Premier Reference Source
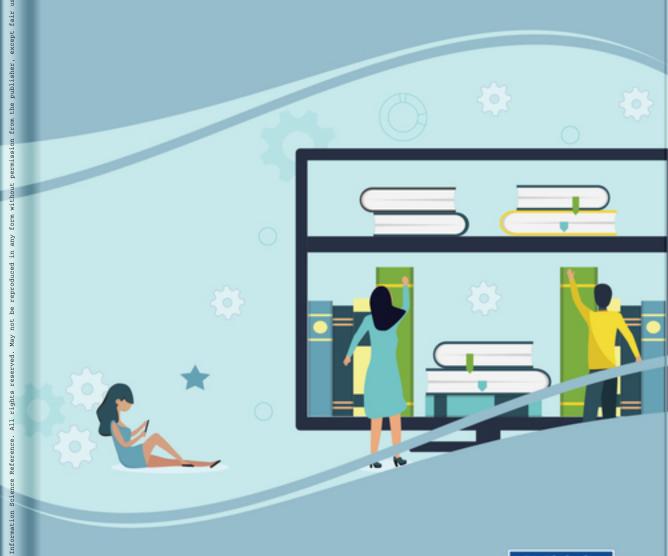
Managing and Adapting Library Information Services for Future Users

Nkem Ekene Osuigwe

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Managing and Adapting Library Information Services for Future Users

Nkem Ekene Osuigwe
African Library and Information Associations and Institutions, Nigeria

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    Alexious Muunga, Copperbelt University, Zambia

The advent of computers and information communication technologies (ICTs) has drastically changed the acquisition, storage, and retrieval of information. Further, information can be accessed through various media as new technologies continue to spring up. Since information can be accessed anywhere as long as one has

internet connectivity, this has resulted in many users not using the libraries and other information centers. The decline in the use of libraries is worrying, hence the need to understand how the emerging technologies have changed information provision in the libraries. The chapter addresses challenges that affect the provision of the needed services in the libraries. Finally, alternative services that libraries are adopting in order for them to remain relevant in this information age are outlined. This chapter provides insights on how libraries can continue to play their role as information providers and how they can fit into the present information age.

The chapter showcases the 21st century skills that are required by librarians. The digital era brought about a lot of changes in the way that librarians interact with their clients. Due to the changing needs of clients, librarians should ensure that they are well equipped to deliver the needed services. The objectives of the chapter are to identify the skills that librarians should possess in the 21st century, examine how librarians acquire those skills, and discuss the challenges that are faced when acquiring those skills. Structured literature review and web content analysis were used to get the LIS skills. It was discovered that librarians should possess professional, technical, and soft skills in order to remain relevant in the 21st century. The findings revealed that librarians can acquire skills through on the job trainings or formal education. The major challenge that is faced by librarians is the issue of lack of funds to support their capacity building endeavours.

This chapter is on library and information science education for the 21st century users. It aims at x-raying the nature of LIS program as practiced in Nigeria so as to ascertain the extent to which the graduates will remain relevant in practice. This is based on the fact that the present-day library and information users are getting technologically advanced, and graduates of LIS education are also expected to be technologically visible to the users. The following subheadings were considered: library schools in Nigeria and their programmes, need for restructuring LIS programme, new programmes/courses to be incorporated in LIS education, and

challenges of restructuring LIS education programmes. Library and information science professionals are not only having to adapt to change in library services but they also require in-depth and structured education and training programmes that are in line with the current technological demands. This will help the professionals to provide the needed manpower for the nation's information occupation engagements and effective user assistance.

Chapter 5
Rachel Ronke Ojo, African Library and Information Associations and Institutions, Pretoria, South Africa

Leadership is an integral aspect of successful organisations including libraries. Helping librarians to acquire leadership skills in order to adroitly navigate libraries through 21st century changes and challenges of the information environment is crucial. INELI (International Network for Emerging Library Innovators) was birthed globally as an initiative of the Bill and Melinda Gates Foundation to provide young leaders in public libraries across the world the opportunities to connect, learn, and explore new ideas and services that can transform their communities. INELI Sub-Saharan Africa (INELI-SSAf), an offshoot of the initiative for African public librarians, is a leadership training program with the primary objectives of exposing participants to concepts and practices about innovative information services in current times and assisting them to create within and across border networks for peer leaning. The topics taught include time management, advocacy, data management, smart risks, and innovations in libraries. (INELI SSAf is run by African Library and Information Associations and Institutions (AfLIA)).

Chapter 6
Adaora Joy Udo-Anyanwu, Imo State University, Owerri, Nigeria
Amaka Rose Alor, Anambra State Polytechnic, Mgbakwu, Nigeria

Professions are distinct groups whose members share body of knowledge and practice as well as ethics of engagements in common. Every profession is brought together by an association that in one way or another influences the practice of the profession. The influence of library associations, for example, IFLA, AfLIA, and NLA, on library and information services cannot be underestimated, but suffice it to say that these associations have led to the growth and development of the library profession. This chapter therefore examines these associations, programmes, areas of influence, their problems, and recommendations are made based on the identified challenges.

Chapter 7

    Adaeze Nwona Nzewi, Nnamdi Azikiwe University, Nigeria

The basic purpose of libraries is to provide and meet the information needs of their real and potential user communities. Resources that include information resources and library professionals are needed for libraries to effectively fulfil the purpose of their existence. Most importantly, financial resources are critical for acquisition of information resources and ensuring that the human resources are up to date with developments in the information sector. The continuous introduction of new technologies, stagnant budgetary allocations, and the expectations of users – who have been conditioned by information availability on the internet – are putting undue pressure on libraries who need more funds to catch up with the technologies and increasing population of people who need information for daily activities. The chapter therefore explores new revenue streams for libraries such as grants, crowdfunding, and friends of the library. Having a financial resource development plan is also advocated for.

Chapter 8

    Isaiah Michael Omame, Federal University of Lafia, Nigeria
    Juliet C. Alex-Nmecha, University of Port Harcourt, Nigeria

Artificial intelligence (AI) is one of the emerging trends and applications of computing in libraries. It involves programming computers to do things, which if done by humans, would be said to require intelligence. The ultimate promise of artificial intelligence in libraries is to develop computer systems or machines that think, behave, and in fact rival human intelligence, and this clearly has major implications on librarianship. The application of artificial intelligence in the library has become pervasive. They include expert systems for reference services, book reading and shelf-reading robots, virtual reality for immersive learning among others. Although the incorporation of artificial intelligence in libraries can be perceived to alienate librarians from their users, it will probably help libraries do more rather than taking over the jobs of librarians. It will enhance their services delivery. Artificial intelligence will greatly improve library operations and services and will upgrade and heighten the relevance of libraries in an ever-changing digital society.

Chapter 9

    Monicah Jemeli Chemulwo, St. Paul's University, Kenya
    Emily Chepkirui Sirorei, St. Paul's University, Kenya

The advance of artificial intelligence (AI) as a field of computer science that can impact and improve all sciences and human interactions is changing the information sector. AI is reconfiguring many library tasks such as classification, indexing, cataloguing, information retrieval, reference, information literacy, and even learning. It is the greatest usable intelligence that has the capacity of assisting librarians in decision making and administration. AI can also be employed in various areas such as speech recognition, machine transformation, and librarian robots. The very disruptive nature of any novel technology can be perceived as a risk to many organizations, including libraries. However, the ultimate acceptance and integration of artificial intelligence into library services is indeed possible and beneficial.

Chapter 10
Abiola Bukola Elaturoti, Lead City University, Nigeria

Librarianship, as is quite obvious, is changing very fast with the high rate of technological infusion in every aspect of the profession. Books and other information resources that are managed by libraries and information professionals are being transformed to electronic platforms. Also, the information users are becoming more technology savvy as well as sophisticated in their information needs and the quest to satisfy these needs. Users are vast in the use of search engines, and it is like they do not need libraries and the services of librarians anymore. All these and many more developments have put great strains on libraries and librarians. This chapter therefore discusses how librarians can provide services for 21st century users through innovative thinking.

Chapter 11
Afusat Olaroju Ogunjimi, Oyo State Library Board, Ibadan, Nigeria

Librarians in the 21st centuries need knowledge of innovative thinking to able to be relevant in their profession. Can they compete, survive, and thrive successfully in the midst of 21st century technological advances? All over the world, libraries are facing challenges. Already, there are reports of closures of public libraries. Many libraries are becoming underutilized while quite a number have to deal with stagnant or dwindling budgets. In order to adequately formulate workable solutions to these challenges, librarians need to consider new perspectives of offering services to their user communities. Also, libraries as living agencies are not to be stagnant but change and grow with the trends and their user communities. Innovations need to be introduced in the design and service delivery of libraries.

Adetoun Adebisi Oyelude, University of Ibadan, Nigeria
Sunday Abiodun Oluwaniyi, University of Ibadan, Nigeria

This chapter documents the experience of upgrading services in the Faculty of
Pharmacy Library, University of Ibadan, Nigeria and future management plans.
The participatory and "give-back-to-community" approach, future mappings of
users, faculty and library management are documented using a descriptive survey
with questionnaire and interviews for data collection. Data was analyzed using
frequency counts and percentages, and interview findings are thematically discussed.
It was revealed that users expected top rate technology facilities and learning
commons with augmented and virtual reality-utilized classrooms and laboratories
to replay lectures, experiments, and real-time demonstrations. Online reference-
services, booking makerspaces with lecturers locally and internationally solving
pharmaceutical problems in prime time, were expected. Strategic planning, technology
training, crowdfunding, and human resources collaboration were recommended for
implementation of these future services.

Magnus Osahon Igbinovia, Ambrose Alli University, Nigeria
Esther Oluwayinka Solanke, University of Medical Sciences, Ondo,
  Nigeria
Oluwatoyin Oyeyemi Obinyan, Ambrose Alli University Ekpoma,
  Nigeria

The poor perception of libraries by the general public and their unfavorable position
in government corridors can be corrected by library advocacy (LA). While we all
struggle to gain support for our libraries, there is need to "talk-up" the library by
showcasing its relevance to national development in the 21st century. As a result
of this, there is need for a text on advocacy in Africa and beyond, which prompted
this chapter on strategizing for library advocacy. The chapter looks at introduction
to library advocacy, building team for library advocacy, strategies for developing
and getting messages out in library advocacy, media of library advocacy, and getting
feedback and appraisal of library advocacy. The chapter concludes by affirming that
strategy for library advocacy will create a roadmap for promoting libraries among
stakeholders, thus retaining its place of pride as a social and information-based
institution. Thereafter, recommendations were made on how to ensure effective
strategy for library advocacy.

Preface

Libraries play key roles in providing access to information which is pivotal to development at local, national and global levels. They are also crucial for quality education, digital literacy, building inclusive communities as they bridge the gap between the haves and have-nots and assisting people to live gainfully. The 21ˢᵗ century information provision environment is highly competitive as technologies evolve non-stop and information service providers seemingly strive to take over the functions of libraries. Technology has enabled the representations and formats of information and knowledge to change, re-change and change again within short time frameworks as books published can be transformed into electronic copies which can be published as tweets on Twitter, turned into podcasts, or shared as screenshots from mobile devices, and animated among other options all within a short period. Information consumption patterns fluctuate as more and more people rely on Personal Virtual Assistants (PVA) such as Siri, Alexa, Cortana, Ask Google to seek out information for them and the world becomes more hyperconnected with devices communicating, providing and streaming information in real time to one another. Robots that can shelve books, read, analyze and provide needed information have come on board as Artificial Intelligence takes root and is applied more and more to services and routines in workplaces, transportation sector, medical care and in homes. As the library is trying to catch its breath on challenges brought on by technology, Artificial Intelligence and robotics, more seemingly crop up as social changes wrought by the changing demographics in many communities due to migrations and other factors create new information provision matrixes for libraries in the 21ˢᵗ century.

Libraries have been around for nearly 5,000 years, and for some people, it appears as if they never change – full of books and librarians that shush (Matchar, 2016). This is not the whole truth as is speculated by David Pescovitz, co-editor at Boing Boing and research director at the Institute for the Future, a Palo Alto-based collective that makes forecasts about our world. The core function of libraries is to provide access to information, and that is what the 21ˢᵗ century wants – information and more information. Globally, there are examples of libraries are 'mutating' as

they explore new avenues for playing their key roles in the society (Weller, 2016). Many libraries are transmuting their physical spaces and improving the learning experiences of users as they convert into technology and community hubs yet the information landscape keeps on transforming. Keeping up with altering users' preferences due to emerging technologies and changing demographics becomes challenging with no end in view. On the other hand, some libraries are caught in-between as they struggle with budgetary constraints, inadequate funding and lack of direction on the next steps as technologies make access to information easier and trying economic times drive more people to libraries (Ebbitt, 2015).

It has then become crucial to ponder about the future of libraries and search for possible pathways that could make the institutions thrive and continue to play major roles in creating a better world for all and driving development through the provision of access to information. American Library Association (2014) recognized the importance of discussing the future of libraries with the Center For Future of Libraries charged with the identification of relevant emerging trends pertinent to libraries and their user communities and building cross-sectoral connections to help understand these trends, while assisting librarians to acquire skills that will help them shape the future of information provision sector.

Nevertheless, beyond integration of technology into library processes and services, libraries need to learn how to manage change, build influence and adapt their services to answer to the challenges of their user communities through the use of innovative thinking. Funding has become a major challenge to the relevance of libraries. New revenue streams, collaboration and partnerships are essential for the Library of the future to perform optimally. Library Associations have been strategic in bringing to the fore issues affecting libraries. Sharpening their focus on the place of library in the future is imperative.

The book *Managing and Adapting Information Services for Future Users* therefore seeks to answer asked and yet to be asked questions about the future of libraries. It encapsulates practices, concepts, ideas and proposals that have great potentials to chart new pathways for libraries of all types to envision and understand how to thrive and remain relevant in the 21st century competitive information provision environment. The book will motivate librarians and information scientists to probe further into how libraries would better serve user communities of the 21st century who have options of accessing information from sources other than from libraries. Furthermore, it will be of immense benefit to librarians in practice, scholars/researchers in the field of library and information science, teachers in the field of library science and policy makers who design Library school curriculum all over the globe as topics that will equip students to serve effectively in the 21st century are discussed. The book will also help community development practitioners to identify libraries as development partners.

Managing and adapting library services for future users begins with effective, open-minded, futuristic-thinking leadership in libraries that can influence librarians to manage change and create change where possible. Changing information provision scenarios require adept leadership that understands not just how to adapt to change but have the capabilities to think ahead and anticipate change in order to stay ahead of the curve (Bell, 2018). Chapter 1, "Leading From the Front: Future Ready Librarians," explores motifs of future-ready librarians who can instigate bold innovative thinking processes, fathom the changes in user communities including diversity and multiculturalism and leverage such for sustainable library services, as well as harness the power of evolving information communication technologies to provide information while creating strong brands for their libraries. These are leaders who fully understand the current realities in the library sector from different perspectives, think ahead and be able to intellectually construct models of the future through present day realities and promises of the future in order to envision tomorrow's possibilities. Knowing one's self as a librarian and a leader, non-stop learning, building social capital through communicating and networking on different levels, disruptive thinking, thinking globally to act locally are highlighted as avenues for librarians to adapt to change, be future-ready and construct the future where possible.

Technology has changed the representation of information from printed books to electronic storage and this has drastically affected how information is created, acquired, stored, disseminated and retrieved. Chapter 2, "Emerging Technologies, Information Provision, and Libraries," delves into technologies that radically provide new user experiences, enhance the quality of services and have the capacity to transform and exert considerable impact on knowledge production processes and storage. Cloud computing, mobile applications, Internet of Things, Artificial Intelligence and 5G are explored as emerging technologies that are changing the information sector and affecting all the processes of library operations. The Chapter investigates online cataloguing, virtual reference services, libraries as publishers, Learning Commons, Makerspaces among others as services and library operations that have been influenced by emerging technologies. The Chapter also brought to the fore the challenges that these technologies have birthed in libraries.

The 21st century technologies necessitate new skills for librarians beyond those taught in library schools or used for traditional library services. For libraries to be innovative, introduce services that utilize opportunities brought on by emerging technologies in the information sector and that effectively serve the digital-born and digital-adapted users, skills on how to operate and use technologies for information provision have to be acquired by library professionals. Chapter 3, "Librarian Skillset in the 21st Century: The Changing Role of Librarians in the Digital Era," focuses on the ability of librarians to be able to digitally curate, process and preserve information resources and have an appreciable level of expertise in working with digital library

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software, aspects of web technology, metadata, data management, as well as have knowledge of copyright and licensing issues of digital information resources. That notwithstanding, the possession of professional and technical skills is not enough for 21st century librarians. Soft skills such as communication, interactive, analytical, adaptability, critical thinking, problem solving and interpersonal skills are needful. The Chapter also emphasizes leadership skills, teamwork, listening, writing skills, presentation skills and teaching skills as what 21st century librarians need in order to offer meaningful information services to Generations X, Y and Z.

Librarians can learn the 21st century skills outlined in Chapter three through self-development. However, there is the need for Library and Information Science schools to integrate such into their curricula so as to create a nexus between the information preferences of Generation X, Y and Z with library services. Chapter 4, "LIS Education for 21st Century Users," discusses the curriculum of Library and Information Schools in Nigeria and recommends that courses such as Software Design and Management, Library Resources Management, Artificial Intelligence and Information provision, Innovative Thinking and Bibliometrics should be taught at 300 Level while Introduction to Library Automation Modules, Network and Networking and Management of Social Media Tools should be part of the curriculum for 200 Level Library and Information Science students.

Not every librarian can go back to Library and Information Science Schools to acquire new skills that are needed for providing 21st century library services. Practicing librarians especially those in leadership positions at different levels require training that will boost what they already know since leadership is essential for successful navigation of 21st century information provision environment. Chapter 5, "Leadership Training for 21st Century Librarians Using INELI-SSAf Model as a Case Study," dwells on the efforts of African Library and Information Association and Institution (AfLIA) in providing leadership training for public librarians in Africa. Modules of the leadership training - Time Management, Change Management, Advocacy, Innovation, My Library makes a difference, Partnerships and collaborations and others are discussed as topics that leaders need for showing the way to others as their libraries adapt to the changing information landscape.

Chapter 6, "Library Associations, Leadership, and Programmes: IFLA, AfLIA, and NLA," highlights the importance of library associations in building frameworks for the growth of the profession by recognising trends and providing platforms for librarians to learn and integrate such into their professional practices. The Chapter deepens the conversation on the role of these Library Associations at the national, regional and global levels in assisting librarians to acquire leadership skills for 21st century information provision.

Integrating technology into library operations and services as well as taking action for provision of information services to multicultural communities require

funding. Libraries have complained of stagnant and mostly insufficient funding. Some have been shut down in some climes due to lack of finances to keep them open. Chapter 7, "Financial Resources Development For 21st Century Libraries," takes a broad look at particular pathways that libraries could explore in order to have new revenue streams outside of statutory funds. The Chapter while recognizing the fact that government funded libraries are not empowered to do fundraising, advocated for financial development plan which would include the use of Library Foundations, Library Associations and Friends of the Library to seek for grants and crowdfund for projects, services and facilities. Social media as a means of building connections through internet-ties was fingered as necessary for successful crowdfunding and attracting bequests.

Development and innovations are driven by access to information, and libraries are the primary source in providing this access. The paradigm shift in the format and dynamics of information and knowledge provision as a result of evolving technologies especially artificial intelligence is deeply explored by Chapter 8, "Artificial Intelligence in Libraries." The coming on stream of machines that think, read, analyse and answer questions, create and evaluate content is a phenomenon that the Chapter discusses. How does it affect libraries? How are libraries integrating the technology into their operations and services? What are the merits and demerits? Can the technology replace and take the jobs of librarians? This Chapter provides insights into all these questions.

Chapter 9, "Managing and Adapting Library Information Services for Future Users: Applying Artificial Intelligence in Libraries," expands the conversation started in the previous Chapter. The Chapter discusses how Artificial Intelligence could be useful in library administration, human resource management, planning for remodelling of library facilities, technical services such as collection development and classification, reference and information retrieval services.

Technological and societal changes influence library operations and services. Consequently, librarians need to reconfigure what they offer to their user communities within the context of these changes and come up with innovative information services that are suitable for the times and the users. However, to do this requires innovative thinking. Chapter 10, "Libraries and Innovative Thinking in the Digital Age," examines why and how libraries can be innovative using the 5 Laws of Library Science to weave an interesting narrative of the nexus between resources, users and services.

What then is Innovative thinking that will help librarians spawn new services for 21st century information users? How can innovative thinking be used to manage and adapt library services for future users? Chapter 11, "Innovative Thinking Skills for 21st Century Librarians," provides answers such as lateral thinking, recognising patterns and making inferences from such for providing solutions, recognizing a problem, a challenge before others, connecting and using a combination of ideas and

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concepts from different situations and disciplines to think up solutions and thinking out of the box. How can innovative thinking be fostered? What role does curiosity, asking questions and never taking knowledge at face value play in engendering innovative thinking? What is the role of design thinking in birthing innovations in libraries? This Chapter answers these questions and more.

Libraries can create the future. Chapter 12, "Managing Future Library Services for the Medical Sciences: A Pharmacy Library Experience," documents the experience of a library that asked their users what they think they would want in the future – how the library can better serve them considering their needs and emerging technologies. The template is easy adopted, adapted and used by libraries that have their eyes on being relevant to their users in the present and future despite non-stop evolving information technologies as not all emerging technologies are needful to users. Keeping the library open for longer hours and availability of library services through mobile apps might be more important than robots in libraries for some user communities.

The 21st century information seeker has options of where and how to access information. How libraries are perceived especially by digital-born generation then becomes critical if they are ever to use the spaces and information services of the library. Chapter 13, "Building influence: Strategizing for Library Advocacy," discusses how to talk up the value of libraries in offline and online spaces.

The 21st century information landscape is unrelenting in absorbing and spawning changes in how information is created, processed, stored, accessed, disseminated, used and re-used to create new knowledge. What is the future of libraries? The answer lies in managing and adapting information services using technology and being cognisant of the social changes that are transforming communities all over the world; restructuring the curriculum of Library and Information Science schools to expand the field of librarianship and integrate contemporary topics on information provision into the curricula; getting librarians to think innovatively in order to provide information that people want, how they want it and when they want it. What is the future of libraries in the era of dwindling resources? The answer is in building connections and trying out new ways of raising funds. Libraries can adapt to the changes in the 21st century information environment and go on to create the future they want outlined in the chapters of this book, *Managing and Adapting Library Information Services for Future Users.*

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Acknowledgment

Thank you everyone who taught me to think, to believe, to dream and to imagine possibilities beyond present realities.

Knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution (Albert Einstein).

Chapter 1
Leading From the Front:
Future Ready Librarians

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ABSTRACT

Technological advances, climate change, economic turbulence, and global demographics are bringing about rapid changes in every sphere of human existence. Multiculturalism and diversities are changing the makeup of many communities as migrations increase. Access to information is a click away on mobile devices. Leadership is critical especially in seasons of change. Libraries need to flow with the ebb or even better stay ahead of the crowd in the field of providing access to information. As the information provision sector continues to develop and evolve, libraries need visionary and focused leadership that would be courageous, fearless and strategic, committed, creative, and innovative to not only adapt to change but to lead change in providing access to information to their different user communities. Effective leadership is the core driver for growth and development in organizations including libraries. Self-development, disruptive thinking, global mindset, and ability to build social capital are highlighted among others as needful qualities for future ready library leaders.

INTRODUCTION

Leading From the Front: Future Ready Librarians

The core mission of libraries is to make information available and accessible to their user communities. Social changes and the ever-evolving information and communication technologies have been throwing up challenges to libraries as the way information is created, processed, stored, disseminated and consumed keeps on changing dramatically. Adapting and making these changes work effectively for libraries can happen when their leadership is future ready. Leaders play crucial roles in organizations. Effective leaders at different levels in private, public and civil organizations, drive and sustain the management of men, money and materials to achieve stated common objectives (Legas, 2017).

Their functions include initiating actions, providing guidance and coordinating human and material resources aimed at attaining organizational goals. They organize, motivate and influence other members of staff in order to engender commitment to the organization and to maximize efficiency in performance of tasks. Leaders also build organizational culture through exemplary behavior that inspire trust and confidence. According to Dayton (2018), leaders should be decisive, focused, emphatic, honest, optimistic and inspirational. These qualities are meant to make leaders role models that others can easily follow, communicate with, learn and seek support from for greater productivity in an organization.

Management differs from leadership although there are various points of intersection. Management copes with technicalities and complexities such as budgeting, planning and setting of goals. Leadership is about dealing with change and direction, influencing a group to believe in a shared vision, and assisting the members of the group to bring to fore their innate abilities to achieve the vision (Toor and Ofori, 2008). Leadership can differ according to the different character traits of leaders, approaches, preferences, diverse situations and varying assumptions and beliefs. Named leadership styles include charismatic leadership, situational leadership, transactional leadership, transformational leadership, the quiet leader and servant leadership (Changing Mind, 2016). Some leaders are authoritative. They pass on instructions as commands, are very clear about the functions of the different cadres of staff in the organization and hardly ever ask for inputs in decision making. Leaders adopt this style especially where rapid decisions and actions need to be taken.

Leaders have been known to adopt the participatory style of leadership in situations when they need to build a team, boost staff morale and tap into the creative energies of the team as well as engage them in more in decision making. This enhances commitment to the goals of the team or workplace as the feeling of belongingness

is nurtured. The Laissez Faire type of leadership leaves everything to chance and to others. This style is hardly ever recommended for use in any situation (Cherry, 2019).

No one can predict the future. Nevertheless, leaders are meant to be future-ready so that they can understand and manage change efficiently. According to Gorbis (2019), being future-ready entails imagining possibilities by connecting the dots of small changes to see the big picture, matching the data of the past with the present to recognize patterns that may or may not mutate and envisioning what could be. Demographic shifts and attendant multiculturalism, abounding digital technology, escalation of collaborative and distant learning, budget cuts in libraries, hyperconnected communities and 'glocalization' are signs of the future that are already affecting libraries (Wenborn, 2018; Burton, 2017; Ebbit, 2015; Li and Rice, 2012)). These are reasons and more why the library sector needs leaders who can initiate bold innovative thinking processes, understand and leverage on the changes in user communities for sustainable library services, welcome and drive diversity in institutional operations, as well as harness the power of evolving information communication technologies to provide information while creating strong brands for their libraries. Libraries need leaders who can manage change, inspire and motivate staff through clear communication of their vision and intellectual stimulation to be innovative in ideas and solutions that will create positive change for the growth of the organizations (White, 2018).

Literature Review

Leadership in libraries is concerned with clear definition and fulfilment of vision, mission and goals in tandem with existing realities and future projections. Leaders in management and non-management positions focus on using known and established processes to achieve the already drawn up goals. Effective leadership is the core driver for growth and development in organizations including libraries. It maximizes the strengths and capacities of others to achieving a common goal while building commitment, encouraging communication on different levels and supportive environment that enhances creativity and innovativeness. Leaders that are effective assist in shaping the future of their organizations as they manage change, build trust, inspire, motivate and influence others and themselves to achieve more and literally reach for the next heights to climb.

Zenger and Folkman (2014) as well as Summer (2012) opine that in being future-ready, library leadership must always have long-term perspective and excellent strategic vision. This will enable them to navigate changes more easily than those whose focus is on the present and now as social changes that alter user communities and the 21st century information landscape continue to evolve with great possibilities of affecting the future of libraries and causing significant transformations on how the

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institution provides information services (Hicks & Givens, 2013). The complexities and changes of the present times require robust, inclusive, collaborative and open leadership that can be in the forefront, showing libraries the way into the future (World Economic Forum and Watson, 2016).

Demographic shifts are redefining communities. It is estimated that the world population grows by 83million annually and in 2019, the human population is approximately 7,714,576,923 (World Population, 2019; Haub and Kaneda, 2011). Climate change has increased migrations nationally and internationally as the rate of recurrence and gravity of environmental disasters continue to rise (Raleigh, Jordan and Saleyhan, 2008). It is reckoned that more than half of the world's population now live in urban areas as migrations take place within countries and across borders (Ritchie and Roser, 2018). These two factors are bringing about changes in communities and work places as multiculturalism and diversities increase due to upsurge in migrations as people seek where they are safe and can thrive better. When the increase in global demographics, escalating migration and other factors that are capable of birthing transformations including social inequality in communities such as homelessness occasioned by the rising rate of unemployment, low wages and poverty are placed side by side, the changes that they can cause to society are signposts of what the future could be. Libraries are not immune to these changes as their user communities change and they need leaders who can seamlessly factor in linguistic diversities and cultural differences as they provide information services (Paraschiv, 2017).

The non-stop evolving information communication technologies are changing the world and revolutionizing the way things are done. They have infiltrated the education sector even as the global eLearning market is estimated to exceed 243 billion USD by 2022 (Lee, 2018). Learning methods have changed as technology-enabled online courses and distance education programs have become popular and information, data and knowledge can be transferred and acquired with ease and flexibility no matter the distance. These changes are creating multiple learning settings in educational institutions at different levels as digital technology enables MOOCs, blended learning, flipped classrooms, learning circles and distant learning (Green, 2019).

