The Digital Generation Reaches Maturity

Brave New World Wide Web

Jessica Lichy

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PREFACE

The thought process involved in writing this book is not only intellectually stimulating, but also involves an introspective look at our profession as research-informed academics. As with any analysis of a profession, certain elements clash with the reality of unexpected events arising, causing us to change course.

Above all, I would like to express my special thanks to my postdoctoral supervisor, Professor Kiane Goudarzi, for his advice and unwavering support in the different phases of my reflection. I particularly appreciate his vision of our profession and the active role we take in furthering scientific understanding.

My thanks also go to my colleagues worldwide who gave me their unconditional support in this process; our discussions on digital technology and user behaviour have, in part, shaped my thinking. I would also like to thank my IDRAC 'family', for their encouragement and ongoing support, as well as my former and current students, with whom I always enjoy discussing research. Finally, I extend thanks to my husband and children, without whom none of this would have been possible during all these years.

INTRODUCTION

Drawing from a selection of published research (see 'Overview of Publications'), this opening section gives an outline of Internet developments, highlighting key factors that have shaped (and continue to shape) Internet user behaviour. The focus is on identifying and explaining trends in the consumption of information and communication technologies (ICT), paying attention to the influence of cultural context and generation belonging. This knowledge is needed for a better understanding of the changing digital landscape, and for developing digital products and services that meet the evolving needs of individual users.

In recent decades, a number of concepts have been put forward to explain consumers' acceptance and intention to use new technologies – such as TAM (technology adoption/acceptance model) (Davis, 1986), Theory of Planned Behaviour (Ajzen, 1991), and UTAUT (Unified Theory of Acceptance and Use of Technology) (Venkatesh et al., 2003) – and are used for predicting user behaviour towards a given innovation. These models are framed by an *Anglo-centric* reading of Internet user behaviour, focusing on the adoption of technology systems such as word processors and email programmes. Over time, these theories have become firmly anchored in the literature relating to our understanding of Internet usage, and are widely used by practitioners. They propagate an incomplete and culturally biased view of ICT usage, which neither reflects nor predicts current practices related to Internet user behaviour.

While such concepts provide an explanation for interested parties (e.g., policy makers, businesses, scholars) to understand theoretical and practical aspects of ICT adoption, they only partly explain individual Internet user behaviour – owing to four main reasons:

(i) There is a tendency in the literature to disregard context by glossing over Internet user behaviour at a 'local' level. The five American tech companies known as *GAFAM* or Google-Apple-Facebook-Amazon-Microsoft (Smyrnaios, 2016) are *not* regarded as the epitome of technological progress in every country, particularly in countries where there is restricted Internet access such as Russia (Lichy, Kachour and Khvatova, 2017) or China.

Although Facebook, YouTube and WhatsApp are seen in the literature as global market leaders, many Internet users have adopted 'local' social networking sites (SNS) such as *Вконтакте* (*VKontakte*) in Russia) or 人人网 (*Renren*) in China.

(ii) Given the pace of technological evolution from early ICT (i.e., 'web 1.0') to social technologies (i.e., 'web 2.0'), it has become increasingly difficult to make sense of the changes taking place and to interpret the knock-on effects brought about by constant innovation. In the digital era, the 'consumer society' has embedded a cultural orientation that perceives the possession of certain goods and services*, including Internet access*, as the path to personal happiness, social status and success (Assad, 2007). The early notion of 'global Internet culture' reflecting a common user behaviour (Dickson, 2000) ignores the influence of cultural adaptation and generational segmentation on user behaviour. Differences in Internet usage have often been overlooked in research, in favour of projecting 'global Internet culture' (c.f., Burri, 2014).

(iii) Many studies of ICT usage reflect Anglo-centric perspectives; they are generally published in English and exclude views from other contexts. Language has often been used to shape the representation of economic and scientific activities, playing a crucial role in projecting an image and justifying a viewpoint (Léglise and Migge, 2007). Studies published in different languages need to be considered, in order to avoid framing and interpreting the realities of non-Anglophone countries through an Anglo-centric lens (see Bell and Willmott, 2015; Santello, 2015). By sourcing information from different national contexts, it is possible to remove the predisposition of the North American research lens (c.f. Emery and Trist, 1960), which suppresses sociomaterial and socio-technical differences in our understanding of the consumption of ICT.

(iv) Research has typically focused on younger generations of Internet users (Generations Y and Z), overlooking older users (Generation X and Baby Boomers). The proportion of Internet users in Europe aged over 50 with high disposable income is steadily increasing. New literature is needed on the Internet user behaviour of this demographic segment, as well as attempts at segmenting older users. Similarly, early concepts of teenage Internet usage and socio-spatial setting (i.e., neighbourhood) put forward by Hargittai and Walejko (2008) and supported by Zhao (2009) need to re-visited and updated to take into account Internet access via smartphone, which triggered a new culture of generation-specific Internet user behaviour. Prior studies have often focused on the commercial (monetized)

implications of engaging with ICT, rather than on furthering our understanding of individual user behaviour.

Despite the belief held in the marketing literature that demographic segments define generation-specific consumption patterns, given the accelerating pace of technological developments, it may be more realistic to use shorter time-spans such as 5 or 10 years (maximum) to designate an 'age bracket' of digital user behaviour. It is worth bearing in mind that the dates for each generation (every 20 years after WWII) are entirely random, with an arbitrary starting date. And by grouping individuals into generational brackets, much information is lost. Research and practice may benefit from a moratorium on time-based operationalisations of generations as units for understanding complex dynamics in digital user behaviour (underscoring the difficulty of turning an abstract concept into measurable observations). In reality, each generation is far from homogenous, as individuals age differently and are subject to numerous factors that shape their user behaviour. Demographics offer a rough proxy for expected behaviour; it would be more accurate to segment individuals based on their individual media and consumption habits (or experience), rather than by grouping them into segments that marketers assume are homogenous – i.e., a segmentation based on online and offline consumption.

To address these gaps in knowledge, the three following chapters put forward 'brick-in-the-wall' research to present a reading of key milestones in Internet developments and user behaviour. Each chapter reflects a complete cycle of technological evolution and usage at a specific moment in time. Chapter 1 (Internet adoption) examines cultural and generational differences in acceptance and usage. Chapter 2 (Internet growth) focuses on the emergent consumption of Social Networking Sites (SNS). Chapter 3 (Internet maturity) identifies contemporary trends in the ICT usage. A summary of each chapter is now presented, to situate the reader in the chronology of ICT developments and user behaviour.

Summary of Chapter 1: Cultural & generational differences in Internet user behaviour

Chapter 1 provides an understanding of how the Internet has transformed business and society, offering new channels of communication and commerce. It draws attention to early Internet-enabled transformation, revealing the extent to which adoption and diffusion has been uneven and unequal, hampered by a variety of structural characteristics – such as lack

of infrastructure, human capital, economic resources, institutional frameworks and various complex factors related to language and culture.

In the early years of the first decade of the millennium, studies explored the introduction of e-commerce and e-business (Mishra, 2011), e-learning and the adoption of email (Anthes, 2018). The focus was on aspects of Internet technologies that can generate income and the implications of integrating Internet-driven business solutions. In other words, scholars overlooked the more subtle impact of Internet-enabled change in terms of the *individual user* – and society as a whole. There are gaps in knowledge regarding three key issues, namely, (i) Internet adoption and diffusion beyond borders, (ii) converging and diverging Internet user behaviour in online communities, (iii) adolescents online and socio-spatial disparity. Chapter 1 considers each area in turn.

Examining early Internet adoption, Lichy (2009) explains the impact of language and cross-cultural communication, to show how individuals are 'collectively programmed' by their cultural setting and the linguistic group(s) to which they belong. The views presented in the literature at that time failed to provide comparative insights into Internet user behaviour in different cultures and in different linguistic communities. This notion was the genesis of a doctoral thesis "*An investigation into Internet user behaviour in different cultures and linguistic communities*" (Lichy, 2010), which put forward a comparative analysis of Internet user behaviour during the first decade of the millennium. The thesis applies the notion of generation segmentation to explain how an age cohort can shape awareness and readiness to adopt new technology. Many of the early studies of Internet user behaviour were undertaken by and based on monolingual Anglophone users; researchers suggested that cultural frameworks (c.f., Hofstede, 2001) can be used to predict Internet usage. McSweeney (2002:102) challenges this notion, stating that Hofstede (2001) "fails to satisfactorily justify his claim that an average tendency based on questionnaire responses from some employees in a single organization is also the national average tendency". Despite the criticisms of cultural frameworks, however, it seems reasonable to assume that the globalisation of markets (online and offline) will lead to a certain degree of convergence in consumption patterns, particularly in the online environment where digital content is shared in real-time.

A more holistic perspective is needed for understanding the nature of Internet user behaviour beyond borders and across different generations. To this end, Lichy (2011) takes a socio-spatial approach to examine Internet user behaviour among 13-16-year-old teenagers. Hargittai and Walejko

(2008) and Zhao (2009) claim that an individual's social setting will influence their Internet usage, and how they relate to ICT resources. The concept is based on the idea that differently situated individuals (urban/suburban vs. rural/sub-rural) will consume Internet services in different ways for communicating, information search, online transactions and social networking. However, this concept has failed to stand the test of time, in terms of Internet developments in non-Anglo communities. Lichy (2011) found that the Anglo socio-spatial interpretation of adolescent Internet user behaviour cannot be applied in France, since French urban-suburban infrastructure is the reverse image. In other words, the Anglo-centric socio-spatial model is limited to Anglo communities.

In the second decade of the millennium, new ICT were adopted (such as social media messaging, texting and powerful collaborative tools), triggering new user behaviour. The growing importance of the Internet as a commercial medium and the increased volume of e-business marked a paradigm shift to a 'connected' society (Mishra, 2011). Scholars took an interest in explaining the changes taking place, as firms transformed offline 'brick-and-mortar' business models to partial e-commerce 'click-and-mortar' business models (Otero, Gallego and Pratt, 2014). At that time, research focused on how business can use the Internet to grow, to improve productivity and increase profit. Few studies focused on the individual's Internet user behaviour *per se*. To fill this gap, the publications discussed in chapter 1 contribute to the literature on the introduction of Internet technologies, highlighting the shift to a '24/7' connected society and extending existing research to explain individual Internet user behaviour *beyond borders* and *across generations.*

Table: publications cited in chapter 1

Lichy, Jessica (2009). Borders and Frontiers in the Information Age (lead article), *Global Business Languages*, Purdue University Press, Eds. Keck and Wood, 14(1), 2-16.
Lichy, Jessica (2010). *An investigation into Internet user behaviour in different cultures and linguistic communities.* PhD thesis. University of Portsmouth, UK.
Lichy, Jessica (2011). Internet user behaviour in France and Britain: exploring socio-spatial disparity among adolescents, *International Journal of Consumer Studies*, 35(4), 470-475.

Summary of Chapter 2: Growth of Social Networking Sites (SNS)

Chapter 2 explores the growth in the consumption of Social Networking Sites (SNS) among an important demographic: Generation Y. Empowered by Internet-enabled services, Gen Y are portrayed in the literature as a relatively homogenous cohort of heavy Internet users, driving trends in using SNS for sharing information, interaction and collaboration. Studies suggest Gen Y commonality extends into offline consumer behaviour – for example, the consumption of technological devices, fast-food, entertainment, apparel and environmental issues. However, it is important to bear in mind that the cohort is far from homogenous, owing to differences in individual circumstances – such as self-identity, personal factors, and the user's conception of themselves that originates from other individuals (family, peers, etc.), all of which influence how Gen Y consume ICT.

Building on existing studies (e.g., Meier and Crocker, 2010; Batat, 2014) of Gen Y behavioural traits, Lichy (2012) raises the question of integrating SNS into teaching and learning. At the time of writing, many Gen Y were in higher education or about to enter the workforce. Comparing Internet user behaviour in France and Russia, Lichy (2012) adds to the literature on cross-cultural Internet usage among Gen Y, by providing evidence of an emerging divide in the consumption of the Internet. Lichy (2012) found that the disparity in Internet user behaviour is leading to a new type of digital divide: a 'second-level digital divide', which refers to how and why Internet users have embedded ICT differently. While some users will develop a reliance upon Internet-enabled solutions for undertaking routine activities, other users will reject or reluctantly accept Internet services if there is no alternative. In the case of teaching and learning, Internet-enabled solutions include ICT tools that are used to create, disseminate, store, communicate, and manage information. At the time of writing, few studies examined the impact of cultural context on the perception and motivation to integrate new ICT; there was an assumption that access to technology would automatically lead to having the knowledge (or motivation) to use it. This last point is the main finding of a study by Lichy, Pon and Khvatova (2014) in which the idiosyncrasies of ICT usage in a cross-cultural environment are identified and explained. The study furthers our understanding of Internet-enabled knowledge transfer, by identifying barriers to widespread use of technology in higher education through a comparison of undergraduate programmes in France and Russia. Lichy et al. (2014) found differences in the perception and usage of Internet technology, and the impact on Internet-enabled knowledge

transfer. The study serves as a reminder of proceeding with caution when integrating new technology, to avoid over-generalising the needs of users.

Focusing on emerging trends, Lichy and Kachour (2014a) undertake cross-cultural research into SNS consumption to explore the growing lassitude reported in the literature. The research was undertaken in an era of massive growth in messaging apps and other online networks. Lichy and Kachour (2014a) found that users are becoming weary/cynical of global SNS and are turning to more informal channels such as micro-blogs and forums where privacy/security is easier to maintain. The findings demonstrate two key points: firstly, that there is converging user behaviour in the way Gen Y consume SNS regardless of culture and language, and secondly, that the increasing speed of technical change interacts with transnational convergence and globalisation to generate new consumer behaviour in the online environment, which is not nationally differentiated. This finding was developed further by Lichy and Stokes (2018) in a later study which questions the validity of using essentialist frameworks in the digital era.

Extending the notion of digital transformation, Lichy and Kachour (2014b) then explore how SNS have brought about new business models to generate new business opportunities through online channels. In line with *Diffusion of Innovations* theory and the literature on Gen Y Internet user behaviour (Li and Bernoff, 2008; McMahan et al., 2009; Barzilai-Nahon and Mason, 2010; Meier and Crocker 2010), this study tests the claims put forward regarding the adoption and usage of SNS by Gen Y. Lichy and Kachour (2014b) reveal a decline between 2010 and 2012 in the consumption of SNS that can be attributed to a general lack of interest, growing concerns about data privacy, abundance of networks, a migration towards blogs and forums, and the rapid growth in mobile apps.

While a large body of literature offers insights into Gen Y Internet user behaviour, few studies focused on comparing Gen Y with other generations in the workforce. To address this gap, Lichy (2016) identifies the key characteristics of Internet user behaviour of the four generations that constitute the working population (Baby Boomers, Gen X, Y and Z), to offer management insights into inter-generational and intra-generational trends. The study outlines how each generation has its own behaviour, interests, attitudes, beliefs and lifestyle – and therefore a different level of *technology readiness* (i.e., propensity to embrace and use new technologies) (Son and Han, 2011) and *technology acceptance* (i.e., people's perceived usefulness and perceived ease of use) (Davis, 1986). There are differences in the extent to which ICT are central to the lives of different age groups, and the contexts

in which they are used (Van Volkom, Stapley and Amaturo, 2014). Managers need to be aware of how employees from different generations interact with ICT in different ways; and how their expectations and behaviour evolve when new ICT are introduced, through 'step change' (e.g., the first iPhone, launched in 2007) and 'incremental change' (e.g., each subsequent new model of iPhone).

Lichy (2017) brings together the topics discussed in chapter 2 in a special issue focusing on 'Advanced business models for management education in the twenty-first century: international perspectives'. The special issue contributes to the studies on the growing consumption of SNS – specifically, the adoption and usage of SNS across different cultural contexts and by different generations of users.

Table: publications cited in chapter 2

Lichy, Jessica (2012). Towards an international culture: Gen Y students and SNS?, *Active Learning in Higher Education*, 13(2),101-116.

Lichy, Jessica; Pon, Kevin & Khvatova, Tatiana (2014). Engaging in digital technology: one size fits all, *Journal of Management Development*, 33(7), 638-661. (CNRS/FNEGE rank 4)

Lichy, J. & Kachour, M. (2014a). Understanding the culture of young Internet users in a rapidly changing society, *International Journal of Technology and Human Interaction*, 10(4), 1-18. doi: 10.4018/ijthi.2014100101 (CNRS rank 4)

Lichy, J. & Kachour, M. (2014b). Business Models & Social Networking Sites: 50 Shades of Generation Y, Mar, N°5 de la revue *Question(s) de Management*, ISSN 2262-7030, pp.59-71. (FNEGE rank 4)

Lichy, Jessica (2016). Chapter 8: Managing Internet user behaviour within organizations: Inter and intra-generational trends, in Organizational Management Approaches and Solutions (co-authored with Peter Stokes et al.), Kogan Page Limited http://www.koganpage.com/article/changing-paradigms

Lichy, J. (2017) Guest Editor for *Journal of Management Development*. Special Issue: Advanced business models for management education in the twenty-first century: international perspectives, 36 (6), http://www.emeraldinsight.com/toc/jmd/36/6 (CNRS/FNEGE rank 4)

Lichy, J. & Stokes, P. (2018) Questioning the Validity of Cross-Cultural Frameworks in a Digital Era: The Emergence of New Approaches to Culture in the Online Environment, *International Studies of Management and Organization*, 48(1), 121-136 (CNRS/FNEGE rank 3)

Summary of Chapter 3: Contemporary trends in the consumption of ICT

The Internet is now over half a century old, and has entered the maturity stage in Anglo-centric markets (King and Liou, 2004; Bock, Lee and Li, 2007). The adoption and usage of Internet-enabled devices has been uneven and unpredictable across the globe. Our current understanding of *technology readiness* (Son and Han, 2011) and *technology acceptance* (Davis, 1986) is no longer sufficient to explain user trends. Kozinets (2016) highlights the diversity of ICT usage and the multiplicity of user needs. To further our understanding, chapter 3 sets out to explain a number of contemporary user trends.

The literature offers insights into the acceptance of digital channels as a facet of post-modernity, but fails to explain the intangible and subjective nature of individual user behaviour. ICT provide opportunities for users to connect with communities of like-minded individuals, anonymously or otherwise, driving self-confidence and reaching out to others who share similar norms, values and consumption practices (Zhao, 2005). With the exception of Panteli and Marder (2017) who examine how different age groups construct and enact normality within SNS, researchers have tended to focus on *general* user behaviour (see Lomborg, 2017) or the use of SNS in business, for example for recruitment (Fondeur and Lhermitte, 2006). Relatively less research has been undertaken on the reasons behind the choice of ICT and the different types of user behaviour within higher education.

