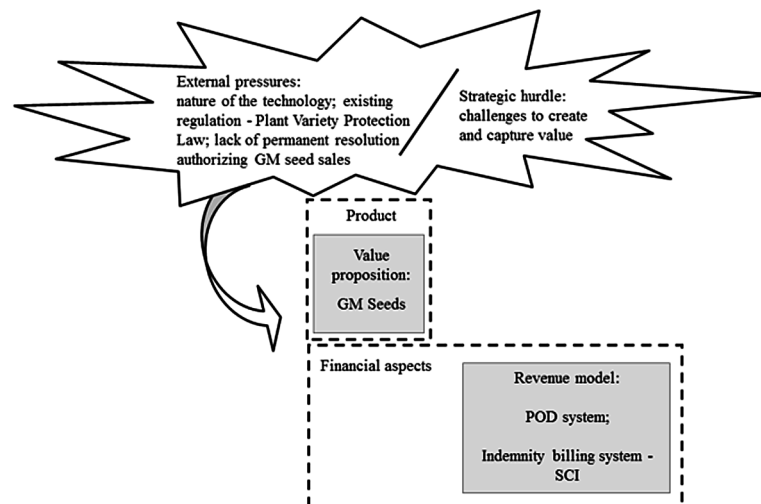
Faced with the lack of a permanent resolution about the sales of GM soybeans from 2002 and 2005, the Brazilian government had to issue temporary regulations legalizing the sale of the Roundup soybeans. Only in 2005, did the Brazilian president sign a comprehensive biosafety bill that legalized genetically modified crops and regulated the biotechnology sector (Bell & Shelman, 2006).

Back in 2002, Monsanto considered the alternatives with regards to collecting payment for use of the technology. Once sales were not authorized in Brazil, the company could not sell seed and charge the technology fee. This strategic hurdle was even more complex because, even if GM seed sales were legal, farmers would avoid it by planting saved seed.

In this context, Monsanto came up with an idea which changed the revenue model building block within the company's business model (see Figure 5).

Since every farmer who plants seeds, either using new seeds or saved seeds, has to sell his harvest to someone (because the soybean is not a product that is consumed *in natura*), the company's commercialization model could be split into two parts: those farmers who had bought and paid for the seed, and those who did not buy it but who would deliver their harvested seeds to someone else. By the time the crops had been delivered, Monsanto would map those trading companies who buy soybeans in Brazil, such as ADM, Bunge, Cargill, Draifus, and cooperatives.

Figure 5. Changes observed in the Revenue model component of Monsanto's business model



There are about five hundred companies that buy soybean seeds at about three thousand different spots. But, in every case, the farmer delivers his harvested crops to one of those traders. So, Monsanto realized that if the company established a commercial link with all of the soybean buyers, the problem would be solved.

In January 2004, Monsanto was ready to activate the system that received the name of 'Point of Delivery' (POD) in the south of Brazil. In the POD system, when the farmer makes the decision to deliver his crops at a cooperative, the cooperative asks the farmer whether that seed is genetically modified or not. If the farmer says that the seed is genetically modified, he assures that when he sells his harvest, he authorizes the payment of royalties. The warehouses, in this system, became responsible for paying Monsanto (regardless of where those crops would be taken, whether they were to be processed or to be exported).

In the case of the Bollgard cotton, something similar occurred because the producer could also save his harvested seeds. The pricing model for cotton works the same way, but it has been called the Indemnity Billing System (abbreviated as "SCI" in Portuguese) (please refer back to Figure 5).

Summarizing the Changes in the Company's Business Model

Certain external pressures, such as the new agricultural biotechnology, public demand for information, the nature of technology applied in the transgenic seeds, existing regulation in Brazil, and the lack of a permanent resolution authorizing Brazilian farmers to adopt the new technology, forced Monsanto to think about its business model and make changes in some of the business model components (Figure 6), especially the following:

- **Product (Value Proposition):** Genetically modified seeds;
- **Infrastructure Management (Core Capabilities):** Molecular biology; laboratories in different parts of the world; seed companies; expansion and qualification of the Communication and Responsibility department;