Libraries aim to take it in their stride as they strive to work out personalized, research-based digital learning plans and activities to enable their users who may be full-time, part-time or distant learning students access information, class lessons, assignments for their courses. (Pelletier, 2018). Technologies and the Internet has birthed the concept of 'Open' access, data, government, knowledge, science and educational resources. People expect information and knowledge to be open for them and not behind paywalls and restrictions. They want to have the right to reuse and recreate available knowledge (Chalmers, 2012). Libraries are also seeing the need

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to be learning commons with collaborative, flexible physical and virtual spaces for project-based immersive and interactive learning, participatory teaching, content creation, making, critical thinking, experimenting and connecting (Loertscher and Koechlin, 2014). Library leaders need to envision a future for libraries where the provision of immediate and highly personalized technology-enhanced learning for students is widely practiced with focus sharply moving from collection-centric to person-centric possibilities for libraries.

Technology has spearheaded the complete transformation of communication as information can be sent and received effortlessly in nanoseconds. Video conferencing tools and social media platforms allow people to pass information about their workplaces to others at the other part of the world smoothly. Access to news and information about global issues has become easy. These have brought lifestyle changes as technology can lead to a confusion between being busy and productive. Cloud computing is canceling out physical storage of data in flash drives and CDs. Business processes are now easy to access as one can research the market, know about competitors, sell products online and get money paid directly into an account without stirring from the front of a screen (Kumar, 2017). Technology continues to evolve as voice assistants, gene-splitting technology, Internet of Things, robotics, augmented and mixed reality and driverless cars and many such others become available to more people (Long, 2018).

These technological advances are promoting hyperconnected communities as content that starts out as conversation can be quickly changed to text and video clips and accessed by millions globally within seconds. People are engaging with content in so many formats. Geographical location does not matter anymore in setting up meetings or lectures as teleconferencing applications flood smartphones. Immediacy in information consumption has become the norm. Data privacy, cybersecurity, protection of digital footprints and digital wellness are growing concerns in information consumption in the 21st century. These changes are affecting libraries in various ways. Libraries came into being when books were scarce resources that needed to be kept in places where first only the royalty and priesthood could gain access to them. With time, libraries became a haven to all who had to study, who loved reading and who wanted a safe, trusted place to meet with others in the same user community. Now, information can be transmitted at the speed of light from one corner of the world to the other with a click on any chosen internet-accessing mobile device. Technological changes have made it is easier to hear 'Google is your friend' than 'Ask a librarian' from 21st century young people. According to Huber and Potter (2016), the choice is between using the library website to access information or Google, and searching for information resources in libraries or buying from Amazon.

Artificial intelligence (AI) has come into play in predictive information provision, dissemination and data collection among other functions. These have thrown up

challenges of ethics and privacy as big data is used by government and private organizations to predict likes, dislikes and behavior of people in certain situations. According to Johnson (2018), AI which has the capacity to understand/predict information needs and provide relevant answers is a challenge to libraries as in the nearest future, one will not need to read to get information as machine learning enabled devices will within seconds 'read' information resources, analyse, summarize and provide the pertinent points/answers for people.

Due to evolving technologies in information and communication as well as the pervasive availability of internet, students (resident and distant learners) now find it possible to learn and work everywhere. They expect libraries to always be available at a click for the provision of learning resources facilities for collaborative learning digitally and physically (Wenborn, 2018). These changes in user expectations and technologies cannot be ignored by the library sector. The need is for library leaders who can learn and understand the current information landscape as they cope with the present and get ready for the future by considering the role of libraries in hyperconnected communities and how sophisticated machine learning affects information provision.

In the midst of all these challenges, libraries in many countries are battling with insufficient, stagnant or reduced budgetary allocations (Afebende, 2017; Saka, 2014; Asante, 2014). In Britain, between 2010 and 2018, 737 public libraries were closed with lack of funding being cited as the culprit (Reynolds, 2018). Beyond funding, Coates (2018) has argued that the closures happened because the public lost interest in their libraries. Interestingly, another school of thought is of the view that the library leadership and management in the country are to blame for the loss of interest in libraries which led to budgetary cuts as the decline in use of their facilities have been noticed at least two decades back and no efforts were made to address the issue (Cain, 2018).

Leadership is critical especially in times of change. According to Aslam (2018), the rapid non-stop changes in the information sector fueled by technology and social changes is creating an uncertain future for libraries and this necessitates that library leaders have dynamic leadership abilities. Such changes demand that organizations such as libraries have leaders who can develop skills and qualities that will assist them in preparing staff to meet and cope with the challenges of the future (Kotter, 2013). Leading in times fraught with changes and challenges require leaders that are courageous in recognizing, pursuing innovative possibilities and following through conclusively (Llopis, 2014). Bradham (2017) argues that the key for libraries to flow with the ebb or even better stay ahead of the crowd in the field of providing access to information in these changing times, is leadership that will bravely lead the change by being the change, consistently standing firm and hustling hard.

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As the information landscape continues to witness changes, the need for visionary library leadership that can understand trends in information provision, integrate libraries successfully into them and ramp up the value of libraries even in the seasons of change is obvious. These leaders will also be able to lead the charge in creating social capital through deepening the engagement of libraries within and outside their communities by going beyond providing access to information, educational and recreational facilities in order to address the wide range of current and emerging challenges. Consequently, libraries need visionary and focused leadership that would be courageous, bold, fearless and strategic thinkers, committed, creative and innovative to not only adapt to change but to lead change in providing access to meaningful interactions with information for their different user communities (Jange, 2012).

Future of Libraries

Most often, real life practices, experiences and everyday realities overshadow the aspects of leadership that are taught in Library and Information Science (LIS) schools. Preparing librarians to be leaders that can effectively lead and manage present day challenges is vital as libraries strive for survival and more relevance in the 21st information provision environment. What librarians need so that they can lead from the front and are ready for the future is the demand of the moment. According to Dike, Odiwe and Ehujor (2015), for leaders to thrive successfully in the knowledge-driven, competitive, complex 21st century organizations and new global economy, they need to have adequate knowledge of their environment, trends and acquire the necessary practical skills to navigate through them successfully. However, first things first. Who can tell the future?

To imagine the future of libraries and get ready for it requires leaders with futuristic thinking abilities, those that analyze events and situations, connect dots, see patterns and calibrate on what shape the future will take. The circumstances of today would not be the same in 25years time. The future of libraries will be assured if the sector has leaders who look beyond current realities to envision the next stage of today's circumstances. According to Hawkins (2019), the seven key areas in which libraries need to recalibrate in order to remain relevant in 21st century information sector are relationship with user communities, accessibility and services, technology, e-readers and digital collections, physical space, staffing and funding. Future ready library leaders would be those who will be able to:

● Understand the current realities in the library sector by listening to things said and unsaid about libraries – the successes, the failures the trends of the present days and the existing gaps in information provision for different sections of the society.

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- Extract meaning from the fluctuating expectations of users and non-users among members of the community. Most importantly as cultural diversities are becoming the norm in many communities, leaders will be those who can figure out how to cope with the complexity of different languages and ethos in collection development and birthing of new services to ensure inclusiveness.
- Contemplate the moves of competitors. The leaders are those who can objectively ask and seek answers to probing questions;
    - Who is 'competing' in information dissemination and the provision of learning spaces, physical and/or virtual?
    - What are they doing?
    - What niches are they carving out for themselves in information provision?
    - Is library patronage slacking off for certain age groups and section of the community? What do they want from the library?
- Think ahead. Intellectually construct models of the future through the realities of the present day and promises of the future in order to envision the potentials and possibilities of tomorrow.
- Think ahead of the Open movement and what it portends for libraries in knowledge creation and dissemination.
- Perceive how technology is changing work places and communities. Many workplaces are experimenting with remote workers. Is homeschooling and distance education possibilities in the communities served by libraries? How can the library leadership factor in how to serve these group of people better? How is Artificial Intelligence affecting libraries, workplaces and communities? What can be the role of libraries in ethical use of information in machine learning and applications?
- Understand the legal leverage that libraries have and be able to advocate for robust provisions within the framework of law and operating policies in order to provide information effectively with 21st century tools.
- Reject the default perception of libraries as institutions that might be on their way out because of the Internet and dare to push for greater understanding of what libraries did, what they do and what they are capable of doing
- Figure out new financing pathways for libraries
- Create the future for the library sector at the local, national and international levels.

Strong yet fluid and flexible leadership roles within the library sector that can keep up with the times, manage change and operate seamlessly despite challenges and complexities of modern times is the need of the moment. It is therefore understandable that 21st century libraries need leadership that has the capacities

and endowments distinct from traditional leadership qualities in order to manage changes in the institution, user community and the profession itself (Düren, 2013).

Future Ready Library Leaders

Thinking for the future is a core trait of leaders as they build their organizations in times of change (Schaefer, 2015). The search to pinpoint how some people turn out to be successful leaders that clearly define their vision of where an organization should be and go on to achieve it has been on for ages. Genes/Behavioral traits? Environment/Circumstances? Position of power? This has led to the propounding of many leadership theories developed over the years that attempt to explain what makes a leader effective. However, it can be averred that leadership is mostly learned. The process of developing and growing as a leader is interwoven with self-development and other factors.

Know Thyself

The hardest person to ever lead is oneself. Understanding and taking responsibility for one's own growth and sustenance professionally without seeking to apportion blame on circumstances, environment and others is the most crucial step in self-development. Change starts from within. Knowing and understanding oneself is the basis of effective leadership. Individuals function differently based on diverse capabilities and environment. Recognizing one's strengths, talents and weakness is the first step in self-development and is central for building self-esteem, strong character, authenticity and confidence for leaders (Repolle, 2018). Self-awareness is an integral component of self-development. This quality helps leaders to be objective in their summations of themselves as individuals and what is happening around them. Introspective thinking and self-examination of motives, actions and reactions leads to a better understanding of one's capacities, triggers, indicators and what to boost or compensate for in different situations (Esimai, 2018). Learning who one is, separate from the present circumstances and environment is vital for leadership (Davis, 2019). Furthermore, knowing one's talents, natural skills, triggers and temperament as well as strong and weak points as a leader and then working towards managing and optimizing them is imperative on the journey to becoming an effective future ready library leader.

Always Learning

Developing a growth mindset is crucial for leadership. The ability to get curious and motivated and challenged to ask questions, learn and know more despite any

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positive or negative prevailing conditions is critical. Growth mindset assists leaders to recognize and understand their passions, understand their values and gain more insights into the different strands of the profession through application and exercise (Ranadive, 2016). This type of attitude equips one with the perspective that abhors stagnancy, looks forward to preparing for the future and gets involved in lifelong learning which is a key component of self-development.

According to Wiggins (2017), leadership is lifelong learning in action thus, to lead, one needs to decide, plan and invest in continuous learning in chosen areas. Today's fast changing, world requires leaders to keep on learning so as to gain access to innovative ideas with impact, new approaches and opportunities for dealing with challenges (Ulrich, 2018). Leaders who can make impact in the 21st century library field are those who can successfully bring informed perspectives to situations. They are able to do this because they do not rely on static data, instead they keep updating their knowledge, noticing shifts and changes in trends that affect the library. This enables them to continuously reinvent themselves and remain relevant as they expand their minds to accommodate new concepts and possibilities (Mikkelson and Jarche, 2015).

In recognition of the fact that leadership is important for the library sector in the 21st century and that leaders must be continuous seekers of knowledge and skills, continental, national and State Library Associations offer leadership training for librarians. Library leaders who want to excel in handling the changes and challenges of the 21st century need to take a find a way of benefitting from these Leadership Academies.

Always Communicating

Communication is central to leadership. A leader's communication proficiencies can influence the attitude, behavior and output of staff. According to de Vries, Pieper and Ostenveld (2010), the communication styles of leaders in an organization have the ability to provide direction and purpose as well as promote knowledge sharing activities. Future ready library leaders need to be concise, real, honest and present in their communications. This will engender trust and openness among the staff to give authentic feedback. Leaders need to be able to handle the rapid flow of information from within and from external bodies, be able to express their vision clearly as they engage with different stakeholders. According to Jenkins (2008), leaders should communicate about details and facts, the big picture and what they feel about issues. This will help their followers to buy into what the leaders are doing.

Technology continues to change the modes and styles of communication for individuals and as well as for corporate organizations. The pervasiveness of information in the 21st century makes it imperative that communication channels are

open in libraries to share ideas and knowledge. Organizations have policies to guide communication on online platforms especially how workplace information is shared on the social media. Future ready library leaders are those who can integrate the use of modern and effective platforms to stretch the reach of the library in sharing communications and receiving feedback. Visibility is a form of communication. These leaders will use every reasonable opportunity offered physically and by technology to motivate, inspire, train people, share new ideas, negotiate, connect with other library staff and those outside the library, listen to what others are saying and understand inferred, spoken and written communication.

Always Connecting

Leadership cannot exist in a vacuum. It is always a collaborative action between the leader and the led towards achieving communal goals. According to Schaefer (2015), building connections with others is one of the most effective ways one can lead because people are at the centre of all leadership efforts. Leaders lead from a combination of authority and connection within their organizations (Stallard, 2016). They make more impact when they connect and understand with the people they lead. Leaders who build a strong culture of trust through connecting within their organizations can always tap into their collective ideas to cope with the present challenges and prepare for the future.

Furthermore, the world is becoming more and more interconnected. Beyond human and financial capital, future ready leaders understand the concept of social capital – recognizing the value and using one's networks of relationships to birth positive mutual outcomes. There are imperceptible and unquantifiable advantages that accrue as people engage and interact among themselves. These interrelations create social obligations of reciprocity that link and bind them as group (Pasricha, 2015). According to Arkoubi and Davis (2013), creating or belonging to networks, stimulating trust, inspiration, synergy, sympathy and collaborations within the network, understanding the cultural values of others and being able to connect through conversations and storytelling are the core features of social capital. Leaders who can connect people to opportunities create value and expand their own networks (Goswami, 2018).

Leaders can cultivate social capital, build influence and trust in their capabilities as information professionals when they open up to participate in dialogues, debates and offer informed advice or resources in their online and offline networks. This fosters reciprocity as leaders stand to gain from the tacit knowledge, information and insights that will chart strategic pathways for libraries, social support and connections to opportunities given out by other professionals. Within the library, the leader can leverage on social capital to establish a relationship economy that promotes staff

engagement, realignment of formal and informal organizational culture as well as the creation of an innovative work environment as human and social capital are closely linked (Cancialosi, 2014; Chen, Zheny, Yang and Bai, 2016). Importantly, social capital generated by a leader can positively spill over to benefit the library and other employees (Gulanic, Ertug and Garguilo, 2012).

Library leaders can no longer afford to operate in silos within the sector. Leaders need to recognize that interactions, connections and relationships are assets that the library can leverage on to link up with diverse stakeholders and partners to influence policies, access information critical for funding opportunities, sway perceptions about the library and actually attract goodwill and funding to the library. Social capital can be grown, utilized and sustained online and/or offline to form internal and external linkages with other people possessing shared set of values. The ties can be flexible or strong. The networks can be open or closed. Future ready library leaders are those who recognize that libraries cannot achieve their goals and objectives in isolation. They are willing gain competitive advantage by building up their social capital as they connect, help and collaborate with a vast array of people within and outside the profession and their immediate communities to establish more relationships and ties for the benefit of their libraries.

Time Manager

Fast-paced activities are the hallmark of modern times with many services and products accessible instantly or at the click of a button. The borderline between work and personal life seems to disappear as work emails can be read at home, social media posts about work can be composed and sent from outside of the workplace and people can be reached anytime and anywhere through phone calls or emails. This has the capacity of creating imbalance and engendering burnout. Future ready library leaders are those who can learn how to manage time appropriately and balance the demands of work, personal lives and distractions brought on by technology for more productivity.

Learning how to focus and concentrate is a basic step in time management. Multitasking can be distracting. Setting realistic goals and focusing on particular tasks at assigned blocks of time helps the brain to focus and think clearly. While focusing on important tasks, alerts for social media chats could be on silent to avoid interruptions to thought processes. According to Mindtools (2018), prioritizing on which tasks to perform first before the other helps to build concentration especially if a high-attention demanding task comes before those that do not require much attention. This can also assist in avoiding procrastination. Leaders cannot afford to defer or dither over tasks to be done or decisions to be taken. Human beings unconsciously practice temporal discounting. However, when tasks are properly

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prioritized and viewed from broader perspectives, it can jump start one into action (Hendriksen, 2018)

Leadership is all about influence and giving direction. When a leader finds it difficult to delegate and hoards every assignment and duty to himself, it is a sign of impending failure. Delegation is a trust-building activity which allows leaders to manage their time better, perform other tasks, get fresh ideas into their own pool of reasoning and motivate those under them to try their skills and knowledge on solving problems.

Disruptive Thinking

Technology and social changes are accelerating the wheel of change in the information provision sector faster than ever imagined. As people get used to the fact that information is available about food, water, light, clothes, health, finance, transportation, education, housing, jobs at the click of a button, they acquire "on demand" expectations that extend to their use of the library. According to O'Connor (2014), in order to stay relevant and connected to their users, libraries need to rethink their traditional mode of operation for libraries dramatically using the disruption of international organizations as models. Library leaders of the future are those who can widely think, critically examine known assumptions and ask questions, survey available alternatives, decide and inspire others on how to adapt or integrate the rapid changes into their institutions' service delivery models and/or information products.

Disruptive thinking is used to integrate change into the operations of an organization through innovative and sometimes outrageous thinking that seek solutions by questioning traditional methods of achieving things, assumptions and that asks 'why, which, what, if?' without limiting imagination and possibilities. Disruptive thinking focuses on shifts from popular or 'accepted' perspectives and status quo to progressive, radical viewpoints and ideas for provision of modern day solutions (Mariama-Arthur, 2016). To move past cognitive biases, bandwagon thinking, overconfidence, stereotyping and to think disruptively, leaders need to learn to ask and invite questions on options as pertains any situation or challenge (Gregersen, 2018).

According to a global design and consultancy firm, IDEO (2015), libraries need new perspectives and approaches to face the real, varied and complex challenges of the present times. It offered the idea of design thinking as a disruptive thinking creative problem-solving framework that employs empathy & creativity to work out innovative solutions where the indices of viability, desirability, and feasibility interconnect. The framework is a disruptive process that library leaders can use to understand challenges appropriately, discard biased mindsets and hypotheses, ask relevant questions of 'what, why, if', get inspired to discover new angles and

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opportunities for meeting the challenge, then experiment, implement, deliver and keep on testing on the solutions found.

Dam and Siang (2019) emphasize that the process of design thinking must be human-centric by first understanding the needs of the people who are being served before brainstorming, thinking outside the box and coming up with prototypes of solutions. According to them, empathy is the first step that will allow leaders to lay aside their own assumptions/conservative mindsets and perceive the challenge from the viewpoint of the people concerned. This will help the leader and his team to define the problem clearly and gain insights about possible solutions, come up with prototypes of solutions, test and retest to get what is needed and to learn more about the challenges at hand. Practicing this type of disruptive thinking process will open the minds of library leaders to the potentials of thinking without a box in finding solutions to challenges birthed by the changes in the modern world.

Global Thinking for Local Impact

The world has become a global village as hyper-connectivity brought on by non-stop evolving technologies in the information sector continue to grow and expand. This has thrown up new challenges for leaders. People take cues on how to behave, react, socialise, interact and communicate with others from their culture; what they learned and have been conditioned to think as the 'proper way'. However, as technology and globalization continue to bring down the walls between people and cultures, the need for leaders to develop a global mindset has been highlighted. Cultural relativism is turning out to be a needful trait for 21st century leaders as multiculturalism becomes the norm in many communities and workspaces.

Leaders who are future ready are those who are aware of the diversities that this brings, are able to be openminded in engaging with unfamiliar cultures and importantly are able to recognise the fact that events in one corner of the world can affect other areas even their local constituencies. Leaders who develop global thinking skills including cultural intelligence are able to learn best and current practices from every side of the globe for and cash in on opportunities from all over the world to make impact locally (Moore-Fiander, 2017). According to Dubberke (2017), leaders who think globally even if they have to act locally are self-assured to efficiently integrate the knowledge of their own culture with what they have learned of the way of life of other people. They tend to be more constructive in reading and reacting to situations globally as they work out solutions in their own corners of the world to local challenges.

CONCLUSION

Changes brought on by politics, technology, nature and economy will keep on taking place in the world. Information will continue to be an important currency for development and survival. To surmount these challenges, the need is for library leaders who are bold, courageous, disruptive thinkers, lifelong learners, effective communicators, focused, with global mindsets yet with the ability to act locally to meet the 'on demand' expectations of library users, who can innovate and chart new pathways of services and even funding through the building of networks and social capital and engage with different stakeholders wherever they are for the good of the library.

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Chapter 2
Emerging Technologies, Information Provision, and Libraries

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ABSTRACT

The advent of computers and information communication technologies (ICTs) has drastically changed the acquisition, storage, and retrieval of information. Further, information can be accessed through various media as new technologies continue to spring up. Since information can be accessed anywhere as long as one has internet connectivity, this has resulted in many users not using the libraries and other information centers. The decline in the use of libraries is worrying, hence the need to understand how the emerging technologies have changed information provision in the libraries. The chapter addresses challenges that affect the provision of the needed services in the libraries. Finally, alternative services that libraries are adopting in order for them to remain relevant in this information age are outlined. This chapter provides insights on how libraries can continue to play their role as information providers and how they can fit into the present information age.

INTRODUCTION

Early libraries were only associated with the handwritten and later printed copy of documents and major functions of the library were to collect, organize, store and make available these documents when they were needed. However, with the

development of technology, the representation of information has changed from printed books to electronic storage which has drastically changed how information is created, acquired, stored, disseminated and retrieved. Media such as found in online platforms, wireless networks, computers, and smartphones can now be used to access information at any time resulting in many people not using libraries and other information centers solely for their information needs (Barclay, 2016). The decline in the use of libraries has an effect on library operations, hence this chapter examines emerging technologies, how they affect information provision and how libraries can effectively harness the benefits of these technologies to provide 21st century services. Thus, the chapter examines how libraries are moving beyond traditional services to leverage on technology for information provision in order to remain relevant in this information age. The chapter also provides insights on how libraries can continue to play their role as information providers, fit into the present information age and plan for future information provision strategies.

BACKGROUND

The world has gone through three main developmental stages. The first was the agrarian age. Agriculture was the cornerstone of the economy of different countries and communities as much emphasis was placed on producing and maintaining crops and farmlands for the creation of wealth. Implements that helped in making farming faster and more efficient were produced in the 18th and 19th centuries and these led to an Agricultural Revolution as there was great improvement in farming and increased crop productivity. Land owners wielded enormous power during this period.

According to Encyclopedia Britannica (2019), the second phase was the Industrial Revolution when machines were developed and used to produce goods in bulk in the early 18th century and processes that were hitherto performed manually were taken over by machines. Nations and private individuals invested heavily in machines of mass production of goods in order to boost their economy. The Industrial Revolution was a process of change from agrarian and handicraft economy to one dominated by industry and machine manufacturing as people moved from tilling the land to work in industries. Manufacturers were power brokers of the era.

The third stage is the information economy where the dominance of industrial sector of workforce seemingly ended in the 1940s with the rise of service industries. This was followed by a rapid growth in Information Communication Technologies which saw the computers moving from being locked away mainframe to personal desktop and handheld machines/devices available to all and most importantly communicating among themselves. This made information available to all who can access digital devices and the Internet. According to Rouse and Tucci (2014),

the undergirding principle of the Information Age is the fact that access to and the control of information is basic for all activities. The information Age is characterized by emphasis on information as a commodity that can change lives, drive economies and that is easily disseminated through technology.

The information age brought with it wide ranging innovations in the information provision field. Information communication technologies (ICT) were birthed. According to Ogar and Tangkat (2018), ICTs are the array of resources and technical tools that are used for creating, connecting, spreading, storing and managing information. Coupled with the growth of Internet, these technologies have made access to information pervasive. It was predicted that the coming on board of ICTs was the death knell for libraries (Staff, 2005). However, libraries had long understood the challenges of ICTs and the Internet and have been proactive in exploring new ways to offer access to information in tandem with emerging technologies of each period in time. Catalogues were networked as collections were digitised. Libraries provided computers and Wifi. Electronic resources and technological devices for reading them were introduced (Wyatt and Leorke, 2018). Wenborn (2018) opines that as technology continues to evolve and become more integrated into the daily activities of living, library operations will also be further affected.

Emerging technologies is a term generally used to describe new technology, but it may also refer to existing technology which usage is now extended for more purposes. Furthermore, emerging technologies have been defined as radically novel and fast-growing technology which has a certain degree of coherence, persisting over time and have the capacity to exert considerable impact on knowledge production processes and storage (Rotolo & Martin, 2015). According to DiChristina and Meyerson (2019) emerging technologies are those that challenge the status quo and have the capacity of altering known processes as well as great possibilities of providing major benefits to societies and economies. These technologies are developed in order to enhance work quality in different fields such as agriculture, aviation, medicine, electronics, information and many other disciplines. ICTs are also emerging technologies that are making great impact in information and even education landscapes globally. These technologies are transforming information provision, operations of libraries and providing new user experiences quite different from what was formerly obtainable.

EMERGING TECHNOLOGIES IN INFORMATION PROVISION

Information provision covers the entire gamut of information creation, processing and organization, storage, dissemination and use. Libraries have played significant roles in information provision through the different eras of human development

as they make accessible information resources for formal and informal education, preserve and advance culture, assist researchers, entrepreneurs and decision makers with information materials that they need to carry out their daily professional and personal activities. Thus, libraries are considered to be major stakeholders in the information provision ecosystem. As the thirst for information availability continues to fuel the Information Age, new technologies keep on emerging to ease information provision. Libraries become concerned because such technologies invariably have potentials of causing modifications of their operations, services and even spaces.

Cloud computing, mobile applications and user interface are some of the emerging technologies that are affecting information provision, processing, managing, use, dissemination and storage. Cloud computing (with cloud as a metaphor for internet) means storing and accessing data and programs over the Internet instead of the hard drive of a computer or in servers (Griffith, 2016). According to Goldner (2010), cloud computing can be used as infrastructure, platform, applications and service to give libraries opportunities to transform and create extensions of their core services (e.g. union catalogues) thereby having more impact as collaborations and use of other applications such as social media become easier. Cloud computing can be used to provide library and information services that can be discovered and accessed through browsers from any part of the world economically (Sahu, 2015). According to Dutt (2015), cloud computing provides third party services manage servers, perform upgrades and back-up data thereby freeing librarians to focus on their core duties of managing, organizing and disseminating information through innovative services enabled by the technology such as e-book lending services, shared catalogues, document download services, digital preservation/scanning services, article delivery services, document sharing, Information Commons, file sharing, e-learning services, current awareness services among others.

Mobile applications are types of software applications modeled to be operated through mobile wireless computing devices and they are affecting 21st century information provision. They are simple to use and convenient for accessing information about almost everything including audio and video communication. These applications have made the use of Augmented Reality available for many uses (Delisle, 2017). They turn mobile devices into miniature powerhouses of function and fun as they allow users to access information on health, entertainment, education, transportation and social platforms from anywhere, anytime thus removing physical barriers for information retrieval (Viswanathan, 2019). Khare (2009), had noted a decade ago that mobile applications are changing the way library users access information as they prefer to search and browse books, journals and access information generally through mobile devices. Libraries have also been interested in avenues for disseminating information thus, mobile technologies are widely used by libraries to provide access to collections, for interactive personalized reference

services, renewal notifications, Current Awareness services, audio/virtual tours of libraries and new title reviews among others (Kumbhar and Pawar, 2014). With the increasing number of mobile devices all over the world, mobile applications technology is expected to still continue to globally influence information provision.

The Internet of Things (IoT), another emerging technology is tied to the mobile applications technology as objects such as vehicles, Television sets, refrigerators, air conditioners with unique identifiers will all be connected and be able to exchange data using WiFi, Bluetooth and other sources without human-to-human or human-to-computer interaction. The data collected will be accessed through mobile phones or web browsers (HTMLPanda, 2019). According to Purnik (2019), the Russia State Library for Young Adults, Moscow already has robotic devices controlled through the web related to RFID and to the Internet of Things which are being used in the book return system with automatic sorter as well as University of Chicago Mansueto Library where books requested by readers are searched for underground and delivered by machines upstairs where readers wait. Bansal, Arora and Suri (2018), have pointed out that IoT has great potentials for library and information services as it can be used for inventory control, theft management, mobile reference, assistive technology as well as virtual library and book tracking. Interestingly, IoT is being merged with Augmented Reality and Virtual Reality to provide information for immersive, hands-on and interactive learning with tools such as Google Expeditions that allows students to be 'visit' far off places like Mount Everest. Libraries use such tools to create smart learning environments as Learning Commons/hubs, merging physical and digital realities that assist students and children to absorb information and learn faster, smarter, holistically and at their own pace (Burns, 2019). Internet of Things (IoT) technology is bringing to the fore information that was hitherto not easily available such as living conditions in places of extreme temperature or realms outside of human experience for example other planets. The technology in combination with cloud computing and Artificial Intelligence (AI) can provide solutions to this as robots deployed to such climes such relay information through connected devices (Vogel, 2019).