Extending the work of Folorunso et al. (2010) on students' attitudes and intention to use SNS, Lichy and Kachour (2016) investigate the use of SNS to provide space and opportunities for teaching and learning in France. The findings show that students prefer using basic web 1.0 tools (email and corporate intranet) for communicating with faculty and administrative staff. Yet, they will use web 2.0 tools (social media and SNS) for communicating with peers. Their choice of ICT is intuitive and unprompted, confirming the notion that 'the medium is the message' (McLuhan and Fiore, 1967). Of

particular interest is the finding that the students communicate asynchronously, rather than interactively in real-time. This is an important detail, since in other national contexts, web 2.0 tools are being used interactively for collaborating, co-creating and sharing knowledge across diverse student communities (Gan, Menkhoff and Smith, 2015). However, Lichy and Kachour (2016) found the use of email and corporate intranet is being perpetuated by faculty and administrative staff who favour one-way channels for disseminating resources and information, rather than using SNS. The findings reveal the need for ongoing research into ICT usage in non-Anglo-centric markets, and underscore the second-level digital divide and inter-generational disparities in user behaviour. More recently, Lichy and Merle (2019) undertook a comparative study of ICT usage for knowledge transfer in the UK and France; their findings show how culture is an enabler for the former but (still) a barrier for the latter.

As ICT transitioned from the early adoption phase into the growth phase, academic interest shifted from a late 20th century focus on Internet usage towards a 21st century focus on data, currently crystallized in 'Big Data'. To shed light on key ramifications of digital transformation affecting business and society worldwide, Lichy (2019) put forward a special issue on managing change in the 21st century.

Answering calls for research by Warf (2011) on the need for more investigation into Internet censorship, and by Erevelles, Fukawa and Swayne (2016) on the impact of Big Data, Lichy, Kachour and Khvatova (2017) examine perceptions and interpretations of Big Data applications in a censored environment, Russia, from the perspective of the individual Internet user. The findings reveal that many individuals lack a clear understanding of how Big Data tools are used. Acknowledging that the pursuit of knowledge sometimes requires researchers to identify 'lack of awareness' (i.e., ignorance), this study underscores the need to raise awareness of Big Data at the level of the individual Internet user, to explain the benefits (commoditization of data) and drawbacks (data surveillance).

The growth of global infrastructure and transnational cosmopolitanism have blurred the boundaries across national cultures and economies (Ger, 1999). While consumers worldwide are becoming more homogeneous as a result of marketing standardization, researchers suggest that consumers within individual countries are becoming more culturally heterogeneous (Carpenter et al., 2012). Rather than segmenting at the individual country level, Cleveland and Laroche (2007) advocated segmenting consumers across markets, based on *acculturation to the global consumer culture* (AGCC).

However, little empirical work exists to explain the role played by social media. To fill this gap, Dutot and Lichy (2019) investigate the extent to which social media are accelerating the process of AGCC. The findings show that, firstly, social network, social influence, cultural novelty and economic rewards significantly accelerate the process of acculturation; and that, secondly, social media play a mediating role on social networks, cultural novelty and trust. The study makes a contribution to theory by developing and testing a social media based model that provides a more holistic overview of the process of AGCC.

The online environment plays host to numerous diverse subcultures or communities of Internet users who can be identified by their consumption patterns; they are made up of people who consume similar products and services, with a feeling of shared well-being, shared risks, common interests and common concerns. Researchers have investigated consumption patterns in offline communities and in online communities – but little is known about the interface between online and offline. McLeay, Lichy and Major (2019) explore the online-offline interface, to identify and explain co-creation in the ski chalet community *experiencescape.* This study contributes to the fast-growing and fragmented literature on communities by refining the understanding of its dimensions and situating it in a network of conceptual relationships, then putting forward a framework for explaining the 'augmented community' *experiencescape*, at the online-offline interface. The works discussed in chapter 3 make a contribution to the literature on perceptions of Big Data from the perspective of the individual user and on how individuals consume social media based communities.

Table: publications cited in chapter 3

Lichy, Jessica and Kachour, Maher (2016). Understanding how students interact with technology for knowledge-sharing: the emergence of a new 'social' divide in France, *International Journal of Technology and Human Interaction*, 12(1), 90-112. (CNRS/FNEGE rank 4)
Dutot, Vincent and Lichy Jessica (2019). The Role of Social Media in Accelerating the Process of Acculturation to the Global Consumer Culture: An Empirical Analysis. *International Journal of Technology and Human Interaction,* 15(1), 65-84. (CNRS/FNEGE rank 4)
McLeay F., Lichy, J. & Major, B. (2019). Co-Creation and the Ski Chalet Community Experiencescape, *Tourism Management,* 74, 413-424. (CNRS rank 2/ FNEGE rank 1)

Lichy, J. & Merle, K. (2019). Clicks & Tweets in Continuing Professional Development: A cross-cultural comparison of ICT usage, *Management International*, 24 N°5, 1-17. (CNRS rank 3/ FNEGE rank 2)

Lichy, J. (2019). Guest Editor *Journal of Management Development.* Special issue: 'Managing Change in the 21st Century', available at: https://mc.manuscriptcentral.com/jmd (CNRS/FNEGE rank 4)

Taken as a whole, the 3 chapters explain the impact of cultural context and generation belonging on Internet usage, focusing on the consumption of ICT, social media and SNS, by tracing adoption (chapter 1), growth (chapter 2) and maturity (chapter 3). The unabridged chapters offer detailed insights into Internet user behaviour in the 21st century, paying attention to emerging disparities at an individual level.

These insights lead to a 2-part concluding section covering: (i) a retrospective on the past decade and a prospective on the next decade, (ii) research-in-progress focusing on Internet developments and Internet user behaviour in China, highlighting the bifurcation into a Chinese-led Internet and a non-Chinese Internet led society.

CHAPTER 1

CULTURAL & GENERATIONAL DIFFERENCES IN INTERNET USER BEHAVIOUR

1.1 Transnational Internet adoption and diffusion

In 2009, Purdue Research Foundation published "*Borders and Frontiers in the Information Age*" (Lichy, 2009) as the lead article highlighting transnational dimensions of Internet usage – c.f. article 1 in 'Overview of Publications'. The article made a break with the literature of that era; as prior studies had been undertaken from a monolingual and/or mono-cultural approach, and therefore offered a predominantly Anglo-American interpretation of Internet usage, overlooking the impact of socio-linguistics and context on how the Internet is consumed in different national contexts.

The purpose of the article was to investigate emerging trends in ICT developments at a specific moment in time (i.e., prior to the advent of web 2.0) to draw attention to the need to broaden our understanding of Internet user behaviour beyond borders. The article explains early Internet user behaviour to develop a sense of the past and, with that, the ways in which new user behaviour came about. The intention was to put forward an explanation of Internet user behaviour in the era immediately preceding the widespread adoption of social media. The article drew from early interpretations of ICT usage, which enabled scholars to establish knowledge in the field and to define Internet usage in different contexts, during the phase of Internet adoption and diffusion.

However, researching Internet user behaviour is problematic, owing to the scope of the topic. For example, many of the early studies analysed data within a national setting, which introduced biased or unreliable explanations of Internet user trends. Similarly, researchers often employed an ethnographic approach, which can foster a close relationship with local agents, causing them to lose sight of the larger context. As the understanding of Internet usage is anchored in socio-cultural norms, concepts of Internet usage will differ from one context to another, hence the need to take into account scholarly publications from different national sources.

The stimulus for this article was the emerging popularity of communicating and sharing information beyond borders over the World Wide Web, both in a professional and social context. There is an abundance of early literature on the impact of ICT, much of which is chronicled and discussed from an Anglo-American perspective, thus oversimplifying the idiosyncrasies of how the Internet is consumed in other cultures and linguistic communities. National differences generate different ways of perceiving, interpreting and consuming ICT. Thus, while there are many broad similarities in Internet user behaviour from one country to another, certain differences merit closer investigation.

In this study, two comparable European countries, France and Britain, provided an ideal setting to illustrate commonality and disparity in Internet user behaviour. Differences in ICT developments and Internet usage can be partially explained by the respective business environments in each country, generating a different approach to introducing ICT (MacLean, 2002). While Internet adoption was largely top-down in France (through government initiatives), it was bottom-up in Britain (through consumer demand and business pressure). Public and private campaigns to encourage Internet uptake therefore had greater impact in Britain than in France (Acaud and Lakel, 2003).

Acknowledging the abundance of business literature relating to ICT, few studies have attempted to explain differences in ICT developments and Internet usage with respect to language legislation. Since the introduction of the 1975 law *Bas-Lauriol* in France, no foreign words can be used in official communication if a French equivalent exists. In 1994, this law was modified as part of the *Loi Toubon* to underscore the notion that the language of the Republic is French for every citizen living in France (Bentz, 1997). The Court of Justice of the European Union (CJEU) considers that certain dispositions of EU law contravene the *Loi Toubon* (decision 12/9/2000); the interpretation of the EU regulations could also be considered contradictory (decree n° 84-1147). Despite this controversy, the French State remains reluctant to modify the existing legislation that regulates the French language.

Language legislation regulates the use of French in official government publications, advertisements and commercial contracts, but it does not concern private, non-commercial communications, such as non-commercial user-generated content (UGC). The French language is considered a compulsory condition to ensure the principle of equality. Realistically, however, it is impossible to preserve language purity in the digital era, given

that the diffusion of web content is independent of editorial control. Despite the complexity of regulating a language, various non-legislative measures have been taken to promote and preserve the purity of the French language online. The continued efforts to increase French-language web content seem colossal and yet the results have been neither successful not sustainable. The article gives examples of abandoned projects, including the *Chaîne d'Information Internationale*, designed to rival the dominance of online English-speaking news, namely CNN and the BBC. Similarly, the search engine, *Quœro*, was developed to challenge Google. At that time, Google was perceived to be too Anglo-centric, thus portraying a distorted view of French culture (Croft, 2005). These illustrations highlight not only the importance of cultural identity in the online environment but also the notion of 'communication context' as defined by Hall (1976). The habitual medium-to-high context communication style so common in France is somewhat mismatched with the predominantly low-context philosophy of Internet communication. Consequently, as ICT favours extensive interpersonal communication online, both top-down and bottom-up, it runs counter to the established channels of hierarchical communication traditionally found in France (Stoner, Freeman and Gilbert, 1995).

The article focuses on the relatively homogenous online community of early Internet users (although nowadays there are numerous, diverse online communities). International mobility and global forces have changed the traditional channels of communication. Diverse sub-cultures now co-exist, each with different perceptions and practices of using ICT. Two of the largest sub-cultures in France (many of whom use French as a second or third language) include the international expatriate communities (Crystal, 2012) and 'Third-Culture Kids' (Lam and Selmer, 2003) – referring to adolescents who have lived at least one of their formative years in another country. For these groups, the Internet provides a vital connection to other like-minded individuals of a similar cultural background, and a valuable source of multi-lingual information – c.f. article 15 in 'Overview of Publications'.

In terms of acculturation, technology can contribute to reducing *psychic distance*, which describes the different perceptions of cultural value systems between the 'home' and the 'foreign' country (Hallén and Wiedersheim-Paul, 1984). The higher the level of psychic distance, the greater the time and effort required to develop successful and sustainable relationships. ICT can facilitate the process of integration and assimilation into mainstream society – c.f. article 14 in 'Overview of Publications'. Furthermore, ICT can enable individuals to connect with like-minded others – c.f. article 15 in

'Overview of Publications'. However, while ICT brings users together interactively, having access to ICT does not automatically lead to constructive or effective use, as highlighted by the 'second-level digital divide', which will be discussed further in chapter 3.

Ongoing technological change is accelerating, bringing about a constant stream of new trends in user behaviour. The changing landscape of ICT developments represents a challenge for researchers to keep pace. At best, studies can focus on narrow aspects – such as the impact of user diversity – but there are numerous dimensions of ICT that are being overlooked because their impact has not yet been detected or noticed. The wider effects of Internet usage will not be apparent until later, owing to the so-called '*rear-view mirror effect*' (McLuhan, 1964), which describes how the impact cannot be identified until it has finished having an effect and is in the past. It is nevertheless clear that ICT have enabled users worldwide to communicate and share information across languages, cultures, national borders and social classes. ICT have given Internet users access to vast volumes of information (that were previously withheld or unobtainable), generating new opportunities and real-time interactivity.

In the decade that followed the inception of the World Wide Web in 1995, Internet developments evolved from web 1.0 (asynchronous messaging, email and blogging) towards the next generation of technology, characterised as participatory, interactive, pervasive and integrated: the era of web 2.0 (Valcanis, 2011). Web 2.0 tools multiplied opportunities for Internet users to establish contact with other users worldwide, offering superior-quality graphics and high-speed data transmission for communicating, collaborating and sharing information. Today's *global village* is typified by a vast array of virtual platforms (blogs, chats, forums, instant messaging) enabling 24/7 communication between Internet-enabled devices (desktop, laptop, tablet computers, smartphones). Each mode of communication transforms the nature of the content, confirming the notion that the medium *is* the message (McLuhan and Fiore, 1967). Effective communication requires an understanding of language, as well as an awareness of the non-verbal aspects of communication that are part of every speech community (Ferraro, 1994). Online communication remains problematic owing to the lack of widespread high-speed stable Internet connection 24/7 and response delay. Furthermore, as any Internet user can publish content online, there is a risk for both individuals and organisations when controversial or defamatory content is published. Monitoring the veracity of content is unmanageable in the online environment, since greater interactivity is generating greater diversity of ideas and content. As increasing numbers of Internet users

engage in far-reaching online interaction (Rainie and Wellman, 2014), further diversity can be expected as the online population continues to fragment into different user groups united by shared values.

Multi-lingual online content is a relatively recent phenomenon, which emerged gradually as non-English speakers began to create and consume content (Pimienta, Prado and Blanco, 2010). In certain parts of the world, cultural and linguistic diversity online is not permitted. Repressive governments have taken radical measures to prevent access to GAFAM products, or have installed sophisticated software to filter, block and monitor hundreds of thousands of sites (e.g., Tunisia, Iran, Saudi Arabia, Cuba, China). Internet users will continue to risk long prison sentences for disclosing views online that allegedly violate Islamic tradition (e.g., Middle East and North Africa). Such segmentation in the online environment is a stark reminder that the Internet is not a culture-free product. Users are culturally 'formatted' to engage with social networks in different ways, depending on the national context and the occurrence of major events. For example, during the Arab Spring uprising and Ukraine's Euromaidan protests, social networks were used to disseminate propaganda (both for *and* against the regime), to display the massacres of certain regimes and to organise manifestations against these regimes. Although popular media narratives are likely to have exaggerated the impact of social media, the protests nevertheless generated a substantial amount of social media activity. Furthering our knowledge of Internet usage in countries ruled by repressive governments is essential for understanding ICT usage worldwide. This theme is further developed in the section on research-in-progress.

1.2 Convergence and divergence in online communities

Continuing with the theme of Internet user behaviour beyond borders, the doctoral thesis *"An investigation into Internet user behaviour in different cultures and linguistic communities"* (Lichy, 2010) examines the evolution of Internet usage in France and Britain – c.f. article 2 in 'Overview of Publications'. This investigation was undertaken during a period in time when rapid developments in ICT were re-shaping the long-established ways of thinking and working. The findings of the thesis were re-tested a decade later in a post-doctoral study to offer a contemporary update of cross-cultural differences in ICT usage – c.f. article 16 in 'Overview of Publications'.

The thesis contributes to knowledge in three distinct ways. Firstly, it traces key developments in Internet usage to further our understanding of how individuals adopt, adapt and 'consume' (i.e., engage with) ICT. It captures a critical period in Internet history marked by radical technological evolution and changing consumer behaviour. An analysis of the data gathered in a survey (administered in 2005) and interviews (undertaken in 2009) shows strong signs of increasing convergence in Internet user behaviour, and that ***age*** (rather than gender or national characteristics) was the main influence governing Internet usage at that moment in time. The findings demonstrate how the Internet was used by both men and women of all ages in the early years of the millennium, in contrast to the earlier studies of Internet usage that suggest young English-speaking male users dominate the Internet. Moreover, age difference noticeably correlates with certain Internet user preferences (i.e., engaging in social networks and undertaking financial transactions online). The findings underscore growing convergence in Internet user behaviour and, more importantly, how the increasing pace of technical change interacts with transnational convergence and globalisation to generate new consumer behaviour in the online environment, which is not nationally differentiated.

A second contribution of the thesis is that the findings challenge the existing explanatory frameworks and models that use notions of culture to predict national difference. In other words, the data indicate that the essentialist view has no predictive value in today's online environment. The early notions of cultural difference put forward by Hofstede (2001), Trompenaars & Hampden-Turner (1997) and Hall & Hall (1995) which are taught to scholars worldwide now appear inadequate for explaining Internet usage beyond borders. The notion of predicting that 'the French' will behave differently from 'the British' merely because of national difference is simply not borne out in ICT usage. The theories have failed to stand the test of time. They may have been briefly true when national identity was stronger but probably, *even then*, it was over-claiming to state that 'the French' (as a group) reacted in one single way. In terms of relevance, these mandarin theories of culture are not only outdated but also inapplicable in the global online world. In a later study, Lichy and Stokes (2018) return to this idea to test the validity of using essentialist frameworks in the digital era – c.f. article 12 in 'Overview of Publications'. The ongoing pace of change exemplifies both the dynamic nature of Internet technology and Internet usage.

Lastly, this thesis breaks with common practice in Internet studies by employing a largely offline mixed-methods approach to data collection; an

online survey was carried out to extend a face-to-face survey, followed by a second phase of field research using in-depth interviews by telephone. The belief supporting this approach was that Internet user data needs to be gathered in different ways (face-to-face, online and telephone) to attract participation from different profiles of Internet users. This approach overcomes the problem of relying on secondary data that are often outdated by the time they are published, due to rapid Internet developments and evolving user behaviour. Therefore, it can be claimed that this thesis provides a wider sample than most online enquiries, and is a more reliable sample than many of the Internet studies available in the public domain or in the wider academic community.

The thesis captured a moment in time when Internet users were in the process of shifting from using asynchronous web 1.0 tools (mainly email and blogging) to more interactive communication (such as social networks and forums). Although the shift was a gradual evolution spanning several years, the adoption of interactive tools contributed to a paradigm shift in attitudes towards divulging personal and financial information in the online environment. Moreover, while the literature reported that language and culture would influence consumption, generating context-specific behaviour, there were in fact very clear similarities in activities undertaken online in each national setting; particularly for communication and information-based services.

Acknowledging converging Internet user behaviour, it is worth noting that divergence was apparent in the adoption of social media and undertaking online financial transactions. This finding appeared to stem from generational (i.e., age) difference. While there was a degree of convergence in Internet usage between Gen X and Gen Y in France and Britain (e.g., in the consumption of free Internet services), there was divergence among older generations (at that time, participants aged over 40) regarding the use of social media and online financial transactions. French consumers were more reticent than their British counterparts about, firstly, divulging personal and financial information in return for accessing certain online services, and secondly, about adopting web 2.0 tools for undertaking online financial transactions.

The thesis predicted certain outcomes as a result of ongoing developments in technology standardisation[1]. Firstly, it was expected that the standardisation

[1] i.e., the 'interoperability' of platforms to exchange information in transparent fashion (Larher, 2002).

of Internet norms and offers across Europe would create more homogeneous patterns of Internet user behaviour. Secondly, it was assumed that Internet standards would lead to a new consumer market, characterised by a range of products and services that people would choose to consume online in preference to offline. This view was based on the belief that, in time, users will adopt similar behaviour, irrespective of 'local' consumer behaviour, language and national difference – though it would be unrealistic to assume that convergence would continue to spread to Internet users worldwide.