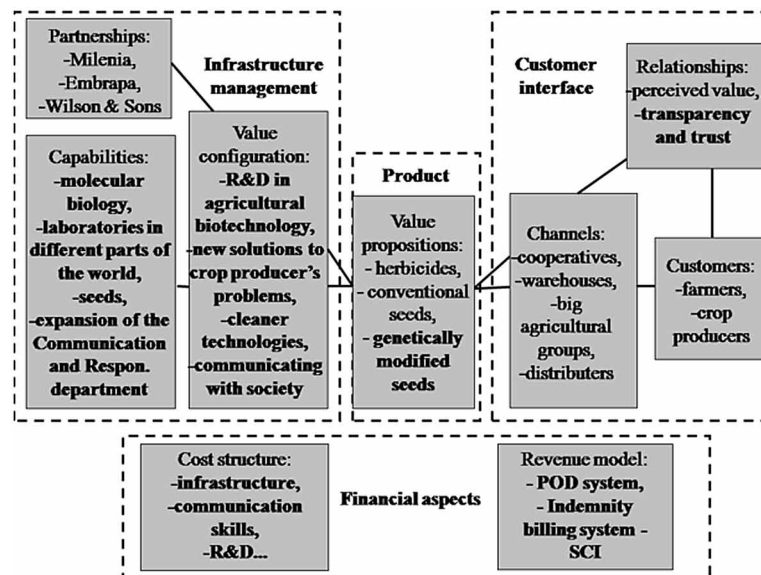
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- **Infrastructure Management (Value Configuration):** Research and development in agricultural biotechnology; new solutions to crop producers' problems; cleaner technologies; communicating with society;
- **Customer Interface (Relationships):** Based upon transparency and value;
- **Financial Aspects (Revenue Model):** Point of Delivery system; Indemnity billing system.

CONCLUSION

With the aim of answering to the research question of how multinational companies succeed in creating and capturing value from a new technology, we have endeavored to help fill the gap in the existing literature with regards to demonstrating business model dynamics in practice. We defined a firm's business model as the logic that exposes how the company creates and captures value from its value propositions and those business components related to the strategic choices employed to develop that task. In this chapter, we have argued that business models are continuously subject to external pressures, obliging the company to adapt. Besides the business model static approach, which can be used to evaluate the coherence between core business model components, the business model dynamics approach allows for change to be addressed in the business model itself—thus enabling adaptation of the business model components when necessary. Business model dynamics has been defined as the process of change in, at least, one of the components of a company's business model to enable the necessary response by the company in face of strategic problems caused by external pressures—challenges, such as technological change, competitive forces, public acceptance, changes in customer demand, changes in the social environment, and changes in the legal environment. The new business model rearranges strategic choices to allow new value creation and capture.

Figure 6. Changes in Monsanto's business model



Our case study showed that external pressures forced Monsanto to implement changes and create new elements in some of its business model components. Factors included new technologies, such as the biotechnology tool; the need to respond to the customers' demand for information concerning the company's new value proposition; the nature of the technology; existing regulation (among other external pressures); and leveraged business model change, allowing the company to capture part of the value that had been created already with the new Roundup Ready seeds. Sometime later, Monsanto would realize that another good option for transforming its new technology into value would be to start opening its business model, so that other Brazilian seed companies would license and commercialize Monsanto's technology with their own brands—thus, opening new markets and new business opportunities.

The general conclusion to be drawn, as related to our research question of how multinational companies succeed, is that successful innovation depends on business model adaptation and evolution. The need for business model adaptation is especially important if the innovative company has the intention of profiting from a new technology.

Relating to the model by Osterwalder, our approach shows how it might be useful for methodological purposes with regards to connecting strategic hurdles over time to changes in the business model components. This allows for a clear display of how external or internal pressures necessitate or push business model dynamics. This approach also allows for a cross-company comparison where, for example, competitors' responses to similar hurdles may be observed.

Nevertheless, the business model concept – without an analysis of the external environment – might not be able to guarantee success— especially when it comes to multinational companies. The business model construct alone does not comprehensively describe how an organization (a multinational company, in the case of this chapter) creates and captures value. How an organization captures value is strongly determined by external pressures. The business model construct neither includes competitive forces nor external pressures such as new technology, new customer demand, or the need to adapt to a specific regulatory environment. These are some theoretical flaws of the business model as it has been defined and illustrated in the literature. That is why the business model environment should be considered when analyzing how to create and capture value from a new technology.

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KEY TERMS AND DEFINITIONS

Agricultural Biotechnology: The use of scientific tools and techniques, including genetic engineering, molecular markers, molecular diagnostics, vaccines, and tissue culture, to modify living organisms such as plants, animals, and microorganisms.

Business Model: The logic that exposes how the company creates and captures value from its value propositions and those business components related to the strategic choices employed to develop that task.

Business Model Dynamics: The process of change in at least one of the components of a company's business model to enable the necessary response by the company in face of strategic problems caused by external pressures—challenges, such as technological change, competitive forces, public acceptance, changes in customer demand, changes in the social environment, and changes in the legal environment.

Genetically Modified Seeds: Seeds and plants used in agriculture with part of the DNA modified using genetic engineering methods. Some examples of these plants are herbicide tolerant or pest resistant plants, drought tolerant crops, or seeds with improved nutritional content.

Innovation: Innovation is not the same as invention. In general, an invention refers to the result of research activities, such as a patented idea, while an innovation is a commercial product, process or service. An invention might become an innovation when it is transformed into a socially usable product.

ENDNOTE

¹ A clear definition for the business model concept might help bridge the gaps present in the extant literature; integrating and synthesizing earlier work in that area.

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