What then is Artificial Intelligence (AI)? It is another emerging technology that affects information provision. It is machine learning that enables devices to do things that ordinarily would require human intelligence. Through iteration, optimizing past experiences, extracting meaning from recognition and analysis of data patterns, the technology enables machines to make inferences that have the capacity to solve problems and provide innovative solutions (Bourg, 2017). AI is changing how information is generated, processed and analyzed. Coleman (2017), has pointed out that AI has the capacity to make library collections more discoverable, searchable and better analyzed to provide needed information. According to Johnson (2018), AI is propelling the use of Personal Digital Assistants (PDAs) such as Alexa, Siri,

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Google Assistant, Cortana, Watson etc to help people seek and get information for personal and professional activities. As machines read, learn, speak, recognize patterns, ask and answer questions, understand the information needs of humans, what will be the fate of libraries?

Frisco Public Library, Texas USA, has seemingly provided an answer! The Library which circulates Makerspace kits of STEM has also taken up an AI kit from Google – the AIY (Artificial Intelligence Yourself) which was released in 2017. The Kit which comes with components that pair with Raspberry Pi and a small speaker is also designed to take voice commands and requires a minimal knowledge of Python to set up. According to Finley (2019), Frisco Public Library also holds basic AI classes for the public using the AIY Kit. This introduces people to the basic principles of AI technology and how it can be used. Already, Google has introduced the AIY Vision box and it can be accessed at https://aiyprojects.withgoogle.com/

Springer Nature (2019) while advertising their products on AI noted that libraries are already using AI in form of chatbots on websites that perform different functions such as creating alerts for overdue books, answering simple information requests and highlighting relevant library resources to enquirers. The publisher envisages that AI will play more roles in the way information is processed, mined and searched for in the future. The immediate past President of American Library Association, Garcia-Lebo (2019) posits that it is time for libraries to bring the AI conversation into the limelight for better understanding and clearer perspectives. The advent of AI technology has been likened to electricity that transformed every sector but like it was difficult to fully understand how electricity will change manufacturing, health service delivery, education, transportation, governance, etc. in those early days so it is with AI.

With 5G technology roll-out, IoT is set to move to higher levels as machine to machine communication will increase as well as virtual reality, augmented and immersive information transmission and dissemination. 5G? 5G uses formerly inaccessible (due to high cost and government restrictions) high frequency radio airwaves between 6GHz-90GHz while 4G works within a range of 700MHz – 6 GHz (Badman, 2019). According to King (2019), 5G is the newest mobile cellular network that will make online access to information faster, IoT devices to function more broadly and more Smart Cities to come up. For libraries, it will mean planning for more services through mobile devices and strategizing on how libraries can play leading roles in deployment of Smart Cities networks.

New technologies keep on emerging that are likely to affect the information provision sector. Librarians are always quick on the uptake in understanding and integrating such into library services and/or teaching the public how to understand and use them better.

IMPACT OF ICTs ON LIBRARY OPERATIONS

According to Mittal (2017), emerging technologies have impacted libraries and changed every aspect of library work from acquisition, processing, storage, retrieval and dissemination of information as printed collections change to web-based content and digital information resources, reference desks expand with the help of Web 2.0 technologies and platforms, manual indexing and bibliographies transform to full text databases and manual library catalogues to Online Public Access Catalogue (OPAC).

The easy availability of information with the click of a button has made students, researchers and other library users expect to access information around the clock from anywere via a growing number of devices from laptops to smart phones. Users no longer need to be phyically present in the library in order to access information that they need. This has removed the barriers hitherto experienced with print materials in the library that had ristricted access. Technology has enabled free access to information resources through the use of institutional repositories online. Users can now access information which is kept in the special collection that was a restricted area before the advent of technology.

Online Cataloguing

One of the library operations that has changed significantly due to ICTs is online cataloguing. Librarians have adapted new technologies by improving the processing and storage of information using library management systems. Copy cataloguing is now widely used where libraries share bibliographic records online with other libraries by downloading bibliographic records and integrating them into their library without having to re-catalogue and reclassify the same document. This service provides efficiency in the cataloguing process by quickening the process of cataloguing and classification, thereby, reducing the time spent on cataloguing the same document which is already available online. Since documents are now catalogued online using library management systems, users can search for documents using the Online Public Access Catalogue (OPAC) which can be accessed anywhere online. An OPAC is a discovery product tool that a library implements to provide patrons the ability to search its collections and gain access to materials (Irina, 2016). A user therefore, does not need to be physical in the library in order for him to know what resources the library stocks, but he can search the OPAC online and can go to the library to borrow the materials he needs. Previously, libraries used to catalogue books manually and display the holdings of the library through card catalogues and a user could only know what the library has by physically visiting the library. This service is made possible by cloud computing technology.

Virtual Referencing

Before the introduction of ICTs, users had to meet the reference librarian for a face-to-face interview. With the advent of ICTs, reference services have now been transformed into virtual referencing, where reference service is offered online or electronically. The user will send a query either through the internet using for example email reference, chat reference or SMS reference to the reference librarian. The reference librarian responds online, thereby cutting off the face-to-face interaction between the reference librarian and the user. This service has enhanced reference services in that one can conduct the reference service without going to the library. It has an advantage for those users who are shy and feel uncomfortable to be in a face-to-face interview. It also saves time for the user in that he can be doing some other work but at the same time have his queries attended to by the reference librarian. Libraries are also providing reference services through their websites and even the social media enabled by Web 2.0 technologies. Anyone can access the handle of libraries on social media, ask questions and expect answers.

Academic Libraries as Publishers

Academic libraries have also become publishers as institutional repositories and discipline-based digital archives become a common feature in academic institutions. An institutional repository is a digital collection of copies of the intellectual output of an institution from its various research activities. Institutional repositories are deposited in an open source repository software package known as Dspace. Through the Dspace software, university libraries have been accumulating academic papers, conference presentations by members of staff, student dissertations and other academic research work. Therefore, the role of the traditional library as being a collector has now changed to being a publisher. With the developments in technology, most academic libraries now have institutional repositories which provide a rich source of information that is needed for research and teaching. Institutional repositories apart from indexing the information sources, provide full text databases of the indexed resources.

User Preferences

Another area that has radically changed with the advent of ICTs is that library users prefer to use electronic resources as compared to consulting printed books in the library. The current crop of library users are digital natives who have grown up with computer technology (Prensky, 2001). Muunga (2018), had confirmed this in a study that showed that students at the Copperbelt University in Zambia prefer to

read electronic resources as compared to reading printed books in the library. The findings confirmed other researchers such as Ajayi, Shorunke & Aboyade (2014) and Ruterana (2012) who concluded that students prefer to use electronic resources more than printed books. The shift from the use of printed books to electronic resources has an impact on library operations in terms of information and service provision. For libraries to remain of value, they should provide information in the format users are more contented with.

21ST CENTURY LIBRARY SERVICES

Despite the information format changing from print to electronic, libraries still play a vital role in the provision of information to users through professional services provided by librarians. Kannappanavar and Jayaprakash (2010), descibe librarians as those professionals who apply their special knowledge about information for the purpose of getting the right information from the right source no matter in what format to the right client at the right time using different avenues including technology. Information professionals are therefore trained and qualified to provide the information needs of society in whatever format that the information is packaged.

Changing Library Spaces

Emerging technologies have affected how libraries use their spaces. Columbus Public Library, Wisconsin has just a small space for reference materials due to the fact that those resources have almost all migrated online due to emerging technologies. Wenborn (2018), points out that libraries now have rooms or corners for active learning, media productions, virtual meeting and for other collaborative, hands-on learning experiences as necessitated by emerging technologies.

1. Learning Commons

With the digitization of content and availability of the internet brought on emerging technologies, information is no longer limited to printed materials or in single, physical locations. Content is easy to access and libraries are rethinking their roles in the knowledge and information chain. According to Holland (2015), though printed books still play a critical role in education, emerging technologies now offer more avenues for people to learn and access information. Libraries are turning into Learning Commons, where participatory, collaborative teaching and learning takes place through emerging technologies. Libraries are becoming learning hubs where teachers offer classes for project-based learning with emerging technologies such as

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augmented virtual reality that provide immersive interactive learning experiences. Students also use library spaces to do collaborative assignments and share ideas, co-create information and construct knowledge as they explore and learn through varieties of emerging technologies in libraries (Franz, 2016).

2. Makerspaces

Emerging technologies have enabled the creation of Makerspaces in libraries where library users get the opportunity to learn, experiment and understand how things works through hands-on experiences. The possibilities are endless and can range from being tech-based, such as 3D printing and multi-media, to art carts and building stations (Roman, 2018). Makerspaces, sometimes referred to as hackerspaces and fablabs, are spaces within libraries where people collaborate to express their creativity with DIY class-assigned or personal projects, share ideas and learn how to make new things (Open Education Database, 2019). According to Velasquez (2018), Makerspaces which are primarily for young people and students is redefined craftwork and skill development using emerging technologies to create things. Makerspaces are adjudged vital for 21st century learning. The spaces help learners of all ages, especially children to discover resources that assist them to reflect more deeply on concepts learned in classrooms, apply the principles underlying the concepts through practical making thereby exploring possibilities of coming up with innovative solutions that address societal challenges. Makerspaces incorporate social studies, STEM related and writing activities and all these build up communication, collaboration, critical thinking, creativity and problem-solving and skills essential for 21st century living. This goes a long way in reaffirming libraries as learning hubs at all levels of education (Alexandria Library Software, 2019).

3. Self-Study

It has been observed that libraries are changing their roles in that they are no longer custodians of books only but have evolved as areas of self-study and collaborative study as well as creation of content. This is where students find a conducive environment for self-study. Students go to the library with their own materials or laptops and use the library space for study. Shelf space in the libraries, for instance, is no longer an issue since a lot of information can be kept in electronic format that does not take up much space as compared to space taken up by books. It was further observed that the current trend in academic libraries is to remove books and journals which are no longer being used for academic and research work from the shelves and create space in the library for self-study. University libraries now utilize the spaces by adding more seating, study spaces, writing surfaces, and adjustable furniture to allow

students have a conducive environment for self-study. This has attracted students to visit the library and use the furniture, technology and space being provided by the library, a typical example is Cornell University's Mann Library in the USA. Users are free to use the available space in the library for self-study, where they are free to even discuss unlike the traditional libraries where silence has to be maintained in the library.

Changing Librarians' Skill Sets

The way traditional libraries were organized is changing due to the fact that the information sources and formats have changed. Most of the materials are now being published online and libraries have to focus more on how to deal with these electronic resources. The world is moving towards "a bookless" library and so the roles of the library professionals are changing towards that culture. The role of information professionals is to process information so that the right information is available to the right users. The roles of information professionals are equally changing since the medium of information delivery is changing; hence, for information professionals to remain relevant, they have to adapt to the new technologies and learn how to use the new technologies.

Thus, as technologies transform information provision and library services, the skill set of librarians is changing too.

1. Blended Librarian

The traditional methods of teaching and learning in the colleges and universities are changing. "The uses of information technologies and computing to both support and deliver instructions have become widespread and continue to serve as an almost disruptive force in colleges and universities" (Bell and Shank, 2004, p.4). The academic library supports the learning, teaching and research of the institutions of higher learning. In this case where the learning and teaching methods are changing, the research part becomes affected if it does not change its operations in line with the parent institution. The library should therefore be blended into the new approaches of teaching and learning if it is to remain of value to the institution. The blended librarian, according to Bell and Shank, (2004) is

an academic librarian who combines the traditional skills set of librarianship with the information technologist's hardware/software skills, and the instructional or educational designer's ability to apply technology appropriately to the teaching-learning process.

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Blended librarians should understand the basics of blended learning and flipped classrooms and be able to assist faculty members make available their lecture notes as podcasts or videos or digital objects on the library's social; media handles, websites or Moodle platforms. They should be comfortable with information resources in all formats so that they can collaborate with teachers as they choose lecture materials for long distant learners that can only access such through the internet. Furthermore, for academic librarians have to remain relevant, they have to blend themselves in such a way that they do not sit and wait for students and faculty to come to the library; instead, their services should be directed at helping students and faculty with their information needs. Librarians must integrate with the faculty and students so that they understand how best they can contribute to the learning process.

2. Transliterate Librarians

Transliteracy is a new concept associated with the digital age. According to Sukovic (2016), transliteracy is the ability to read, write and interact across a range of platforms, tools and media from signing and orality through handwriting, print, TV, radio and films, to digital social networks. Being transliterate will greatly assist librarians to efficiently search for and retrieve information across formats and platforms for the 21st century library users while intelligently engaging and collaborating on the field of the information sought. This calls for awareness of and dexterity in information search skills across platforms as well as creativity and critical thinking skills.

CHALLENGES OF EMERGING TECHNOLOGIES

Due to information technology, information has been brought closer to the user and in large amounts. Users no longer have a problem of access to information but, they face the challenges of getting the right information that they need (Feather, 2006). Apart from having excess information at their disposal, users face the challenge of lack of information searching-skills. Thus, librarians have to provide information literacy skills to the users by teaching information searching-skills which will enable the users to get information they need out of the massive information at their disposal. In order to overcome the challenge of information explosion, librarians have become knowledge navigators, presiding over a variety of information sources and providing the right information to right users (Billington, 2004). Beyond just skills for searching out needed information, librarians have recognized the need to teach users about information privacy issues and cybersecurity in use of emerging technology so that they do not compromise their privacy or expose themselves to criminal activities online.

According to Abu-Shanab (2012), digital divide is an economic and social inequality with regard to access to information and communication technologies. Even if technology has brought information closer to the users, not all users have access to the information and opportunities available through the new technologies especially in Africa. This is a challenge that Africa faces despite being in an information age because not all users can afford to have gadgets such as computers, laptops, smartphones, and fast internet connectivity. This greatly limits access to opportunities for better living.

Despite ICTs providing information freely to anyone who has internet connectivity, scholarly electronic resources cannot be accessed unless they have been subscribed to and this can only be possible through Libraries. Libraries, through consortia, are able to acquire electronic resources at lower prices and make them available to users. Libraries are still relevant in the information age by providing the needed electronic resources which are relevant, accurate and timely. Libraries therefore have to reduce this gap by providing the necessary information to every user regardless of his or her standing in society.

Another challenge of emerging technologies is the rapid change in information technology. Information technology changes rapidly for example information storage has changed from magnetic tapes, floppy disks, Compact disks (CD), flash memory (USB memory sticks), and Blu-ray disc. Each information storage has to be compatible with a given playback technology and when new technologies were developed, the information storage as well as information retrieval device changes. The challenge with the rapid change in information storage format entails that the library has to keep on changing the information retrieval/playback systems compatible with each new development. The cost of keeping technology current becomes a challenge to the information providers. Similarly, the information formats provided on the internet keeps on changing and it requires computers that are compatible with that format, in order to access the information. On the other hand, is the bandwidth for a given institution adequate to handle the volumes of information from the internet? Furthermore, it has been observed that most libraries in Africa have limited bandwidth allocated to the libraries thereby making access to electronic information very slow and sometimes unachievable as alluded to by Jensen (2002).

CONCLUSION

Emerging technologies have continued to transform information provision over time, and this has an impact on library operations. Gone are the days when a library was only known as a collection of printed books and confined to a specific building. Emerging technologies especially those in the information provision sector

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(ICTs), have made it possible for information to be stored in electronic format and transmitted over the cloud, thereby increasing its accessibility. The current information provision has led to the creation of a "networked Society" where information can be shared electronically to a wider user group, and it's not restricted to a single location. However, electronic information provision has brought about challenges in the information service delivery. The more the networked society develops, the more the information professionals continue to change their roles in order to meet the needs of the users. Since information has been brought closer to the users, the issue of access is no longer a problem to information professionals but, the problem now is to get the relevant information to the right users. Libraries therefore have to evolve in order to remain of value to society in this information age, without which their services will not be appreciated. Libraries have evolved by providing services like self-study, virtual referencing, makerspaces, Learning Commons, institutional repository online, blended librarianship, and electronic resources providers. However, information technology has its own challenges such as information explosion, digital divide, high cost of keeping up with current technology and high cost of electronic resources.

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KEY TERMS AND DEFINITIONS

Blended Librarian: A 21st century librarian who works with the users in order to provide the right information to the users. In terms of academic institutions, a librarian is involved in curriculum development, subject specialist, and information literacy provision among others.

Digital Divide: An unequal distribution of ICTs among the rich who can afford and the poor who can't afford.

Digital Libraries: Libraries that only provide electronic information such as 'bookless' libraries.

ICTs: Emerging technologies which combine the creation, storage, transmission, and retrieval of electronic information.

Library Operations: Major tasks performed in the library such as acquisition, cataloguing and classification, storage, retrieval, and service provision.

Transliteracy: A state of being literate in the digital age. One who can read, write, and converse using ICTs.

Chapter 3
Librarian Skillsets in the 21st Century:
The Changing Role of Librarians in the Digital Era

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ABSTRACT

The chapter showcases the 21st century skills that are required by librarians. The digital era brought about a lot of changes in the way that librarians interact with their clients. Due to the changing needs of clients, librarians should ensure that they are well equipped to deliver the needed services. The objectives of the chapter are to identify the skills that librarians should possess in the 21st century, examine how librarians acquire those skills, and discuss the challenges that are faced when acquiring those skills. Structured literature review and web content analysis were used to get the LIS skills. It was discovered that librarians should possess professional, technical, and soft skills in order to remain relevant in the 21st century. The findings revealed that librarians can acquire skills through on the job trainings or formal education. The major challenge that is faced by librarians is the issue of lack of funds to support their capacity building endeavours.

INTRODUCTION

The advent of information communication technologies has led to the millennial or the digital native patron who has knowledge of how to access digital information from an early age (Institute of museum and Library services 2009). Traditional library users were forced to visit the physical library but the 21st century learner has assorted options of accessing information. Initially, libraries were known as storehouses of information sources and librarians used to facilitate the acquisition and storage of print materials (Tulder 2018). Then, library and information professionals were regarded as experts in acquiring, evaluating and disseminating information. The digital era has brought about a lot of changes in the way that librarians offer their services to the digital natives leading to the need to acquire 21st century skills despite where one is working, be it a school, public, special or academic library (Ptak-Danchak 2012). Patrons require information literacy training to ensure that they know how to effectively and efficiently access, use and evaluate information sources in an ethical manner according to Corrao (2016). Chutia (2015) posits that book oriented librarianship had been changed to user centred librarianship leading to the need for new skills to serve the patrons. The evolution in the education system such as open and distance learning, online education venture, virtual campus, flipped classrooms, m-learning and learning management systems has brought about diverse patrons who require different types of information (Chutia 2015).

Zhou (2005) pointed out that a digital librarian must be able to select, preserve and manage digital collections and also work with the technical architecture of digital libraries. This would assist in planning and implementing digital services by putting in place policies and standards that should be adhered to when running the digital library. The protection of digital intellectual property in a networked environment cannot be underestimated in the digital era. The digital librarian should ensure that there is enough security for the information. Farkas (2006) added that there is need for librarians to have basic technical skills such as ability to troubleshoot new technologies, use of online media, and willingness to learn new technologies to embrace the ever changing library technologies. It is against this background that the study was done to unpack the skills that are needed by library and information professionals in the 21st century. The objectives that were addressed by this chapter are:

1. To identify the skills that librarians should possess in the 21st century,
2. To examine how librarians acquire those skills, and
3. To discuss the challenges that are faced when acquiring those skills.

The rest of the chapter is organised into why new skills are needed, the 21st century skills, how to acquire the skills, challenges faced when acquiring the skills, recommendations, areas for further study and the conclusion.

WHY NEW SKILLS?

There is need for library and information professionals to develop new skills since the library is moving from being a deliverer of information and is now embedded in research, teaching, learning, and community activities that are done in research institutions and schools (Huff-Riley and Rholes 2011). The library is now more than a physical place since libraries are becoming areas for meeting, sharing and collaboration. Gillingham (2013) added that libraries now support the creation of new information and evaluating the impact of the research output of institutions, managing data, engaging in data analytics, bibliometrics, search engine optimisation, relationship management, research policy and planning, and marketing among other activities. These had been caused by the new technology and tools, migration from print to digital, economic downturn and the new access models. Therefore, today's librarians should have the expertise needed in working with both print and digital information.

Library and information professionals should be able to embrace change when dealing with digital native patrons. The technology that is used in the 21st century is rapidly changing, leading to the changing needs of the patrons who are served by the library (Matthews 2010). Therefore, librarians should be able to continuously change the strategies that are used to offer library products and services. Librarians should not be afraid of change to ensure that they move along with the changing needs of the patrons that they are serving. In order to effectively provide a service to the patrons, librarians must have skills of operating in an online environment (Rao 2014). The traditional ways of operating such as offering technical, reference and circulation services has been enhanced by the use of computers and the internet. Libraries are now automated and library management software are used in service provision. This shows that librarians should be knowledgeable about search engines and should have internet and database searching skills that should be transferred to the patrons for them to find useful online resources (Latham 2013). He added that some patrons require assistance in setting up e-mails and searching information on the internet.

Reference services are now being offered online using the live chat facility, e-mail, and social media platforms such as Facebook, Twitter, Skype and WhatsApp. Librarians should be conversant with the use of these various platforms to ensure that they manage to interact with the digital native patrons (Sewell and Kingsley

2017). There is need to have social media skills by studying the dos and don'ts when using various social media platforms. This would assist in getting the patrons where they are since most of them are spending their time chatting with others in online spaces. Thus, posting notices, announcements and updates on social media would ensure that patrons would get the information. Social media marketing skills are essential for 21st century librarians.

Librarians should possess basic troubleshooting skills when dealing with computers and the internet since machines such as computers, printers, scanners and photocopiers might have faults when the information technology personnel is not around. Knowledge and skills of how to fix paper jams is regarded as good client services and customer care in libraries (Foo, Chaudhry, Majid and Logan 2002). Therefore, there is need to be both computer and information literate in order to give good service to the clientele in the 21st century. This calls for the need to learn how the new technologies that are used in the library work through reading the documentation and having hands on sessions on how to use various machines. Due to the rapid changes that are taking place, there is need for librarians to keep pace with the rapid changes and library and information professionals should always create time from their busy schedules by reading the literature and attending webinars to learn (Yadav and Sawant 2017).

21ST CENTURY LIBRARY USERS

Library users in the 21st century consists of a mixture of the millennial (Generation X, Y and Z) and the "born before technology" generations. Generation Y users were born between 1980 and 1994, generation Y between 1984 and 1996 while generation Z after 1997. Their level of accessing and using information resources is not the same and should all be met accordingly by the same librarian. These users have different needs which should be balanced during procurement of library facilities and resources, information creation, seeking, accessing, and use. Librarians should possess teaching and leadership skills that would enable them to provide information products and services without discrimination. All these users should be satisfied when they visit or contact the library and they expect to be served by professionals who understand their needs and meet those needs satisfactorily. There are also potential users who might not be currently using the library. Librarians should possess interpersonal and advocacy skills to ensure that they are able to provide services that are needed by both the real and potential users.

TRENDING ISSUES IN THE LIBRARY

Libraries are helping to generate and create content unlike when the library was used for disseminating information resources only whereby the librarian was supposed to know organisation of knowledge such as cataloguing and classification. In addition to the traditional skills such as shelving, shelf reading, circulation of materials, cataloguing, classification, reference services, librarians are now writers. For example, AfLIA(African Library and Information Associations and Institutions) and Storyweaver are translating books into local languages using open source software. Librarians should possess content creation and writing skills in addition to the knowledge of how to use various software to translate books.

Librarians should possess blogging skills to be able to market the products and services and be able to attract more users to the library and get feedback from those patrons. Libraries are beginning to run Cooking clubs as a way of diversifying in terms of service provision. This exercise is regarded as both educational and fun, for example, at the La Vista (NE) Public Library (Tomsu 2017) and the Library of Congress cooking club. Book clubs is another emerging issue together with some fundraising activities such as gardening. These are done by librarians and these clubs are advertised on platforms such as WhatsApp and Telegram to ensure that they engage and provide services to those who are too busy to come to the library or those who might be off campus. Librarians should have knowledge of the various apps that are used in libraries such as QR codes, Goodreads among others. The skills can be acquired through reading manuals that must be developed when the services are introduced.

21ST CENTURY SKILLS

It is important to ensure that library and information professionals are equipped with the skills that are needed in the 21st century (Michalis and Rania 2008, Matthew and Baby 2012, Emezie and Nwaohiri 2013, Jerome and Promise 2013, Kolle and Parmeshwar 2014, Gwyer 2015, Sewell and Kingsley 2017, Montgomery 2018, Mabweazara 2018). Cheng (2016) pointed out that career advancement opportunities as well as on the job training activities are necessary to help library and information professionals to overcome the challenges that are experienced in the provision of information in the digital era. As a result, library and information professionals should have data visualisation and communication skills to be able to deal with the changes taking place in the 21st century (Gillingham 2013). Due to the new technological demands, librarians need new skill sets in order to remain competent in offering the traditional and new services. The skills that are needed in the digital era are

professional skills, soft skills and technical skills (Rao 2014). Tulder (2018) added that these skills can be further divided into advocacy, negotiation, interpersonal, leadership and management, and IT skills.

Professional Skills

Professional skills assist librarians to practice and fulfil their specific duties and responsibilities (Yadav and Sawant 2017). They added that the 21st century skills for librarians include information curation, evaluation, training and user support, collaboration, digital preservation, and library marketing. Daniel (2014) and Abubakar and Attahir (2018) opin that professional skills are knowledge of information resources, information management, and research which help to provide, collect, and store information for supporting learning, teaching and research activities offered by the library. The information seeking behaviour of the clientele has greatly changed and this affects the way that librarians should interact with the patrons in a digital and virtual environment. Chutia (2015) reiterated that librarians should maintain their traditional core values and manifest library services in new ways to address the changing needs of patrons.

Information Curation

Librarians should know how to curate information in the digital era so that they can be able to distinguish what is valuable from what is not (Muddapur and Agadi 2017). This means that librarians should understand the information infrastructure in order to understand how the information is classified. The information curation skills that should be possessed by library and information professionals include research, editing, classification, and archival skills (Skinner and Krabbenhoeft 2014). A librarian should be able to move around the web to locate information from various sources on a wide range of topics so as to assist numerous patrons who use the library resources. During the research process, librarians are also partners with researchers and can assist in identifying various sources of information that can be utilised by patrons to come out with worthy research outputs (Prabhu 2016). Embedded librarianship is now key from primary to tertiary levels of education and librarians must possess the skills needed to remain relevant in providing the needed information to the patrons (Eke, Orji and Okorie 2010). As a result, a librarian should have good research skills to deal with big data in this digital era.

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Digital Preservation

Digital preservation skills are one of the skill requirements of the 21st century librarians. Librarians traditionally used to preserve the information resources in print such as maps, textbooks, magazines, newspapers among others (Gerolimos and Konsta 2008). The generation of content in electronic format has taken over and this is forcing library and information professionals to have the knowledge and skills of dealing with e-content in preserving and managing information (Gillingham 2013). According to Emezie and Nwaohiri (2013) digital preservation would ensure that the information is archived and made accessible to all researchers who have the rights to access it. This includes the knowledge of various formats of information and how to migrate content when there are upgrades, for example, how to run and manage institutional repositories.

Mobile Library Services

A survey that was conducted in 2010 (Shettar and Chavan 2016) by the library journal indicated that academic and public libraries were offering mobile library services to their patrons. The services include text messaging for notifications and reference services, websites and catalogues that are compatible to viewing on mobile devices, mobile access to databases offering e-resources and digital collections through e-reader platforms such as Amazon Kindle, Barnes and Noble Nook, Kobo and Sony Reader (Shettar and Chavan 2016), development of mobile apps, QR codes to offer self-services, and use of social media platforms such as Twitter and Facebook. Librarians should have the skills and knowledge of how these mobile devices operate so that they are able to offer the services to the patrons and assist the patrons when they face challenges. Librarians should therefore take advantage of the opportunities that are offered by using mobile services to improve the efficiency and effectiveness of library services. There is need to provide training to librarians who develop and offer mobile library services so that they know how to operate the devices and can train the users as well.

Familiarity with the mobile environment would assist library and information professionals to be able to offer services from anywhere as long as they have mobile devices that are connected to the internet. This is as a result of cloud computing where most of the information is stored in the cloud. In addition to the use of computers, librarians should be knowledgeable about how to use mobile devices such as smartphones, iPads, iPods, and tablets (Shettar and Chavan 2016). Librarians are expected to assist patrons who would be using these devices if they face any challenges when they are in the library. Therefore, librarians should also possess advisory skills in order to work with the information technology people who are

responsible for implementing cloud computing services to ensure that the library products and services should be accessible on mobile platforms.