The growth of the Internet has been spectacular, brought about by both 'step change' and 'incremental change'. The Internet was designed to support communication between computer systems in academic and scientific communities; it was not designed to cope with an ever-growing population of networked, mobile users and apps. The structural limitations of the Internet are now apparent and its future is being discussed. Today's challenge is to make the Internet more robust, versatile and equipped with suitable governance models, calling for ongoing investigation on a global scale. Cross-cultural studies are required for understanding the evolution of Internet user behaviour, particularly among younger users, the managers of tomorrow. For this reason, attention now turns to a study of the 'digital savvy' cohort to explore how they engage with social networks for collaboration, learning and recreation in different national contexts – and the extent to which they are driving change.

1.3 Adolescents online and socio-spatial disparity

The assumptions raised in the thesis (discussed above) have stood the test of time, as evidenced by Lichy (2011) – c.f. article 3 in 'Overview of Publications'. Responding to calls for further research on younger Internet users, this article explores the extent to which the frameworks (put forward in the first decade of the 21st century) are reliable for predicting Internet user behaviour in different national settings.

As Internet users gradually adopted web 2.0 technology to perform everyday activities, it became apparent that its diffusion and adoption had been uneven. Studies published in the first decade of the millennium on digital inequality had been mainly undertaken in Anglo-American communities. Few studies had explored digital inequality from a socio-spatial perspective – i.e., by looking at Internet usage within different neighbourhoods, rather than an urban vs. rural comparison. This gap in knowledge and methodology highlights the complexities of gathering comparable data on Internet user behaviour beyond borders and across

different language communities. Reflecting on studies of cross-cultural and/or inter-generational ICT usage, the reliance on partial knowledge and middle-class cultural and political bias has pointed to the need within the field for reflection on how and why empirical realities are studied in the ways that they have been – and may benefit from rethinking traditional research methods of inquiry. In order to enhance the understanding of cultural difference and diversity as a shared human experience, therefore, it is constructive to use an interpretive approach**,** based on the assumption that social reality is not singular or objective, but instead is shaped by human experiences and social contexts (ontology), and is therefore best studied within its socio-technical context.

In an attempt to redress the balance, Lichy (2011) takes a multidisciplinary approach to investigate emerging trends in Internet usage across different neighbourhoods (inner-city vs. suburban, rather than urban vs. rural), employing in-depth interviews with young Internet users aged 13-15 years old in France and Britain. The objective was to provide a more holistic understanding of the way in which teenage Internet users behave online, comparing different neighbourhoods. The investigation revealed a number of converging trends that are common to France and Britain – in addition to certain unexpected disparities.

At that moment in time, our knowledge of Internet user behaviour across different neighbourhoods was influenced by research undertaken in Anglo-American contexts. In particular, a study undertaken by Hargittai and Walejko (2008) proposed that the extent to which young adults share creative materials online (video, music, writing and artistic photography) is directly related to a person's socio-economic status, as measured by parental schooling. Thus, it was suggested that the children of families living in the suburbs tend to benefit from the greater affluence and encouragement of their parents to explore and make use of ICT. Inversely, it was found that inner-city children have comparatively lower ICT access. The general consensus was that despite new opportunities to engage in the distribution of content, relatively few people were taking advantage of developments in ICT. If valid, these findings implied a long-term challenge for society by perpetuating the digital divide, in addition to problems for curriculum design and teaching. Moreover, they challenge the literature, which claims that differences in Internet user behaviour are diminishing (Wasserman and Richmond-Abbot, 2005; Bouwman et al., 2008), in other words, that converging Internet user behaviour is replacing divergence in the online environment.

In a similar manner, Zhao (2009) suggested that there is an inner-city vs. suburban differential in the adoption of *killer applications*[2] by teenagers. The theory puts forward that suburban teenagers (usually middle class) are more likely to be earlier adopters of the latest technological devices than inner-city users (often from low-income families). In other words, inner-city teenagers (assumed to have limited communication skills) would prefer to use photo-based *MySpace* (rather than the written word). It supposes that suburban teenagers (assumed to be more educated) would prefer to use word-based *Instant Messaging* (such as MSN), which requires a higher level of digital literacy plus dexterity to read and write at high speed.

Consequently, the literature of that era articulated the notion that the barriers to disseminating material in the online environment had been lowered by the adoption of web 2.0 tools (compared with earlier ICT), but that a new digital divide was emerging that could be explained by disparity in socio-spatial setting. The assumption was that inner-city teenagers would have a more basic grasp of using ICT than suburban teenagers. However, given that the work of Hargittai and Walejko (2008) and Zhao (2009) was undertaken in Anglo-American contexts, it is reasonable to question the extent to which their findings can be generalised to a European setting and, in the case of France, to a non-Anglophone context.

When exploring the validity of urban-suburban disparity in Internet usage within British and French neighbourhoods, urban geography is a major factor to take into account. In terms of etymology, the French term for 'suburb', *banlieu* (ban + lieu), has a historic context: literally 'excluded' from the city proper, yet 'subject to the authoritative dictates of [its] power structure(s)' (Fielder, 2001:271). In France, many schools in the *banlieu* struggle with limited financial and human resources. French mainstream media draw attention to the poverty and depravity of the *banlieu*, depicting the area as beyond the cultural periphery (and the *périphérique*) of mainstream society. Conversely, in the English language, 'inner-city' is often used to describe 'social unrest'. In this respect, there is a certain resemblance between the suburbs in France and the urban (or inner-city) communities in Anglo communities. This view is supported by urban initiatives that advocate community-wide technology projects to encourage civic participation, engagement and empowerment, in an attempt to reduce the disparity between the marginalised and the affluent districts.

[2] An application or service that is reason enough to buy a device or sign up to a subscription.

Two key assumptions can be drawn from a review of the literature at that time; firstly, that Internet user behaviour will reflect socio-spatial setting (i.e., type of neighbourhood can cause disparity), and secondly, that Internet user behaviour is influenced by cultural values (i.e., national difference can cause divergence). The belief is that young Internet users would behave in a predictable way: thus, inner-city British teenagers would reflect similar Internet user behaviour to French suburban teenagers. These assumptions were tested by survey method with four comparable groups of teenage Internet users in Britain and in France. Surveys were administered to pupils attending an inner-city school and to pupils at a suburban school in each national setting.

The findings show that, firstly, it is not possible to reliably predict Internet usage; and secondly, that using the Internet does not equate with equal use of all websites in similar ways by different socio-spatial user groups. A degree of commonality was found, indicating some convergence in Internet usage. However, there was evidence of disparity in the responses from each neighbourhood, which suggests that certain differences may in fact exist between urban and suburban Internet users. The observed differences support the notion that learning styles vary between urban and suburban settings, and between France and Britain – but not to the extent suggested in the literature. The urban context in Britain can be linked to the low disposable income of residents, closely resembling the suburban (or *banlieu*) context found in France.

A further factor to take into account is technological developments. During the course of the investigation, new ICT were launched offering users the possibility to communicate online using both graphics and text. Text-based messaging services (such as MSN) added image options and, equally, graphic-based messaging services (such as MySpace) added texting options, thus reducing the emphasis on literacy skills and enabling a wider cross-section of the community to interact online. Thus, at the time of writing, it was difficult to prove significant socio-spatial difference in Internet user behaviour across neighbourhoods, owing to the dynamic pace of technological change and user behaviour. What can be claimed, however, is that the literature offered a partial and somewhat oversimplified understanding of Internet user behaviour, interpreted through an Anglo-centric lens. Notions of socio-spatial difference may have been relevant for ‘Anglo’ communities at that time but the findings became outdated when new ICT were launched. The extent to which Anglo-American studies can be generalised to a European context is therefore very questionable.

Lichy (2011) found relatively few major differences in Internet usage, either between urban and suburban neighbourhoods, or between French and British teenagers. This observation confirms the more recent literature that underscores converging Internet user behaviour in, for example, the consumption of social media platforms such as Facebook, which superseded MySpace. In other words, the findings point to convergence in the numerous sites and services used by urban and suburban respondents in France and Britain, with some minor differences concerning the use of the Internet in an educational context – a detail which will be revisited in later works.

Variance can be explained by the role of technology-led learning in the curriculum. In Britain, the emphasis is on teaching pupils to *independently* retrieve and use digital information. Learning is student-centred, thus the teacher is perceived as a mentor (or facilitator) who imparts the knowledge and skills needed for independent study. In contrast, in France, there is more emphasis on rote learning, memorisation and teacher presence. Learning is teacher-led; pupils are 'formatted' to learn primarily from the teacher, rather than being encouraged to take responsibility for retrieving digital information independently. While rote learning still has an important role to play in education, such as for memorising formulae and syntax, the pedagogical approach must enable pupils and students to develop skills needed for a digitally driven world.

The term *digital revolution* is often used to describe the rapid advances in technology underlying the production of information in digital form, and the marketing and distribution over the Internet. The digital revolution requires individuals to be able to collaborate, interact and share information. These skills are at the forefront of curriculum development in Anglo countries as well as in Scandinavian/Nordic countries, but are less prominent in Latin and Mediterranean countries where the focus is on more traditional teaching methods. With the adoption of new ICT, notably social networking sites (SNS), further changes emerged. The dynamic consumption of ICT merits closer investigation, and is thus the focus of the next chapter, which explores the growth and widespread popularity of SNS.

CHAPTER 2

GROWTH OF SOCIAL NETWORKING SITES (SNS)

2.1 A generation Y phenomenon?

As the popularity of social networking sites (SNS) continued to grow, chiefly among younger generations, it called into question the integration of SNS into teaching and learning. Lichy (2012) examines converging Internet user behaviour in a cross-cultural comparison of Gen Y students – c.f. article 4 in 'Overview of Publications'. The aim was to test the notion of 'second-level digital divide', which holds that urban residents will use the Internet differently from residents dwelling in suburban, sub-rural and rural neighbourhoods. The findings support the literature on converging Internet user behaviour among students, but also reflect some disparity in their Internet usage, indicating the importance of proceeding with caution when using technology-enhanced teaching, to avoid over-generalising the needs of a student cohort.

The genesis for this enquiry stemmed from the idea that new developments in Internet technology will bring about new user behaviour, as in the case of SNS, which have changed the way in which individuals build relationships and maintain contact with others. As Internet-based social networks began to play an increasingly prominent role in everyday life, understanding how younger generations consume the Internet, especially SNS, attracted heightened interest from educational practitioners, parents, researchers and policymakers.

The dominant view in the literature on Internet user behaviour is that Gen Y worldwide consume similar Internet-based services. It is likely, but unconfirmed in the literature, that while this view may hold true for the consumption of popular services such as communications, information retrieval/ storage, social networking and financial transactions, it is to be expected that the intensity and frequency with which Gen Y consume these services will vary greatly among members of this cohort. In addition to the straightforward differences in Internet access, a vast array of complex

factors influence Internet user behaviour, as will be explained in the following pages.

The segmentation of Internet users into different generations provides a convenient prism through which to study the consumption of Internet services within a particular age group. While dates of each generation vary somewhat in the literature (see Clare, 2009; Dorizas, 2009; Boyd, 2010), Internet users can be segmented into five key groups; the *silent generation* (born 1922-45), *baby boomers* (born 1946-64), *Gen X* (born 1965-75), *Gen Y* (born 1976-94) and *Gen Z* (born since 1995).

It is thought that having experienced the same technological breakthroughs, each generation will share a similar awareness, readiness and ability to use ICT. The word '*millennials*' is often used in the international business press – however, there is no consensus on the exact dates of this cohort. For some writers, millennials are individuals who became adults at the turn of the millennium but, for others, millennials refer to the group of individuals who were born at the dawn of the millennium. 'Time' magazine brandished the age group (born 1980-2000) as 'lazy, entitled narcissists who still live with their parents', portraying them as coddled and a bit delusional (Stein, 2013). Thompson (2017) refers to millennials as the offspring of the Baby Boomers, drawing attention to their idle, self-centredness (symbolised by selfies). The media attention raises two questions: (i) the extent to which millennials are actually more self-obsessed than any other generation of young people who subsequently matured and acquired responsibilities, (ii) whether the widespread coverage of millennial behaviour is merely exacerbated by UGC posted on social media, particularly self-branding and personal advertising.

Acknowledging the mounting evidence of deviant user behaviour (e.g., bullying, prejudice, fake news, ransomware cyber-attacks), there is a risk that today's Internet users will be remembered as the most connected generation who deliberately disconnected from pioneering a more altruistic, transparent and constructive way of engaging with ICT. However, caution must be exercised when simplifying the behaviour of a whole generation; there is a general lack of empirical evidence to support many of the across-the-board assumptions. It is irrational to assume, for example, that all the members of Gen Y would know how to use ICT simply because Internet access was available during their formative years.

Generalising about youth and technology ignores the needs and perspectives of those young people who are not socially or financially privileged. Cross-

generational understanding is fraught by an insistence on identifying all young people as 'digital natives'; a term coined by Prensky (2001) to refer to the students of that era. It would be more accurate to define today's Internet users by how they interact with technology, rather than by age. Boyd (2010) suggests using the term 'digital native' to refer to a *state of experience*, instead of a generation. Information available in the public domain often discusses the acceptance and diffusion of technology in terms that insinuate ubiquity. These broad-brush views are rarely, if ever, backed up with academic underpinning. Consequently, the intricacies of Internet user behaviour regarding divergence are overlooked in favour of focusing on convergence, and the ways in which convergence can be used for commercial (monetized) purposes.

Based on user data gathered in Lyon (France) and in St Petersburg (Russia), Lichy (2012) found a certain amount of commonality in Internet user behaviour – despite widespread claims in the literature that cultural difference would be noticeable. Commonality was observed for example in sites used for communication, information retrieval and social networking (particularly Facebook), suggesting the emergence of an *international subculture*. There was also evidence of intra-generational disparity concerning trust and loyalty vis-à-vis engaging in online financial transactions.

The convergence in Internet user behaviour can be partly explained by technological evolution (e.g., more user-friendly services, multilingual content, cost-effective Internet access). It can also be explained by a growing reliance upon online services for undertaking daily activities. While the study provided a snapshot of Internet user behaviour among international Gen Y students in France and Russia at a precise moment in time, it is not possible to extrapolate to other contexts, generations or timeframes. For a more complete understanding of Internet user behaviour, further research is needed to benchmark a wider population and different geographic areas.

Facebook emerged in the study as the primary platform for information exchange among Gen Y Internet users. Launched to the English-speaking public in December 2004, the growth of Facebook was slow in the first four years. However, by early 2015, Facebook had more users than the population of China, with over 75% connecting via mobile. The popularity of Facebook raises questions about the extent to which this platform could (*or should*) be integrated into teaching and learning – for example, by using closed group discussions for liaising with students. The issue of using SNS as a channel of communication for learning was raised with the students in

an informal post-survey discussion. The general consensus was that SNS should remain in the sphere of interpersonal communication, to be used exclusively for social or informal dialogue, and to remain quite separate from technology-led teaching and learning. This issue is developed further in the next section on barriers.

2.2 Barriers to integrating SNS into teaching and learning

In today's crowded higher education sector, great emphasis is placed on developing innovative pedagogy, as a means of delivering cost-effective pedagogy, and for achieving global ranking in the international academic community. As a sector, higher education institutions (HEI) are lagging behind other sectors concerning the integration of ICT. Few HEI have successfully introduced the 'flipped classroom', or even Artificial Intelligence tools that can capture real-time student data and feedback in order to improve teaching and curriculum. Students need a relevant, modern, customised education that can help them to develop the skills needed for the 21st century workplace. Higher education providers need to be able to move learners through the system at different paces, rather than as cohorts, semester-by-semester or year-by-year.

To this end, Lichy et al. (2014) compare the delivery of international undergraduate programmes in France and Russia, to investigate the factors that hinder a more widespread use of technology in teaching and learning – c.f. article 5 in 'Overview of Publications'. In contrast to the existing literature which often discusses and compares student reactions to technology-enhanced learning, this article set out to further our understanding of the broader factors that influence the delivery of course materials using ICT. Face-to-face surveys were used to gather information from teaching staff at each HEI. The findings reveal the complexities of technology acceptance and technology awareness, underscoring the differences with Anglo-American studies that focus on how ICT can be used to increase student engagement and motivation, to accelerate learning, to support learning 24/7, and to enhance teaching via digital learning tools such as hand-held devices. It can be concluded that there is no 'universal' approach for integrating new technology. Participants at each HEI articulated how integration is hampered by cultural factors (corporate, national and organisational) and complex factors (corruption, perception and understanding of innovation, media influence, lack of autonomy).

The work of Hofstede (2001), Trompenaars & Hampden-Turner (1997) and Hall & Hall (1995) suggest that the cultural environment in Russia and

France is not favourable to risk-taking. The biggest hurdle will therefore be transforming the culture and then building trust in a new learning approach. Students will need to learn how to take responsibility for learning and sharing information among peers. Teachers will need to relinquish direct control in order to build learning communities. This is a new way of thinking and working for teachers in Russia and France.

Lichy et al. (2014) found that both HEI were facing similar problems with implementing new ICT, especially the institutional platform, which is seen as too cumbersome to navigate, prompting teachers to use other ICT (especially SNS) for communicating with students. In the Russian HEI, classes are delivered using oral lectures and sometimes PowerPoint; the online platform is perceived as optional. In the French HEI, the online platform remains largely unused, in favour of PowerPoint and photocopies. At the time of writing, teachers in both settings felt that lack of interest and lack of technical skills were preventing technology-enhanced teaching from being fully exploited. The handful of teachers who were using the platform claimed to be self-taught, suggesting that mastering the technology can be seen in terms of a personal objective rather than an institutional objective. These views emphasise how the voluntary use of SNS to supplement formal learning cannot be culturally embedded in the HEI, until the technology is embraced by all users and becomes an 'integral' part of the learning experience. With hindsight, it is clear that the school directors lacked vision and understanding of the cost-effective savings that pedagogical innovation would bring.

A second finding was that faculty at the French HEI share a 'pragmatic' approach to using technology for teaching, adopting the advantages of greater flows of information and communication. Participants reported a progressive experience of interacting with students, once the initial technical problems were resolved. However, in the Russian HEI, the participants were less optimistic about integrating new technology, owing to the lack of training to use it. Younger staff, more familiar with digital tools, were able to use the new technology with greater ease than older staff. The participants voiced strong concerns that the students need to be able to use the technology intelligently, and that the technology needs to be integrated into the existing culture of the institution, in order to overcome barriers to using new ICT.

A further finding was that participants in the French HEI were investing time in developing resources using social media, blogs and wikis – rather than adopting the institutional platform, perceived as too awkward. It

suggests that there is a willingness to experiment with tried-and-tested technology, in preference to using corporate technology. In the Russian HEI, an unexpected observation voiced by the participants was the view that if additional money were offered for implementing the platform into teaching, then every teacher would use it, despite their fears of plagiarism, corruption and incompatibility with traditional pedagogy. Overwhelmingly, the participants agreed that technology can enhance learning, and bring about consistency in teaching practices; however, they stated that more work is needed for changing attitudes, pedagogical approach and management thinking before technology can be used to develop resources that improve the learning experience.