Collaboration and Training

Librarians are no longer providers of information but are also producers of information and knowledge. Gerolimos and Konsta (2008) note that librarians should have a coaching or training role since they are now actively involved in making strategic decisions concerning information acquisition and distribution. It is therefore noted that, "librarians who prefer dealing with information over people will need to push out of their comfort zones" (EBSCO 2019). Due to the large volumes of information available, there has been a shift from what the library has to what it can do for patrons. Librarians should be able to collaborate and work with users in making the library spaces more user friendly. Librarians should possess the collaborative skills since they are supposed to work with teaching departments to design and organise teaching aids and sometimes course content is hosted by the library for easy access by users. Possession of the new skills would help in increasing the visibility of the library profession and ensure that librarians remain relevant in teaching, research and community services.

Library Marketing

Librarians should have marketing and advocacy skills to market the library both to the current and potential patrons and institutional administrators to ensure that support is guaranteed (Shetter and Chavan 2016). The patrons would be aware of the various services that are offered by the library and management would be appraised of the value of the library within the institution. The patrons would be convinced on the advantages of using library products and services, be it subscription based or open access resources as compared to using the general google search when looking for information resources. Therefore, the patrons will access and use authentic information sources which would save their time when doing research. Social media marketing skills are essential since most of the patrons are now using social media platforms. When marketing the various products and services, librarians should possess good communication, problem solving and interpersonal skills so that they are able to deal with difficult patrons.

Technical Skills

Technical skills are regarded as the abilities required to accomplish technical operations in the day to day running of the library including technology expertise,

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digital library software, knowledge management, web technology, metadata standards, data management, and copyright and licencing (Shetter and Chavan 2016). Muddapur and Agadi (2017) add that technical skills deal with knowledge and abilities that are needed to accomplish information communication technology (ICT) applications in libraries and related jobs. Librarians should have basic knowledge of HTML and other languages as well as trouble shooting knowledge to be able to assist patrons when they face challenges when using computers or printers (Matthew and Baby 2012). The development of digital libraries and knowledge of basic digital library architecture and administration would assist librarians in working with open source software to develop and run digital libraries. Knowledge of content management systems such as Drupal, Joomla and WordPress would assist librarians to develop dynamic and interactive websites and applications.

Technical skills were affected by the adoption of the electronic environment whereby card catalogues were replaced by online public access catalogues (OPAC) which has web based graphic user interface and electronic journals (Matthews, 2010). Cataloguers should be conversant with resource description and access (RDA) and copy cataloguing. This calls for basic knowledge of metadata standards such as Dublic core, RDA, METS among others. This shows that an added skill of working with information technology is needed when doing cataloguing and classification in the 21st century in addition to the basic traditional knowledge of how to catalogue and classify library materials. Librarians should be able to train users how to use the online public access catalogue to locate information resources timeously.

Data management is an emerging area in library and information science and librarians should have the skills needed to assist researchers in data collection, management, sharing and preservation (Chigwada, Chiparausha and Kasiroori 2017). Knowledge of various data repositories would assist librarians in their collaborative and support role in the research life cycle. This would also aid librarians in creating data repositories in research institutions where datasets, file sets, research outputs such as journal articles, book chapters, books, presentations, posters, media and figures can be archived. In all this, librarians should be knowledgeable about copyright and licensing issues to ensure fair use through the evaluation and implementation of copyright laws. Knowledge of the FAIR principles (Findable, Accessible, Interoperable, and Reusable) is key to ensure that librarians would be able assist researchers when developing their data management plans.

Soft Skills

Soft Skills are also known as personal skills which are used to interact with users and other fellow librarians at work. These are related to one's personality and behaviour and they help to manage self-perception and reactions to adverse situations

(Muddapur and Agadi 2017). According to Junrat, Jenphop, Suravee and Kanokorn (2014) soft skills include communication and interactive skills, analytical skills, adaptability, problem solving skills, interpersonal skills and behavioural skills which are necessary in ensuring that technical skills are applied efficiently. Muddapur and Agadi (2017) added that the soft skills that should be possessed by librarians in the 21st century include communication, flexibility, integrity, positive attitude, responsibility, courtesy, work ethics, and bargaining skills. Weber, Finely, Crawford and Rivera (2009) emphasised that these soft skills are developed through reflection and personal experiences. They help to mould a good relationship with the patrons which in turn lead to improvements in the quality of the services that are offered.

Leadership skills, teamwork, listening skills, writing skills, presentation skills, teaching skills, library etiquettes, and IT skills should be possessed by librarians in order to offer efficient services in the 21st century. Leadership skills would enable librarians to influence others and demonstrate ability to lead in discharging duties and creating new services (Abubakar and Attahir 2018). Librarians should be able to lead their sections and be in a position to proffer solutions to deal with the challenges that might be faced at different levels.

HOW TO ACQUIRE 21ST CENTURY SKILLS

Ezema, Ugwuanyi and Ugwu (2014) state that librarians can acquire skills through on the job and off the job training. On the job training can be achieved by assisting those who are already employed to acquire the needed skills and this can be through "demonstration, lecture, discussion, programmed instruction, simulation, mentoring, literature research, job exchange, regular staff meeting, project and task management and technology assisted training" (Ezema, Ugwuanyi and Ugwu 2014). They added that off the job training can be done out of the work environment whereby workers can attend further education, conferences, seminars, interest groups, short courses or other professional contributions and meetings. Egun (2006) pointed out that there should be a training schedule for librarians to ensure that they are able to deliver services in a digital environment. She added that on the job training is more ideal in the process of acquiring real skills in the 21st century.

A summary on how the 21st century skills can be acquired was given by Chinware (2007) who noted that "internally organised training programmes, sponsorship to workshops and conferences, sponsored courses in library schools, short term courses, train the trainer, orientation programs for new staff, mentoring from senior colleagues, training tour to establishments, online training programmes, self-sponsored training programmes" can be employed by libraries to upskill their employees. Skinner, K and Krabbenhoeft (2014) point out that residential programmes, fellowships, workshops

and virtual training sessions can be offered to librarians. They stated that both pre-professional experience plus service learning in library and information science are important. Service learning activities such as practicum and library partnerships as well as participating in electronic discussion lists to attain technology related services were pointed out as successful ways of acquiring skills in the digital era by Tulder (2018).

Library schools have a major role to play in ensuring that they produce highly acclaimed graduates who are able to deliver the services to patrons in the digital era. As a result, there is need to continuously evaluate the courses and modules that are offered to ensure that the graduates are moving along with the contemporary issues in library and information services provision (Pillai 2016). Library schools from polytechnics to higher degrees granting institutions should ensure that the modules of their curricula help to transfer the skills to the graduating librarians including a year of internship in a library or information centre to have hands on experience. After college or university, the employer should offer on the job training activities and many librarians had participated in local, regional and international training programmes.

Ocholla and Bothma (2013) noted that library schools should review and revise the curricula of LIS schools to include information communication technologies and other trending issues. It was suggested by Chiware (2007) that integration of ICT to the LIS curriculum, retraining library staff, and collaborations between those in the diaspora who have access to funding would enable the reskilling of librarians in the digital era. He added that capacity building should be a joint effort between all the stakeholders which include government institutions, civil society, donors, non-governmental organisations and library and information service providers. The government would be responsible for facilitating access to ICT by providing the required infrastructure and enacting policies that promote the use of electronic resources. This would also assist in emphasising the use of electronic services in the LIS curriculum. Maphopha (2001) stressed the importance of engaging in all types of training which can be trial and error, unplanned, unsystematic, as well as purposeful and well planned training in equipping librarians with 21st century skills.

A number of institutions are now offering webinars to develop librarians and some are free while others are paid for. For example, AfLIA has been running a number of webinars in line with the trending issues in the 21st century (AfLIA 2019). Rao (2014) notes that conferences can assist librarians to acquire 21st century skills. There are some conferences that concentrate on trending issues only, and sometimes workshops are held alongside conferences leading to the enhancement of skills acquisition. A number of discussion groups and user communities are now available to offer learning opportunities to librarians in contemporary issues in library and information science. Various exchange programs are also available and some libraries

promote contact leave so that employees can learn from other institutions similar to them. Fellowships can also be taken advantage of when acquiring skills in the digital era. These include mentorship whereby the fellow is subjected to working with an experienced person.

Challenges Faced When Acquiring Skills

A number of challenges were pointed out by various authors (Mortenson Center for International Library Programs 2004, Michalis and Rania 2008, Ezeani and Ezema 2011, Mathew and Baby 2012, Ocholla and Bothma 2013). They include lack of funds for capacity building, the neglect of libraries by their parent institutions, library management favouring some staff members at the expense of others, library management not supporting training requests from staff members, unavailability of training facilities and technology infrastructure, lack of skilled personnel to train staff members, diversification of the job market, and phobia for new technology. The issue of continuous budget decline has led to some cost cutting measures which seriously affected the training of librarians. In order to deal with such challenges, some libraries had been organising staff development activities within the library instead of waiting for the parent institution to spearhead such. There is need to continuously advocate for the importance of continuous professional development in the digital era and also develop various fundraising strategies and then channel the funds towards capacity building of librarians.

Most libraries face network and bandwidth challenges when librarians want to attend webinars and online courses. Internet connectivity challenges sometimes do not allow librarians to complete a course within the specified time (Chiware 2007). Some libraries face power outages as well leading to limited access to internet and email which is key when attending webinars or online courses be it massive open online courses (MOOCs) or those that are paid for. Some librarians also do not have exposure to the international standards that guide them on what is expected in librarianship in the digital era. As a way of dealing with that, some librarians are taking advantage of the international library leadership program as a way of nurturing and educating librarians. This would help the budding leaders to develop their leadership skills and be at the lookout for emerging issues within the library and information science field.

RECOMMENDATIONS

It is highly recommended that library and information professionals should take advantage of the opportunities that are offered by the digital era such as free and

open source software, webinars, massive open online courses (MOOCs) and the social media platforms of library associations at national, regional and international level to acquire the skills needed in the digital era such as AfLIA and International Federation of Library Association and Institutions (IFLA). Training and development of librarians is key in order to deliver the services that are needed in the 21st century. Library schools should assist in ensuring that long life learning skills are mastered by students to become independent learners who would be able to continue learning after graduation. Those who would be graduating should possess basic internet and search skills, that is, lecturers offering courses in library schools should ensure that the information technology component is added to every programme. Librarians should continuously upgrade themselves to remain relevant in this digital era. Institutions should develop favourable staff development policies which give priority to the training of librarians.

FUTURE RESEARCH DIRECTIONS

A study on whether the current trainings that are available in various institutions are meeting the 21st century needs of library and information professionals can be done. This would help to unpack new strategies that can be employed by various libraries to ensure that the librarians move along with the emerging issues in the field so that they are able to deliver efficient services and remain relevant in the digital era.

CONCLUSION

It can be concluded that librarians should possess professional, technical and soft skills in order to survive in the 21st century. Libraries should employ both formal and informal ways of training librarians so that they can acquire the needed skills to be able to offer efficient services in the digital era. Librarians should be able to manage change in order to serve the ever-changing needs of patrons and move along with the information technology applications and tools that are not stagnant. This can be accomplished by possessing skills and knowledge that are needed in the 21st century so as to meet the needs of patrons. In order to ensure that librarians are well versed with the new skills, there is need for being intentional in professional development activities. Employers should afford learning opportunities to employees and take advantage of free trainings that are offered by some organisations especially library associations such as AfLIA and IFLA among others.

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KEY TERMS AND DEFINITIONS

21st Century Learner: Students who are participatory learners who use information technology to accomplish specific tasks such as the use of e-learning and learning management systems. They do not sorely depend on the instructor and are well versed in the use of ICTs. Lifelong learners who participate in distance and online learning programmes.

21st Century Skills: A set of abilities and competencies that are required to survive in the digital environment.

Digital Era: The environment that uses digital technologies.

Information Professional: A person who is well versed in collecting, recording, storing, organising, preserving, retrieving, and disseminating information in various formats.

Librarian: An information professional who knows how to manage books and other information sources in all formats.

Skill: Ability to perform a certain task exceptionally.

Chapter 4
LIS Education for 21st Century Information Users

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ABSTRACT

This chapter is on library and information science education for the 21st century users. It aims at x-raying the nature of LIS program as practiced in Nigeria so as to ascertain the extent to which the graduates will remain relevant in practice. This is based on the fact that the present-day library and information users are getting technologically advanced, and graduates of LIS education are also expected to be technologically visible to the users. The following subheadings were considered: library schools in Nigeria and their programmes, need for restructuring LIS programme, new programmes/courses to be incorporated in LIS education, and challenges of restructuring LIS education programmes. Library and information science professionals are not only having to adapt to change in library services but they also require in-depth and structured education and training programmes that are in line with the current technological demands. This will help the professionals to provide the needed manpower for the nation's information occupation engagements and effective user assistance.

INTRODUCTION

'Users' is a generic term for people that utilize one or more library resources and services. They are the important link in the information communication system and according to Edoka (2000) the 'focal point', prime aspect and most crucial component of any library or information system. They vary in, among others, gender, information need, professional environment, nature of work, psychological character, age, level of study, religion, race, socio-economic status, parental and educational background (Okorie and Njoku, 2016). As the desire to be educated is the order of the day, there is the possibility that most users undertake courses without any significant permanent change and can also obtain qualifications without improving on their job performance. There is therefore the need for well packaged relevant and current information for their academic pursuit and day-to-day activity so that they can achieve their goals of education. Thus, they require the assistance of a versatile and well-grounded librarians for quick and easy access to the myriads of information resources. The class of librarians to render the type of services needed by these computer age information users' need to be educated in the current trends of library services delivery. Education system geared toward incorporating courses and internalizing rudiments of ICT in upcoming librarians will go a long way in ensuring their relevance in the 21st century librarianship.

Education is the process of acquiring knowledge, values, beliefs, habits and skills that will enhance good performance within and outside academic environments. It brings about an inherent and permanent change in a person's thinking and capacity to do things. Many may have a superficial concept of education; by equating it with doing a particular course or obtaining a particular qualification. Qualifications and courses offered/undertaken during training however do not always equate with effective education and learning. Quality education is something that cannot be fast tracked. It is very different from just having access to (or being exposed to) information about a subject area. It infuses knowledge into one's brain and according to Mandela (1993), "It is the most powerful weapon which you can use to change the world." Anyone who understands education will understand that it comes from repeated exposure to well defined and unified course content and use of information or skills in line with the dictates of the time in question. Therefore, going by Mandela's assertion, with well executed education and training, for Library and Information Science in Nigeria, the challenges of the 21st century information service delivery will have solutions.

Investment in the education of human work force has long term advantages. Organizations have realized that benefits such as enhanced market share, sales, productivity, quality and reduced employee turnover are results of investment in proper education and training programmes of the workforce that will carry out

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the jobs. In the same manner, investment in, and improvement of, the educational programmes of these would-be human capital (librarians) will establish opportunities for improving their knowledge and proficiency to practice the profession effectively after school. As emphasized by Salas and Cannon-Bowers (2001), education creates an opportunity for improvement in technology, knowledge and skills of employees which in turn, enhances performance. The identified gains notwithstanding, different training schools provide training with different objectives at various levels and consequently, most graduates come to the job with limited knowledge, skills and experience for that particular job.

LITERATURE REVIEW

In library organizations, librarians are the face of the library. Education of students in its academic programme is provided to give them the knowledge and skills required to perform particular tasks in any library and information provision environment. Their education therefore ensures that they will be able to know the complexities of the system and be in a position to explore and obtain strategies to become proficient researchers. However, the standard of the programme for Library and Information Science (LIS) students determines their competence to effectively utilize library resources and offer good services to the end-users. Educational institutions offering LIS programmes need to invest in the programmes so as to be able to address the challenges of competencies that the students would have acquired when they graduate. This will assist the Library schools to provide and maintain the quality of programmes that will make its graduates to be well positioned and be proactive to change. In librarianship, the library students' knowledge value depends on their potential to contribute to the organizational competitive advantage of their future workplaces. This value can only be achieved if LIS schools raise their education standards through programme enhancement and development.

Library schools and their programmes form the backbone of any healthy educational institution interested in producing competent librarians. The professionals, apart from requiring in-depth and structured education and training programmes for occupation engagements in all libraries, also have to adapt to changes in library services. These changes are due to the combination of globalization and technology, which is transforming the way the global economy works (Barber, Donnelly & Rizvi 2013). Similarly, Okello-Obura and Kigongo-Bukenya (2011) attribute the changes largely to the alignment of higher education to the competitive global trends. On this premise, Mambo (2000) emphasized that the current trend of library staff training and development in developing countries should cope with the current trends in technology. The current global technological advancements and their impact on

information provision must be taken into consideration in designing the programmes for LIS education. This is why Boerlijst (1994) pointed out that professionals should be aware of the dramatic changes in their career fields. Such realization provides guideposts and points the way for further learning.

Today, owing to the growing number of higher institutions granted operational license in Nigeria, which propelled a greater need for more personnel, there are many library schools across the country. These schools offer library education programmes at different levels – NCE, diploma, degree with mostly institutionalized self-designed programmes, varying nomenclature and located in different faculties. Hence Okeke, Oghenetega, Erimieleagbon (2014) discovered that library schools in Nigeria operate with different departmental names like Department of Library Science, Department of library and Information Science, Department of Library and Information Technology and others. While some institutions place the programme under faculty of Education, others are found in the Faculty of Social Sciences or Information Technology. However, one can easily switch from an unrelated programme after a first degree to study Library and Information Science at masters' level and be at par with those that started the programme from the scratch, which is hardly obtainable in any other profession.

People in different library schools come with different education backgrounds, experience, skills and knowledge. Given the competition now in the field of LIS and the realization that the profession to remain relevant, the global reorientation has not spared the content of LIS programme. Drexel University (2000), noted that education for LIS professionals should integrate both human and technical aspects of information systems and exhibit a strong client orientation in service delivery to the library and information users. The issue of what constitutes or should constitute the 'core' in library and/or information science (LIS) education and training is one that is frequently debated in different circles by LIS professionals. On this note, there is a clear manifestation for the need to balance between core skills of LIS and those which apply to specific work environments. Most LIS schools look at this differently. Consequently, what remains unanswered is what the uniform "core" courses that should form the LIS education curriculum are.

Library Schools in Nigeria and Their Programmes

Education and training programmes for library and information professionals is tagged Library and Information Science (LIS) education. In LIS education the professional degree is masters' degree, and even after the master's degree, the professionals are still encouraged to move on to the PhD programme to enhance their status. Continuous education and training in well-designed uniform programmes in line with demands of the times increases one's capacity to respond to the challenges at work which

eases transition to new positions. In the past, librarianship was not considered as a profession until the late 19th century when Melvil Dewey, emphasizing the current role of librarianship, tasked librarians to go beyond keeping and preserving books. Library and Information Science education institutions in Africa started as early as 1960.

In Nigeria, history of library education can be traced back to the Ibadan 1953 UNESCO seminar which saw the first library school called Institute of Librarianship at the then University College, Ibadan, and the 1968 F. N. Sharr's led Carnegie Corporation sponsored study on "Library Needs for Northern Nigeria" that ushered in the second library school in Ahmadu Bello University, Zaria (A.B.U.). In 1984 the first NALISE conference held with a theme on "Education for Librarianship" also made its own impact. Among their numerous resolutions was the establishment of professional training programmes in Nigeria. While the first sets of students of the University College, Ibadan Institute of Librarianship were admitted to read post graduate diploma (PGD) and masters in library science (MLS) degree respectively in 1960, those of ABU, Zaria were admitted to offer Bachelor degree in Library Science. The 1980s and beyond witnessed establishment of a number of library schools not only in universities but also in the polytechnics and some state/federal Colleges of Education in Nigeria (Ochogwu, 2010). Originally, these schools' major focus in the education and training area was librarianship. In Nigeria, about 30 Nigerian universities, 14 polytechnic institutions and 6 Colleges of Education offer LIS education. Some of these institutions include:

Universities

Abia State University, Uturu
Abubakar Tafawa Balewa University, Bauchi
Ahmadu Bello University, Zaria
Ambrose Alli University, Ekpoma
Bayero University, Kano
Baze University, FCT, Abuja
Benue State University, Makurdi
Delta State University, Abraka
Ibrahim Badamasi Babangida University, Lapai
Imo State University, Owerri
Kogi State University, Anyigba
Kwara State University, Malete, Ilorin
Lead City University, Ibadan
Madonna University, Okija
Michael Okpara University of Agriculture, Umudike

Modibo Adama University of Technology, Yola
Osun State University, Osogbo
Tai Solarin University of Education, Ijagun
Umaru Musa Yar'adua University, Katsina
University of Benin, Benin City
University of Calabar, Calabar
University of Ilorin, Ilorin
University of Jos, Jos
University of Nigeria Nsukka

Polytechnics

Federal Polytechnic, Offa
Federal Polytechnic, Ede
Federal Polytechnic, Ida
Federal Polytechnic, Mubi
Federal Polytechnic, Nassarawa
Federal Polytechnic, Nekede
Federal Polytechnic, Oko
Federal Polytechnic,Ilaro
Hassan Usman Katsina Poly, Katsina
Hussaini Adamu Federal Polytechnic, Kazaure
Kaduna Polytechnic, Kaduna
Kogi State Polytechnic, Lokoja
Nasarawa State Polytechnic, Lafia
Rufus Giwa Polytechnic, Owo

Colleges of Education

Federal College of Education (Technical) Umunze, Affiliated To (Nnamdi Azikiwe
    University
Federal College of Education, Zaria (Affiliated to Ahmadu Bello University, Zaria
Kwara State College of Education, (Technical), Lafia (Affiliated to Ahmadu Bello,
    Zaria
Alvan Ikoku Federal College of Education, Owerri
Federal College of Education, Zuba
College of Education, Ilorin (Affiliated to Ahmadu Bello University, Zaria)

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(Directory of accredited programmes in Nigeria, 2014; 2016; accreditation status www.nbte.gov.ng 2016).

All the Colleges of Education lack the minimum standard as there was no document of standards by the National Commission for Colleges of Education on LIS programme run in Colleges of Education in Nigeria. Some of them for instance, The Federal College of Education, Minna, has stopped the programme over a decade.

A quick look at library education in Africa shows that, in the past most departments were simply called Department of Library Science or Library Studies. In the eighties many departments changed their names to Department of Library and Information Science/Studies while many others again changed their names to Information Science/Studies (Minishi-Majanja, 2004). Others, through a combination with other (information-related) disciplines, have also incorporated such disciplines in their names as well, for example the Department of Information and Communication Studies at the University of Namibia, Department of Information and Knowledge Management at the University of Johannesburg, (Ocholla and Bothma 2007). In Uganda, the East African School of Librarianship was changed to East African School of Library and Information Science (EASLIS). The then University College Ibadan, Institute of Librarianship changed to Department of Library and Archival Studies, and Imo State University, Owerri Department of Library Studies changed to Department of Library and Information Science among others. These nomenclature changes have made significant impact on the LIS Education, training and awards.

Although some institutions, like, University of Nigeria, Nsukka, Ahmadu Bello University, Zaria, Abia State University, Uturu, Imo State University, Owerri, Ambrose Ali University, Ekpoma, University of Port Harcourt, Rivers State, Ignatius Ajuru University, Port Harcourt, Nnamdi Azikiwe University, Awka, Madonna University, Okija Anambra State, College of Education, Agbor Delta State, Federal Polytechnic Nekede, Owerri, Anambra State Federal Polytechnic, Oko etc, have designed programmes for LIS Education, it is only the university library schools that provide LIS education at the Bachelors and Doctoral level. However, quite a number of private universities are now planning to introduce LIS or similar programmes. It is also worth noting that LIS education in Nigeria has expanded from the certificate to PhD in Information Science. For a long time, all LIS professionals (librarians, archivists, records managers, publishers, book sellers, documentalists etc) have been catered for in the following programmes:

1. PhD in Library and Information Science
2. Master of Science in Library and Information Science (MSc).
3. Postgraduate Diploma in Library and Information Science (PGDLIS)
4. Bachelor of Library and Information Science (BLIS)-

5. Ordinary National Diploma in Library and Information Studies (O.N.D. LIS)
6. Higher National Diploma in Library and Information Studies (H.N.D. LIS)
7. Certificate in Library and Information Studies (NCE etc.)

With the changing need of employers and the proliferation of related courses and programmes, many changes have taken place in the field of librarianship. These changes have been especially due to the re-orientation of higher education in the world and the need to stay relevant in the global competitive world (Okello-Obura and Kigongo-Bukenya, 2008). Today, LIS education in Nigeria and Africa as a whole no longer focuses on the training and education of librarians for effective and efficient preservation and conservation of knowledge and to work in libraries only. They are now prepared for the promotion of information literacy in the country, services delivery to its user community and to diversify and fit into any organization they find themselves.

Need for Restructuring LIS Programme

A formal education cannot do without a well-articulated programme of studies and curriculum as practice cannot be changed substantially without adequate attention to professional changing trends. A critical examination of the library and Information Science curriculum shows that many aspects of its programmes were fashioned to fit into the manual or traditional method of library operations and services. In consonance with the above stated observation is Nwosu's (2008) declaration to the Nigerian Library Association that the academic Programme provided by the National Board for Technical Education (NBTE) for Diploma programme in Library and Information Science in Nigerian Polytechnics is quite inadequate for producing librarians that can cope comfortably in the 21st century information provision field. Similarly, Nwosu, Eyisi and Ekene (2013) assert that the 1995 NUC designed LIS curriculum was not only antiquated but does not provide for the current professional skills and techniques needed for 21st century library and information services. Buttressing this statement further is Saka, Garba and Zarmai's (2018) assertion that the newly established library schools are either located in institutions' libraries, under consultancy services unit or as a unit of a department with their curriculum produced from the harmonization of older library schools.

Presently, LIS curriculum is not ICT compliant because, the infusion of Information and Communication Technology that has currently revolutionized information creation, provision, management, dissemination and storage and that is affecting all human activities as observed by Aina (2007) and has completely changed the practice of library service all over the world seems not to have shown up in the curriculum of library schools in Nigeria. Seemingly, Nigerian Library Schools have

Table 1. A situational picture of some LIS Education nomenclature, degrees awarded and domicile units in Nigeria are as summarized in the Table below

S/N	Name of institution	Former Name of Library School	Present Name of Library School	Year Established	Degree Awarded	Home Faculty
1	University of Ibadan, Ibadan	Library Science	Library, Archival and Information Science	1960	BLS	Education
2	Ahmadu Bello University, Zaria	Library Science	Library Science	1968	BLS	Education
3	Bayero University, Kano	Library Science	Library Science	1977	BA/B.Sc.	Education
4	University of Maiduguri	Library Science	Library Science	1978	BLS	Education
5	University of Nigeria Nsukka	Library Science	Library and Information Science	1986	BA/B.Sc.	Education
6	Imo State University, Owerri	Library Science	Library and Information Science	1990	BLS	Education
7	Abia State University, Uturu	Library and Information Science	Library and Information Science	1990	BLS	Social Science
8	Enugu State University of Science and Technology	Library and Information Science	Library and Information Science	1991	BLS(Ed.)	Education
9	Ambrose Ali University, Ekpoma (the Edo State University, Ekpoma)	Library and Information Science	Library and Information Science	1991	BLS	Social Science
10	Nnamdi Azikiwe University, Awka, Anambra State	Library and Information Science	Library and Information Science	1991	BLIS	Education
11	Delta State University	Library and Information Science	Library and Information Science	19991	BLS	Education
12	Madonna University, Okija, Anambra State	Library and Information Science	Library and Information Science	1999	BLS	Social Science
13	Federal University of Science and Technology, Minna	Library and Information Technology	Library and Information Technology	2001	B.Tech. LIS	Education
14	University of Port Harcourt		Library and Information Science	2015	BLS/Ed.	Education
15	Ignatius Ajuru University, Port Harcourt		Library and Information Science	2017	BLS	Education
16	Federal Polytechnic Nekede, Owerri		Library and Information Science	1980	N.D, HND	
17	Anambra State Federal Polytechnic, Oko	Library Science	Library and Information Science	1980	N.D, HND	

not responded positively to the changes in the 21st century information environment. Library and information science education in Nigeria according to Edogbo (2011) cannot be relevant without effective preparation of new generations of librarians to effectively use the new information and communication technologies in their professional practices.

Furthermore, unless the training of the professionals is allowed to pass through the oven of a standardized curriculum, we will not realize the bread of needed professionals in our institutions and society for 21st century information provision. Based on this premise, no good curriculum should be static but rather should change in response to social, political and economic activities. Hence, Karisiddappa's (2004),

assertion that the education and training programmes in library and information science must make a provision to prepare for professionals to assume the pro-active role in coping with new technology and the information explosion. In the same vein, Nwosu (2009), recommended an upgrade of the curricula to reflect the ever-dynamic information super-highway. In recognition of this need, African Library and Information Institutions and Associations (AfLIA) held a webinar to start the conversation rolling on having repositioning and revitalizing Library education in Africa through a standardized LIS curriculum for the continent (AfLIA, 2019).

Speculation on what the library of the future will look like has become increasingly popular. Today, developments in technology have taken place in various areas such as networking, services delivery, marketing, telecommunication, digitization, electronic publishing and keeping materials in electronic and micro formats. These innovations have radically changed professional skills that sustained the libraries in the past. Against this backdrop, predictions range from the idea of information technology retaining its role in support of printed texts for many years to come, through to the library as a physical entity disappearing completely and ushering in the virtual library. This prompted Erlendsdo'ttir's (1998) comment for the question 'new technology, new librarians?' where he stated that:

We are no longer just the 'guardians' of books. We are information providers in an environment that is constantly changing and where information needs to be gathered quickly and effectively. Today, our mission is to promote services for the ever-increasing amount of information. And even if we don't like it, information technology has changed our jobs.

In this 21st century also, libraries have become new and exciting places. Utilization of Information Technology in learning environments and collaboration in collection development through consortia have gained a stronger emphasis. Greater opportunities in delivery of services in this dynamic environment have emerged through the use of Wikis, Short Message Services, Podcasting, AskA, video-conferencing, twitters, Instagram among others. These new ways of service delivery in the changing world demand relevant programmes for educating librarians in various areas while lots of literature needs to be produced on the appropriate skills in view of the role of librarians. Also, looking at the various institutional needs at different levels, the training of Library and Information Science (LIS) professionals requires meeting the various challenges that have resulted from knowledge-based environment and the current technological complexities. On this note, the need to restructure the LIS students' education in information technology in the 21st century is crucial. This is because the skills and knowledge of 21st century users have changed and as stated by Barber, Donnelly and Rizvi (2013), librarians have to keep up with such technological

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developments for them to be relevant in the era where information can be accessed at the click of a button on mobile devices. Such developments require specialized skills for the library staff if they are to support the library services and activities. Overall, emphasis should be put on the redesigning of LIS programme to ensure proper education of the graduates of the profession and reputable service delivery.

New Programmes/Courses to be Incorporated in LIS Education

The LIS programmes in institutions of higher learning in Nigeria should be reviewed as many of the courses that are taught today are either obsolete or their contents can no longer suit the needs of this generation's professionals for equipping them with relevant skill set for 21st century information environment. Balarabe (2005), in his study of curriculum for library education and training in Nigeria and the challenges of Information and Communication Technology (ICT) revealed that the contemporary challenges of ICT to the curriculum for library education and training are indeed multifarious and that the curriculum is less responsive to the emerging trends in the new information age. He argues that for Nigerian library schools to produce the right caliber of professionals who would be able to cope with the emerging challenges, the study programme of these institutions should greatly emphasize information science rather than the classical librarianship with the very few information science courses.

It has been observed that the curriculum used in training librarians in the 20th century is what is still being used by some, if not all library schools in training LIS professionals in this 21st century. Also, some of the courses that are taught in our library schools cannot equip the professionals with the right competences required to fit into the 21st century demands of librarianship. This is due to fact that there is dearth of lecturers in the library schools to handle the more needed sophisticated and modern courses. In this century, any librarian who is not vast in computer and ICT applications to library and information handling is no longer relevant to the library profession. Opeke (2007), agrees to this fact by stating that the whole world is now in an information and knowledge-based economy and for the library and information science profession to take its proper position in this economy, it must produce efficient information professionals who are able to respond proactively to the needs of this economy and hence, drastic reforms are needed.

Some of these outdated courses that are still taught in the LIS programme which need to be revisited are:

Resources and Services in Education
Resources and Services in Humanities
Resources and Services in Science and Technology.

Even courses under the management of libraries; public, school, academic, national or special are highly over emphasized and taught severally under numerous headings such as:

Introduction to library management

Management of public library

Management of special library

Management of school library

Management of academic library

Management of National library and lastly,

Advanced Library Management.

All these management courses could be grouped into two tangible courses which will incorporate all these areas. Furthermore, in many LIS programmes cataloguing and classification are taught from 100 level as Organisation of Knowledge, Cataloguing and Classification and then Advanced Cataloguing and Classification yet none of them is given the ICT coverage it requires – use of OPAC, MARC, and other software in cataloguing and classification of information resources. Students in LIS field are incompetent in accessing and retrieving information online with search engines yet they offer courses like indexing and abstracting and information storage and retrieval. There is therefore need to introduce the ICT aspect of these courses into the LIS programme. This argument is supported by Edegbo (2011), where he states that developments in our society, technological or otherwise, have brought significant changes to library and information science education all over the world. It is therefore imperative that areas that the changes have taken place in librarianship be identified for restructuring. Below are the new courses that can be incorporated into the Library and Information Science Curriculum.

Network and Networking (200 level)

Multimedia information resources (100 level)

Management of Social Media Tool (200 Level)

Introduction to electronic information systems (100 Level)

Information Sources and Systems in Science and Technology (300 Level)

Information Sources and Systems in Business and Industries (300 Level)

Computer application in Knowledge Management (200 Level)

Data base Design, Construction and Management (400 level)

Introduction to Library Automation Systems and Modules (200 Level)

Bibliometrics I (300 level)

Bibliometrics II (400 level)

Marketing of Library and Information Science Products and Services (400 level)

Software Design and Management (300 level)

Library Resources Management (300 level)
Introduction to Search Engines, Search Strategies and OPAC (200 Level)
Artificial Intelligence and information provision (300 Level)
Innovative Thinking (200 Level)
Everything Open (Open Access, Data, Government, Knowledge, Science, Licensing)
    (400 Level)

Challenges of Restructuring LIS Education Programmes

It is no longer hidden that LIS Education has no uniform programme and the approaches, relevance, effectiveness and standards have changed drastically even in the last decade. Efforts to develop unified and restructured programmes have been encountering challenges. Among some of the challenges include:

Academic Background of LIS Educators: In Nigeria due to the traditional nature of their LIS programmes, most of the educators/trainers are not grounded in the technological and other special aspects of the programme. They did much of traditional library science courses even at postgraduate level hence, the LIS institutions rely on first degree holders' graduates of the traditional library practices and those LIS programmes that are far from the current technological approaches. More so, some of the existing lecturers do not have educational background that will help to direct their teaching methods towards impacting knowledge on the students. A link between educational and technological development is particularly critical at the higher levels of the educational system, and especially, university education.

Technology Infrastructure at LIS Schools: There is now an outweighing use of computers and other web-based information systems in all human activities and or transactions leading to creation of a digitized academic environment. However, these technology infrastructures in LIS schools are poor with limited computers, lack of good maintenance, slow internet access and few technologically literate LIS managers to manage them.

Development in the Field of Information Creation and Dissemination: This includes the increasing use of computers, satellites, microforms, word processing equipment, lasers and a wide range of developments in the field of communications. These developments have continued to pose a challenge to LIS field because as the programmers try to meet with the existing trends, newer versions keep coming in thus making it difficult to know when standard is attained.

Inadequate Research and Publications among LIS Scholars: As a result of the limited number of lecturers, the available ones are usually engaged in teaching at the expense of research and only a few staff members are involved in productive research. More so, due to the inadequate number of staff, lecturers are given excess work cum teaching load to handle. This in turn does not give them the chance to go

into private reading for research on issues that are publishable let alone supervising the students assigned to them.

CONCLUSION

There is no doubt that Information and Communication Technology (ICT) has found its niche in education and its use and integration has also become widespread in various academic programmes. In Library and Information Science as noted by Abdulrahman (2017), its education has taken a new turn in the face of far-reaching developments sparked off by social changes all over the world. The Library and Information Science professionals are not only having to adapt to changes in library services they also require in-depth and structured education and training programmes to produce the needed manpower for the nation's information sector and engagements. This is because the increasing trend of the use of ICT in classroom work across the globe has necessitated the need to prepare the present generation for a future workplace that will undoubtedly be characterized by Information Technology (IT). Therefore, preparing the LIS students for the 21st century challenges, the information studies programme in the various Nigerian library schools should undertake reform/innovation, which should emphasize Information and Communication Technology both in theory and practice. The regulatory bodies such as National Universities Commission, National Board for Technical Education, Librarians' Registration Council of Nigeria (LRCN) and Nigerian Library Association (NLA) must endeavour to harmonize the LIS programmes in Nigeria. These bodies should ensure quality control for universities, polytechnics and colleges of education running library and information science programmes in Nigeria in the areas of: harmonized curriculum, resource evaluation, admission requirement and assessment of academic staff duties in the areas of teaching, administration, research and community services among others.

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Chapter 5

Leadership Training for 21st Century Librarians Using INELI–SSAf Model as a Case Study

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ABSTRACT

Leadership is an integral aspect of successful organisations including libraries. Helping librarians to acquire leadership skills in order to adroitly navigate libraries through 21st century changes and challenges of the information environment is crucial. INELI (International Network for Emerging Library Innovators) was birthed globally as an initiative of the Bill and Melinda Gates Foundation to provide young leaders in public libraries across the world the opportunities to connect, learn, and explore new ideas and services that can transform their communities. INELI Sub-Saharan Africa (INELI-SSAf), an offshoot of the initiative for African public librarians, is a leadership training program with the primary objectives of exposing participants to concepts and practices about innovative information services in current times and assisting them to create within and across border networks for peer leaning. The topics taught include time management, advocacy, data management, smart risks, and innovations in libraries. (INELI SSAf is run by African Library and Information Associations and Institutions (AfLIA)).

INTRODUCTION

Effective leadership in libraries is crucial as the 21st century information landscape continue to evolve. An effective leader is one who can lead his followers to achieve the desired goal(s). Again, an effective leader is one who sees ahead, formulates what is needed to succeed today and in the future and successfully leads his followers to achieve the desired goal(s) by assisting them to realize their potentials. In order to achieve these, leaders need to be equipped with mindsets and skills that will assist them in managing change efficiently and spawning innovations necessary for 21st century library services. Leadership is birthed by an inner drive to make more efforts consistently, to complete tasks efficiently, and to show more tenacity in charting the way forward for greater success. Furthermore, leaders that are open-minded and confident about gaining new ideas and experiences are critical for the well-being of their organizations. Library leaders are then those who are knowledgeable enough to catch the vision of change and are willing to lead the staff to adapt to change.

It then follows that for librarians to continue being relevant and impactful in their different user communities, they need leaders who can point out the way on how to be innovative in rendering services to suit the information needs of the current times. The International Network for Emerging Library Innovators – Sub-Saharan Africa (INELI-SSAf) program as a case study, underscores the importance of exposing librarians to leadership training for innovative services and information products for the survival of public libraries in the competitive and ever-changing information provision environment. It is worthy of note that leadership in libraries is closely tied with innovation considering the wide array of changes that have been brought into the information provision sector by technology and social changes. Technology and nature are making change fast and completely unavoidable for all professions. However, it can be reasonably argued that the field of information witnesses more changes than every other sector. Internet, web 2.0 and Artificial Intelligence are bringing multitudes of changes in the way people interact and communicate. Social media, robotics and Internet of Things (IoT) are realities of the 21st century information sector. Organizations and agencies in the information provision sector are continuously learning how to adjust their procedures and services to align with and make use of these changes. Technology, changing community demographics, climate change and downturn in the global economy have all brought transformations to the practice of librarianship. Public libraries have been caught up in the squall of these changes. They have had to face radical shifts in the form and format of information needed by their patrons, stagnant or dwindling budget, and the increasing need to do more with minimal funds.

However, innovations do not spring up if they are not introduced in organisations such as libraries. Leadership has a large role to play in spawning new services,

programmes and projects that are innovative. In recognition of the importance of leadership in managing change and birthing innovations in the 21st century public libraries all over the world, the Bill and Melinda Gates Foundation (BMGF) sponsored the Global Libraries (GL) initiative to run the INELI (Innovative Emerging Library Leaders) programme as leadership training for middle level leaders/managers in public libraries. The (INELI) program is one that is meant to be partly carried out online and physically, expose public librarians to the realities of leadership in the modern world and the need for innovative services while creating a network which they can lean on for continuous learning.

The International Network for Emerging Library Innovators (INELI) global took off in 2011 with the first Cohort which had 19(nineteen) Innovators from 17(seventeen) different countries and 6(six) mentors. This was followed by a second Cohort. Each of the INELI programs lasted two years, and they included online course work and in-person convenings. According to Mackenzie (2017), the birthing of regional INELIs spearheaded mostly by participants in Global INELI in ASEAN, Balkans, India and South Asia, MENA (Middle East and North Africa, Oceania and in sub-Saharan Africa is strong evidence that the program equips librarians as leaders who in turn can train and help others to step up as leaders in their different libraries.

The original INELI courses were inter-related and designed to be accessed online in conjunction with the physical convenings. The courses are being revised by the regional INELIs in a way that they can be taken alone. The online courses (which are also referred to as Skills Modules) offered are: *Getting Started, Advocacy in Action, Change Readiness, Community Partnerships, Conflict Management, Using Data to Make Decisions, Innovation, Taking Smart Risks,* and *Time Management.* The duration for which each course is offered varies from one course to another depending on the contents and the amount of time deemed necessary for completing the activities within each module.

AfLIA has partnered with the Global Libraries (GL) Programme of the Bill and Melinda Gates Foundation, to deliver the INELI leadership training for public librarians in Africa to support the transformation of public libraries into engines of development in the continent. INELI-SSAf operates under the auspices of AfLIA (African Library and Information Associations and Institutions). Just like the other branches of INELI world-wide, INELI-SSAf, advertises and chooses participants from the countries within its catchment area (Sub-Saharan Africa). The participants are expected to be librarians in middle level management at least. They are taken through the modules of *Time Management, Innovation, Community Partnerships, Change Management, Time for Reflection, My Library makes a difference, and Advocacy in Action*. Most of the Modules taken in the INELI-SSAf program are among the ones taken in the Global INELI program though some changes were made to reflect the information needs of African communities that the librarians

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serve. The librarians selected for the programme are referred to as *innovators.* The innovators read resources for the different modules and do assigned exercises online on each of them. The activities completed in each Module are designed in such a way that any librarian who goes through the courses becomes more innovative in carrying out his/her duties. The program which lasts for two years has three physical convenings which avail the innovators the opportunities to meet themselves, bond and showcase what they have been doing through presentations. Recently, AfLIA has added a module which assists the innovators to carry out a project in their community.

LITERATURE REVIEW

According to Sharma & Jain (2013), leadership is a process by which a person influences the people in an organization to accomplish an objective and direct the organization in such a way that the people in it (the organization) can work towards a common goal. Leaders are meant to exhibit requisite skills and attributes including clear understanding of changing and competitive landscape to ensure organizational success (Rihal, 2017). Libraries need leadership who can move beyond information services geared towards literacy and education to envisioning how they can contribute to the community development in other critical areas such as health, employment and agriculture (Elbert and Fuegi, 2011). Furthermore, librarians are also expected to exhibit leadership skills in their user communities. According to Al-Suqri, Al-Kindi and Al-Sarmi (2010), librarians should play key roles in times of crisis and change in communities by leading efforts to ensure proactive sharing of information and data in formats which are understandable and user friendly. For libraries, this is critical as Coffin and Morrill (2015), had pointed out because;

1. They render their services in an environment of increased and changing demands,
2. Traditional methods of delivering library services are no longer adequate to meet the needs of library patrons and the community
3. Innovative services require time, effort and thoughts to plan.
4. Librarians need to be trained in order to be innovative.

Ordinarily, libraries are structured as institutions that run on routines for acquisition, processing, organisation, management and dissemination of information resources. Breaking out of that mould in order to do new things and be relevant to their user communities that have been exposed to 21st century information communication technologies requires training that will produce leaders who understand innovative information services. It can then be clearly understood that libraries of the digital

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era require innovative leaders who can motivate and mobilize others to think and turn creative ideas into reality (Baumgartner, 2019).

Already, some libraries are providing innovative services and using their spaces in manners that can be termed innovative. According to Tiwari (2016), innovations in libraries include tweaking of traditional services physically provided in libraries and the use of web 2.0 technology to provide information services while Akanbiemu (2017) opines that teaching user communities' information literacy and having compact storage of less used collection are innovative activities in libraries. Furthermore, libraries are embracing the use of social media platforms and tools to be more innovative in libraries. Social networking sites have been proved to be useful for communication among library users. Khan and Ansari (2014) point out that libraries can make use of social networking sites as a strategy to reach out to various categories of users especially the young generation of professionals who are more comfortable with social networking sites (as opposed to the traditional way of library services) due to their techno-savvy nature.

Leadership development programs need to be designed to suit particular professions and organizations in order to manage change successfully. This explains why leadership competencies in libraries must be developed in such a way that suit library organizations. Riggs (2008), had observed that as libraries continue to experience rapid change that cannot be overlooked or ignored, the leaders need to understand the times and have requisite knowledge and skills to navigate uncharted waters so that libraries can continue to be relevant.

INELI-SSAf (International Network of Emerging Library Innovators, Sub-Saharan Africa) is a training program meant to bridge the gap in knowledge and skills between what practising librarians in public libraries know about leadership and innovative services and the possibilities that exist in the 21st century. The program also affords the participants the opportunities to know themselves, bond and create networks that will enable them to continue sharing and learning. The program which is an initiative of the Global Libraries of the Bill and Melinda Gates Foundation was berthed globally in 2011 with participants from all over the world. However, countries and regions adapted and run the training for their constituencies. The program is expected to equip participants with the knowledge and skills that will make them innovative and run public library systems effectively (AfLIA, 2016).

INELI-SSAf Leadership Training Program

INELI-SSAf operates under the auspices of African Library and Information Association and Institutions (AfLIA) with a major objective of training and supporting upcoming public librarians to develop innovative services for the benefit of their communities. Specifically, the goals of the program are:

- Create a pool of future library leaders to build and sustain public libraries throughout the continent.
- Explore or address national and regional library issues that have the potential to stimulate, expand, or improve public library services.
- Enhance the leadership skills of new professionals from a variety of countries to enable them to redefine public libraries for the future to meet the unique needs of the people in their respective countries (AfLIA, 2016).

The program is managed by the AfLIA Training and Capacity Building Committee. A precondition for being admitted into the program is a written agreement by the supervisors or line managers of the participants. This ensures that those undergoing the training are supported and nurtured by their workplace officials even up to the extent of helping them to implement what they learn. The program runs for two years and currently, INELI SSAf is in its 2nd Cohort. Experienced librarians who have received leadership training either at INELI Global or at other programs are made mentors to guide and support the participants. The INELI-SSAf platform supports a blended learning mode combining face-to-face and online activities.

The online activities include skills building modules and an Open Forum in which the participants of the program can post some useful information. As the innovators complete their assignments on the platform, they can work with their colleagues (other innovators) from other countries in Sub-Saharan Africa. The topics, resources and assignments which are meant to be done online are accessed using the Moodle software platform. Innovators are expected to log into the Moodle site from to time and complete the assignments in the skills Modules within an assigned time frame, as well as participate actively in the online forums. The assignments are scored by a Learning Coordinator who also coordinates the online forums alongside a consultant brought in to assist in ensuring that the content of each topic is relevant, and up-to-date with appropriate exercises. The innovators work together with groups as assigned by the Learning Coordinator and the Consultant. The assignments that are completed by the Innovators in the various skills Modules are in the form of forum posts, surveys, work forms or action plans. For each of the assignments, a time frame is allocated. And there is a deadline by which the activities in each of the Modules must have been completed. At the end of each skills Module, there is a Feedback Survey designed to be completed by every Innovator. The questions in the Feedback Survey are designed in such a way that they enable the Innovators express their opinions about the completed Module; they are also asked to give improvement suggestions to the Learning Co-ordinator and the Consultant of the program.

The program schedule comprises Modules that are beneficial to the participants in their workplaces. The idea is that when the innovators go through the INELI-SSAf programme and complete the assignments, they would be able to transfer

the knowledge acquired to their colleagues at their workplaces and impact their communities. The topics taught online are Time Management, Innovation, change management/Leading change, Conflict resolution, Community engagement, Advocacy, Risk management/Taking smart risks, Team work and Team projects., Data: Using Data to Make Decisions, My Library makes a difference.

Content and Delivery Logistics

Getting Started: This is the first Module the Innovators go through on the INELI-SSAf program. The tasks kick off with an interaction among the innovators on the Moodle platform. This interaction provides an opportunity for the innovators to meet informally, online. The interaction is done by way of making online posts and responses by the innovators. This interaction is usually very helpful for the innovators because it enables them to interact with one another (online) through posts and responses. By the time the innovators meet during the first convening, a rapport would have been established among them.

Under this Module, the innovators start by doing a *Tech Check* in which they practise and improve on technical skills that would help them in completing the assignments competently online. After this exercise, the innovators are introduced to *Learn to Use Moodle Tools* in which they practise how to use the Moodle software by introducing them to the different forums and how to complete assignments which include downloading and uploading of information, making forum posts as well as completing surveys. They are also introduced to some of the social media tools that they would need in communicating with other innovators in the course of the programme or when completing their assignments, for example, *WhatsApp*, *Skype*, and *Google Docs*. The innovators are also required to update their personal profiles which should include their names, work places and some other biodata details including their pictures.

After completing the activities in the *Getting Started* Module, the innovators prepare for the first convening. Since the innovators would have interacted with one another informally before the convening, the innovators meet one another in a more formal way during the convening. As the innovators get ready for the convening, each of them prepares a 7-minute power-point presentation that will be made at the convening. The contents of the power-point presentation are a little about each innovator, his family, country, library and general philosophy of life.

The topics and assignments are scheduled to be completed within a *Cohort* which lasts for two years. During the period of two years, there are three convenings which are attended by the innovators, mentors, the Training and Human Capacity Building Committee, AfLIA and the Program consultant.

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The physical convenings for the INELI-SSAf programme take place in different countries in Africa, as identified by the AfLIA Training and Capacity Building Committee. The purpose of the convenings is to allow the Innovators of the programme to meet face-to-face, make presentations about the assignments, interact with other Innovators and other stakeholders of the programme. Invited resource persons also make presentations during the physical convenings on topical issues including how libraries can support the African Union Agenda 2063, the SDGs, and the national development goals in the Innovators' countries.

The focal point of all the modules in INELI-SSAf is training emerging leaders in public libraries to brace up to the challenges of 21st century and be innovative in serving their user communities. According to Educopia Instiute (2014), the change-oriented 21st century environment requires strong, skilled leadership which can be developed through training opportunities that will afford professionals the prospects to acquire knowledge and skill sets for tackling change as well as advancing their careers. Leadership training opportunities abound globally but INELI SSAf is the only training program which targets African public librarians as a group and that is accessed online and offline.

Darini, Pazohouhesh and Moshiri (2011) had carried out an extensive study that reveals the positive relatedness of creativity and innovation to proper time management practices. INELI SSAf has *Time Management* as the second module to be studied online after the first physical convening. The aim of this is to make the participants more innovative as they complete assignments on 'Work-Life Balance', 'How Do You Spend Your Time?', 'What Are Your Time Management Challenges?', 'What Do the Experts Say?', and 'My Thoughts on Time'. This module is deemed to be very essential because innovative leaders must be good time managers who are aware that time lost can never be regained. The module is structured in such a way that the participants are required to outline various ways in which they can strive to create a balance between their work and personal life. This gives them the opportunity to actually ponder and articulate what they do most as well as learn how to free up their time to delegate and think innovatively.

The Module also requires the innovators to complete activities in which they highlight the changes they hope to make in their behaviours to address their challenges in managing time properly such as prioritizing activities, making a to-do-list, avoiding disturbances as much as possible, and breaking down big tasks into small pieces before acting on them. The innovators also post links to resources on the Open Forum that provide helpful tips for dealing with specific time management challenges as well as upload worksheets in which they list their most time management challenges and describe how they plan to address the challenges in the following three months.

The *Innovation* Module on the INELI-SSAf platform is designed to help the innovators explore library innovation that particularly focuses on innovative library

services and information products that will support the priorities and goals of the AU Agenda 2063 & SDGs 2030. The activities that the innovators complete in the *Innovation* Module include reading up and understanding *'The AU Agenda 2063, the UN Sustainable Development Goals, and the Cape Town Declaration', 'What Is Innovation?' 'What Is Innovative in Libraries Today?' 'What Is Your Vision for Your Library in 2030?' Is Your Library or Organization Ready for Innovation?' and 'What Will You Do to Become a More Effective Innovator?'*

In one of the activities, the innovators are made to share their thoughts on AU 2063 Agenda, 'The Africa I Want'. In this assignment, they are also required to identify one Pillar of the Agenda that fits into the challenges of their user communities, express their desires on the type of future they want for Africa and the roles their libraries can play in achieving that. The assignment guides the participants to look introspectively at themselves, consider their own immediate communities and think about how their libraries can provide services that answer directly to the challenges in their communities in line with the AU 2063 Agenda.

Equipping leaders with requisite skills on partnerships is crucial because innovations in workplaces are driven by effective partnerships especially during times of change (Stanley, 2017). Thus, Community Partnerships is another module on the INELI-SSAf platform. The innovators complete activities that have to do with the benefits or importance of partnering with their host communities and how to go about it. In the assignment on *How Can You Establish a Successful Partnership?* the innovators complete the activity in form of forum posts, and some of the points that stand out in their forum posts are: the need to determine the purpose of the partnership, understand the organization one is partnering with, proper planning, have specific aspects of the partnership documented, and the need for a good flow of communication among all the parties involved in the partnership. This module encourages librarians to strike out as leaders into their communities to seek for partnerships that will lead to innovative and new ways of serving their users.

Constant change brought on by technology, new competition, or nature requires that leaders learn how to be mentally agile and flexible constantly in order to innovate (Jenkins, 2008). Another Module in which the INELI-SSAf innovators read up resources and complete assignments is the 'Change Management' Module such as '*How Do You React to Change? How is Change Managed in Your Library? Why Do People Push Back Against Change? What Can You Learn from Others? How Will You Implement a Change to support African Development?* One of the assignments the innovators complete in the *Change Management* Module is 'What Will You Do to Plan for a Change to Support African Development?' For each 'Action Plan', the innovators are meant to state their 'Change Action Plans', and include how the Action Plans are related to the AU 2063 Agenda and/or SDGs, the possible challenges they might encounter while carrying out their plans and how to overcome the challenges.

It is a well-known fact that a plan for change to support the African Development Agenda means innovative services for libraries. The innovators also complete an activity on *What Will You Do to Become a More Effective Change Agent? – 'My Thoughts on Change'.* In completing this activity, and as a follow- up to one of the activities the innovators had completed in an earlier Module, the innovators are asked to explain what they would do to become more effective change agents in Understanding Change, Planning Change, Managing Resistance to Change, and Implementing Change. Furthermore, the participants are required to identify the two areas of change that they would like to address in their self-development plans. By completing this activity, too, the innovators are applying their minds to understand that change happens and how the challenges bought about by changes can be used to provide innovative services.

Libraries are at the heart of communities as places to access information and resources as well as spaces for people to connect, engage and learn (Public Libraries of New Zealand, 2019). Getting African public librarians to understand the different roles that libraries play in the urban and rural areas of the continent is vital as it will make them more sensitive to the peculiar information needs of their users. Consequently, *My Library Makes a Difference* is a module on the INELI SSAf platform that provides the participants the opportunity for them to assess the difference that their libraries are making in their communities. The participants work on the module before the second physical convening. The main activities in the module comprise gathering materials in the community and library for a PowerPoint presentation that will describe a program or service in the innovator's library or organization that supports a priority in the SDGs or AU 2063. The mentors, consultant and Learning coordinator as well as the participants themselves critique the presentations. After the second Convening, the innovators go through the activities in Time for Reflection 1, and at a later stage, go through the Module on *Time for Reflection 2*. The essence of this Module is to get the innovators to reflect on the activities they have completed in the previous Modules. The time for reflection is important because when a problem is identified, and plans are made to address that problem, it would be easy to develop new skills for the program concerned. Therefore, in the course of completing the activities in this Module, the innovators look at the progress they have made in implementing their self-development plans, and, at the same time, look forward to other actions that they could take to build more needed skills. In the *Time for Reflection* Module, the innovators complete two self-development plans in *Time Management* and *Innovation* and review the *Community Partnership* plan.

According to Imber (2016), leaving the comfort zone of routines and established organizational processes, challenging the status quo of organizational culture and taking smart risks is a hallmark of leaders who innovate. INELI_SSAf cues into

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this and the module *Taking Smart Risks*, has resources and activities designed to help participants in the program learn how to manage the work-related risks that accompany changes and innovation. This Module is important because leaders cannot afford to be reluctant to take informed risks if they want to succeed in implementing innovative services.

Data – metrics and facts related to the goals of an organization can be leveraged on to make decisions and strategize on activities that will lead to innovation and growth (Durcevic, 2019). Thus, the INELI-SSAf module on *Using Data to Make Decisions* seeks to address the importance of librarians understanding the importance of data and the type of data to be collected to tell their stories effectively and to influence decisions within and outside the library walls. To make them more innovative, the INELI-SSAf innovators completed exercises in input data, output data, process data, outcome data and how they can use data in their workplaces to chart new courses for the services they already provide and to influence funding authorities.