In higher education, technology is defined as "the physical instrumentation that helps us carry out our tasks" (Fleck, 2008: 1). Researchers interpret technology as any application of human knowledge to solve practical problems, as epitomised by Massive Open Online Course (MOOCs). The initial enthusiasm for integrating MOOCs seemed limitless but when the first wave of MOOCs was launched in 2012 in higher education, the results were disappointing. HEIs promoted MOOCs as an active and enjoyable way of learning, arguing that they are useful, diverse, community-oriented and (mostly) free. Students would no longer need to attend lectures in crowded rooms; they would be able to follow courses online anytime, anywhere and as often as needed. Lectures would be pre-recorded and available online along with uploaded course materials. However, MOOCs faced two major problems: their heavy reliance on UGC which leads to a rather disordered learning environment, and the fact that digital literacy is a prerequisite for participating in a course, which led to a high drop-out rate.

MOOCs were seen as a response to the challenges of the higher education marketplace: rising tuition fees, decreasing disposable income and hyper-competition. However, the introduction of MOOCs required HEI to rethink their business model. Many HEI have been unable to leverage technology for providing a quality education at an affordable price to students. Part of the problem stems from the ineffective interaction between policy, leadership and practice. Another part of the problem is that technological change is fraught with challenges; it is difficult to determine when to implement new technology to foster real improvement, or how the new technology will disrupt the existing business model. As 'change' is the only constant, the biggest challenge for HEI over the coming years will be to identify the implications for the fusion of new ICT, ideas and talent as we live and work longer, and as faculty postpone retirement. There is an even greater need to keep pace with the changing landscape of ICT and user

behaviour, in order to plan for a sustainable future. Building on Lichy et al. (2014), these themes are developed further by Lichy and Merle (2019) in a study that examines the extent to which culture can act as an enabler or barrier for integrating and using ICT in knowledge transfer – c.f. article 16 in 'Overview of Publications'.

Digital literacy is a skill that students must master, not only for lifelong learning but for future work. Bringing together international research on the benefits of embedding technology in learning environments and the factors that can act as barriers, Lichy (2017) puts forward a special issue on 'Advanced Business Models for Management Education in the twenty-first Century: International perspectives' – c.f. article 10 in 'Overview of Publications'. To prepare students for the digitally-enabled workplace, Lichy (2019) undertakes a sequel investigation, to put forward a special issue on 'Managing Change in the 21st Century'– c.f. article 13 in 'Overview of Publications'.

2.3 ICT usage beyond borders among young Internet users

As new technology is adopted, new consumer behaviour emerges, new legislation is later drafted and, finally, scholars put forward theoretical frameworks to explain the changes taking place. Lichy and Kachour (2014a) set out to capture and explain the dynamic evolution in Internet user behaviour among young adults – c.f. article 7 in 'Overview of Publications'. This research exposes the multidimensional facets of social media usage. By critically analysing the existing research and then developing new junctions of knowledge; the intention is to stimulate reflection and debate beyond the established interpretations of ICT. The research is set in the context of ICT usage beyond borders among young Internet users, examining recent developments in ICT in order to contribute to the literature on the societal impact of ICT.

Modern ICT endorse an individualistic lifestyle by reducing the need for face-to-face communication. Over recent years, the widespread adoption of web 2.0 tools has changed our relationship with information and our mode of communicating with each other. Today, the focus is on sharing information and co-creating UGC via social media (Cavazza, 2011). Social media have enabled community-oriented dialogue in which the individual user can choose the level of interaction. Depending on the context and the interlocutors, a user can participate actively (e.g., as a blogger, influencer or

opinion leader) or passively (e.g., as an onlooker or *voyeur*). Over time, social media have moved from an interpersonal sphere into a professional/commercial sphere, as explained by McLeay et al. (2019) – c.f. article 15 in 'Overview of Publications' – with the result that creating and curating identity has become a common feature of online activity.

As the novelty of SNS began to wear off, saturation was expected. The waning interest in social networking was accelerated by the growing discontent that users feel regarding privacy, spamming/advertising and marketing efforts. Users are uncomfortable about third parties having access to personal data. The declining popularity of certain social media is inevitable, now that the initial hype has passed. There are further reasons that explain the decline in active usage of social networks, including:

- Too many networks available (i.e., choice-overload),
- A migration towards more informal social media including micro-blogs and forums, where privacy/security is easier to maintain,
- Popularity of messaging apps and mobile apps,
- Expansion of international networks through proxy servers, Virtual Private Network (VPN) and access through multi-national company networks

As young Internet users manifest their lassitude towards certain SNS, it is worth bearing in mind that some older Internet users have yet to adopt social media. The net effect is that there will be further fragmentation of Internet user behaviour. Although younger generations may understand technology at a utilitarian level (i.e., how to use a piece of software for its intended purpose), they do not necessarily master the technology much beyond that point – and certainly not for reflective thinking and problem solving. Indeed, as the number of Internet users continues to grow, it is becoming increasingly difficult to monitor trends in the online environment.

The Internet is a diverse medium that conforms to the notion of a *global village* and illustrates a feature of post-modernity, evidenced by the popularity of SNS. The findings of this study underscore two key points: firstly, that there is convergence in the way Gen Y consume SNS irrespective of cultural and linguistic barriers, and secondly, that the increasing speed of technical change interacts with transnational convergence and globalisation to generate new consumer behaviour in the online environment, which is not nationally differentiated. The collaborative nature of social media enables individuals to gain a sense of belonging to a global community of like-minded people, with whom they can dialogue and share personal

perspectives, ideas and experience. Lichy and Kachour (2014a) challenge the traditional concepts that use notions of culture and linguistic difference to anticipate national difference. Their findings confirm that the essentialist view of cultural difference has no predictive value in today's global online society. These concepts are now outdated and irrelevant, as further confirmed by Lichy and Stokes (2018) – c.f. article 12 in 'Overview of Publications'.

2.4 Business Model transformation driven by young adult Internet users

Focusing on the knock-on effects of SNS, Lichy and Kachour (2014b) explore how the consumption of SNS is driving the need for new business models – c.f. article 6 in 'Overview of Publications. The study examines the rethinking of business models, in response to the increased consumption of SNS by Gen Y entering the workforce. The intention is to identify emerging/current trends in consumption, in order to develop managerial implications. The study draws from Diffusion of Innovations (DOI) theory, which speculates how, why and at what rate new ideas and technology spread. DOI provides an operational mechanism for informing policy implementers on how to increase the adoption and usage of new technology.

New technologies often trigger a chain of changes. For example, technological innovation (such as bendable smartphones) will trigger evolution in user behaviour (allowing users to wear the device on their wrist, and use it as a smartwatch), new lexicon (new jargon) and new management tools (new quality control tools). The integration of ICT into management practices has transformed business models by improving productivity and profitability in traditional sectors and by generating new business opportunities through online channels. Technological changes, however subtle, have a knock-on effect throughout the whole business ecosystem, disrupting long-established procedures.

Compared to other generations in the workforce, Gen Y stand out in their ability to drive change by integrating new technology and by challenging management thinking that pre-dates web 2.0 tools. The adoption of web 2.0 tools among Gen Y illustrates the ease with which young adults can adapt to using new ICT (particularly, mobile technology) and can adopt/integrate innovative tools into their daily activities. Blurring the division between office technology and personal technology, Gen Y use their connected

devices to keep up-to-date with current events, to unite with distant friends and acquaintances, and to fill (or kill) time – via SNS.

Gen Y engage with technology, and expect to be able to customise their experiences, to experience their lives online and then share the experience with others online. They grew up "surrounded by technologies and digital tools that enable a wider range of communication possibilities and greater connectivity than ever before" (Barzilai-Nahon and Mason, 2010: 396). Digitally-literate and "savvy computer users" (McMahan et al., 2009: 61), Gen Y are accustomed to using web 2.0 tools to get information from each other, rather than from traditional institutions like corporations (Li and Bernoff, 2008).

Understanding what Gen Y are actually doing online is an increasingly complex task, since technology usage is in constant evolution and the sheer volume of Internet users is generating a colossal amount of content. Gen Y have often been portrayed in the literature as 'not working' rather than 'networking'. They are also characterised as needing a lot of 'hand-holding' and present a challenge to managers who find it difficult to "train and motivate this next generation of employees so that their strengths become a benefit to the company" (Meier and Crocker, 2010:69). Their inquiring minds will question the logic behind traditional management practices and business models.

To test the validity of these claims, Lichy and Kachour (2014b) examine a sample of 400 Gen Y international students in France and Russia. Data are collected in two phases by survey and interviews: phase one in 2010 and phase two in 2012. The findings show a noticeable decline between 2010 and 2012 in the use of SNS; suggesting no correlation between the time spent using social networks and gender. Neither was there any relationship between the time spent using social networks and socio-spatial setting. Age, however, did exert some influence over the time spent using social networks in 2010 but this association was no longer visible in 2012. Therefore, it can be said that gender, socio-spatial setting and age exert very little influence over the time Gen Y spent on SNS in 2012. However, other factors were leading to a decline in active SNS usage of social networks, including a general lack of interest, growing concerns about privacy, too many networks to choose from, a migration towards blogs and forums (where privacy is easier to control), and the rapid growth of mobile apps.

In terms of managerial implications, the findings confirm the widespread adoption and popularity of SNS, transcending borders and lending substance

to the notion of an international subculture of Gen Y Internet users. Differences in SNS consumption persist among Gen Y, since the diffusion of technological innovation is unavoidably uneven, compromised by structural characteristics such as patchy infrastructure, resource availability and institutional frameworks. Taken as a whole, Gen Y exhibit broad traits of ambition, individualism and embrace globalisation via boundless online channels. Yet, despite the tools that exists to target and track Gen Y Internet user behaviour, efforts to communicate with this generation remain problematic.

Marketers and academics have a broad awareness of Gen Y Internet user behaviour in many contexts, but they lack detailed insights. Part of the problem stems from the over-simplified and sometimes contradictory studies of Gen Y that are posted online, and part of the problem can be attributed to the fact that there are a multitude of different ways in which different Internet users engage with each network. SNS usage is perceived and interpreted differently from one national context to another. Our enquiry set out to investigate the variables that determine SNS usage by Gen Y, focusing on the impact on business models. The findings show that gender, socio-spatial setting and age exert very little or no influence over the time spent on SNS; but that the national setting has a significant impact on *how* Gen Y engage with SNS.

Organisations are now rethinking their business models to harness the opportunities provided by digital platforms. In the shift from ‘traditional’ to ‘social’, different tools are required for building brand image, creating a sense of belonging, engagement, sourcing new talent and ideas, establishing competitive advantage. Constructing meaningful dialogue with stakeholders in the online environment is crucial for testing innovation and testing innovative ideas. Managers need to create an interactive, mobile and virtual workplace, taking into account the new power relationship in which the employees and ICT are embedded. Effective communication is fundamental. Any change within an organisation will need to be communicated to all stakeholders. If older generations are less familiar with corporate blogs and forums, there is a need to use traditional media (print and email) to prevent an ‘information divide’ from emerging.

In contrast to traditional media, social media users participate in SNS as individuals, irrespective of whether they hold specific jobs or positions. This arrangement may suit a celebrity, journalist or pop idol but it is borderline and risky in the case of people occupying high-ranking public positions. A very fine line divides the politicians who voice opinion via social media and

urban residents who post photos of local drug dealers online to incite the dealers to move on. Certain individuals in positions of power have shown great skill in adapting the technology to suit their own purposes, enabling them to exercise better control of society. The ability to mobilise certain individuals to broadcast a particular view via social media is strengthening the power of authoritarian regimes, as in the case of Russia (see Gainous, Wagner & Ziegler, 2018) – c.f. article 11 in 'Overview of Publications' – and China (see Lagerkvist, 2005). Acknowledging the rise of digital authoritarianism, the government responds to public opposition by employing strategies to tighten their grip on the digital flow of information.

Social media symbolise the shift from *systems* of technology to individual user technology. Research into technology acceptance mainly focused on the adoption of systems of technology such as word processors, email programmes, Internet banking and computer-aided software. These systems consist of a personal computer with a standard software application and a single user in a closed (i.e., private) work environment. By contrast, today's technologies are mobile and virtual, and above all, able to support individual users in technology-enhanced environments. Users expect digital services to be available in real-time, 24/7, customised to individual preferences, context-aware and able to predict behaviour. The acceptance of new ICT is no longer determined by usefulness and ease-of-use, but by different factors – such as the values infused in our collective consciousness (i.e., reliance upon social interaction and networking) and social situation (i.e., the qualifications and skills required to use technology).

Until recently, the sheer cost of implementing innovative technology prohibited adoption; very few individuals were able to afford the initial cost of desktops, laptops, Internet access, iPhones, and smart TV. Small and medium sized firms faced similar constraints – but were ready to invest when they developed an understanding of how new technology could facilitate the business activity, for example CRM, websites, social media, analytics, high performance computing (simulation, modelling etc.), Internet of Things (sensors) and smartphone apps. As such, the early models of technology acceptance are no longer relevant, since our choice is now guided by the cost of the technology and an understanding of the value/impact of the technology to the individual. The next section takes a closer look at technological developments as a facet of modern society, and how it affects users of different age.

2.5 Generation segmentation in the digital environment

There is an expectation that individuals are able to access and use ICT for undertaking routine activities in both a personal sphere and professional capacity. This expectation raises the issue of how different generations engage with ICT on a daily basis. Lichy (2016) identifies five issues relating to generation segmentation in Internet usage, discussed below – c.f. article 8 in 'Overview of Publications' – outlined below:

(i) generational belonging and ICT usage

The way in which each generation consumes the Internet, especially SNS, reflects the blurring boundaries between work and downtime. Many employees go online in their downtime to check email and/or to continue working. Conversely, employees will use the Internet during work time for non-professional purposes (e.g., chatting, online shopping, posting UGC). While the Internet is used by people of all ages, there are differences in the extent to which ICT are central to their lives and the contexts in which they use it (Van Volkom et al., 2014). People interact with technology and other users in different ways, which brings about differences in how each generation collaborates, interacts and shares information online. Managers need to recognise different user behaviours to avoid potential conflict, misunderstandings and ultimately wasting resources. Individuals born in the 1970s would typically have been brought up with access to digital communications technology through personal computers, mobile phones and computer/video game consoles. In contrast, individuals born in the 1980s will have grown up surrounded by mobile phones, Wi-Fi, interactive computer games and cloud computing (shared resources, software, data access and storage resources). The net outcome is a difference in how (and how much) individuals communicate online (consecutively or in real-time) and how they store and retrieve information (external memory drive or cloud). While many older Internet users are still in a phase of 'accepting technology', younger Internet users are in a phase of 'reliance upon technology'. The sheer number of Gen Y and Gen Z users, coupled with their technology tendencies and willingness to share information, provides a rich context for examining inter-generational Internet user behaviour.

(ii) managing knowledge and knowledge-transfer

Digital technologies have reduced the need for administrative and support staff – and at the same time, they have created a need for new occupations

such as community managers, webmasters, programmers and coders. Younger users (Gen Z) may lack professional experience and managerial skills but they often have the relevant technology skills and ability to undertake digital jobs. Owing to their connected lifestyle, Gen Z consume Internet-enabled devices effortlessly; they have been using the Internet longer and more intensively than their older counterparts (Olson et al., 2011). New methods of transmitting knowledge are needed to communicate with Gen Z (Sojka and Fish, 2008) such as virtual user groups, SNS, forums, blogs and wikis, as confirmed by Lichy and Merle (2019) – c.f. article 16 in 'Overview of Publications. While it is impossible to predict how today's learners will behave in tomorrow's workplace, it is likely that their familiarity with digital devices for learning collaboratively will lead to a more interactive approach to work, as noted by Lichy et al. (2014) – c.f. article 5 in 'Overview of Publications'. Younger users have better online collaborative skills than older users who are less experienced and less comfortable with newer devices, apps and tactile screens. When upgrading technology at work, managers would be advised to take into consideration that some employees may need to be upskilled or reskilled.

(iii) emerging gaps in knowledge and know-how

The adoption of ICT among younger generations occurred so rapidly that there are a number of gaps in our knowledge. Gen Y and Gen Z are powerful agents of change, forming a cohort of networked individuals who seem more socially responsible and less gullible regarding advertising and logo-driven materialism (Williams and Page, 2011). Their behaviour raises questions about the continuity/ rupture of social behaviours in terms of work, consumption, leisure and lifestyle. The unique characteristics of these young adults will make them very different from previous generations, in terms of their values, attitudes and beliefs. In the workplace, managers should bear in mind that Gen Z have been educated and nurtured to use ICT to work collaboratively and interactively. They are adept at sharing information. Consequently, managers should involve younger employees in policy-making and decision-making concerning 'best practices' for ICT usage. By the same token, many young adults are unfamiliar with a broad range of *basic* life skills, such as manual chores (home maintenance, cooking, sewing, etc.). With access to geo-localisation, many never learn to use physical landmarks to guide them (Howe, 2014). Some young adults cannot comprehend how people functioned prior to Internet-enabled devices for looking up information, meeting up with friends in public places and dealing with getting lost. Constant access to the Internet leads younger

generations to believe that everything can be searched for and accessed via smartphone, to the detriment of developing life skills. The potential for the cloud to crash is a major concern – serving as a reminder that backup copies of everything must be made, in order to prevent complete data loss. Data can also be lost by other means: accidentally deleting files, viruses and damaging malware, mechanical damages of hard drive, power failure, theft or spilling a beverage over a device, fire and explosion. Managers need to provide guidelines to employees to help reduce the eventuality of losing data; the phenomenon is not restricted to a particular generation. The ability to work offline is still needed.

(iv) generational differences in Internet user behaviour

Individuals within a generation constitute a diverse group, even though they may have experienced the same influential events. Thus, a behaviour commonly associated with a particular generation is not applicable to every member. Managers need to be aware of general generational preferences in ICT usage, without relying too heavily on theoretical constructs (which are often based on different contexts); inter-generational conflict can often stem from errors of judgement and perception, rather than from valid differences. Employees need coherent guidelines on how they are expected to use ICT – for example, a protocol for communicating online, the use of corporate software and hardware for non-professional purposes, managing screen time, and the capture of personal data (Big Data) by the employer. The purpose of introducing such guidelines is not to monitor Internet usage, but to provide a reference for professional conduct and for safeguarding personal data. Sharing information is a tolerated-yet-undesirable facet of modern society; Internet users need to be aware of the potential dangers. The exponential growth of social technologies and pervasive usage in everyday life draws attention to the ‘dark sides’ of digital engagement, which can lead to negative consequences triggering pathological conditions such as Internet addiction, cyber bullying and personal identity theft. Managers need to be vigilant in ensuring the safety and security of data circulating on the corporate servers.