Libraries have great resources and services that people in their communities need to know about. According to Library Connect (2012), the availability of online resources and digital platforms for disseminating information has made it quite critical for librarians to learn how to influence policies favourably and create awareness by talking up the value libraries add to individual lives, institutions and communities. The *Advocacy in Action* Module, has a strategic exercise. The innovators read up on resources and are required to write their Advocacy Plans which are submitted to Librarians in the continent who have excelled on local, national and global platforms. These experienced librarians help the innovators to finetune their advocacy plans. The corrected plan is presented at the 3rd and final physical convening of a Cohort.

Surveys

At the end each Module, the innovators complete a Feedback Survey. The responses given by the innovators portray their opinions or experiences about each Module as well as the INELI-SSAf program. The responses are analysed and sent to the AfLIA Training and Capacity Building Committee. The analysis of the surveys helps the Management committee to assess how the INELI-SSAf program is going and gives them ideas as to how make improvements in the program, if necessary. Apart from the *Feedback Surveys*, the innovators also complete a few surveys which fall under some of the skills Modules.

Looking Ahead

AfLIA recently carried out a survey to find out what the 'graduands' of INELI-SSAf has been able to achieve since they went through the program. It was discovered

that across 14 African countries that participated in the programme between 2016-2018, 54 new library services had been developed which were accessed by more than 30,000 people. The jury is still out as the 2nd Cohort in the program sets to graduate. Furthermore, the 2nd Cohort is required to start and finish a project in their different communities in partnership with formal/informal organisations and/or individuals. This is informed by the need to practise what is learned under the Community partnerships, Taking smart risks, Using Data to make decisions and advocacy modules. Also, the AfLIA Training and Human Capacity Development Committee is currently revising the content of the INELI SSAf program to make it more inclusive for all library types.

CONCLUSION

The library profession, just like many other professions around the globe has seen the need to be innovative in the change-oriented 21st century in order to meet the needs of users and the communities they serve. Leadership training for librarians especially those in Africa berthed through the collaboration between Bill and Melinda Gates Foundation and AfLIA as INELI SSAf was introduced in 2016. The modules of the program are designed to build up the skills of the participants to understand change, manage their time appropriately, take smart informed risks, learn how to have innovative ideas, use data to make decisions and advocate to create awareness and influence policies about libraries. With a revision of content to include all types of libraries in the program, INELI SSAf appears to be a strategic leadership training program that will continue preparing librarians to step up their game in rendering innovative library services in the 21st century.

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KEY TERMS AND DEFINITIONS

AU Agenda 2063 and SDG 2030: African Union 2063 Agenda and UN Sustainable Development Goals 2030.

Innovators: The librarians selected from Public Libraries in Sub-Saharan Africa who go through the International Network of Emerging Library Innovators – Sub-Saharan Africa (INELI-SSAf) program.

Mentors: Experienced librarians who mentor the Innovators in the International Network of Emerging Library Innovators – Sub-Saharan Africa (INELI-SSAf) program.

Moodle Software: A free and open-source learning management system (LMS).

Chapter 6
Library Associations, Leadership, and Programmes:
IFLA, AfLIA, and NLA

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ABSTRACT

Professions are distinct groups whose members share body of knowledge and practice as well as ethics of engagements in common. Every profession is brought together by an association that in one way or another influences the practice of the profession. The influence of library associations, for example, IFLA, AfLIA, and NLA, on library and information services cannot be underestimated, but suffice it to say that these associations have led to the growth and development of the library profession. This chapter therefore examines these associations, programmes, areas of influence, their problems, and recommendations are made based on the identified challenges.

INTRODUCTION

Every profession is brought together by an association that in one way or the other influences the practice of the profession. Libraries have always played a key role in the development of an information literate populace that can participate as informed citizens in a democratic society. Libraries also uphold and champion intellectual freedom or right to free access to information. It has been observed that libraries

cannot play this role in isolation hence the need for professional associations. In the context of libraries, the association means the organization of the library staff members who have undergone training at different levels in Library and Information Science. Thus, the library association is an organization of persons or institutions related with the library jobs and profession. Library associations play important roles by training and retraining librarians, influencing government policies and developing professional policies which influence library and information services.

A profession could simply be viewed as an occupation that require extensive education or specialized training. A profession is a type of job that needs special training or skills especially one that needs a higher level of education. The professions stand out as distinct groups whose members share common socio-economic origins, educational experiences and life styles. The concern to provide a framework for the development of individuals in a profession and the need to influence the creation of the social framework within which the profession as a whole can develop necessitate the need for professionals within professions to come together under well-structured associations. Professional associations provide platform for the interchange/exchange of ideas, self-control and benefit both for the membership and the practice of the profession as a whole. The formation of these associations could be traced to the colonial era. They are distinguished by their common issues and trends, including their ability to communicate with their members, their ability to create relevant programmes and conferences, and their need for self-evaluation.

The growth and importance of libraries brought about the profession of librarianship. Librarianship is the profession that emerged from library practice. Librarianship as a profession has its associations. These are associations of librarians – practicing or retired and all persons and organizations interested in library work. They provide opportunities for librarians to meet and share experiences and learn from each other. They offer a range of services to members and look after their interest in dealing with the profession; they act as the ideal contact point for all within the profession. Although library associations do serve the needs of their members, ultimately, the long-term benefactors are the end-users of the services that these members provide (Ossai-Ugbah, 2013). They lay down standards for performance, thereby protecting the continuing existence of special services and monitor trends in user-needs.

LITERATURE REVIEW

A professional association is intentionally formed to provide a platform that will unite and inform people who are in the same profession. They are avenues for networking, as they create opportunities for professionals to connect with their peers, mentors, future mentees and others in the profession. Such associations also imbue members

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with competitive edge through training, making available of educational resources and information about jobs (Santiago, 2019). According to EDUCBA (2019), professional associations could exist to "standardize, unify, monitor quality, promote research, further education, along with updating the skills of practicing professionals". This agrees with the view of Matthews (2012), who opines that professional associations are most vital for creating and sustaining momentum, flow of ideas and pre-emptive thrusts aimed at uplifting and upholding professions.

Dillion (2010), lists five main reasons why people join their professional associations. First, to be in the loop and always receive prompt and accurate information about their profession so as to be guided in their decision making as pertains their career and practice. Second, to have a group of persons in the profession who advocate to the right sources at different levels for the effective positioning and repositioning of the profession. Third, professionals want the public to know and appreciate what they do. Thus, they join professional associations who will cover this need of public relations effectively. Fourth, professional associations build clout that enables cross-disciplinary collaborations and partnerships. This opens doors of opportunities to professionals as some associations access grants for members. Fifth, professional associations build up their members through trainings from experts. All these advantages notwithstanding, EDUCBA (2019), advises that professionals should always check the objectives, online presence, coverage and recognition at local, national, regional and international levels of professional associations before joining or enlisting to work as volunteers.

Librarians also have professional associations at the local, national, regional, and international levels. These association are valuable in the charting of pathways for the practice of librarianship in their domains. Chatterjee (2017), lists the functions of India Library Associations as:

- "Promotion of library movement and improvement in library services in all its aspects
- Promotion of library science education and the improvement in the training of libraries
- Promotion of bibliographical study and research in library science;
- Improvement in the status and conditions of services of librarians;
- Affiliation of the state and other library association with Indian Library Association and co-operation with international organization with same objectives;
- Publication of bulletins, periodicals, books, etc. which will help in the realization of the objectives of the association;
- Establishment of libraries, documentation, and information centers and assistance in their establishment and working;

- Promotion of appropriate library legislation in India
- Providing a common forum to all persons engaged or interested in library and information work by holding conferences and meetings for discussion of professional, technical, and organizational issues…"

Schwartz, (2016), points out that two major benefits of joining library associations is that sense of community one gets from belonging to a professional body as well as how listing of being a member and posts held/ tasks performed in such associations have great potentials of boosting one's resume in job hunting.

There are different types of library associations: the very prominent ones are those where membership is granted on the basis of being in that country or region as in these examples: American Library Association (ALA), West African Library Association (WALA), Nigerian Library Association (NLA), Ghana Library Association (GLA) etc. There are also international library associations that are truly global, like the African Library and Information Associations and Institutions (AfLIA) and International Federation of Library Associations (IFLA). Currently there are thirteen special interest groups in existence under the Nigerian Library Association (Nigerian Library Association, 2019). For the purpose of this paper, the library associations that will be treated are IFLA, AfLIA and NLA. This chapter therefore examined these associations, activities, areas of influence on library practice, problems, and recommendations made based on the identified problems.

INTERNATIONAL FEDERATION OF LIBRARY ASSOCIATIONS (IFLA)

The International Federation of Library Associations (IFLA) is a worldwide, independent, non-governmental organization founded in Edinburgh, Scotland, in 1927 when library associations from 14 European countries and the United States signed a resolution at the celebration of the 50th anniversary of the Library Association of the United Kingdom.. It is the leading international body representing the interests of library and information services and their users. It is the global voice of the library and information profession. IFLA closely partners with UNESCO, with several IFLA manifestos recognized as UNESCO manifestos (IFLA, 2019., Dowling and Fiels, 2004, Wilipedia). IFLA is a founding member of the Blue Shield, which works to protect the world's cultural heritage threatened by wars and natural disaster. The purposes of the Federation as stated in its Statutes are:

1. To promote high standards of delivery of library and information services.

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2. To encourage widespread understanding of the value and importance of high quality library and information services in the private, public and voluntary sectors.

3. To represent the interests of its members throughout the world. (IFLA, 2019).

IFLA organizes international conferences every year but the Association does most of its work mainly in the various groups that make up the organization. These groups are all filled with enthusiastic professional volunteers who work together to achieve the objectives of the Association and further librarianship as a profession. More than 60 sections and special interest groups are organized in five divisions to carry out a variety of IFLA's activities and programmes. IFLA advocates at the highest levels globally for libraries such as United Nations, UNESCO and WIPO to name just a few. It had published the first IFLA Trend commissioned "Caught in the waves or caught in the tide? Insights from the IFLA Trend Report," in January 2013 The Trend report identified and highlighted emerging trends that affect the global information provision field and the profession. This visionary act assists librarians to understand the global information provision environment as well as know how to chart pathways for information services that will answer directly to what people needed considering the trends.

Areas of IFLA's Influence in Library and Information Services

IFLA supports the establishment and maintenance of libraries by serving as an international advocate to ensure that the vital roles of libraries in the digital age is well understood and acted upon. It lobbies on behalf of libraries with government officials and community leaders using available avenues to secure appropriate funding and staffing of library services worldwide. IFLA believes that all people have a fundamental right to create and acquire information and to express their views publicly. Libraries play a key role in securing these rights, and IFLA supports this role by defending the ability of libraries to acquire, organize, preserve and make available the widest variety of materials, reflecting plurality and diversity in the society, and thus to protect and enhance democracy and a free debate. IFLA's programmes promote literacy in many aspects, helping libraries worldwide to develop programmes that support increased literacy for all people, including basic literacy, reading, information literacy and lifelong learning.

IFLA works to protect the right of authors and the role of libraries by playing an active role with organizations such as UNESCO and WIPO in drafting of appropriate treaties and legislative models which recognize and mitigate the dichotomy between the rights of authors and the needs of users. It also works to assure that intellectual property rights are in tandem with the universal availability of information by such

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activities as encouraging national legislation for legal deposit and assuring the right of libraries to make copies of published documents in a manner consistent with principles of fair use. Currently, IFLA is spearheading the need for an international treaty on Copyright exceptions and limitations for libraries (IFLA, 2019).

4. **Promoting Resource Sharing:** IFLA serves as an international forum and advocate for sharing information in all its forms across national borders. It promotes the communication of bibliographic information which is the basis for all resource sharing. It works to encourage the sharing of resources, by supporting traditional lending and document delivery and encouraging the development of virtual libraries whose holdings will be accessible without regard to geography or national boundaries.

5. **Developing Library Professionals:** IFLA works to strengthen the abilities and knowledge of library and information science professionals and paraprofessionals throughout the world in order to improve service to the user. Programmes supported by IFLA encompass all educational processes, including library and information science curricula and continuing education activities such as lectures, seminars, workshops and in-service training.

6. **Supporting the Infrastructure of Library Associations:** IFLA supports the infrastructure of library associations, especially in countries and regions where these are poorly developed, because they provide the essential means for accomplishing IFLA's goals at the national level. Library associations provide many valuable services to librarians. They work to develop effective library programmes and services that meet the needs of library users and advance societal objectives and interests, ensuring public access to information, and preserving and protecting cultural resources.

7. **Representing Libraries in the Technological Marketplace:** IFLA serves as an international advocate for libraries and their users, seeking to influence the development of technology in the world marketplace, especially technology that controls the flow and availability of information. It negotiates on behalf of libraries in discussions on international trade and telecommunications, and it also works to encourage the development of affordable technologies that will bring information to all the populations of the world.

AFRICAN LIBRARY AND INFORMATION ASSOCIATIONS AND INSTITUTIONS (AfLIA)

The African Library and Information Association and Institutions (AfLIA) is a continent-wide Association that was established in 2013 and registered as an

international Non-Governmental Organisation (NGO) under the laws of Ghana in October 2014. AfLIA is an independent international not-for-profit organization which pursues the interests of library and information associations, library and information services, librarians and information workers and the communities they serve in Africa. The AfLIA has fast become the face of libraries in Africa, providing communities on the continent with a voice and ability to openly access research and information. AfLIA believes in open access to information and the open science movement. This is especially due to the African base, where most libraries cannot afford to purchase or subscribe to high impact research information – the work needed for development. Without open access to information, the development gap between the north and south could prove difficult to bridge. One major area of AfLIA that has helped librarianship is its leadership academy.

The Council admit members from international regional library associations, national library associations, national libraries, academic libraries, public libraries/ community libraries, special libraries, school libraries, national library consortia, information and documentation centre, library and information education/ training institutions, library and information-related businesses, friends of AfLIA/libraries and library Institutions in the diaspora, institutions/ organizations related to libraries and information services.

Functions/ Objectives

The following are the functions/objectives of AfLIA:

- Support the library and information profession that anticipates and responds to the needs of communities in Africa.
- Drive high standards in library and information services and professional practices.
- Place African library and information professionals in a position to offer relevant services.
- Support the establishment and strengthening of regional and national library and information associations in Africa.
- Promote libraries and information centres as vital institutions that enhance people's lives through equitable access to knowledge and information and innovative services.
- Embrace the principles of freedom of access to information, ideas and works of imagination and freedom of expression embodied in Article 19 of the Universal Declaration of Human Rights and the Article on African Charter of People's Rights.
- Forge links with other relevant institutions, organizations and associations.

- Put the library and information profession on the national and continental agenda.
- Do all other things that will support the development of LIS on the African continent.
- Encourage widespread understanding of the value and importance of high quality library and information services in the public, private and voluntary sectors.
- Advance research and development of relevant services to indigenous knowledge as well as information on local communities and preservation of cultural heritage.
- Enable all its members to engage in, and benefit from, its activities without regard to citizenship, disability, ethnic origin, gender, geographical location, language, political philosophy, race or religion (AfLIA, 2017).

African Library and Information Association and Institution (AfLIA) initiated programmes to enable them to increase visibility of libraries, profession, stakeholders' engagement, and to lobby and advocate for the recognition of libraries in advancing Sustainable Development Goals (SDGs) and the Au 2063 Agenda. AfLIA works with libraries and national library associations, governments and government agencies responsible for libraries, African regional and economic bodies, global partners and related organizations. The Association is represented at WIPO and has recently signed a Memorandum of Understanding with the African Union (AU, 2019).

NIGERIAN LIBRARY ASSOCIATION (NLA)

Following the breakup of WALA, the Nigerian Library Association (NLA) was formed. As a successor of WALA which was founded in 1952, the NLA is one of the oldest professional bodies in Nigeria. The formal inauguration of the Nigerian Library Association was in 1962 at a conference held in Ibadan and Kalu Chima Okorie was elected its first president. The official organ of the NLA is the *Nigerian Libraries* with John Harris the first president of WALA as its first editor.

There are State chapters of the NLA, some really active, others dormant. The supreme organ of the Nigerian Library Association is the Council which consists of the elected national officers of the Association, eight elected councilors and all the Chairmen of State chapters and Federal Capital Territory, as well as special subject interest section Chairmen. NLA's financial obligations are met by the contributions from members, subscription for the Nigerian Libraries and paid advertisements in the journal.

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The objectives of the Nigerian Library Association include the following:a.) to unite persons interested in Libraries, Librarianship and Information services;b.) to safeguard and promote the professional interests of librarians;c.) to promote the establishment and development of libraries and to assist in the promotion of such legislation as may be considered necessary for the establishment, regulation and management of libraries in Nigeria;

d.)   to watch legislation affecting and to assist in the promotion of such legislation as may be considered necessary for the establishment, regulation and management of libraries in Nigeria;

e.)   to promote and encourage bibliographical study, research and library cooperation;f.) to do all lawful things as are incidental or conducive to the attainment of the above objectives.

Areas of NLA's Influence in Library and Information Services

1.   **Publication of Standards for Libraries:** The NLA conference of 1978 held at Ilorin was devoted to the subject and a whole issue of Nigerian Libraries (3) 1980 was also devoted to it. The members and the association have thus made a great impact in the area of standards of practice.

2.   One of its aims is "to unite all persons interested in libraries and library work by holding conferences and meetings and by publications and other mean". The NLA since December 1962 has consistently held conferences and meetings of the members at sections, state and national levels. These meetings enable members to come together and exchange ideas and the association's publication serve as a means of communication and for transmission of information to both members and others outside the membership.

3.   The pursuance of the establishment of the National Library of Nigeria to fruition in 1963 and branches in states of the federation is the handiwork of NLA.

4.   It belongs to IFLA and Commonwealth Library Association. Through this the NLA involves its members in international library work and on the international scene.

5.   The promulgation of Librarian Registration Council of Nigeria (LRCN) decree in 1995 and its subsequent inauguration on 28th May 2002 was made possible by NLA.

6.   It got most of the state governments to pass Library Edict to establish Library Authority for various states. These legislations resulted in unprecedented expansion in the provision of library services and the necessary funds for the establishment and operations of the libraries.

7.   The NLA has successfully mobilized its members to be aware of the wind of change blowing around the world of information by encouraging training and re-training on information and communication technology (ICT).

Leadership Programmes

Leadership plays an important role in every organization. Without effective leadership, nothing works well in any workplace. Thus, leadership needs to be nurtured in changing times so that organizations can successfully weather the tides of change at any given time. According to Johnson (2017), libraries need to foster leadership traits as the information landscape continue to evolve rapidly due to technologies in the field and social changes. Phillips (2014) had noted that strong, capable, determined and visionary leaders who can chart the way into uncertain future are needed for the growth and survival of libraries. Libraries as service-oriented agencies, meant to serve members of their user communities need to have leadership that that is innovative and visionary in order to successfully wade through the complex 21st century information provision sector and meet expectations of users. Library leaders should also have good communication skills, enthusiasm, flexibility, high ethical standards and sense of responsibility (Narang and Kumar, 2016). Sarasvathy, Namratha and Giddaiah (2012), opine that leaders in libraries should not only take the lead in integrating digital services in their libraries, they. Library leaders cannot go back to formal education in order to acquire these traits.

Effective library leadership is meant to influence the behavior of its followers collectively or individually for the good of the library in achieving set goals and that of the followers in helping them to blossom and reach their full potentials as professional. Jain (2015), posits that leadership performs crucial functions in knowledge management and decision making. Professional library associations are therefore bridging the gap by having leadership trainings for top level, middle management leaders in libraries so as to equip them with the requisite skills to run their libraries efficiently and engage appropriately with their user communities

IFLA as the global body for all librarians recognized the need for training leaders and runs the 2yr International Leaders Programme with the clear intention of breeding and increasing the number of librarians who can lead from the front, showing the way and representing other professionals locally, nationally and in the international arena. The programme is meant to create a pool of tomorrow's leaders for IFLA and the wider library field. The leaders are exposed to international librarianship at the highest levels (IFLA, 2018).

AfLIA, the continent-wide association for the strategic growth of the library and information profession in Africa, has partnered with the Global Libraries (GL) Programme of the Bill and Melinda Gate's Foundation, to deliver leadership training

for public librarians. These trainings are geared towards repositioning the libraries to achieve the "Africa we want". One of the training referred to as the International Network of Emerging Library Innovators (INELI) is an initiative of the Global Libraries (GL) programme for middle level library leaders. It was established to support the transformation of public libraries into engines of development and does this by supporting upcoming public librarians to develop innovative services for the benefit of their communities. The programme runs for two years and lectures are received and assignments done online mainly through the Moodle platform. Physical convenings are done thrice for each Cohort. The programme which is in its second cohort is expected to widen its scope from the third cohort in order to accommodate librarians from all library types.

AfLIA also runs a leadership enhancement programme – AfLIA Leadership Academy for African public library leaders at middle and high management level. It was developed in partnership with the Public Library Association (PLA) of the USA and modeled on the PLA Leadership Academy. The programme is funded by the Global Libraries Initiative of the Bill and Melinda Gates Foundation. AfLAc is part of a series of programmes developed by AfLIA and its partners to strengthen the public library field through developing innovative, well-connected and networked leaders ready to take the public library field forward for the transformation of African communities. The participants of this leadership programme do visit American public libraries to understand more about innovative library services, community engagement and public libraries as part of civic engageme

The Initiative Young African Library Innovators (IYALI) is a programme by AfLIA and Electronic Information for Libraries (EIFL), to connect young librarians with their peers elsewhere in Africa and in transitional and developing countries. It is envisioned that this will expand their outlook and also help them gain new ideas and create a network that will assist them to support each other in their work.

Challenges Faced by Library Associations

Library Associations especially in developing countries are faced with numerous problems. These include weak revenue base as they neither receive governmental subventions nor large donations from government or other bodies on consistent basis. Subscription of members most times is not enough even as some of qualified librarians are reluctant to join such associations and many experienced librarians refuse to serve at any level. Most national Library Associations lack official recognition as professional bodies unlike other professions such as Engineering, Medicine, Law, among others unlike AfLIA which has been recognized by the African Union within 6yrs of existence. Library Associations at all levels need to strive to make

inputs into the accreditation of Library schools to ensure that institutions providing professional training maintain the standards set by the association.

Also, quite a number of librarians in developing countries do not attend conferences by Library Associations except they are sponsored by their organizations. Hence, they lack the updated knowledge to influence library and information services with the current trends of events.

CONCLUSION AND RECOMMENDATION

Library Associations have been seen to have great influence on library and information services. Therefore, the following recommendations are made to encourage them more:

1. It is high time government is made to understand the importance of these associations so that they will give subventions to them. Non-Governmental Organizations and philanthropists even well-to-do members should be approached for donations and sponsorship of activities of the association. Members should endeavour to pay their annual dues consistently.
2. Library Associations should sensitize the public and carry out activities that will make them to be recognized. During AGM and conferences, public officers should be invited and followed up to attend and proceedings aired in the media.
3. Appointed members should be included in the accreditation team for library schools and libraries.
4. Employers of labour should make membership of the association criteria for qualification for employment to work in the library or teach in a library school.
5. Librarians should endeavour to attend conferences, workshops and seminars whether sponsored by their employees or not.
6. More leadership programmes need to be rolled out by Library Associations especially at the national level so that more people will learn.

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Chapter 7
Financial Resources Development for 21st Century Libraries

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ABSTRACT

The basic purpose of libraries is to provide and meet the information needs of their real and potential user communities. Resources that include information resources and library professionals are needed for libraries to effectively fulfil the purpose of their existence. Most importantly, financial resources are critical for acquisition of information resources and ensuring that the human resources are up to date with developments in the information sector. The continuous introduction of new technologies, stagnant budgetary allocations, and the expectations of users – who have been conditioned by information availability on the internet – are putting undue pressure on libraries who need more funds to catch up with the technologies and increasing population of people who need information for daily activities. The chapter therefore explores new revenue streams for libraries such as grants, crowdfunding, and friends of the library. Having a financial resource development plan is also advocated for.

INTRODUCTION

The library is the principal instrument in the creation, dissemination and conservation of knowledge. In order to achieve their functions, libraries need the necessary resources. The medium through which information is received is referred to as 'resource'. Resources could be information carriers, a stock of supply of money, material staff and other assets that can be drawn on by a person or organisation in other to function effectively. Resource which could be tangible or intangible is anything that is functional to man, satisfies his wants and that ensures his welfare. The resources of any library are made up of information resources, human resources and financial resources which make the library functional. The functions of the three resources are interwoven; one cannot function without the other. Both information and human resources need financial resources to exist. For effective provision of library and information services, all the resources of the library have to be developed.

The basic objective of a library as an information resource centre is to fulfil users' information needs which are continuously changing in this age of evolving information and communication technologies that enable people to create and access information at just a click. Libraries need to update their information resources, facilities and services to keep pace with these advancements. Staff need to attend training workshops to update their skill set for understanding and putting new technologies to maximal use for their user communities. Information resources include everything that is used in providing the required services to the clientele. They are those materials which enable libraries to carry out their functions effectively. The information resources in the library comprise of print, non-print materials, physical and digital objects. They are for use by the library clients. A library may meet user's information needs by acquiring, organising and making available relevant information resources backed by appropriate facilities and delivered by means best known to them, which could be manual or through Information and Communication Technologies (ICTs). These information resources need to be developed. This can be done through selection, acquisition, collection evaluation, community analysis, preservation and weeding. This is collection development (also known as collection management, materials management, or information resources management) and involves the identification, selection, acquisition, and evaluation of library resources (e.g., print materials, audio visual materials, and electronic resources) for a community of users. Collection development is at the heart of what libraries do.

The human resources are very important in the library. They are the key to sustainable library services in an organization. In recent times there are emerging trends in library services and operations, and even in the format in which information resources are presented. Human resource development is the practice of helping people to acquire and update skills, knowledge and competencies through a process

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of planning, performance, feedback, training, periodic review of performance, assessment of the developmental needs and creation of development opportunities through training, job rotation, responsibility definition and such other mechanisms. Quality and performance improvement are the main objectives of human resource development. It therefore requires the training of library staff to cope effectively and efficiently with innovations. The relevant ways for the development of library personnel include study visit (exchange programmes), in-services training, on-the-job training, and training programmes by international organizations, institutional training programme, conferences, seminars and workshops.

Library Resources

Resources in the library are the bedrock of any library and are essential parts of the planning and managing processes that results in the attainment of the objectives and aims of its existence. Resources to be committed to any activity are always finite. Consequently, the resources provided accomplish the task of their existence when they meet the needs of the users. Therefore, information resources stored in libraries, as archives, museums, research centers, the web pages should provide information that are vital for humanities and scholars. In generality, information resources are generated between subjects and they flow through different publications in terms of primary, secondary and tertiary literatures. Popoola and Haliso cited in Okiki (2013) define information resources as those information-bearing materials that are in both printed and electronic formats, such as textbooks, journals, indexes, abstracts, newspapers and magazines, reports, CD-ROM databases, the Internet/e-mail, video tapes/cassettes, diskettes, magnetic disk, computers and microfiches. According to Akanwa and Udo-Anyanwu (2017) information resources in the library are categorized into three main headings – Books, Audio-visuals or multimedia and Electronic Information Resources (EIRs). Acquisition of information resources are identified as purchase, gift and donation, exchange, bequeath, legal deposit, and membership of associations.

Human resources in the library are the different categories of library personnel and their levels of education, employed to support the highest standard of library services for all kinds of libraries using their variety of skills to achieve the objectives and aims of the library. IFLA (2000), opined that to meet the goals of library services, both professional and supportive staff are needed in libraries. Thus, the library occupation is much broader than that segment of it which is the library profession, but the library profession has responsibility for defining the training and education required for the preparation of personnel who work in libraries at any level, supportive or professional.

The impact made on the library and the users can equivocally be said to be determined by the personnel. For where there are availability of information resources and inefficiency of the personnel, the library will lose its credibility. To buttress this claim, Likert stated that human resources in an organization have overriding importance in the sense that every aspect of a firm's activities is determined by the competence, motivation, and general effectiveness of its human organization. Of all the tasks of management, managing the human component is the central and most important task, because all else depends upon how well it is done. This also leads to the fact that there should be immediate self-improvement either through training, attending conferences, exposition symposiums, and book fares that will necessitate interpersonal relations towards organizational objectives.

The inexhaustible benefit of the library demands that as she continues to meet the needs of the users in providing informational resources that ranges from education, to agriculture, employment and the likes, library personnel should strive to meet the changing world. In other words, for library to effectively meet the goal as a viable organization in a changing culture, it is pertinent to view personnel as an asset that need to be adequately managed. The ways through which human resources can be developed in libraries include on-the-job training, study visits, in-service training, workshops, seminars, conferences and exchange programmes.

However, finance is very important in the running of libraries. To acquire the necessary facilities for the discharge of their statutory responsibilities, libraries of all types require adequate funding. The amount of funding that a library receives directly influences the quality of its services. The library budget is drawn based on what the library hopes to accomplish in the next year. Libraries are run mainly by funds provided by the government at different levels. Global economic meltdown has seen governments trying hard to ensure that available funds are utilized for areas considered as 'priority' in governance and in the society at large. Also, governments strive to shore up revenue yielding entities to enable such institutions to function maximally and yield the needed financial returns. Libraries are non-revenue generating institutions that provide needed social services, most importantly, access to information. In recent times, more than 300 public libraries have been closed in the United Kingdom within the last 6yrs. Insufficient funds to sustain them and the fact that information can be acquired with just a click of a button have been cited as reasons for the closures while the library buildings have been turned into bars, gyms or at best libraries are staffed by volunteers (Jubbes, 2014). Libraries now find themselves paying subscriptions to access electronic databases instead of purchasing print journals. There are of course huge financial implications associated with the emerging technology-based information services. Cost range from infrastructure costs, hardware and software, staff training. How can libraries create new financing

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pathways for streams of revenues to provide and sustain their services and to keep in tandem with the ever-evolving technologies in the information provision field?

The development of financial resources for the library is fraught with challenges. Some funding authorities seem not to appreciate the importance of libraries anymore as they focus on bodies that yield revenues. Librarians rarely actively solicit for funds from donor organisations and agencies due to restrictive policies of parent bodies or lack of knowledge of how to attract such grants.

Financial Resources Development in Libraries

Financial resources are the funds allocated to an organization in the running of day to day activities of the organization. Depending on the organization, its financial resources are generated by its representing partners. Governments however, are expected to provide essential services and to use resources for the betterment of citizens. Governments are presently faced with the challenge of population explosion and economic tightening that they can no longer wholly provide, so the library as an institution that is generally funded by the government needs to seek other funding sources to maximize benefits in accordance with their particular goals. And no matter how well-endowed the funding sources are, there are always limits to how much they can provide (Carothers & Brechenmacher, 2014).

Finance is the backbone of any library. Library managers need to control the operations as well as monitor and manage the finances of the institution no matter the source of provision. The lackadaisical attitude of some library managers of government funded libraries towards financial resources development has the capacity to make such libraries irrelevant for 21st century users. Unlike the special or institutional libraries where the partners show interest in their investment, some library organizations receive financial resources support from some conventional ways such as, public appropriations. contracts with other agencies, loans. Gifts, income from sales, user fees, endowment income. private investment, income-producing activities, and the same sources as public extension. These supports are not only in cash form, but could be through the provision of special funding sources which often help the organization to focus on emerging high priority concerns or to test new approaches. A practical goal might be to have a resource commitment from the principal funding partner (the most dependable source of continuing funding) that will maintain the "core" or basic structure of the organization (e.g., selected staff salaries and other expenses). Any other support which is beyond the core might then come from the so-called softer resources or some combination of funding sources as described previously. Depending on custom and regulations, extension organizations may receive support from any combination of the above. Currently, there is interest in some countries in "privatizing" some functions - that is, shifting

certain responsibilities (and the costs associated with them) to privately funded enterprises (NGOs) or directly to users through outsourcing (American Library Association, 2017)

Donshik (2012), has pointed out that organizations that do not generate revenue such as libraries should engage in strategic planning process on financial sustainability through the exploration of options for financial security that will enable such bodies raise funds for their services, programmes and other incidentals. Financial resources development requires careful planning with input from all stakeholders including staff and user communities (Judd, 2004) and that is why libraries that wish to effectively serve their communities without being hindered by lack of funds need to understand the processes of financial resources planning as an avenue of engaging stakeholders and user communities in order to raise adequate resources for the library. According to Fulop (2009), resource development is thinking about the future and making clear cut plans on how to meet expected and unexpected challenges. This can be achieved through increasing the ability of organizations such as libraries to manage and navigate change successfully, consider how rational and sustainable growth can occur and the preparation of thoughtful and reflective plans that will encompass current realities of the organization, possible pathways of resources development with realistic action plans and strategies for implementing the plans. Designing relationship-building programs with stakeholders and user communities, building a culture of philanthropy, creating donor-centred communications, training staff and volunteers on how to fundraise through storytelling are some of the strategies that ought to be in financial resource development plan of non-revenue generating bodies such as libraries (Fridman Strategies, 2019).

According to the International Committee of the Red Cross (2000), financial resources development involves building the capacity of staff within an institution to understand the financial standing of the institution and possibilities for raising funds to strengthen its financial base for financial sustenance. Thus, organizations need to develop long-term strategic plans for resource development with integrated viable marketing and fund-raising pathways from corporate bodies, individuals, government and non-governmental organizations for financial sustainability. It is then obvious that libraries need leaders and managers who have the ability to draw up realistic plans of how to organize, train and motivate staff to think about the financial capacity and future of their libraries, and how to engage all stakeholders in the process of building sustainable financial security for their organizations.

Pathways of Funding for Libraries

Most libraries receive their funding mainly through subventions from their funding bodies or book vote in the case of academic libraries. The subvention covers salaries,

general administration, acquisition of materials and office equipment/facilities in some countries and regions while for others such funds are only for administrative purposes and purchase of new resources and facilities. According to American Library Association (2018), majority of funds for libraries from the federal level in United States of America are distributed through the Institute of Museum and Library Services to each state through the Library Services and Technology Act (LSTA). Also, school libraries in the country are supported through funds from the U.S Department of Education's Innovative Approaches to Literacy (IAL) grant program. States in U.S also levy taxes specifically for libraries such as the Multnomah County Library services which are funded by a dedicated property tax for Multnomah County Library District (Multnomah County Library, 2019) and Ohio public libraries which is funded through the Public Library Fund (PLF) derived from fixed percentages of the general revenue taxes (The Public Library of Cincinnati and Hamilton County, 2018).

In Nigeria, the Federal government in an effort to contribute to the effective running and growth of the academic libraries intervened through an agency formerly known as Education Trust Fund (ETF) now known as Tertiary Education Trust fund (TETFund). It is a financial agency towards solving the problem of underfunding and to help revive the fortune of Nigeria's academic libraries. The Tertiary Education Trust Fund Act (2011) is charged with the responsibility of managing, disbursing and monitoring the education tax to public tertiary institutions in Nigeria. ETF is now called Tertiary Education Trust Fund (TETFund), following the amendment of the original act which has further streamlined and restricted the operations of the fund to periodic financial allocations to the country's tertiary education institutions (Bamigboye and Okonedo-Adegboye, 2015).

Beyond Government Funding

According to Twardoski (2017), with what libraries do in education, research, building economy and equipping citizens through teaching of lifetime and digital skills it would be expected that the institutions would be well funded in order to acquire and develop resources such as new books and technologies for carrying out these functions. However, the opposite seems to be the case and libraries are exploring different avenues of raising sufficient funds so that they can continue to serve their user communities. It is therefore needful that beyond the funding of government agencies and statutory funding bodies, libraries need to diversify their funding streams and raise support for special programs and facilities. Bremer (2004) opines that libraries of all types need extra funds apart from the allocations from their major funding bodies to finance the costs of steady internet access, technology hardware, upgrades/maintenance, staff training to cope with new technology and software, and

web design/management. According to EBSCO Connect (2018), libraries can only thrive fully when they have adequate funding for research, educational enhancement and provision of 21st century information services. Thus, they need to explore other revenue streams such as governmental and non-governmental funding bodies that provide grants for researches and innovative solutions to developmental challenges.

Grants

Grants are non-repayable funds or products disbursed or given by one party (grant makers), often a government department, corporation, foundation or trust, to a recipient, often (but not always) a non-profit entity, business, an individual or an educational institution such as libraries. Grants are usually meant to fund specific projects and require specific levels of compliance and reporting as directed by the grant maker. Grants should never be used to justify reducing or replacing government's commitment to the funding of libraries but they do go a long way in assisting libraries provide services, train staff or run special programs. The roles of professionals in making adequate use of the grants in strict compliance to the policies and agreements to the grant could attract more grant and this will mean more opportunity for the development of library resources.

Grant makers usually announce grants with eligibility criteria for institutions including project scope, geographic focus, evaluation criteria and deadlines. Some require preliminaries expression of interest before the application forms are filled while others skip that step. Librarians can access grants from the websites of grant making bodies, subscribing to the listservs of such bodies or grant aggregating services such as Funds for NGOs who search for and bring grants available to the notice of their subscribers. Foundation Centre (2019) believes that the roles libraries play in the society are critical thus they need support and resources to continue to innovate in serving their user communities. However, they are often overlooked and this makes it difficult for them to get appropriate funding for the services they offer. Consequently, with assistance from John S. and James L. Knight Foundation, the Foundation Centre launched Visualizing Funding for Libraries, a free comprehensive database of library funding that helps libraries identify new funding by providing information on grants available for libraries in U.S. Some of the grants can also be accessed by libraries in other parts of the world. In addition, the site offers trainings to librarians who wish to learn how to seek grants funds for their libraries According to Tkacik (2018), the site helps libraries to break away from over-reliance from one-line funding from their parent bodies and is useful for all types of libraries. Currently, the site has tracked $287million available for public libraries, $81.5million for academic libraries, $18.5million worth of grants

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that school libraries and media centres can apply for and $278.8million for archives and special collections (Foundation Centre, 2019).

Identifying the particular projects or programs that the library would want to engage in and finding a matching grant is the first step in grant seeking. The purpose of the project/program needs to be clearly envisaged as part of the financial resource development plan, how long the program/project will run, the primary beneficiaries as well as the expected outcome and impact need to outlined. This assists in filling the application form for the grant. Major grant making bodies specifically insist on not making funds available to government-funded bodies, including libraries. Having a Library Foundation such as the Rochester Public Library Foundation as a separate legal entity to seek for funds, grants and bequests where possible from different sources and disburse such procedurally is essential and should be integrated into the financial resource development plan of libraries. The foundation of Rochester Public Library (2019), has as its mission, raising of funds from different sources, creating of awareness about the role of libraries in the community and, seeking partnerships with groups, individuals and organizations that are interested in assisting to build strong libraries that serve all in the community.

Crowdfunding

Not every library has been able or will be able to access grants because of eligibility criteria and other factors. Libraries are beginning to explore the concept of crowdsourcing to raise funds directly from people to run innovative programs or acquire new resources. Crowdsourcing leverages on the power of Web 2.0 technologies to reach out and connect with others near and far away through online platforms in seeking out innovative solutions. According to Holley (2010), crowdsourcing has great potential in helping libraries through social engagements to work collaboratively with others in achieving goals which may be large or small, shared or individual. Zakaria and Abdullah (2018) and Severson and Sauve (2019) explain how libraries are using crowdsourcing for the completion of micro-tasks such as proofreading texts, transcription of handwritten records, translation and tagging images which otherwise takes up the time of library staff thereby aggregating and utilizing talents, ideas, collective intelligence and knowledge of people to perform tasks in the library. One of the advantages of crowdsourcing is high level of engagement with the user communities as partners rather than just patrons thereby creating the 21st century participatory library (Wilson, 2015). This creates great possibilities where users' involvement with the goals of libraries can be leveraged for resources development through Friends of the Library by government funded libraries who may not have the legal backing to raise funds online directly by themselves.

Crowdfunding is an offshoot of crowdsourcing whereby an organisation can raise money on online platforms from a large number of people who each contribute minimally towards a particular project English Oxford Living Dictionaries (2017). Crowdfunding uses mass-community collaborations to raise funds from known and unknown people online especially through social media for organizations who interact via such platforms and have great reach. Specific crowdfunding platforms are also available for raising funds (McGowan, 2018). Crowdfunding can be classified according to the 'reward' for investors into donation, rewards-based, lending and equity models (Belleflamme, Lambert and Schwienbacher, 2014). Donation crowdfunding follows a patronage model, in which funders function as philanthropists (Mollick 2014) and this might be most suitable for libraries

According to Hasan, Khan and Iqbal (2017), libraries can also use crowdfunding as a means of generating resources as well as for introducing new and innovative services through collective funding by several donors in the user community. There is no guarantee that crowdfunding will work for every library but it has potential of bringing in extra funds. According to Agrawal (2018), choosing the right platform to crowdfund, knowing the target audience for crowdfunding, having set goals of what is needed to be achieved and how much is being sought, spreading the word about the crowdfunding widely offline and online, communicating openly and adding a personal touch to the crowdfunding appeal are necessary for successful crowdfunding. A number of crowdfunding sites exist including Kickstarter, FundRazr, GoGetfunding, Indiegogo and Crowdfunder among others (Taylor, 2013). Most of these sites have inbuilt costs. However, EveryLibrary Institute has launched a platform fundlibraries.org specifically to help libraries connect to a big crowd of potential funders (Chrastka, 2019).

Identifying of the library as a brand that creates value is important for succeeding in crowdfunding efforts. Creation of awareness of what the library stands for and provision of services online for those far and near will help create favourable impressions and create social capital for the library through such interactions. According to Cai, Polzin and Stam (2019), the concept of social capital embraces the ideas of connectedness, similar interests and interactions in the building of social capital and this makes it one of the main determining factors of success in crowdfunding ventures. Fundraising from crowds relies heavily on already created social capital to build awareness and buy-in for the campaign from funders (Colombo, Frazoni and Rossi-Lamastra, 2015). The internet and Web 2.0 technologies has made it relatively easy for individuals and organizations to interact and converse with total strangers. Such Internet-based 'relationships' are essential to the formation of ties which though not active but can be activated for crowdfunding campaigns (Ellison, Steinfield and Lampe, 2011). This is important after the early responders to a crowdfunding campaign who are most likely to be directly connected to the

project must have contributed. The second batch of contributors often depends on those internet-based ties made up of the social networks of the first responders, the project owners and the crowdfunding platform (Ordanini, Miceli, Pizzetti and Parasuraman, 2011).

A study conducted by Aprilia and Wibowo (2017), shows that the number of Facebook friends of the project promoters and the amount of words used to succinctly describe a crowdfunding project has significant positive influence on the chances of success of the project. Building social capital, creating awareness and value for the library through social media is important as the different platforms of social media provides access and informs friends, family, connections and those who might be interested in the project (Pozible Team, 2018). Social media can bring libraries closer to their communities, those afar off and be good avenues for promoting crowdfunding for their services, programs or the purchase of new facilities. Planning for financial resources development for 21st century libraries should integrate the use of social media to interact and connect with people. However, libraries should have a general communications policy including the use of social media. This would help streamline the platforms to be used, who can send posts - who creates the content and who authorizes the posts to avoid the perils of unregulated communications by the library.

Friends of the Library

All library types can have volunteers as Friends of the Library that can assist them in raising funds, promoting and marketing library services (United for Libraries, 2012). They raise money for libraries from so many sources and activities like sales of books, and asking for donation by keeping boxes in strategic places that government bodies are not authorized to do. They disburse the funds through a properly constituted Governing Board. According to South Burlington Public Library (2019), Friends of the Library are citizens who care and believe in the power of libraries in creating communities that are literate, informed and stimulating. The group puts out calls for volunteers who can help them run different activities for fundraising and supporting the library.

The Friends of the Public Library of Cincinnati and Hamilton County support the library through sales of books donated for supporting the group and used library books at fair prices at the Friend's shop located inside the main library (Friends of Public Library of Cincinnati and Hamilton County, 2019). According to Rochester Public Library (2019), friends of the library raise funds to keep on growing their collections and programs while supporting special projects, and creating awareness about the offerings of the library through community engagement. The Friends group get funds from sale of books online and at their store and from membership

contributions. The group also partners with Amazon to get a percentage of sales made if an Amazon account is opened and used from the Friends of the Library website.

Setting up a Friends of the Library group or revitalizing an already existing one can be among the strategies outlined in the financial resource development plan of libraries. However, libraries will need to clearly draw up a volunteer policy – who can be a volunteer, rewards of volunteering and then spell out functions of the Friends group, how they can be motivated, spaces for their meetings in the library and the level of involvement of the library in running the group as well as get an inspirational, passionate leader who can galvanise members of the community to volunteer to serve as friends of the library.

In addition, interactions and connections can create a pathway for libraries to build enough goodwill to develop their collections through bequeaths. Bequests are planned giving through Wills and libraries do solicit for such gifts. A number of libraries have requests for bequests on their website. State Library Victoria (2018), runs the Redmond Barry Society, which is made up of library benefactors and supporters as well as those who wish to leave bequests to the library. The Society provides aspiring benefactors with information that will assist them to understand the whys, and process of leaving bequests Members receive rewards in form of invitations to exhibitions and other special occasions in the library.

Library Associations

Libraries can get funds for new services, projects and facilities from Library Associations who access grants on behalf of their members. In 2017, American Library Association had accessed $500,000 as a grant for the Association's "Libraries Ready to Code" program. The funds were distributed to up to 50 participating libraries with operational support from Google in order to create a library-based CS (computer science) educational toolkit (Publisher's Weekly, 2017). Again, in 2019, American Library Association received $2million from Google to deepen and expand what libraries are doing in the area of entrepreneurship by having centres in libraries devoted to helping people start a new business (ALA News, 2019). African Library and Information Associations and Institutions (AfLIA) is raising funds on the Global Giving platform to train public librarians across African to birth innovative services in their different communities as well as carry out community projects in partnership with their community members (Global Giving, 2017).

Libraries that can benefit from this type of largesse from Library associations are those that their services stand out as being innovative and fitting into the current agenda of the concerned Library Association. Therefore, libraries need to make innovativeness in their service delivery a strategy for financial resource development. Furthermore, libraries need to ensure that they belong to and play active roles in

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such Associations as part of their game plan for accessing available grants for their services and programs.

CONCLUSION

The basic purpose of the library is to meet the information needs of the user. Information resources in their various formats are needed in order to perform this basic function. Libraries need to understand the different pathways of financial resource development in order to thrive and provide needful services that will meet the insatiable hunger for information in the 21st century. Planning for financial resource development is crucial so that libraries can understand their present realities and come up with actionable plans for financial sustainability and security. Engaging more with users of the library, non-users through online forums and those who value the services of libraries is important if libraries are going to raise funds from other sources outside of the normal revenue streams. The social media can be explored to create social capital for the library through interactions and provision of information services online. Libraries should also open up to members of their user communities as Library Foundation or as volunteers in the Friends of the Library group. This will create more goodwill and connections for the library within the community. Furthermore, as most libraries are government-funded, they will need a Library Foundation or a Friends of the Library group in order to be qualified to source for grants. Professional associations are viable sources of getting financial resources for programs and services. Belonging to such associations at national and continental levels is necessary for libraries. Libraries have various options to explore in financial resource development for the provision of 21st century information services. The pathways can all be successfully navigated and used to boost library services, programs and facilities.

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Chapter 8
Artificial Intelligence in Libraries

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ABSTRACT

Artificial intelligence (AI) is one of the emerging trends and applications of computing in libraries. It involves programming computers to do things, which if done by humans, would be said to require intelligence. The ultimate promise of artificial intelligence in libraries is to develop computer systems or machines that think, behave, and in fact rival human intelligence, and this clearly has major implications on librarianship. The application of artificial intelligence in the library has become pervasive. They include expert systems for reference services, book reading and shelf-reading robots, virtual reality for immersive learning among others. Although the incorporation of artificial intelligence in libraries can be perceived to alienate librarians from their users, it will probably help libraries do more rather than taking over the jobs of librarians. It will enhance their services delivery. Artificial intelligence will greatly improve library operations and services and will upgrade and heighten the relevance of libraries in an ever-changing digital society.

INTRODUCTION

Intelligence is the ability to think and learn facts and skills and also apply them when necessary. The prospect of developing computers or machines that perceive, learn, reason and behave like human beings has fascinated many people. Humans are born with an innate ability to perceive, reason/think and act, which develops and improves over time as a result of so many factors. Intelligence in humans is measured by the Intelligence Quotient (IQ) obtained through series of aptitude test focusing on different aspects of intellectual functioning. Similarly, developing intelligent computers that perceive, think and behave like humans is the crux of Artificial Intelligence. Intelligence in computers or machines depicts their ability to accomplish specific task in the presence of variability and monitor its environment and appropriately adjust its actions based on what it has sensed as prerequisites for intelligence. Intelligences in machines is an anthropomorphism in that intelligence is defined by the criterion that the actions would appear intelligent if a person were to do it (McGraw-Hill Encyclopedia of Science and Technology, 2007). According to Ex Libris (2019), intelligence in machines not only gives such devices the ability to learn but they are also configured to improve with use to perform functions better without being explicitly programmed because they are built to recognize and imbibe patterns efficiently on much higher scales than humans.

Artificial intelligence already touches many of our daily computing activities, most of the computer systems and mobile phones being developed today have artificial intelligence features and we have probably used them not knowing that they are intelligent machines. Examples of Artificial intelligence in computers are speech recognition, natural language processing, self-driving or autonomous cars, machine learning, deep leaning and robotics. Artificial intelligence works based on perceptual recognition unlike human beings that operate on deep cognition. The power and advantage of Artificial intelligence lies in the fact that computers can recognise patterns efficiently at a scale and speed that human beings cannot.

The development of societies in recent times have been facilitated by the growing demand of access to information, and libraries are the prime source in providing this access. The paradigm shift in the format and dynamics of information and knowledge as a result of the rapid advancement in computer technology and software applications especially artificial intelligence, have shifted libraries to a demand of the commensurate supply of the same technologies. Unless libraries begin to exploit the new technologies and innovate their information and services delivery, they may face obsolescence in this era.

Artificial intelligence is used in many areas such as medicine, military, business, education, gaming, libraries etc. The idea of creating artificial intelligence systems in libraries dates back to 1990. These intelligent library systems provide knowledge-

based services to both the library staff and patrons (Asemi & Asemi, 2018). Application of artificial intelligence in library system encompasses descriptive cataloguing, subject indexing, reference services, technical services, shelf reading, collection development, information retrieval system etc. These has gone beyond Natural Language Processing (NLP), and knowledge-based services. With the advancement in artificial intelligence programming, creating a smart library is not only a possibility but a matter of time. Corroborating this assertion, Corke (2013) reported that researchers and experts in the field of artificial intelligence are creating intelligent systems which can think and behave like librarians – library robots.

Justification for Applying Artificial Intelligence in Libraries

Libraries have evolved structurally and content-wise through different eras: the ancient, medieval and modern era. In the ancient times, clay tablets and stones were used as media for transmitting information, through the medieval era of papyrus and parchments and the modern era of paper, microform and now the digital or electronic media (Gustavsson & Hedlund, 2011). Libraries have acquired and maintained various forms of information resources throughout these eras so as to meet the information needs of its user communities. Similarly, a library was formally defined as a function of the physical building where books were kept for reading and other purposes. However, the definition of library today has gone beyond the physical building, it now centers on the collections and services offered, since virtual libraries have no physical walls and services could be rendered to users from remote locations. Consequently, in the effort to satisfy the dynamic information needs of its clientele at the same time uphold its relevance in this ever-changing technological society, libraries have explored, incorporated and metamorphosed through different technological revolutions of clay tablets, stones, papyrus, parchments, paper, microforms, computers, Internet, virtual libraries, library 2.0, cloud computing etc.

Interestingly, artificial intelligence is the current technology that has evolved with huge prospects and promising applications in libraries. Hence, the need to also explore this tech, its pros and cons, in order to adequately maximize its rich benefits for innovative and optimal services delivery in libraries, as Corke (2013) asserted that artificial intelligent systems (robots) will be an important technology in this century. In a nutshell, the crux for applying artificial intelligent systems in libraries is the fact that they are less prone to errors unlike human beings; they can work for 24 hours/7 days without getting tired thereby freeing the librarians to do other jobs. Ultimately, since computers can operate efficiently at a scale and speed beyond human abilities, it will maximize speed, efficiency and effectiveness in processing library materials and enhance library services delivery at all levels.

This chapter will be focus on the concepts, foundations, application and advancement in the field of artificial intelligence in libraries, application of robots, virtual, augmented and mixed realities in libraries, their promises, benefits and demerits they hold for future libraries.

Concepts of Artificial Intelligence (AI)

The sound of the term artificial intelligence often conjures images of robots or computers that talk. Artificial intelligence is an aspect of computer science that focuses on how computers learn (Machine Learning), interpret information, vision: character recognition, picture analysis, 3D perception, and modelling of the function of the eye; furthermore, it encapsulates speech recognition, speech production, understanding and use of natural language (Natural Language Processing), and Expert System which continues to gain more attention. Furthermore, artificial intelligence is the programming and development of computers to perform human required-intelligence task, such as speech recognition, decision-making, visual perception, language translation, talking and emotional feelings (Irizarry-Nones, Palepu & Wallace, 2017). According to Heath (2018), artificial intelligence is the technology that enables machines be to have the abilities to plan, learn, reason, solve problems, move, and be creative to some extent.

Three main focus of artificial intelligence is perception, reasoning and action. Reasoning is fundamental in intelligence gathering, it involves internal processes or programming logic/algorithm, that makes computers think of the best way of action before performing the action. Similarly, McGraw-Hill Encyclopedia of Science and Technology (2007) maintained that artificial intelligence is a subfield of computer science focused with understanding the nature of intelligence and constructing computer systems with ability to make intelligent behaviour. Moreover, it is primarily concerned with representations of knowledge and heuristic methods of reasoning using common assumptions and rules of thumb. Other definitions of artificial intelligence include: creating machines with minds (Haugeland, 1985), the study of mental faculties through the use of computational models (Charniak & McDermott, 1985), the explanation and emulation of intelligent behaviour in terms of computational processes (Schalkoff, 1990), the science and engineering of making intelligent machines and computer programs (John McCarthy). Artificial intelligence is concerned with the concepts and methods of symbolic inferences and representation of knowledge by machines. It is aimed at performing intelligent tasks such as logical thinking, learning new abilities and adopting to new situations and problems (Nilson, 1998 cited in Shohana, 2016). In a nutshell, artificial intelligence is making computers or machines intelligent just like human beings, in order to make them find solutions to complex problems in human fashion.

Furthermore, Asemi and Asemi (2018) asserted that the field of artificial intelligence deals with the study and development of computer systems or machines that exhibit some forms of human intelligence, such as learning new concepts and tasks, reasoning and drawing useful conclusions about a specific task, natural language processing or perception and comprehension of visual scene etc. The intelligence of computers can be measured using the 'turing test', developed by Alan Turing in 1950s. Although there are controversies and objections over this method. Irizarry-Nones, Palepu & Wallace (2017) however asserted that the artificial intelligence of computers or machines could be strong or weak. A computer with strong artificial intelligence is able to think and make decisions like human beings, it is also capable of learning from experience and re-programme itself to improve on past mistakes like in the movies. Weak artificial intelligence computers cannot think, learn or re-programme themselves, rather, they are specifically designed to respond to specific situation.

Trends in the Field of Artificial Intelligence (AI)

Advancement in the field of artificial intelligence include autonomous vehicles or self-driving cars, navigation systems, human versus computer games, fraud detection, robotics and machine learning – the application of artificial intelligence which give computers or machines the ability the learn from data gathered of past experience, re-programme and improve on itself without human intention (Irizarry-Nones, Palepu & Wallace, 2017). Machine learning simply implies the computer teaching itself through iteration and past experiences with data. In addition, artificial intelligence encompasses the following general areas of research: automatic programming, computer vision, intelligent control systems, expert systems, intelligent computer-assisted instruction, image processing, natural language processing, planning and decision support, robotics, and speech recognition (Asemi & Asemi, 2018). The application of artificial intelligence has gained usefulness in most fields of study and its thriving fast with the development of smart phones, smart homes, Internet of Things (IoT) and Internet of Vehicles (IoV).

Interestingly, Artificial Intelligence is being used to generate and evaluate content including artistic and creative work (LeFebvre, 2017). Washington Post newspaper uses an AI system – Heliograf to cover elections while IBM's Watson machine learning suite provides assessments, analytics, real-time scores and captions for sports and cultural events (Melendez, 2016; Alpert, 2016). According to Harris (2016), AI has made a significant inroad into education as IBM has come up with the Teacher Advisor an AI system which has been built to help teachers draw up personalized lesson plans by pointing them to best lessons in math and then customizing the lesson to fit their unique classroom needs. The Teacher Advisor has a database of open

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educational math resources that provides over 2,000 free lessons, teaching plans and videos that can quickly search and bring up relevant answers (Fine, 2017). Semantic Scholar uses machine learning and other AI systems to assist the academia search more effectively and efficiently through resources as more and more research get published (Metz, 2016).

Artificial intelligence systems have been broadly classified from two different perspectives as outlined by Liu (2011):

1. The degree of their intelligence. In this perspective, artificial intelligence systems are classified into: (1) reflex agents able to respond to stimulus from sensors such as heat sensor, light sensor, motion detection etc; (2) utility-based system; (3) goal-oriented systems; and (4) learning system such as machine learning systems that can teach computer programming.
2. The nature of their functionality. In this view, artificial intelligence systems can be categorised into (1) collaborative systems; (2) reactive systems; (3) Internet-based systems; and (4) mobile systems that can autonomously travel from one place to another to perform a task.

Foundations of Artificial Intelligence

According to McGraw-Hill Encyclopedia of Science and Technology (2007), the four foundations of artificial intelligence are representation, search, reasoning and learning. These four foundations are basic requirements present in any artificial intelligence system.