(v) collaborative user behaviour: the circular economy

With the blurring boundaries between ‘networking’ and ‘not working’, ongoing research is needed on how individuals collaborate, interact and share information in online communities. In the *circular economy*, new forms of sharing are becoming popular, in which strangers (rather than

acquaintances) are exchanging goods and services. The exchange is motivated by economic and ecological concerns, as well as a desire to increase social connections. The term 'peer-to-peer' is often used to capture the idea that both buyers and sellers tend to be individuals or small firms, despite the fact that buyers or sellers may be professionals or large firms, and arguably not 'peers'. This approach has the potential to enhance sustainability and reduce ecological and carbon footprints in a number of key areas, in particular: transportation (e.g. Uber, BlaBlaCar, Didi Kuaidi), accommodation (AirBnB, Kozaza, Couchsurfing), household goods (Peerby), household services (TaskRabbit, Care.com), deliveries (Postmates, Instacart), retail commerce (eBay, Etsy, Taobao), consumer loans (Lending Club, Prosper), currency exchange (TransferWise, Currency Fair), project finance (Kickstarter), computer programming (oDesk, Freelancer), etc.

The circular economy creates new ways of procuring goods and services, and opportunities for 'connected consumption', by relying on peer-to-peer relationships rather than the existing market actors to mediate exchanges. Increasingly, the trend of renting/recycling/reusing and 'upcycling' is becoming a lifestyle choice; the belongings that surround us now no longer define us. As new consumer behaviour emerges, the circular economy is being driven by national context (i.e., institutional isomorphism), market orientation and social business models. These critical characteristics will shape the potential to provide truly alternative economic arrangements.

Taken as a whole, Gen Z stand out for their technology usage, but older generations also embrace digital living. The younger generations have traditionally led older users in their adoption and usage of technology, and this still holds true today. However, there has been significant growth in tech adoption since 2012 among older generations – particularly for social media usage by Gen X, Baby Boomers and the Silent Generation. Recognising ongoing changes in user trends is crucial for furthering our understanding of contemporary user behaviour, in order to predict new applications and likely adaptations, for example.

The process of keeping pace with new technologies and inter-generational user trends is a challenging task. ICT markets are generally characterised by short product life-cycles, which naturally accelerates the ongoing evolution in user behaviour. It is necessary to understand the changing digital landscape for the sake of protecting information and other assets from cyber-threats, which can take many forms including ransomware, malware and phishing. Over the past quarter century, our relationship with Internet technology has changed. The concept of Internet maturity is used to describe

how a user learns and adapts over time to Internet consumption and content sharing, two important parameters of modern-day digital living. Accordingly, the following chapter focuses on Internet maturity in greater detail.

CHAPTER 3

CONTEMPORARY TRENDS IN THE CONSUMPTION OF ICT

3.1 The juncture of communities and social media

By 2010, almost 2 billion people were connected to the Internet; a decade later, over 4.5 billion people were actively using the Internet, contributing to the transformation of business and society, bringing about new business models and creating new opportunities for users. The Internet has changed the individual's view of the world and how individuals see themselves in the digital era (Cupchik, 2011; Wessels, 2014). By engaging with social media communities and interacting with like-minded others, people contribute, create and join communities to fulfil basic human needs of belongingness, being socially connected and recognised by peers. As such, social media and community are topical concepts to be explored together.

Internet technology enables users to shape their self-identity in the liminal spaces between the online and offline communities. McLeay, Lichy and Major (2019) contribute to the fast-growing and disjointed literature on communities by refining the understanding of its dimensions and situating it in a network of conceptual relationships – c.f. article 15 in 'Overview of Publications'. They focus on traditional offline and online communities in the context of co-created ski communities, with the purpose of exploring the core social and interactive characteristics of motivations and experiences within this group of like-minded individuals. The subtle interaction in the liminal spaces requires an examination of the literature in the fields of communities (physical and virtual), value co-creation and experience. These research fields explain the multifaceted nature of the ski-chalet community.

In studies of consumer communities, researchers have tended to focus on social interaction and user engagement. There is a lack of knowledge regarding how consumers co-create the *service experience* with each other and/or service providers. Like other social groups, members of a community exhibit mutual consciousness, communal rituals and traditions (Muniz and O'Guinn, 2001) while sharing common values, pride and togetherness

(Decrop and Berbaiz, 2009). The historical notion of geographically-bound rural communities based on familiarity and emotional values has been replaced by global non-geographically constrained virtual communities such as social networks and online communities, facilitated by wider Internet access and faster connectivity (Zaglia, 2013). There has been an increase in studies of virtual travel and tourism communities with recent papers focusing on the online component, to the exclusion of focusing on communities that involve a combination of virtual and physical activities. More research is needed that concentrates on the nature of the intersection between online and offline communities.

Hence, McLeay et al. (2019) set out to address the literature gap between studies of online and offline consumer community research, and rebalance the research agenda. The context is the under-researched community of ski-chalet holiday; a facet of contemporary adventure tourism, bringing together travel, sport and outdoor recreation (Beedie and Hudson, 2003). In this setting, the guests cohabit in an all-inclusive holiday; skiing, dining and socialising communally, amongst themselves and with the chalet staff, drawn together by a common passion for winter sports. They share online their photos, anecdotes and clips of co-created experience, driving enthusiasm and motivating other skiers or potential members of the ski-chalet community. The experience offline consolidates the legitimacy, longevity and authenticity – which is further endorsed and embellished in the online environment. Skiers are motivated by the lure of the ski environment, linked to the social aspect, construction of individual and collective identity, and participation in the *staged authenticity* (MacCannell, 1973), as skiers co-create their experience (Kreziak and Frochot, 2011).

McLeay et al. (2019) take inspiration from the literature on consumer communities to develop a theoretical lens with which to answer three specific questions: (i) What motivates individuals to participate in the 'consumer community' of ski-chalet aficionados? (ii) What experiences are produced? (iii) To what extent is the experience co-created with other community members and service providers? Phenomenological interviews were undertaken with 32 individuals at ski-chalets located in the well-known French ski domain of *Les 3 Vallées* and *La Toussuire-Les Sybelles*. In addition, 8 ski-chalet employees/managers were interviewed. Thematic analysis was used to identify key motivators and experience factors. Five themes emerged: 'socialisation', 'all-inclusive chalet offering', 'active hedonistic skiing', 'location'/destination' and the 'augmented community' of online and offline skiers. Here, the term '*augmented community'* is used to describe a new type of community that cannot be explained by theories

of brand community or online/virtual communities. Online visits to ski domains (e.g., via resort webcams and GoPro clips) amplify the non-virtual visits and reinforce existing affinities in social relations, not only between guests and ski-chalet staff but also between other individuals (e.g., après-ski service providers). Thus, the augmented community extends the existing relations between guests, hosts and places into a new domain, and transforms the community members.

Drawing upon social identity theory (Tajfel, 1978), sociologists and psychologists have tried to understand how individuals join a social groups/community and what defines their membership (e.g., Stets and Burke, 2000). More recently, there has been a resurgence in academic research focusing on different and/or other types of communities (Zaglia, 2013). Communities provide a vector for fostering complex and lucrative synergies between individuals. In the marketing literature, studies of communities have been largely oriented towards monetized aspects, particularly the processes of value creation among networked firm-facing actors in communities based on branded goods or services (Schau, Muniz and Arnould, 2009). The widespread adoption of ICT has consolidated online/virtual communities (Baker and Ward, 2002), enabling interpersonal communication and information retrieval, interactively and in real-time (Kim, Yu and Lee, 2003). A social ensemble of networks is formed among members of virtual communities, which brings together large, loose, geographically widespread populations (Brown and Duguid, 2001). Members co-create and voice opinion via online ratings, reviews and forums (Buonincontri et al., 2017).

Tourism researchers and professionals cannot ignore ICT-driven transformation, particularly co-creation (Filieri, 2013) stemming from the juncture of online/offline communities; tourists generate valuable, original, novel and feasible ideas that can stimulate product and service innovation (Buonincontri et al., 2017). Value co-creation takes place when there is social interaction between resident communities and tourist communities (Lin, Chen and Filieri, 2017), fostering active participation and intra/inter collaboration with service providers (Campos et al., 2017). Tourists are (inter)active, collaborative consumers of UGC for co-creation (Cabiddu, Lui and Piccoli, 2013). In a virtual community, individuals collaborate for a common purpose and share similar interests (Koh and Kim, 2004). ICT have empowered individuals by re-shaping the process of creating and sharing information (Lichy and Kachour, 2016). The travel and tourism literature has examined the juncture of brand communities and virtual communities, such as Couchsurfing (Rosen, Lafontaine and Hendrickson,

2011), Tripadvisor.com, Virtualtourist.com and Mytravelguide.com (Xiang and Gretzel, 2010). Studies of brand communities show how consumers identify with brands; dominant brands like Coca-Cola (Sicilia and Palazon, 2008) and Red Bull (Cova and Pace, 2006) are distinct in their members' common interest in – *or infatuation with* – a brand (Albert, Merunka and Valette-Florence, 2008). Marketers are aware of the power of experience (Pine and Gilmore, 1998) and shared unusual experiences (Arnould and Price, 1993) to create value for customers (Schouten, McAlexander and Koenig, 2007).

Communities foster social exchange through the consumption of products and services, both for the *'linking' value* (to other community members) as well as the *'use' value* (Cova and Cova, 2002). The tribal nature of brand communities and experiences generated by interaction are central for post-modern consumers (D'Urso et al., 2016). These relationships enable consumers to perceive social identities with other like-minded individuals, physically and virtually (Bagozzi et al., 2012). In online travel communities, active participation among members is vital to guarantee community longevity (Filieri and McLeay, 2014); a community would cease to exist if no-one contributed. In a community of networked individuals, defined by the relationships created by fans, customers or admirers (Muniz & O'Guinn, 2001), members engage in electronic word-of-mouth (e-WOM) to create awareness and interest, relationship building, transactions and fantasy. The co-creation of value within tourist communities, however, remains relatively unexplored (Lin, Chen & Filieri, 2017).

Co-creation is the process by which consumers and producers/service providers collaborate to create value (Prahalad and Ramaswarmy, 2004). It can be associated with more satisfied and loyal tourists (Mathis et al., 2016). Value becomes more embedded in co-creation as customers move from being a passive audience to more active players (Vargo and Lusch, 2004). The relationship between value co-creation and tourist experience is well documented; value is co-created through experiences and encounters with service providers (Shim, Gehrt and Siek, 2005). Furthermore, O'Dell and Billing (2005:16) refer to '*experiencescapes*' to describe backdrops of experience organised by producers, yet desired by consumers. Campos et al. (2017) highlight the need for more research on the mutual influences associated with participation and interaction. This paper answers calls for research by exploring the co-creation of tourist motivations and the experience, using a community lens (e.g., Gambetti and Graffigna, 2015; Skålén, Pace and Cova, 2015) framed by the online/offline context. As value arises from consuming the experience itself, especially in the context of

experiential services (Arnould and Price 1993; Pine and Gilmore, 2013), there is a need to focus on 'experience encounters' involving the engagement and participation of users (Sørensen and Jensen, 2015). Thus, this study contributes knowledge on the co-creation of experience encounters in specific a tourist context.

Service experience encounters are associated with a combination of attributes, including socialising and hedonism. Socialising, social interaction, meeting new people, and interacting with staff and other holidaymakers form an important part of the tourist experience (Cutler and Carmichael, 2010). Hedonism also plays a major role in the tourist experience (Major and McLeay, 2013), especially when associated with experiential consumption – and is thus relevant to the ski-chalet community. Although the ski-chalet holiday is widespread in French ski resorts, it is mainly frequented by British tourists and operated by Anglo-centric tour operators who adapt the offer to meet customer expectations. The average chalet caters for around 20 skiers who will ski all day, return to the chalet for mealtimes with the chalet staff, and then 'bore each other with tall stories in the evening over dinner' (Murison-Small, 2003).

McLeay et al. (2019) respond to the need for further research on intangible factors and links with the online/offline skier experience. While some research has been undertaken on skier motivations (Buckley, 2012) and the holistic ski experience (Hall et al., 2017), the co-created experience has been largely overlooked. In France, where skiers account for a large share of inbound tourism, the lack of innovation is creating an unfavourable business environment for winter sports (Paget, Dimanche and Mounet, 2010). Thus, the ski-chalet market provides an ideal context; taking an interpretivist approach, McLeay et al. (2019) developed five stages for gathering and analysing data:

i. Covert observation (skiing and après-ski socialising during six separate one-week ski chalet holidays/ structured field notes during two ski seasons)
ii. Overt observations and informal discussions (following a broad interview guideline, encouraging participants to talk about themselves and their ski holiday experiences/ structured field notes and observation of online and offline activities)
iii. 37 phenomenological interviews with 31 holiday makers and 6 staff/manager volunteers (digitally recorded interviews)

iv. Multiple sources of data including observation of behaviour (skiing, socialising, websites, social media interactivity and interviews) used to establish veracity, credibility, dependability and conformity
v. Thematic analysis of all data (2 researchers) with results reviewed by 3 additional academics to enhance the robustness of the findings

The findings are anchored in realities that are 'talked and lived', gained while socialising, co-habiting and eating in the same vicinity (c.f., Syrjälä, 2016). This type of field work involves gaining entry into the ski-chalet community, selecting gatekeepers and key informants, participating in different activities with the members (skiing, mealtimes, socialising), clarifying our findings through formal interviews and informal conversations, and keeping structured field notes to facilitate data analysis and inform our results (Bowen, 2002). Multiple sources of data were used – including observation of behaviour (skiing, socialising, websites, social media interactivity and interviews) to establish credibility, dependability and conformity (c.f., Davis, 2016).

McLeay et al. (2019) identify 5 key themes: 'socialisation', 'all-inclusive chalet offering', active 'hedonistic skiing' and 'location/place' (also documented in prior studies of ski resort choice, such as Konu et al., 2011), but also 'augmented community', which was specific to the results of the study. Each theme is discussed in turn:

Socialisation

Socialisation themes were associated with enjoying the conviviality of a ski-chalet holiday. The social motivator appeared to lead to the experiences pursued. Borrowing from the field of sociology and psychology, this *outpouring* or 'social sharing of emotions' (Zech, Rimé and Nils, 2004) embodies the verbal expression of an emotion to others by the person who experienced it. Chalet staff play a pivotal role in co-creating the social interaction among guests throughout the trip, including organising and participating in après-ski activities and mealtimes with guests. The social aspects are highlighted in the marketing communications of ski chalets and tour operators that were reviewed during this study.

'All inclusive' pseudo-authentic ski-chalet infrastructure

The chalet staff provide numerous services to enhance the ski community experience; being 'catered for' is vital for British skiers. Guests rely on the

chalet staff to assist with organising ski passes, ski hire and ski lessons, thus overcoming the language barrier. The communal aspect of mealtimes together is central for co-creating the chalet experience. This co-created understanding reinforces the cohesion among community members and creates the chalet '*stage*' (Pine and Gilmore, 2013). The guests had a vivid expectation of the ski-chalet infrastructure; the 'stage' is the basis of the chalet community. McLeay et al. (2019) describe it as 'pseudo-authentic', lacking in naturalness and spontaneity, and very far from the reality of a 'local' ski-chalet.

Hedonistic skiing

Hedonism is associated with skiing, après-ski and additional experiential elements of the ski-chalet. Motivations for ski-chalet holidays are linked to the challenge and achievement of active vacations (Kreziak and Frochot, 2011). The shared, co-created hedonistic skiing experience is integral to being engaged in outdoor physical activity. Hedonistic behaviour is well documented in the early experience literature, yet has not been explored in a community context. The interviewees articulated how previous hedonic experiences motivate engagement, and contribute to the ski-chalet community experiences, further fuelled by a sense of adventure, thrill, danger and escape. The findings confirm that co-creation occurs when tourists actively participate in physical challenges with communities of like-minded individuals (Campos et al., 2017) and have a thirst for *doing* rather than *seeing.*

Location/place

Location/place factors such as chalet locality, picturesqueness, ambience and weather also influenced motivations and the overall experience – findings that complement Kreziak and Frochot (2011). The ski-chalet experience as a 'home' was prevalent, generating co-created feelings of relaxation and comfort. The 'bundle' of co-created factors is important in the ski-chalet community. These co-created factors contribute to new opportunities and new clients (Pröbstl-Haider and Lampl, 2017). Highlighting the importance of the vicinity, McLeay et al.'s (2019) observations supplement studies that suggest destination-related motivations including terrain, snow conditions and proximity will attract skiers to a resort (Alexandris and Girgolas, 2007).

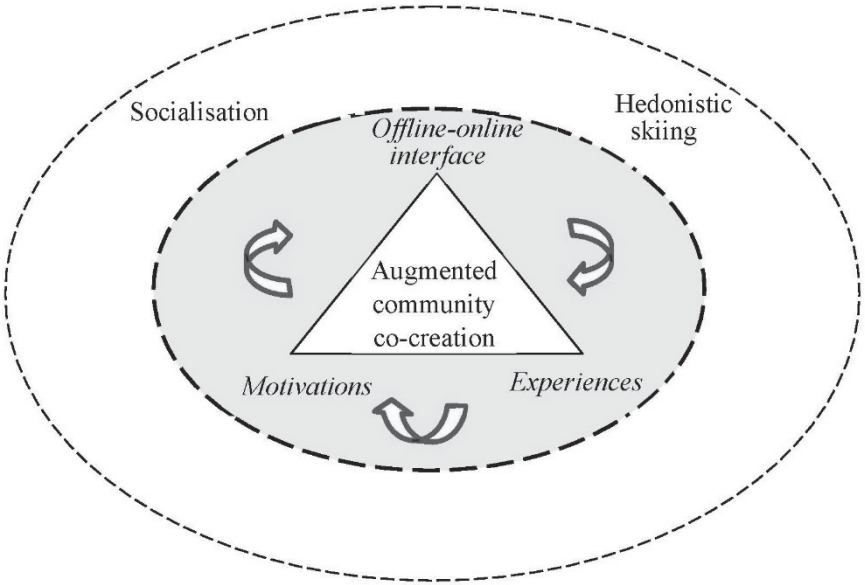
Augmented communities of online & offline skiers

McLeay et al. (2019) observed that skiers, particularly baby-boomers, seek information and generate information via blogs, vlogs and social networks. They join the ongoing conversation of skiers and add to the legitimacy of the community (Kristiansen et al., 2015). Knowledge and co-creation is shared online (and offline) among skiers and providers of ski services, both during the holiday and afterwards. The chalet guests would gather informally and compare each other's photos and clips taken during the day, before posting them on social media. This activity highlights the augmented nature of the ski-chalet community and mix of in-person offline and online interactions. The guests discussed how e-WOM helps them choose a chalet and location – and incites repeat bookings. The notion of trust is paramount; the tour operator plays a pivotal role in co-creating the ski-chalet experience by bringing the group together and enabling the experience (Prahalad and Ramaswamy, 2004) which tourists then share via social media, underscoring the co-created synergies of the augmented community.

The interplay of factors that influence individual experiences in the ski-chalet community is illustrated as a framework (in Diagram 1) to explain elements of the augmented community experiencescape. The framework draws from the themes summarised by the interviewees and reflects the co-created experiences within the ski-chalet community.

McLeay et al. (2019) contribute to theory by developing a framework for understanding the augmented ski-chalet holiday experiencescape. Future studies that focus on different ski domains, different countries and other seasons would provide an ideal opportunity for comparison. Above all, as new technologies are developed (such as 'connected wearables'), ongoing research is needed to keep pace with the constant evolution in technology adoption – in order to further our understanding of emerging user behaviour (online and offline). Without this knowledge, we are unable to harness the opportunities offered by ICT. The communities identified in the ski chalet study reflect the co-created synergies produced in the liminal spaces between offline and online interaction.

Diagram 1: the augmented community experiencescape framework



Given the importance of online communities for facilitating collaboration, it follows that organisations should be encouraging the formation of communities, to incite interaction and co-creation among stakeholders. However, while many sectors have integrated interaction and co-creation into their business model, higher education providers seem unable to leverage ICT in the same way. As such, the key stakeholders (i.e., students) risk being digitally excluded – as explained in the next study.

3.2 Widening disparity in user behaviour

Various intangible barriers work together to hinder the integration and uptake of new technology. Focusing on students, Lichy and Kachour (2016) reveal how younger Internet users purposefully select ICT, depending on the person with whom they are communicating – c.f. article 9 in 'Overview of Publications'. Their findings show the extent to which students in France use basic ICT (email and the corporate intranet) for communicating with faculty and administrative staff, thus avoiding SNS. Similarly, students received course materials from faculty via email and the corporate intranet.

This choice can be explained by three contextual factors:

(i) communication style: interactive/collaborative tools are perceived as inappropriate for communicating with a hierarchical superior,
(ii) the need for traceability: the written word leaves a verbatim 'paper trail',
(iii) the nature of the content: the subject of the communication can influence the medium chosen for communicating (e.g., it would be problematic to use SNS for discussing numerical problems or statistical queries)

In contrast, when the students communicate amongst themselves, they use SNS to exchange course materials and/or information about organising group work. Their choice of technology is instinctive; neither the tutors nor the course administrators encouraged the students to use web 2.0 tools. Moreover, the students communicate asynchronously for *disseminating* and *exchanging* information (i.e., one-way message) within their online community. There is no evidence of the students communicating interactively in real-time to exchange ideas, co-create or produce new knowledge. Reflecting on the literature, this finding is unexpected, given that in other national contexts, the same tools are used by students for two-way communication; collaborating, co-creation and sharing knowledge across a wide community. Paradoxically, it materialised that when the students undertook their Erasmus/ Study Abroad year (i.e., outside France), they enjoyed using interactive tools for enhancing learning. This finding was re-examined in a later study (Lichy and Merle, 2019), which confirmed the extent to which culture can act as a barrier to using certain ICT in knowledge transfer – c.f. article 16 in 'Overview of Publications'.

Lichy and Kachour (2016) questioned the students about the perceived value (i.e., the legitimacy/ credibility) they give to pedagogical content that ***they*** themselves find online – given that students receive their course materials from tutors via email or the corporate intranet. When students autonomously retrieve information online, there is a preference for consulting reputable and recognised sites, such as tutor homepages. It signifies that the value attributed to information depends on the extent to which the source and content can be verified by the students. This finding suggests that the students have certain hesitations about the content that they find independently from tutor recommendations, particularly content retrieved from blogs and SNS. The students raised concerns that what they find online may not be relevant for the learning objectives set by the tutor. When the students were asked about how efficient they think online learning

methods can be, less than half of them perceived technology-enhanced methods to be effective. This observation reveals a certain lack of technology readiness/ awareness in the learning process in France, at that time.

The literature puts forward that the aim of integrating innovative technology into higher education is to improve the quality of the learning process; to encourage students to 'reflect on their thinking', and to prepare students for a connected workplace in which knowledge-sharing is the norm. However, Lichy and Kachour (2016) found that the students in France demonstrated a Cartesian distinction between academic information and social information, resisting the blurring of boundaries between academic and non-academic spheres. The students were very cautious about the authenticity of information that they had retrieved independently. Also, interactivity was hampered by asynchronous communication. The findings suggest that the students in France have yet to grasp the ethos of *sharing* knowledge via social media in a learning context, confirming the notion of an emerging *'social' divide* in the use of social media.

This social divide has long-term ramifications for recruitment, ranking and reputation. There are also repercussions for managing international stakeholders, since technology usage is framed by (and *restrained by*) the cultural context. To further understanding, ongoing research is needed to probe the extent to which students recognise the concept of knowledge-sharing in a social or recreational context, and how this can benefit them if applied to a learning context (c.f., Lichy and Merle, 2019).

3.3 Transition economies: new users, new behaviours & cyber-surveillance

The Internet symbolises the epitome of a century of massive change, reflecting not only the atomisation of society but also the fragmentation of civilizations, beliefs and the individual self. Each technological development has modified user behaviour, offering new ways to communicate (social technologies) and greater reach of the Internet (mobile technology). In many countries, the Internet is a democratic medium, which allows users to create and share content. Technology is a catalyst for change – yet when access is restricted, technology can be used for the suppression of human rights such as freedom of expression, free speech and freedom of assembly. Not every user has the same Internet freedom, as demonstrated by Lichy et al. (2017) – c.f. article 11 in 'Overview of Publications' – and also discussed in the research-in-progress.

Russia and China share a common desire to challenge the principles of the Western-dominated international system. Legislation is used to block legitimate news stories that run counter to the government's position while also allowing the government to broadcast misinformation and propaganda through news websites, giving the government complete control of the country's narrative. As well as blocking individual sites, and entire categories such as news outlets, both Russia and China enforce Internet censorship on individual citizens.

Technological expertise is the pride of a nation, essential for improving standards of living, and a powerful weapon for leaders. The extent to which Big Data technologies are integrated into a society is a reflection of national progress, show-casing political and economic modernity. In the data-driven world, individuals divulge vast quantities of personal data to access Internet services, often unaware of the release to third parties of their sensitive personal data. The information fuelling Big Data practices is inadequately documented and disclosed; little is known about how organisations collect, organise, and transform these valuable sources of data. The disclosure of Big Data raises questions about ownership, ethics and the right to privacy. In Russia, the medical records from the database belonging to the Federal Drug Control Service, liquidated in April 2016 (see http://www.fskn.gov.ru) can now be bought on the black market. The database contains the names, contact details and photos of all known HIV-positive people in Russia, everyone who has recently suffered from a drug overdose and anyone who has tried to commit suicide. This violation of privacy touches an estimated 1.5 million Russians. Modern technologies that trace the daily lives and medical records of citizens are a lucrative source of information, and raise serious questions about the commoditization of data (Big Data) and its disclosure.

The (mis)use of Big Data is affecting perceptions and interpretations of new technologies and, in the absence of concrete reassurance, it has a detrimental effect on consumer behaviour by amplifying uncertainty. Lichy et al. (2017) identify and explain the factors that influence user perceptions of Big Data, from the perspective of the individual web user in a society characterised by restricted freedom of information and communication. Whereas current Big Data research has often been undertaken from an Anglo-centric perspective, this study is set in St Petersburg (Russia), framed by a different institutional context. By contributing to an under-researched area – the individual's awareness of Big Data – the study answers the call for further research by Erevelles, Fukawa and Swayne (2016) to better understand the impact of Big Data.

A number of issues exacerbate the development of Big Data technologies in Russia, including: data security and confidentiality maintenance, lack of qualified human resources, lack of 'local' Big Data IT resources, complexity of new technologies implementation, high costs of investing in Big Data technology, political and economic fluctuations, and higher costs on import items and inflation. Legislation requires companies operating in Russia to store their users' or clients' personal data on servers located physically within Russia; after which, in accordance with cross-border data transfer requirements, personal data can be transferred abroad, if necessary.

Lichy et al. (2017) discuss the impact of the avalanche of legislation aimed at gradually isolating the Russian Internet from the global infrastructure. The objective is to ascertain perceptions and interpretations of Big Data from the perspective of individuals living with Internet censorship. The study reveals that many individuals in Russia have a vague understanding and general lack of awareness about the use of Big Data technologies. Bearing in mind that the pursuit of knowledge may require that researchers recognise 'lack of awareness' (i.e., ignorance), this study has marketing implications for the role of awareness regarding Big Data and the individual user.

Data were collected from individuals (n = 645) aged under 26 years; 75% of whom are CPD trainees (i.e., *Continuing Professional Development*) who work full-time and undertake training. This age cohort is portrayed in literature as a generation of tech-savvy individuals, capable of embracing high-tech change and innovation (Lichy & Kachour, 2016). Our findings reveal an unexpectedly low percentage (about 10%) of the participants believe that the main function of Big Data is for achieving commercial gain (despite the fact that about one third of participants are undertaking business-related CPD). Having removed the participants who reported having no knowledge of Big Data (n = 214), only 15% of the remaining 431 participants expressed an interest in Big Data technologies, or perceived the commercial and economic value. Almost double (28%) identified Big Data as a mechanism for surveillance. These findings call into question the extent to which the Russian context creates this sentiment.

Lichy et al. (2017) highlight the extent to which individuals in Russia have limited access to relevant information that would help them form an opinion about Big Data. What can be learnt from the study is that disruptive change is a natural consequence of rapid technological innovation and that the way in which change is implemented will affect the individual's perception of the new technology. Understanding how people interpret change and behave

as consumers is important because it has a direct effect on the national economy – and in turn the wider economy and plans for a digital society.

In a data-driven world, harnessing information and extracting new insights from data is the key to competitive and societal advantage. From an individual perspective, users need to be aware that more and more data-driven decisions are being made, and that these decisions are based on algorithms that might *or might not* be fit for purpose. The digital data generated by an individual (e.g., their actions, inputs and outputs) will build a 'type', rather than a 'profile', of an individual. Data therefore are a valuable commodity. As with most ICT, Big Data and Big Data analytics generate many benefits, as well as harms. For example, the surveillance of individuals by firms, financial institutions and governments is being used to deny employment based on what individuals post on their personal social media pages, particularly in the case of Russia (Gainous, Wagner and Ziegler, 2018) and China (Lagerkvist, 2005). Russia's attempt to suppress the flow of online information comes as increasingly authoritarian governments around the world are moving towards a Chinese model of digital control by imposing stricter regulations that threaten Internet freedom and their underlying democracies; the government responds to any public opposition by employing strategies to tighten their grip on the digital flow of information. Digital authoritarianism is reversing the notion of the Internet as an engine of human liberation. As data capture and analytics technologies become more sophisticated, governments will find new and more effective ways to collect and contextualize data on everything, including citizens.

Alongside government surveillance, businesses are also constantly collecting data on individuals. Information is gathered by directly asking customers, by indirectly tracking customers, and by cross-referencing customer data from other databases. This information is used to make commercial decisions (e.g., for improving customer experience, refining marketing strategy, turning data into profit) and to gain access to social media based communities. As such, social media trends offer a rich source of information for policy makers, practitioners and researchers alike, as demonstrated by Dutot and Lichy (2019) below – c.f. article 14 in 'Overview of Publications'.

3.4 Social media and acculturation to the global consumer culture?

Worldwide, the increasing number of Internet users and technological developments have given rise to many different types of social media, each with their own user group behaviour. Examples include publishing content (e.g., blogs and wikis), sharing information (e.g., YouTube and Slideshare), Internet telephony (e.g., Skype and VoIP), microblogging (e.g., Twitter), live-casting (e.g., Twitch and YouTube), participating in virtual worlds (e.g., Second Life and Shopaholic), gaming (e.g., World of Warcraft). In addition to these behavioural segments, there is ongoing regional fragmentation. Internet users can engage in global networks (e.g., GAFAM products) and regional networks (e.g., WeChat and BAT: Baidu-Alibaba-Tencent) in China, which offer local services including in-app payment, multilingual chatting and cryptocurrency initiatives.

Extending the work of Kim et al. (2003), Dutot and Lichy (2019) examine how social media enhance interpersonal communication and enable users to obtain information or knowledge, interactively and in real-time, as part of the process of acculturation to the global consumer culture – c.f. article 14 in 'Overview of Publications'.

In view of increasing international mobility, various frameworks have been developed to explain the acculturation of consumers to a host country. Laroche et al. (1997) view acculturation as a dynamic aspect of ethnicity that is largely influenced by a person's willingness to interact with the other culture. Developing further, Cleveland and Laroche (2007) propose a framework of *acculturation to the global consumer culture* (AGCC). Studies highlight the prominent influence of social media in the interaction between firms and their consumers (Fulgoni, 2015) and in market research (Patino et al., 2012). Yet, none of the frameworks has attempted to link social media and AGCC.

Dutot and Lichy (2019) set out to, firstly, re-examine the work of Cleveland and Laroche (2007) to further our understanding of the global consumer culture and to identify new factors that may act as an influence. Secondly, to highlight the influence of social media in a cross-cultural environment. The objective is to investigate the role played by social media in the process of acculturation to the global consumer culture.

The international marketing literature holds that consumers are less clearly defined by their national behaviour or attitudes, owing to the standardisation

of products and services, which has transformed the previously heterogeneous markets (Cleveland and Laroche, 2007) and consumers. The opposition between the anticipated homogenization of consumers and the development of a local consumer culture merits closer investigation of international marketing strategies.

Cleveland and Laroche (2007) developed a framework as an alternative means of segmenting global markets. They define seven components of AGCC: cosmopolitanism (COSM), exposure to marketing activities of multi-national companies (EXPO), English language usage and exposure (ELU), social interactions (SIN), global mass media exposure (GMM), openness to and desire to emulate a global consumer culture (OPEN) and self-identification with a global consumer culture (SELF). In their view, cosmopolitanism (COSM) refers to the qualities held by certain individuals including a willingness to engage with other cultures. Exposure to marketing by multinational companies (EXPO) reflects a consumer's familiarity with marketing efforts by companies operating beyond borders. English language usage and exposure (ELU) indicates that a consumer is familiar with and uses the English language in everyday interactions. Social interactions (SIN) refer to an individual's experience travelling outside their home country, migration and contact with foreigners. Global mass media exposure (GMM) describes a consumer's exposure to media generated outside his/her original country. Openness to and desire to emulate a global consumer culture (OPEN) defines an individual's probability of seeking foreign products for personal reasons. Self-identification with a global consumer culture (SELF) reflects an individual's desire to reflect global consumer behaviour in terms of dress-sense, reading materials and interaction with international brands (Cleveland and Laroche, 2007). Their study supports the use of the AGCC framework cross-culturally and suggests that the effect of demographic characteristics on AGCC will vary according to the country investigated. By choosing to ***not*** focus on a specific country or a product, but on a communication channel and keeping the individual perspective, Dutot and Lichy (2019) extend the work of Cleveland and Laroche (2007).

When discussing consumers, the perception of others becomes crucial. Scholars highlight the fact that individuals are influenced by peers (Dutot, 2015; Thakur, 2013). *Social influence* (as it is termed in the literature) is the degree to which an individual believes the use of a product (or act) to be important among others (Venkatesh *et al.*, 2003). Given that individuals are subject to social norms and pressure from personal contacts, peers and family, the following hypothesis is proposed:

H1: Social influence will positively increase AGCC.

When separated from their original culture, individuals generally form social ties with like-minded others in their new environment, forming what Berry (1997) calls 'community-based social networks'. These ties (or relationships) are often referred to as a *social network* (Meyer, 1994). Individuals who seek to assimilate will develop strong social ties with individuals of the dominant culture (Piontkowski et al., 2000), as a means to benefit from market opportunities (Samnani et al., 2013) – thus, the following hypothesis:

H2: Social network ('networks' or 'networking') development will positively increase AGCC.

Cultural theorists (e.g., Hofstede, 2001) underscore the relevance of national cultural (norms, behaviours, attitudes, values) in academic research. Assuming that each national culture has its own characteristics, then in the context of globalisation, individuals will experience cultural differences between their 'home' (original) culture and a 'host' culture (i.e., where they currently reside). These differences are referred to as *cultural novelty* (Samnani et al., 2013). Interpretations of cultural difference vary from one person to the next, but generally affect risk perception and commitment (Wong et al., 2006). Few studies have linked culture and AGCC explicitly. Hence, the following hypothesis:

H3: Cultural novelty will positively increase AGCC.

Studies confirm that the actions of an individual are often based on trust (Mayer et al., 1995) and that trust is central to relational exchange and adaptation (Chai and Dibb, 2014), acknowledging that trust differs from one cultural context to another (McAllister, 1995; Doney et al., 1998). Thus, the following hypothesis:

H4: Trust will positively increase AGCC.

Economic rewards (or needs) are one of the main motivations for assimilating into a new country or consuming a new product (Gans, 2007; Samnani et al., 2013). They can be understood as the financial retribution earned from the use of a specific product. In purchasing such a product, individuals adopt new values and practices that may not be different from their original culture. Thus, we propose the following hypothesis:

H5: Economic rewards will positively increase AGCC.

The second objective of Dutot and Lichy (2019) was to understand the extent to which social media play a role in the process of acculturation. Social media are a dynamic force for individuals to interact with like-minded others in online communities – both personal and professional (Lichy and Kachour, 2016). They unite individuals (Okazaki and Taylor, 2013), consolidating shared meanings through symbols, brands and artefacts (Merz et al., 2008). Social media underscore the notion of homophily ('*birds of a feather flock together*') (Gu et al., 2014), in other words the tendency of individuals to associate and bond with similar individuals in social media communities.

Social media play a double role: firstly, as an inhibitor of differences when, for example, an individual joins a community which resembles their original culture (Tsai and Bagozzi, 2014; Gu et al., 2014) – and, secondly, for following trends, and subsequently assimilating into the dominant culture. Acknowledging that social media usage for marketing purposes will vary from one country to another (Goodrich and de Mooij, 2014), it follows that social media reinforce the link between factors that affect AGCC and AGCC, thus:

H6: Social media mediates the relationships between factors that affect AGCC and AGCC.

Dutot and Lichy (2019) use online surveys for data collection, owing to their cost-effectiveness (Bethlehem and Biffignandi, 2012) and time-saving (Dillman, 2006). The survey included 13 constructs for measuring AGCC. Social influence was defined from Horenczyk (1997) and Lay and Nguyen (1998) (4 items), and a social network was defined from Piontkowski et al.'s (2000) work (3 items). For cultural novelty, Dutot and Lichy (2019) used Samnani et al.'s (2013) research (3 items). Trust was defined from Barnes et al. (2011) and Chai and Dibb (2014) (4 items). Economic rewards were again taken from the work of Samnani et al. (2013) (4 items). Cleveland and Laroche's (2007) measures were used for each construct (cosmopolitanism, exposure to marketing activities, English language exposure, social interactions, global media exposure, openness to and desire to emulate GCC, and self-identification with GCC); questions were adapted to fit the context of the research.

Dutot and Lichy (2019) distributed the survey to 545 individuals, controlling for two factors: (i) the respondent had to have lived outside their country-

of-birth for at least 6 months, and (ii) used at least two different social media platforms. The survey yielded 326 responses (59.8% response rate), mostly female (65.8%), and between 25-43 years old. Nearly all the respondents spent over an hour a day on social media (91.9%), particularly on global networks: Facebook and Instagram, followed by YouTube (85.1%), mobile apps (78.3%) and websites (62.7%). The respondents were mostly born in Europe (88.2%) and lived in a different European country (63.4%).

Partial-least square (PLS) path modelling and structural equation modelling (SEM) were used. Four of the first five hypotheses are accepted. Only the relation between trust and AGCC is rejected. Dutot and Lichy (2019) found that social networks constitute the most significant factor of influence, followed by social influence, cultural novelty and economic rewards. These findings indicate that the perceptions of peers are crucial when dealing with consumerisation (in line with Thakur, 2013 and Dutot, 2015). They also confirm the idea that, in an international context, our social ties, community, and peers are a driving force of acculturation. The more an individual wants to integrate/assimilate into a new culture, the more he/she is going to develop stronger social ties and value the advice of acquaintances from his/her new country. Furthermore, when the process of acculturation begins, individuals place greater value on the new culture, at the expense of the original culture, a process that can be accelerated by economic rewards. For Dutot and Lichy (2019), trust did not play a role in acculturation, meaning either that consumers do not think that they can trust their new relations or that trust is not an issue arising with respect to acculturation.

The second goal was to investigate the role of social media as a mediating construct between factors influencing AGCC and AGCC. Dutot and Lichy (2019) found that social media significantly increases the influence of the antecedents of AGCC on AGCC (improving R^2 from .271 to .348). More precisely, social media influence stems from three of the five antecedents. The first and most significant factor is social networks. As individuals develop a new community in their new country, the use of social media is crucial for finding new 'friends' to enlarge their network, which in turn generates more consumerism (Banerjee, Mukherjee, and Bandyopadhyay, 2012) and sharing of consumption emotions (López-López, Ruiz-de-Maya & Warlop, 2014). The second mediating factor concerns trust. Although trust does not have a direct effect on AGCC, it has a significant effect owing to the use of social media. This finding highlights the importance of such a channel in consumers' reassurance regarding a brand or product. Individuals find comfort on social media and adapt more easily to the new culture. The final effect of social media concerns cultural novelty. As individuals enlarge

their circle of contacts in the new country, they embrace the new culture, which facilitates assimilation. This influence is natural, as individuals who want to fit in will test new experiences and be more willing to embrace new elements of the new culture. Social media can accelerate this process, via targeted ads and special discounts.

Acknowledging the role played by social media, these platforms not only attract customer attention but also generate a real impact on acculturation. Using strength ties – playing on the novel aspects of the new culture – should be better integrated in the strategy so that newcomers could accelerate their integration into the different culture, leading to increased purchase intention (Wang et al., 2012). These findings validate the need for common global advertising and influence of peers, as social influence was identified as a dominant accelerator of the acculturation to the global consumer culture.

3.5 Final remarks: making sense of ICT user behaviour

The works discussed thus far illustrate how cycles of technology diffusion have disrupted and shaped the consumption of the Internet. Written from the perspective of the individual Internet user, taking into consideration different generations and cultural contexts, each chapter addresses a different cycle. Chapter 1 provides a recap of early Internet developments that pre-date the 'social' paradigm. Chapter 2 explains the growth of ICT developments and Internet user behaviour, focusing on the diffusion of social networking sites. Chapter 3 examines contemporary trends in Internet user behaviour that have manifested in the era of Internet maturity. Taken together, the three chapters highlight the impact of commonality and divergence in Internet usage between different national groups and different generations of users, drawing attention to the scope and magnitude of the global digital divide. In the fragmented online environment, it is becoming increasingly difficult to connect ideas and make sense of the changing digital landscape. The accelerating pace of technological developments and ensuing user behaviour are transforming our daily lives, calling for ongoing research into the changes taking place. This knowledge is needed by scholars and practitioners to develop sustainable Internet access, networks and services that meet technical as well as end user needs.

It is worth noting the emphasis on socio-economically driven research; any data that does not directly address project-based outcomes is usually sidelined (Arora and Rangaswamy, 2013). As a result, there are gaps in our knowledge regarding Internet user behaviour at a 'local' individual level in

different contexts. The gap is exacerbated by the timing; the long-term impact of ICT usage will not be apparent until it has finished having an effect and is in the past (McLuhan, 1964). In other words, the evolution of ICT outstrips the ability of researchers to chronicle ongoing changes. Bearing in mind these constraints, a number of comments are put forward in the form of a discussion in the following pages (i.e., the concluding section). In the first part of the concluding section, key milestones in the development and growth of the Internet are summarised by means of a retrospective on the past decade and a prospective on the next decade. Digital transformation continues to fan the flames of innovation, shaped by the context in which the changes are happening. Pull- and push-marketing leads to new technologies, driving new user behaviour and online communities. For over half a century, American tech developments have dominated Internet user behaviour worldwide, in terms of infrastructure, access and innovation.

Today, however, Internet hegemony is changing, in line with the ongoing cooperation and controversy between the USA and China. As the 'transition economies' of Brazil, Russia, India and China continue to globalise and urbanise, their Internet users are becoming more critical consumers and creative contributors of digital content (Bruns, 2008). Compared to a decade ago, Internet users are more aware and inspired to join online debates concerning outward-looking discussion of politics, protest against social injustice, innovative thinking and petitions. Internet developments represent a powerful tool for bringing about change at a national level, opening up a number of avenues for future research. To this end, the second part of the concluding section examines China's digital ecosystem as a focus for research-in-progress. Given the increasing volume of active Internet users in China, there is a need to further our understanding of Chinese Internet user behaviour, especially as we move closer to a bifurcation into a Chinese-led Internet and a non-Chinese Internet led society.

CONCLUDING SECTION

(i) A retrospective on the past decade and a prospective on the next decade

The three chapters identify and explain the cycles of Internet user behaviour that have taken place over the past decade, in terms of 'step changes' and incremental changes, and the impact of digitisation on individuals. The shift from email to social media has triggered an abundance of global online communities, along with new channels for communication and commerce. Developments in ICT have obliged businesses to rethink their business models, to respond to the online and offline stimuli that affect the customer journey. As Davies (1988:163) reminds us, "the creation of a technology does not occur in a vacuum but instead encompasses social and cultural phenomena", which resonates with the differences in user behaviour in different socio-material and socio-technical settings.

Citizens worldwide have experienced quantifiable improvements in quality of life, opportunity, education and human rights as a result of digital technologies. ICT have changed the business-to-consumer power balance, leading to a paradigm shift in the relationship between brands and their consumers. The marketing process has moved away from being a one-way broadcast, to a more interactive scenario akin to a two-way dialogue, spanning different cultural contexts and generations. The increase in mobile connectivity in emerging economies has enabled apps to target an unexploited base of new users. Although per-capita spending in these countries may be lower than in developed countries, the sheer volume of the population and the growth of online communities makes them attractive for market expansion.

Mobile and wireless have been gradually changing the workplace since the inauguration of the World Wide Web in 1995. Employing people on a remote basis alleviates the need for employers to rent or own costly urban properties. Yet, attempts to introduce working-from-home initiatives have been hampered by reports of remote employees feeling marginalized, which can reduce cohesion among staff and stymie creativity, and make them less loyal. That calculus changed abruptly with the outbreak of the Covid-19

pandemic, which made working-from-home the ‘new normal’ for millions of workers worldwide, and temporarily reduced our world to a screen.

Lockdown forced people to stay at home (and work/learn remotely), resulting in increased demand for video-conferencing, streaming and online gaming. While the Internet can handle the increased surge in access, the real concern is the connection to the ISP (Internet Service Provider) where bottlenecks can occur. Networks are configured to meet demand, not to exceed it. If there is a sudden demand, users will be blocked or slowed down. Bottlenecks are apparent when, for example, a staff meeting via video-conference has to contend with someone trying to watch a film; the Internet sees no difference between the company’s video chat and the film. The data will be delivered but users will notice the chat delay in the online meeting, slow downloads or loss of video feeds.

During lockdown, many people turned to social media and other apps to fill their spare time. The spike in usage has emphasized the evolution of these networks from being ‘social’ channels into fully-fledged media companies that can be used to drive personal advertising and self-branding. Individuals (in the form of digital influencers) are the new brand advocates. User-generated content (UGC) is the new digital word-of-mouth, offering an alternative channel of information at a time when consumers are becoming increasingly sceptical of advertising and celebrity endorsements, and are demanding more authentic dialogue.

Similarly, ordinary citizens now act as important news sources, and are often used by journalists in the newsgathering process. Individuals, who are normally the consumers of journalism, are now collecting, reporting and disseminating their own news content, via video testimonies, podcast editorial and eyewitness reports. Social media play a major role in disseminating this type of news and promoting citizen journalism content. During 2020, citizen journalists around the world investigated various angles of the Covid-19 pandemic, covering topics such as government preparedness, hospital readiness, the supply of protective equipment and masks, trustworthiness of government officials, and commercial exploitation. UGC characterises the hyper-connectedness and collaboration between individuals and organisations, challenging established norms and blurring boundaries.

However, while the attraction of instant global and personal communication is appealing to most users, there are no editorial gatekeepers to monitor the veracity of UGC posted on social media. Some users rely on UGC without

any verification, and this prevents them from making accurate decisions concerning their social lives, politics or business news. Fake news travels faster and further on social media sites, and can capture user attention longer than true news. Furthermore, many users are unaware that if they 'like' certain content then they will be shielded from seeing alternative views that may contradict the 'liked' content.

Looking ahead, it can be expected that individuals will need to further integrate Internet-enabled solutions into their daily lives. ICT have transformed how individuals live, work and play, by blurring many of the boundaries between professional and non-professional activities. Fixed Internet access from a desktop computer will soon be a footnote in history. Since the inception of collaborative tools and cloud computing, Internet users enjoy greater flexibility for accessing online services from mobile and wireless devices, on condition that the users click on "I agree" to the long list of "Terms and Conditions" – which brings us to the 'flip side' of ICT.

The 'flip side' of advances in ICT

A vast proportion of human interaction has shifted onto the servers of GAFAM, making these companies very lucrative. The force of social media interaction is that it continues offline, fuelling a much larger sphere of influence and creating word-of-mouth advocacy. It has ousted presidents (e.g., the Ben Ali regime), mobilised and organised social movements (e.g., the Arab Spring uprising and Ukraine's Euromaidan protests), and enabled us to follow the lives of people who we have not seen for years, decades or ever.

Today, we see the negative consequences of social media usage, as a result of the increasing pressure to maintain constant contact with peers. Some users are now experiencing the side-effects of spending endless hours tapping away on a screen instead of engaging in meaningful conversation. They may risk suffering problems linked to sleep-deprivation caused by addiction to social media activity. Addiction can also lead to procrastinating, getting side-tracked, losing focus, wasting time and a lack of concentration. Moreover, social media accentuate the egocentric mind-set; dopamine-driven behaviour encourages users to 'like', 'follow' and 'share and comment' – users, faced with so many digital artefacts, often ignore the fact that oversharing can result in unintentionally posting inappropriate content.

Social media platforms make use of personalised algorithms, which channel specific information to a user's online feeds. The mediated spread of

information through online networks causes an algorithmic filter bubble, leading to 'echo chambers' and a fragmentation of online interaction. An 'echo chamber' describes the digital space or virtual clique in which users are insulated from contradiction and opposing points of view. It reinforces members' own biases, interests and prejudice, leading its members to distrust everybody outside of that chamber. The echo chamber occurs when an individual or group's belief systems are reinforced and buttressed by continued communication and repetition within a closed system. The users choose how they want others to 'see' them through their edited/filtered UGC, including photos, status updates, posts, emojis and comments. They are often more concerned with the popularity of their own posts and feedback (while voyeuristically snooping on others) than building meaningful relationships online. The biggest danger of echo chambers is that personalised algorithms are making it easier to promote extreme content, potentially driving a wedge between different communities and leading to polarisation.

Social media organisations have been frequently criticised for their negligence regarding data privacy. Millions of users confess their most intimate secrets to apps that read the user's contact list and messages, including messages containing financial transactions and one-time passwords, as well as accessing pictures, screenshots and geolocation. Facebook, Twitter and Google have all been condemned by the UK Home Affairs Select Committee for being completely irresponsible and indefensible, and now face a bill for investigating crimes committed over their networks.

In order for users to become engaged and informed citizens, they need to become critical thinkers and active creators of content rather than passive consumers of online content and technology. Today, we are at a tipping point where technology will play a huge part in redefining our evolution as a species: *Homo Cyber Sapiens*.

'What next for Homo Cyber Sapiens?'

In a world where the Internet and social media are embedded in everyone's personal and professional lives, users are now facing the digital challenges that these new media have generated. The online environment demands specific literacy skills from users in order to navigate through the excessive customisations of news feeds, information flows and search results. Finding accurate, unbiased information online has become increasingly arduous. Users will need to constantly update their digital skills to be fully in control

of their online presence and to make the most of digital opportunities, while also steering clear of risks.

Against this backdrop, it is becoming difficult to accurately monitor Internet user behaviour, partly due to shorter technology life-cycles, and partly due to evolving user behaviour and new users. While software can be used to track various metrics such as session duration, frequency of use, user retention and time spent online, the software cannot explain how and why a user will engage with technology. A number of theories have been put forward over past decades to explain adoption and diffusion of ICT. Although scholars have extended and revisited certain theories in line with new developments, there are gaps in our knowledge since research undertaken in one context can rarely be generalised to other contexts and users.

Some innovations have been short-lived, based on unsustainable business models and servicing ephemeral lifestyles, for example the 3D television set – other innovations offer longer-term opportunities for improving standards of living. Technology is increasingly being used to further our understanding of collective behaviours in human beings. For example, Artificial Intelligence (AI) is automating many tasks, changing the way we live and work by increasing the capacity of the individual. Powerful trends emerge when evolving conditions intersect with age-old human needs and wants, for example, the desire for 'self-improvement'. AI apps can take over areas where an individual may procrastinate – such as planning, coaching, willpower, well-being and motivation. By facilitating human self-improvement, AI can enable individuals to make a great leap forward. Given that we already 'trust' AI to make ethical decisions about our social media behaviour and our newsfeed, it follows that AI can be developed for better managing resources in the business sector, government policy and health care.

There is ongoing debate about whether social media and the use of digital devices are harmful to mental health among younger users. Adolescents are heavy users of digital devices, and especially social media. Their social life and status revolves around intimacy and 'inclusion vs. exclusion', making them more vulnerable to FOMO ('fear of missing out') and the relational aggression that social media can facilitate. Many young users post abundant selfies to capture a moment with friends or to show their friends what they are doing. The selfie trend has become a widespread viral phenomenon. However, the image that the users are projecting of themselves shows a carefully curated ideal moment, edited by apps and filters. Some younger

users are struggling to find their self-identity and personality; they cannot escape the selfie culture, and they feel that they need 'likes', 'retweets' and 'favourites' on their pictures in order to feel that they are interesting, which feeds their dopamine-driven behaviour.

Evidence is growing of the harmful impact on young users (i.e., pre-teen children) of engaging with social media. Risks include being exposed to inappropriate or upsetting content such as aggressive, violent or sexual comments or images, uploading inappropriate content such as embarrassing or provocative photos or clips of oneself or others. Feeling excluded or ostracised has always been unpleasant for an individual, however, it is now possible for children to torment themselves – or others – with social media feeds that feature images of their peers having a wonderful time. Research suggests that this type of user behaviour can cause distress, and lead to depression, and ultimately mental illness. While it is not conceivable to prevent pre-teens from using social media, it is necessary to be aware of the risks.

At the time of writing, there is scant evidence to help us understand the user behaviour of school children. Schools (in Europe) have communicated key messages about the risks of online abuse and grooming. However, many professionals and parents are unaware of how to protect younger users from these risks – and how address the issue of 'screen time': an unhelpfully broad category conflating television, e-books, gaming and social media. Parents cannot control the messages their children receive via social media. There is no policing. There may be guidelines but they are not enforced. It will take state intervention to insist that the Internet starts effective policing. Until then, the Internet environment is a paradise for scammers and bullies.

More research is needed on the topic of children using ICT. Despite social media companies setting age limits for opening an account (usually 13 years old), it is widely known that children will find ingenious ways of working the system to open an account. It is appalling that so many inroads into children's lives and minds have been made by a handful of Silicon Valley companies whose priority is profit making. Safeguarding children in the digital era calls for researchers to undertake in-depth studies in order to provide an explanation of what children are actually doing and then identify the implications. To this end, the topic of pre-teen children online will be the focus of the author's future work.

The amount of toxic content and hate speech circulating online is a reminder that "People are going to do what people always do with a new communication

technology: use it in ways never intended or foreseen by its inventors, so turn old social codes inside out and make new kinds of communities possible" (Rheingold, 1993:415). Social media have morphed into an insalubrious vacuum, underscoring self-destruction and narcissism. Users are being nudged in the direction of political or unscientific propaganda, abusive content and conspiracy theories – ideas that appear to have driven the perpetrators of several mass shootings. Many of the world's most powerful leaders use Twitter to disseminate angry exclamations (Hague, 2017). Tackling vile behaviour is an ongoing challenge but AI may offer a solution. Social media organisations are now experimenting with using algorithms to suppress toxic behaviour by banning accounts if harassment and bullying is detected, and removing offending posts. They also need to introduce a step-change in their responsiveness to these escalating problems. Until they do so, users are advised to tread carefully and, when in doubt, switch off or disconnect from the system. However, acknowledging users' preoccupation with FOMO (fear of missing out), switching off (i.e., JOMO or joy of missing out) may be easier said than done. It may even be illegal.

In the case of China, switching off and disconnecting is not an option. As the COVID-19 pandemic spread during March 2020, the Chinese government issued cell phones to citizens in rural areas and sent people to teach them how to use it, for monitoring the spread of the virus. Consequently, government officials must approve a request for disconnection from the system. The issue of surveillance is examined further in following section which presents research-in-progress on *China's digital ecosystem*.

The growing number of Internet users in China (over a fifth of the world's Internet users) has attracted heightened attention from researchers with an interest in Internet developments and user behaviour. Exploring and unravelling the 'knowns' and 'unknowns' of Internet user behaviour in China is a topical field of research, given the state efforts to rate and rank the behaviour of every single citizen and legal person.

(ii) Research-in-progress: China's digital ecosystem

China offers a fascinating context for undertaking research on Internet developments and user behaviour, bringing to the fore a number of ideological differences and challenges for researchers and practitioners. Internet freedom and academic freedom are restricted within Chinese territory; scholarly journals have blacklisted a number of topics such as research on ethics and the consumption of online 'adult' content. For non-

Chinese scholars, trustworthy interpreters are essential for overcoming the language barrier, verifying the authenticity of information available, facilitating data collection – and, above all, for ensuring social lubrication to encourage 'local' individuals to engage with 'foreign' researchers.

The Chinese Internet

Most research on differences in Internet usage has been undertaken in Western countries (Li and Kirkup, 2007). With very few exceptions, researchers have overlooked identifying and explaining Internet user behaviour in modern-day China from the perspective of the individual. Fallows (2008) states that many Americans (and other Westerners) wrongly assume that China's Internet users are both aware of and unhappy about their government's control of the internet. However, Gorman (2005) stresses the importance of living with the reality that there are differing national and regional interpretations of what constitutes acceptable Internet content. For citizens in China, the Chinese government is protecting Internet users from unregulated online content that could be harmful to the individual user and to social harmony.

The Chinese Internet operates as a closed yet vast intranet, unlike the open-source web that individuals are using in the West (Lu, Zhou and Wang, 2009). Ever since China acquired its first direct Internet link in April 1994, the Chinese government has controlled Internet user behaviour (Kinoshita, 1995). Advanced surveillance technology is used in China to pinpoint where people go, when and for how long, allowing anyone with access to the data – including the police and the Communist Party – to build up a portrait of a person's day-to-day life (Lagerkvist, 2005; Ling, 2010).

In an attempt to produce and maintain social harmony in China, Chinese citizens are monitored against five criteria (Botsman, 2017): 'credit history' (e.g., ability to settle bills on time); 'fulfilment capacity' (i.e., ability to fulfil contractual obligations); 'personal characteristics' (i.e., verifying a person's mobile phone number and address); 'behaviour and preference' (e.g., a person's shopping habits in order to 'nudge' citizens away from purchases and behaviour that the government does not endorse); 'interpersonal relationships' (choice of online friends and their interactions, and the extent to which UGC echoes the philosophy of the government). For the Chinese government, there is no distinction between the virtual world and the real world: both should reflect the same political values, ideals and standards.

Before President Xi Jinping, the Internet was becoming a vibrant political space for Chinese citizens, but today the country has the largest and most sophisticated online censorship operation in the world (Shen, 2016; Marsh, 2018). The Chinese government filters everything that Chinese Internet users see, blocking controversial content and funnelling a vast amount of personal data back to government authorities watching for dissent. Citizens get their news through state-owned media outlets, and connect with each other through government-monitored social media platforms such as WeChat and Weibo. The government blocks a wide range of potentially controversial content, from news about its alleged persecution of minorities in Xinjiang province, to political activism, to accounts of the Tiananmen Square protests in 1989.

An ambitious governance project, the *Social Credit System* (shehui xinyong tixi社会信用. 体系) was launched in 2014 to assess the trustworthiness of Chinese citizens in keeping their promises and complying with legal rules, moral norms, and professional and ethical standards (Chen and Cheung, 2017). Over forty such systems have been implemented since 2018 by local governments in different Chinese provinces. Each citizen is given a 'social credit' score, which is used as a benchmark of honesty. Despite the claimed goodwill to curb escalating dishonesty across Chinese society, the concern is that an individual's entire life is being monitored. Individuals can be punished or fined by the government for various social activities if, for example, the system has not correctly registered that they have settled a debt or fulfilled a moral obligation.

King, Pan and Roberts (2017) estimate that the Chinese government fabricates about 448 million social media comments a year with the intention of distracting the public by posting positive content that includes: 'cheerleading' for China, the revolutionary history of the Communist Party and other glorious symbols of the regime. Lee (2016) describes how online activists will mimic the government posts that attempt to shape their audience's perceptions of specific issues, and can therefore create or grow a group of protesters who are committed to challenging the power of the state. Freedom of speech is not encouraged (MacKinnon, 2011). The Internet is regarded as a tool for political activism (Yang, 2003). Although the Chinese government has displayed greater tolerance of *environmental* activism, supposedly in a bid to appear more accountable to the Chinese public, it can still work swiftly to mute political opposition (Chin, 2017).

WeChat: an indispensable app

Many Chinese Internet users are oblivious to the American tech giants, owing to the wide selection of home-grown equivalents. WeChat is the most popular social network (Zou, 2018) with over a billion active users in China. Launched in 2011, WeChat serves as an example of what happens when an entire country (in which 1/3 of its population have a smartphone), actually 'leapfrogs' over the era of the desktop computer. What distinguishes WeChat from GAFAM (Google-Amazon-Facebook-Apple-Microsoft) is that WeChat was not a product that began as a website and was later adapted for mobile; it was shaped by mobile. WeChat has focused on building a *mobile lifestyle* to address every aspect of its users' lives, including non-social aspects.

What began as a platform for chatting has since transformed into an essential app to manage everything (Gao et al., 2019). By linking a WeChat account to a bank card, users can order taxis, buy airfare, train and movie tickets, book hotels, pay utility bills, transfer money to other users (even in the form of a lucky red envelope), top-up cell phone accounts, and manage personal finances. Digital payment by WeChat has become far more pervasive than other digital currencies (e.g., bitcoin), causing a shift in financial behaviours as the Chinese surged from a 'cash and bank card' society to a dependence upon personalized barcodes, allowing users to leave their wallets at home. Even smart-watches can display the WeChat personal QR code (see screenshot), enabling payments to be made with a flick of the wrist. Many of WeChat's most interesting features – such as access to city services – are not visible to users outside China. WeChat also offers a searchable newsfeed called 'Moments' for tracking user updates, and 'Time Capsule', which enables users to upload videos of up to 15 seconds that disappear after 24 hours, similar to Snapshot stories and Instagram's ephemeral video feature.

As China gets closer to the goal of becoming a technological superpower, it is constructive to formulate an academic opinion of Internet developments and usage in China, in order to fill gaps in knowledge relating to Western insights. To this end, an exploratory pilot study has been designed, outlined below.

Exploratory pilot study

For this pilot, exploratory information has been gathered over three months (one month per year for three years) in business schools located in a 'second

tier' Chinese city. The tier system refers to large cities that can be classified as growth engines of the Chinese economy, enhanced by huge amounts of investment, new infrastructure and an influx of new talent. The author was totally immersed in Chinese culture, without access to non-Sino digital content, such as GAFAM products. Information was gathered initially by observation of and participation in Sino social media (Chinese social networks, search engines, online communities) and, subsequently, from informal interviews with peers and a panel discussion (who requested anonymity). This approach enabled the author to gain entry into the local community, selecting gatekeepers and key informants, participating in as many different activities as are acceptable by the community members (meetings, social events, conferences), as a means to securing formal and informal interviews.

Qualitative interviews were conducted face-to-face with a convenience sample (provided by a private entity, requesting anonymity) of individuals who identify as ethnic Han Chinese. The intention was to explore how individuals perceive advances in ICT in China, in an informal discussion. Three broad question were prepared:

Q1 - how do people in China feel about advances in ICT in general?
Q2 - how do you see ICT evolution in the next 5 years?
Q3 - how can Internet users protect themselves online?

The interview findings are summarised in the following table.

Summary of interviewee excerpts

Question	Interviewee comments
Q1. How do people in China feel about advances in ICT in general?	"Any adult who isn't a digital expert will lose their competitiveness… although they have years of professional experience, their experience is less valuable than digital expertise. Everything is connected; digital technologies have disjointed knowledge, crippling people's ability to think and diminishing the need to be able to use memory" (male, academic advisor, aged 60).
	"ICT have made their place in modern society; we now prefer online to offline for shopping, communicating, working and socialising… using WeChat, QQ and Alipay. We totally rely on digital products – but they must keep pace with the changing needs of younger users, by bringing innovative ideas to the market" (female, business development manager, aged 32).
	"ICT are changing people's lives; they play a dominant role in society, especially in robotics and mobile devices … but the technology sector is not perfect – it remains vulnerable to data loss and hackers. People's personal data can be corrupted; if the government has the wrong data about us then it is very difficult to correct it" (male, student representative, aged 20).
Q2. How do you see ICT evolution in the next 5 years?	"With so many digital services flooding the market, some people are getting confused by the unlimited information. They could accidentally ignore important information … people have so many apps on their phone that they can't possibly use every app and therefore they miss information by not regularly reading their WeChat Moments" (female, professor, aged 56).

Q2. How do you see ICT evolution in the next 5 years? (cont.)	"Tomorrow's world will be a society that connects everything wirelessly, with changes in communication, entertainment, aviation and other aspects, to meet the new needs of industry and government" (female, student, aged 23).
	"The Internet is developing fast, as we move from 4G to 5G. AI and Big Data play an increasingly central role in the digital economy; just based on your search or purchases, apps can suggest the perfect product or service for you to consume" (male, translator, aged 35).
Q3. how can Internet users protect themselves online?	"The government should introduce more legislation for software suppliers, so that different access is granted for different age groups, to protect younger users. School pupils should not be allowed to use mobile phones on campus or in class. At home, parents must be an excellent role model for showing their child how to correctly use the Internet" (female, teacher, aged 49).
	"With such great social disparities in China, you cannot ask people what they want. Children growing up today have so many games and social apps; they enjoy the instant gratification of streaming and broadcasting their own content, idolising and admiring their Internet celebrities ... but their values are being influenced by digital content. Parents and teachers need to step in and make sure that the right values are being passed on" (female, engineer, aged 37).
	"People need to know that after they go through the required procedures for hospital admission, property or car purchasing, their data is collected by the government and sold by third parties to property agencies, insurance companies, retailers and advertisers. The government knows everything about you – but we know nothing about the government" (male, student, aged 20).

Overview of observation and participation

The findings reveal an ecosystem of advanced apps and services that are widely used in China. It is possible to distinguish two key features: firstly, there is prevalent *narcissistic collectivism* in the way in which people exaggerate the positive image and importance of the group to which they belong: i.e., the 'in-group'. An example of this observed behaviour includes colleagues collaboratively creating TikTok clips during break time. They then share edited versions of clips to small chat groups, rather than to the public. Cai, Kwan and Sedikides (2012) attribute Chinese narcissism to a number of factors including the only-child family structure, rapid urbanisation and a high level of individualism; the evolution in social values (an effect precipitated by culture itself) is an immediate and pivotal contributor to the narcissism. A further observation is that that Chinese netizens are strongly influenced by criticisms of the Western egotistical Internet user behaviour encouraged by GAFAM usage. Such views are amplified by Chinese social media and controlled by the media industry in China (Stockmann and Gallagher, 2011). This observation underscores the work of Cai et al. (2012); the Chinese worldview (and thus their relationship with technology and each other) symbolises the collectivist context and social norms. Lee and Chen (2010) hold that critiques of Chinese Internet censorship ignore Western problems of the Internet, such as its domination by commercial and entertainment value.

A second observation relates to user reliance on WeChat for undertaking everyday tasks, professional and recreational, including sharing curated UGC content and TikTok clips to friends, group chat, 'Moments' and 'Time Capsule'. Fu (2018) describes this behaviour as experiencing a sense of belonging and developing self-identity. However, WeChat users seem reluctant to show appreciation for another user's' content by clicking 'like'. Gan (2017) points out that there is a dearth of research and understanding of the factors that motivate users to 'like' social media content in China.

Overview of pilot interviews

The interviewee comments reveal an increasing reliance and mostly positive perception of digital services, acknowledging the challenge of keeping up-to-date with new developments and acquiring relevant expertise. Users are aware of the ways in which their data is captured; and the need to protect vulnerable users (children) in the online environment. There are similarities with Western Internet user behaviour in terms of sharing information, although there was no indication of users being motivated to 'like' other

users' social media content or 'share and comment'. The design and performance of Chinese social media reflect the collectivist cultural norms and values, and China's efforts to compete with GAFAM products. The Chinese digital ecosystem both monitors and protects citizens, for their own well-being and for social harmony.

The interviewees articulated their acceptance of surveillance in return for access to state-of-the-art digital services. The youngest participant described surveillance as "a system operating as a four-level pyramid, with the government at the summit, below which are large and multinational companies, then small to medium sized companies, and at the base of the pyramid are the common people". Given the size of the Chinese population and the abundance of digital spaces for voicing opinion, the government is in favour of closely monitoring Internet usage, in an attempt to ensure that the virtual world reflects and espouses the philosophies of real-world political values.

There was consensus among participants that a lattice of technologies mediates their interactions with the world, automatically recording what they buy, where they go, details of their health, what they say, and to whom. The participants acknowledged that the censorship mechanism can quickly identify 'anti-social' words, then eliminate the user's comments or freeze their account. Some users employ a homophonic word in their online dialogue with other users – such as the mythical '*Grass Mud Horse*' (草泥马), which is used as a political parody for 'social harmony'.

One participant explained that a user's post will be automatically taken down and the account may be suspended if the user posts information which is considered 'anti-social' or if the user has influence. If a user is unknown and without influence over others, their post may be removed but their account will not be blocked. Another participant explained how legislation drawn up for the purpose of state security, public security, censorship and taxation has given the Chinese government extensive power of access to private-sector data in businesses operating in China. Companies such as Baidu, Alibaba, Tencent and Xiaomi collect and share customer data with the government. Chinese citizens are obliged to share information (personal and financial) with online payment systems such as Alipay and WeChat Pay who, in turn, share their customer data with the government. This participant added that the government sometimes ignores (overlooks) the existence of monopolies and inequalities – which in effect implies that the government condones the situation without taking action.

To outsiders, it may seem inconceivable that companies supply the government with their customer information and user data. The relationship between the companies and the government is *quid pro quo*; by supplying the government with customer data, the companies receive permission from the government to operate their business activity, which avoids the creation of monopolies. For ordinary citizens, there is a very low level of transparency; the "common people" lack access to a lot of official information, as well as having restricted freedom of expression both in virtual spaces and in real-life.

Reflections on the pilot study in the light of the COVID-19 pandemic

An overview of the findings was shared with the private entity who provided the convenience sample. The purpose was to cross-validate the data collected and to seek a 'local' interpretation of more recent digital developments.

China has been heavily criticised for suppressing early information on the emergence of COVID-19, a decision that is likely to have exacerbated the human and economic costs of the global pandemic. Notwithstanding the criticism, the pandemic has provided evidence that the Chinese government's use of digital technologies in the name of public health and safety, and in an emergency, is feasible and effective. From mass surveillance and Internet censorship to the Social Credit Systems, third-party data-collection and Big Data analytics, China's new normal exposes tech-enabled authoritarianism as the world's best practice.

At the outbreak of the pandemic, every citizen was allocated a QR code (see anonymized screenshot), automatically generated when users connect to a Chinese IP. While it is similar in principle to the '*StopCovid*' app implemented in France during lockdown, the two approaches are quite different in design. In China, the QR code was embedded in two of the most popular apps (WeChat and Alipay) to maximize coverage. By using and integrating the app's positioning services, keyword searches, government-owned CCTV surveillance systems and Big Data analytics, the code helps the government to collect very detailed information on the social contacts of each individual in China, and then quarantine every contact of an infected person as soon as they are identified. Without the equivalent of GDPR, the geographic positioning information of each individual is passed directly to the government by the telecommunication companies and apps.

Screenshot: COVID QR code in China

Chinese people psychologically trust the government, and are willing to pay the price of freedom and privacy in exchange for social order and a secure digital ecosystem. By tracking and tracking citizens, the Chinese government has been able to control the spread of infection very effectively. In other countries, many people would not accept this level of digital surveillance under ordinary circumstances, seeing it as a risk to human rights. The Chinese digital consciousness and behaviour is very different from the Western view. Some would add that China's digital ecosystem is 100 years ahead of GAFAM products, in terms of design and performance. The question now is how the American giants will accept that they no longer have Internet hegemony.

The next and final section presents the supporting materials, in the form of an overview of the publications cited and the references used throughout.

POST-SCRIPTUM

The pandemic has increased our dependence on digital technologies and revealed many disparities between countries, in terms of access to fast and reliable Internet. Despite differences in mobile broadband provision, digital technologies have been invaluable during the pandemic in three key ways. Technology was used to accelerate research for the development of vaccines using systems and tools linked to AI, to support the monitoring of infected people, and to enable remote working for many jobs.

As digital technology triggers new business models, new professions, new ways of working and different interpersonal exchanges, it may seem timely to look at the skills which have been previously outsourced to low labour cost markets, with a view to relocating them back to the 'home' market. However, this is a hollow debate as we cannot compete in sectors that offer lower labour costs. On the contrary, we can (and should) think more about regional planning, oriented towards setting up local 'hubs' for facilitating research, training and education, entrepreneurship and sustainable development. Such hubs would enable and encourage the emergence of new professions at the junction of management, technology and ecological transition.

When the pandemic reduced the world to a screen, many digital users became dependent on GAFAM products (Google, Amazon, Facebook, Apple or Microsoft) for undertaking almost all of their professional and personal activities online. The network effect makes it possible for the GAFAM business model to create value for users (high-performance user tools) while capturing user data (enabling them to identify the profiles of these users and sell this knowledge to advertisers) – without breaking the law. Efforts to limit the use of personal data by large technology companies – the European Union's General Data Protection Regulation – better known as 'GDPR', which came into force in May 2018 imposes strict conditions on how data can be stored and used in the EU. While it is a good piece of legislation in terms of effort, it has nevertheless gone astray in its diagnosis of the problems caused by the tech giants. Part of the mistake is in the name: the 'General Data Protection Regulation'; the problem is not data protection, the problem is data collection. Regulating data protection presumes that the collection of data was consensual, that it does not pose a threat or danger, that it is acceptable to monitor digital users at all times,

whether they are customers or citizens, as long as their information is not disclosed. At the time of writing, this aspect poses little concern, as many users feel comfortable with disclosing their personal data online to GAFAM; and they see no alternative. Indeed, GAFAM products are successful because users readily consume them and, as a result, thee products lock the consumer into certain patterns; once users have acquired a certain know-how about Google or Apple, they can no longer stop using them. Using Gmail is like having the postman open your mail before you do and then slipping an ad inside. Of course, the process is automated, but there is a large degree of hyper-intrusion of these tools.

Undisputedly, digital has become an everyday commodity like clean drinking water or electricity. The only difference is that standards, control and evaluation means have been created to secure the consumption of water and electricity. This raises the question of if it would make sense to do the same with the information provided by GAFAM products. Realistically, it would be detrimental to prevent the free flow of information.

These issues are all the more crucial as successive lockdowns increased the number of digital users, whether for working remotely or for consumption and pleasure. This greater and more diverse usage of GAFAM products has shed light on the drawbacks and limits of such products, and called into question the issue of seeking alternatives. There is a pressing need for more sustainable marketplaces, adapted to users who did not consume digitally before the pandemic and who want to adopt a more environmentally conscious consumer behaviour. While large structures still dominate the market, the opportunity now arises to bring about a ‘post-pandemic digital 2.0’, more human, smaller, more adapted and more individualised, oriented towards the values of each person and offering less monopolistic products. Digital is far from limited to GAFAM products.

Working remotely deprives employees of an essential dimension in the workplace: empathy. Digital tools are a great time-saver but in terms of creating a relationship based on trust, partnership or learning, these empathy-deficient tools do not allow the brain to pick up all the non-verbal messages that facilitate such a human relationship. Keeping moments of informal contact (around the coffee machine for example) is important because they contribute to a better understanding of the work culture.

Remote work allows for a more flexible approach to structuring time, often resulting in greater performance on pure work activities, yet it does not provide a time slot for informal interaction. A further risk to be kept in mind,

especially for younger recruits, is the impossibility of observing 'management by example', that is, observing how managers and leaders operate in the workplace – acknowledging that 'management is doing things right; leadership is doing the right things'.

A major downside is that the team spirit if often weakened. In remote work, the professional dress code no longer has any meaning and employees less connected to the team. This may give some employees a feeling of autonomy in their jobs, but when everyone has to work within the logic of a system and each person develops, at the same time, a feeling of autonomy, it is impossible to get everyone to move in the same direction. As a parting comment, being 'forced' to work remotely has also allowed employees to spend more quality time with the family, and for some it has raised questions concerning job satisfaction and the quest of happiness. As the post-pandemic environment unfolds, time will tell if this changed environment leads to shifts in human resources or a serious rethink of business models.

APPENDICES

(i) Overview of publications cited

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