1. Representations. This denotes the internal description of the problem or related knowledge of the intelligent system. Representation include knowledge-based of the system to identify problems and the architecture on which it can be manipulated. Representation of an expert system for diagnosis would be the description and symptoms of a person with a disease. For a moving robot, it could include the symbolic 3D description of a room.
2. Search. This is one important aspect of artificial intelligence systems that is used for problem-solving methodology. In some cases, a heuristic search is used to modify itself in response to the problem at hand. Example of search could be a database search of previous problems and solutions for the closest match to the current problem.
3. Reasoning. This is designed to turn knowledge into solutions to problems. This is the crux of the intelligence of the system. Reasoning could be deductive and inductive reasoning in which problems knowledge is used to deduce a set of possible solutions, or used to build a hypothesis that best explains the existing

knowledge and possibly the current problem. Example of reasoning include expert systems, where the solutions to problems are reasoned based on some set of rules or knowledge-based developed by human expertise to identify the rules of the problems.

4. Learning. The learning feature of intelligent systems makes them adapt and gather intelligence by learning the history or knowledge of the system. Learning covers the aspect of reconfiguring the representation, adjusting the search to be heuristic, updating the knowledge and augmenting the reasoning. Some of the most common learning methods used in artificial intelligence systems are statistical learning (using the number of the different types of historical events to base future actions or to develop inductive hypotheses, typically assuming that events follow some known distribution of occurrence), neural networks (networks are trained on existing knowledge and then applied to the problem, and interpret the value of the outcome as a solution), reinforcement learning (actions taken by an artificial intelligent system are rewarded or penalized based on their ability to solve the problem more or less accurately). These falls within the subject of machine learning and deep learning.

Application of Artificial Intelligence in Libraries

Artificial Intelligence matters to libraries because it be used for organizing and making available large collections of information (ALA, 2019). According to Sridevi and Shanmugam (2017), artificial intelligence is the modern technology which is used to manage the digital library. The ultimate promise of artificial intelligence is to develop computer systems or machines that think, behave and in fact rival human intelligence, and this clearly has major implications on librarianship. Artificial intelligence is not just an intelligent system or software program, it is a biologically motivated technology used to replicate human ways of perceiving and processing information (Sridevi & Shanmugam, 2017). Intelligent library automation systems rely on artificial intelligence technologies to provide knowledge-based services to library clientele and staff. Artificial intelligence in libraries should not be misconstrued with library automation. While the later implies the degree of mechanisation to routine library operations, the former goes beyond just automating library activities, and create intelligent rational systems that behave and act like librarians and requires little or no human intervention. Artificial intelligent systems can replicate and thus replace a human being in the library, although Li, Huang, Kurniawan and Ho (2015) believed that this invention will never replace librarians, but will center on menial and time-consuming library operations such as shelf reading and leave the librarians to engage with the patrons. Corroborating this assertion, Murphy (2015)

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maintained that the application of robots in libraries will bring librarians and users closer together, against the notion that robots will alienate librarians from their users.

Some fields of artificial intelligence that are used in library management system include: Natural Language Processing (NLP), Expert Systems (ES), Pattern Recognition, Robotics etc (Sridevi and Shanmugam, 2017). Succinctly, Natural Language Processing (NLP) is the analysis and generation of natural language text by computers. The goal is to enable natural languages such as French, English, or Chinese, to serve either as the medium through which users interact with computer systems or as the object that a system processes. In libraries, NLP can be used to design intelligent expert reference system or information retrieval system, where users can interact directly with the system using natural languages. The computer takes in the natural language as input, analyses and processes it, then respond accordingly with the needed information. NLP has been used as medium of interaction in database management systems and as object/input for processing in automatic text translation or text summarization (McGraw-Hill Encyclopedia of Science and Technology, 2007).

Another practical application of artificial intelligence in libraries is subject indexing. This task requires the technical expertise of the librarian or indexer and his intellectual judgement to peruse, analyse and suggest the appropriate terms to be used as index terms or keyword of a given document. Any computer system or machine that can undertake this task can be said to be intelligent. An Expert System can be designed to handle subject indexing or reference services. Moreover, Expert Systems are computer programs that simulate human decision making. They incorporate methods and techniques with specialized problem-solving expertise. Expertise consists of knowledge about a particular domain or subject, wide coverage or understanding of the domain problems and techniques at solving some of these problems. In designing an intelligent system for subject indexing or reference services, first, relevant knowledge from a subject indexer or expert is extracted and fed to the system, subsequently, the system will learn (Machine Learning) from the knowledge-base and experience to index documents or response to reference queries from users, as the case may be. According to Asemi and Asemi (2018), Expert Systems have been used in several fields to solve problems including: medicine, computer science and engineering. The library is another fertile ground for the application of expert and intelligent systems. Furthermore, Expert Systems can provide reference assistance, help in management policy decision making, assist in applying cataloguing rules, determine vendor assignments in acquiring library materials etc. In order to carry out these intelligent tasks, Expert Systems imitate human thinking/reasoning, by means of a "knowledge base" which serves as a set of rules culled from various human experts.

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Furthermore, an Expert System consist of two modules: the knowledge base and the interface engine. Similarly, Sridevi and Shanmugam (2017) reported that the knowledge base of an Expert System contains the complex structured and unstructured information, while the interface engine subsystem is used to apply logical rules over the knowledge base in order to iteratively decipher the new information. Expert Systems can be designed to function in the reference unit of the library. In fact, it can provide better answers to users query than just a single librarian, since the knowledge base of the Expert System is created and updated from the submissions of team of best/experienced experts in the field – like the saying: two heads are better than one. The Expert System is designed to response to users query based on the keywords or phrases in the users query. If certain keywords or phrases are in the query, then the system intelligently respond to the user accordingly.

It should be added that artificial intelligence systems could also be developed to handle resource development or collection development of the library. Note that, collection development deals with the resource selection, acquisition and development in the library, or simply the process of meeting the information needs of library users in a timely and economical manner mainly through acquisitions (purchase), or gifts from sister organization and various other bodies (Udensi & Akor, 2016). After the selection of books that would be purchased by a library, a list is normally sent to book sellers and vendors to submit the prices with respect to the quality and format (print or electronic, paper-binding or hardcover-binding). Likewise, the intelligent system can learn from past experiences and submit the list of items to be acquired based on the previous performances of the book-sellers or vendors, especially now that most book-sellers and vendors can be accessed via their emails or homepage. Corroborating this assertion, Romero (2018) reported that artificial intelligence systems can give suggestions based on past purchases or user interests - a strategic method to improve acquisition of library materials and enhance the user experience via recommendations of magazines, journals, authors, books, etc.

Information retrieval is another aspect of librarianship that has felt the touch of artificial intelligence. Library information retrieval deals with the recall of information or resources from a file or database, it is concerned with the structure, analysis, organization, storage, searching, and retrieval of information stored in a library's collections, information centre or the Internet (Croft, Metzler & Strohman, 2015). As the information held in libraries grew, several types of information retrieval tools were invented to cope with the vast amount of information therein and make them accessible to users. Nowadays, the quantity of new information being generated is at an exponential rate, this led to the invention and use of computerised and artificial intelligence retrieval systems to facilitate information searching and retrieval from the library's collection, be it paper-based or electronic (Unagha, 2010).

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The modern information retrieval tools now used in libraries to provide quick and innovative access to information include: electronic databases, Online Public Access Catalogue (OPAC), web search engines, and robotic systems customised for book retrieval and delivery. Most web search engines today such as Google, incorporates speech recognition to their system. This enable their users to speak the word or phrase they want to search and the web search engines types it into the search box via the use of Natural Language Processing (NLP) before searching and displaying the search results. In addition, Murphy (2015) reported that robotics technology is being used to free space restraints and make information resources readily accessible to users. Example is the enormous automated storage and retrieval systems acquired by the University of Technology, Sydney (UTS). The system, designed as robotic cranes underneath the library, tend to thousands of closely packed bins of books. The robotic cranes stores and retrieves materials for users on request from the online catalogue of stored books. Once the request is made, the robotic crane automatically search for the item and retrieves it from the appropriate bin to the library staff in charge, who then retrieves the requested book and delivers it to the library's hold shelf where the user can pick it up. The advantages of the system are: maximisation of retrieval speed, about fifteen minutes from the time of request till when the item is delivered; minimization of storage space; and minimization of cost, obviating the need to build an expensive off-site storage facility.

Artificial intelligence has gained tremendous application in library information services, these include but are not limited to:

1. Automatic cataloguing and classification using Optical Character Recognition (OCR)
2. Automatic translation of foreign language materials using Natural Language Processing (NLP)
3. Automatic indexing using Expert Systems
4. Retrieval of audiovisuals materials Optical Character Recognition and Speech Recognition. Music and pictures in the library's collections can be called-up as fast as printed records – a new dimension to knowledge storage and management.
5. Interactive bibliographic instruction using various media
6. Intelligent gateways to online sources,
7. User-structured information environment
8. Portable computer reader services for the handicapped
9. Intelligent Document Delivery Services (DDS)

Robots in Libraries

Robotics is a subfield of artificial intelligence and it focuses on the perceptual and motor tasks. It also refers to the branch of technology that deals with the design, construction, operation, and application of robots (Abram, 2019). A robot is a machine that performs automation tasks and carries out series of complex operations under the supervision of a human or automatically (autonomous) under the control of pre-defined program using artificial intelligence techniques (Shohana, 2016). According to Corke (2013), the term robot was first used to depict artificial people or androids coined in a 1921 Czech science fiction play. Following these, so many robot stories were written including Isaac Asimov's robot series. These stories influenced subsequent books and movies which in turn have shaped the public perception of what robots are.

The application of robots in library activities is one of the current trend in the application of artificial intelligence in libraries. Accessibility to the vast collection of information available on the web is a hallmark of the digital age. However, much of knowledge in the world still remains between the pages of printed books. Tracing these books in libraries is laborious and often time consuming (Li, Huang, Kurniawan and Ho, 2015). Book shelving and retrieval robots are now being developed to undertake this task. Example is the enhanced robotic library system for off-site shelving designed by Suthakorn, Lee, Zhou, Choudhury and Chirikjian (2002), which gains comprehensive access to printed materials on shelves, and retrieves books from the shelves to an off-site scanning station. The robotic system was designed to allow users gain comprehensive access to printed library materials, on demand that are off-site, through a web interface. First, the user will identify the material he/she wants to retrieve/read, then a sequence of operations will be initiated that will eventually trigger the robot to retrieve the requested item. Thereafter, another robotic system will open the item and turn the pages automatically via the use of scanners, Optical Character Recognition and automatic indexing software, which will allow the user to browse through the material, search and analyse the full-text generated from the scanned images of the item. Another robotic book retrieval system is the bookBot technology. According to Stone (2019), this technology has been in existence and used in manufacturing for years, but now being applied in libraries. The bookBot is a book-delivery system that automatically retrieves books for users on demand through the library automated catalogue. Within minutes of receiving a request, one of the bookBot's robotic cranes retrieves the requested item from the shelves and delivers it the unit in-charge for onward delivery to the user within or outside the library when the user intends to borrow the material.

Libraries are embedding Radio Frequency Identification (RFID) tags into their collections. These tags in form of barcodes, contains unique identifying labels for

each book in the library, and is used to quickly scan the library's collection using wireless, handheld RFID scanners/readers. According to Li *et al* (2015), smart shelves containing several RFID antennas can automatically register when books are removed from their stacks or returned. This can be used for automatic shelve reading and generate reports for miss-shelved or missing books. Similarly, robots are also being designed to navigate through library shelves to scan and retrieve materials such as the robot designed by Li, Huang Kurninam and Ho (2015), at Agency for Science, Technology and Research (A*STAR) Institute for Infocomm Research. These intelligent systems offer greater accuracy than humans although they are expensive to design and maintain. The technicalities involve will include outlining detailed map of the entire library for the movement of robot, computing and processing the distance between the robot and an obstacle (shelf, books, tables, users) to anticipate direction changes.

According to Shohana (2016), Connecticut's Westport Library acquired two robots that will assist in teaching coding and computer programming skills to users/students. In addition, two students, Pasi William Sachiti and Ariel Ladegaard at Aberystwyth University, created an artificial intelligent library catalogue by combining existing robot technology with information from the university's online public access catalogue. This robot was designed to accept users book request verbally and process, eventually leading the user to the exact location of the printed material on the shelf. Closely related to this is the robotic cranes used at the British Library's National Newspaper Building. The robot cranes is capable of retrieving newspapers from any time and date from a vast collection of over 60 million newspapers and periodicals spanning over three centuries.

It should be added that museums and archival centres also are exploring the capacity of artificial intelligence to improve their services delivery to patrons. According to Murphy (2015), the de Young Fine Arts museum in San Francisco acquired a pair of tele-presence robots that give patrons with disabilities the opportunity to visit the museum remotely. The robots, called BeamPros, 5'2 tall frame on wheels, has a screen, microphone, speakers and a camera to display the picture of a remote patron, allow the patron to speak and communicate/interact with others and also view the items arrayed in the museum respectively. To operate a BeamPros robot, a patron will first log into the robot via their computer at home or at work, then begins to pilot it and tour around the museum. The screen of the robot displays a live video feed of the patron's face, while the camera captures the live video feed of the museum for the patron to view. In addition, the robot has a second camera which captures the floor, allowing the patron to navigate around the museum to avoid obstacles. The advantage of this technology is the physical presence it gives the patron as he/she tours around the museum, and the interactive features: the

microphone, speaker, camera and screen, which allows a patron to interact with others – unlike a pre-recorded video tour.

From the foregoing, the practical application of robots, artificial intelligence in libraries, museum and archival centres as reviewed, shows that artificial intelligence has a great promise in libraries and information centres. Whether it is used for library instructions (education), organisation of knowledge (shelving and shelf-reading), information retrieval and delivery or remote accessibility of information material, this technology maximises the efficiency and effectiveness of library operations, and facilitates the library's connection with users.

Artificial Intelligence and Virtual Libraries

Virtual libraries are electronic libraries that provides access to distributed information resources in electronic format to users in remote locations. It is a term used to denote libraries without walls, an organised collection of links to various information resources on the network or Internet. It is a collection of electronic information resources in form of e-books, journals, online databases, media and other forms of data. Typically, virtual libraries provide remote access via an online portal or gateway, of information resources in varieties of contents/formats, including online databases, e-books, e-journals, e-magazines, e-newspapers etc, and provides other services traditionally offered by libraries. The virtual library environment means virtual communication between the library and the patrons, virtual services delivery, virtual information access etc (Trivedi, 2010 & Koganurmath, 2007). Users are able to view and request or access the library's information resources from their various offices or homes over the Internet. All forms of communications to the library is through e-mails, phone, fax or the video/audio/text communication system offered via the library's portal. Such libraries organises tele-training for their users, webinars, online video conferences etc. to keep their users abreast with their services and development. An interchangeable or closely related term is the digital library.

Digital and virtual libraries have their services fully automated. Moreover, automation is the process of using machineries to facilitate human activities and saving the human power and time. Library automation refers to the use of computers to automate the routine procedures in libraries such as cataloging, user registration, charging and discharging of books, shelf-reading etc., it the technology concerned with the design and development of the process and system that minimizes the necessity of human intervention in library operations. The main purpose of library automation is to free the librarians and library staff and to allow them to contribute more meaningfully to spread of knowledge and information. Artificial intelligence play a vital role in library automation especially in digital and virtual libraries where their resources and services are fully computerised. In fact, most automated library

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systems incorporates one or more areas of artificial intelligence in the design and implementation of the system such as:

1. Automatic keyword indexing and abstracting of electronic resources via the use of Expert Systems.
2. Internationalisation/translation of electronic resources (text, audio) through the use of Natural Language Processing and Optical Character Recognition.
3. Digitisation of printed materials. This deals with the conversion of traditional library materials into electronic format through scanning or Optical Character Recognition to facilitate searching and retrieval.
4. Automatic textual analysis through the use of Decision Support System (DSS).
5. Information retrieval through the use of speech recognition and Natural Language Processing.
6. Automatic analysis and retrieval of audiovisual resources via the use of Expert Systems/ Optical Character Recognition.
7. The application of data processing systems to support clerical and repetitive functions found in technical processing of books (cataloguing), circulation control (charging and discharging of books) and serial management (tracking magazines, journals and newspaper holdings).
8. Multiple access to information resources and round the clock services delivery via the use of intelligent/ advanced automated systems.

Other digital and virtual library systems built based on intelligence system approach/algorithm include the online public access catalogue and online database gateways. These systems use meta-control and memory management to map knowledge in their various storage locations and control various processes involving data structure, characteristics and description in an intelligent manner.

Virtual Reality and Artificial Intelligence in Libraries

Virtual Reality (VR) is the use of computer technology to create a simulated environment. It is a computer technology that uses multi-projected environments, sometimes in combination with physical spaces, to generate realistic images, sounds and other sensations that simulate a user's physical presence in a virtual or imaginary environment (Jackson, 2015). Virtual reality headsets are built with artificial intelligence features such as computer vision, image processing and speech recognition, to create an artificial 3D world that immerses users in a 360-degree digital world. Until now, libraries have not fully explored the potential of virtual reality (VR), augmented reality (AR), and mixed reality (MR) (Marcotte, 2019). Augmented reality enhances users vision/sight by overlaying 3D objects over real

word, while mixed reality allows digital created objects to interact with the real word. The combination of virtual reality, augmented reality and mixed reality can be used in libraries to enhance user experience and give opportunities for disabled or remote users to visit the library virtually. Like the traditional library environment, a patron using virtual reality headset is able to move around the artificial library environment and by simulating as many senses as possible (vision, hearing, touch, smell), interact with virtual library resources.

Furthermore, virtual reality gives the patron a virtual presence (tele-presence) in the library by immersing him/her inside the virtual library environment rather than viewing it from a computer screen. Like the BeamPros tele-presence robot used in de Young Fine Arts museum in San Francisco as reported by Murphy (2015), which give patrons with disabilities the opportunity to visit the museum remotely. Virtual reality is another option to bridge the distance barrier for distant or disable patrons. It can be incorporated with the work of Suthakorn *et al* (2002), the enhanced robotic library system which gains comprehensive access to printed materials on the shelves and allow patrons to remotely turn the pages of books automatically through the use of scanners & optical character recognition, to browse and search through physical materials in the library.

Since creating a virtual reality of all the information material in the library might seem to be difficult or time consuming, the combination of mixed reality & virtual reality can be used to link the enhanced robotic system for browsing/reading materials, so that when patrons from the virtual reality environment initiate an action to read a particular book, the book-reading robot is signalled/triggered to locate the physical book in the library in order to enable the virtual patron to browse through it via a live-feed of the pages of the book captured from the book-reading robot and transmitted to the virtual reality headset of the patron. Marcotte (2019) reported that virtual reality, augmented reality and mixed reality could be used in libraries for immersive virtual field trips for patrons, such as a walk through the solar system, previewing sea animals or test-driving a new car. Already, applications exist that libraries can use to stimulate reality for their users for deeper learning experiences (Abram, 2019)

It should be added that, the virtual reality headsets are a product of artificial intelligence systems that have gained applications in various field of science and engineering, medicine, aviation, military etc. It is mostly used in these fields for live training of students especially when it involves hazardous or sensitive activities in real life situations. The library should not be left out of the fun!

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The Benefits of Artificial Intelligence in Libraries

Generally speaking, artificial intelligence is installed in machines or computers to reduce human casualties in wars, hazardous work environments, car accidents, plane crash, fire explosion or disasters as a result of human error. Furthermore, artificial intelligence facilitates human work with greater speed, efficiency and effectiveness in work environments such as the library. According to Vijayakumar and Vijayan (2011), artificial intelligence and expert systems are used in classification, cataloging and indexing of library materials. Via the use of optical character recognition and neural network, the system is able to obtain the bibliographic records of books and classify them accordingly. According to Asemi and Asemi (2018), natural language processing can be used to reduce language barriers. For instance, one has to learn Chinese in order to study in China. The availability of Natural Language Processing systems in their libraries can assist the foreign students to translate and understand Chinese. Moreover, Natural Language Processing systems can also assist in searching for information in Multilanguage databases. In addition, expertise is needed in the provision of qualitative service delivery in libraries, as such, artificial intelligence and expert systems will improve the performances of library services and reduce the rate of human errors and defects and can perform task faster than a human being can most likely (Shohana, 2016).

Romero (2018) submitted that artificial intelligence could facilitate searching and retrieval of new media with greater efficiency and effectiveness by library patrons and introduce them to new material they may never have found otherwise. In addition to convenience and entertainment value, using artificial intelligence to suggest similar materials could also help library clientele who are carrying out research by combing the library database in an instant. Generally speaking, artificial intelligence systems can read to you, inform you, advice you, teach you, correct your mistakes, and patiently respond to your myriads demands. Thus artificial intelligence holds great potentials for library and information service.

A good librarian, through working with a user, can provide a much better tailored service, potentially using up time freed up by using AI. – IFLA Library Policy and Advocacy Blog

The benefits of artificial intelligence in libraries can be summarized as follows:

1. According to Ex Libris (2019), artificial intelligence in libraries can make research more discoverable which can boost research productivity among faculty members,

2. **Bridge in Time:** Round the clock accessibility to information resources and services just in time.
3. **Bridge in Space:** The space occupied by piles of books, journals, bound newspapers and other information materials has been reduced by the introduction of digitization, electronic copies and use of robotic cranes that stores and retrieve books from a compact off-site storage location.
4. **Maximization of Efficiency:** This refers to efficiency in library operations: selection and acquisition of materials, technical services, circulation services, references services, serial management etc.
5. Maximization of effectiveness in form of improves services delivery and elimination of human errors in library operations.
6. **Minimization of Effort:** The effort expended by librarians in technical services, circulation services, references services, serial management etc, can been minimized by the use of artificial intelligence systems in libraries.
7. Enhanced and immersive user experience in library services delivery.

Demerits of Artificial Intelligence in Libraries

Although artificial intelligence is a promising innovative idea in the library system, it is not without disadvantages. Shohana (2016) outlined some of the disadvantages of artificial intelligence as follows:

1. Artificial intelligence systems have the ability to replace human jobs thereby increasing the rate of unemployment in the society. This is an issue of concern among librarians for decades. The fear is that intelligent machines with capabilities of shelving books, retrieving information, answering reference queries and attending to users have great potentials of replacing librarians, leaving them unemployed. Jasrotia (2018) also opines that as intelligent machines in libraries can read digitized resources, analyse and offer customized insights, answers and services faster than librarians, the possibility of AI being a 'threat' to librarians but not to libraries does exist. This is probably why many librarians do not like the idea of artificial intelligence in libraries. Nevertheless, Guion (2019) argues that librarians would still be needed because machines with AI systems would still not be able to fully discern what a library user wants as sometimes search terms do not fully explain the need or even judge how well their outputs conforms to basic library principles of intellectual freedom, copyright and privacy.
2. Artificial intelligence systems can malfunction and perform task they were not programmed to do. The fear, according to Ex Libris (2019), is the possibility

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of AI systems propagating misinformation if the algorithms powering them become problematic.

3. Artificial intelligence systems can be misused leading to mass scale destruction.
4. Over dependence on artificial intelligence systems can make librarians forget the basic and fundamental processing involved in library operations such as cataloguing and classification, since a robot now handles that.
5. Lacks the 'human touch'. Some users will prefer to interact with human beings directly and express their feelings rather than to a machine.

Challenges of Implementing Artificial Intelligence in Libraries

Artificial intelligence systems are generally not in operational use in most libraries today. The limitations to implementing artificial intelligence systems in libraries include the following:

1. Lack of technical know-how to use and operate artificial intelligence systems among the library staff.
2. Lack of adequate funding to develop or procure artificial intelligence systems in libraries. Since the budgets for hardware and software are frequently tight, there's always constrain to the type of system the library can purchase or develop.
3. High system development and maintenance cost of artificial intelligence systems in libraries.
4. Erratic power supply to power artificial intelligence systems in libraries especially in developing countries.
5. Inherent complexities of expert/artificial intelligence systems' development.
6. Limited natural language capabilities.
7. Intelligent systems lack that common base of human knowledge, severely constraining the types of functions that they can perform.
8. Level of effort and technical expertise needed to create artificial intelligence systems in libraries. The level and nature of effort that must be invested to develop an intelligent library system is directly proportional to the power and complexity of the system. This implies that, the more intelligent the system is, the more the effort that must be invested therein. Currently, the required skilled personnel with expensive development tools or techniques, needed to develop sophisticated intelligent system in libraries are lacking or costly, hence, the lack of such systems in libraries.
9. Limited amount of artificial intelligence experts among library automation vendors. The field of artificial intelligence is complex and thus, requires a specialised knowledge in that aspect far beyond the development of conventional

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library automation systems. Consequently, this will require hiring new personnel in that area before any significant, widespread work can be done in the area of artificial intelligence systems in libraries.

The Future Libraries

The development of shelf reading robots by Li, Huang, Kurniawan and Ho (2015) and others shows that, it is now only a matter of time, the present generation libraries will be flooded with the impact and utility of new applications based on artificial intelligence (Shohana, 2016). Like the invention of the electric bulb that appeared to be a quasi-magical thing, and no one could predict that it will lead to the development of telephones, radio, TVs, computers and other electronic gadgets. Artificial intelligence is the new quasi-magical thing that has surfaced in recent times. And just like in the early days of the development of electricity, we are yet to completely fathom the application of artificial intelligence not only in libraries, but in every aspects of our lives. In the future, artificial intelligence will revolutionise many sectors of life, including the library.

Bourg (2017) had asked a critical question 'what happens to libraries and librarians when machines can read books?' and provided an example with the GeoDeepDive, a tool with AI systems which geologists use to extract data in texts, tables, and figures in journal articles and websites. Times are changing! Librarians may not have to read a library book to get information to inform their users or take a decision, because a machine would have already read all of the books and is more skilled at analyses and decision making. We will not spend hours on library computers researching a question when artificial intelligence can do it for us in seconds. And we certainly would not go to a human librarian with an information need when artificial intelligence is able to deliver a better answer in a fraction of the time (Johnson, 2018). Library activities in the future will be fully automated. The future libraries will incorporate robots and intelligent machines that will perform library task such as reference services, shelf reading/arrangement, circulation activities (registration, charging and discharging of materials), generating library statistics, cataloguing and classification etc. artificial intelligence will tremendously change the face of the library as we know today. The promise is a perfect librarian that respond to users reference queries based on speech recognition, natural language processing and neural network; Fast, efficient and effective processing of library materials; and state-of-the-art service delivery to patrons even from remote locations. Libraries of the future are the ones that react and adapt to new technology, not run away from it (Stone, 2019). The American Library Association asserted:

The Center for the Future of Libraries works to identify trends relevant to libraries and the communities they serve; promote futuring and innovation techniques to help librarians and library professionals shape their future; and build connections with experts and innovative thinkers to help libraries address emerging issues. – ALA

However, according to Bourg (2017) and Coleman (2017), pertinent questions need to be asked of how can the skill-set of librarians, scholars and others can be built up and used to ensure an intelligent information system with the infusion of the core values of libraries such as inclusivity, privacy, intellectual freedom, social justice and that fosters imagination, knowledge creation and supports human learning as well; how libraries can create an interface between users and AI generated information to ensure that it is accurate and relevant; and how texts can best be discovered by both humans and machines especially scholarly communication so that intelligent machines can be relied to produce 'intelligent' answers to queries? The President of ALA, Garcia-Febo (2019) had recently advocated the inclusion of artificial intelligence in library's professional agenda and national conversations so that these questions and more can be scrutinized and answered. In addition, the President stated that, the wave of artificial intelligence including vice assistants and machine learning is still uncertain in many fields but has already gained recognition and application in the library. In this infancy stage of Artificial Intelligence, libraries are using it to teach information literacy, critical-thinking skills like computer programming, to help their patrons formulate questions for these machines and learn to evaluate responses (Garcia-Febo, 2019) and access information resources remotely via robotic cranes. All these are giant steps implemented in library practices around the world and it points to a large-scale application of artificial intelligence that will shape the future libraries. Therefore according to Jacknis (2017), the question is never 'either AI or libraries', rather it is how libraries can use the technology to offer the best services to user communities.

CONCLUSION

If libraries are to thrive in the new knowledge economy, they must innovate their services and re-examine their practices, a veritable means to achieve this is the application of artificial intelligence in libraries. Libraries will greatly benefit by the development of artificial intelligence systems for technical services, reference services, circulation services, resource management and information retrieval/dissemination. Although there are speculations that this technology will render librarians jobless, artificial intelligence will greatly enhance library operations and services delivery, and will upload the relevance of libraries in an ever changing digital society. In

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addition, as it is with many emerged technologies, artificial intelligence is also viewed as thread to librarians and the touch of humans in libraries, the eventual acceptance and incorporation of artificial intelligence into library services will no doubt reveal the many potential promise it has in librarianship. Artificial intelligence will not diminish the human touch in libraries, nor will it erode the library's connection with their patrons any time soon.

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Chapter 9
Managing and Adapting Library Information Services for Future Users:
Applying Artificial Intelligence in Libraries

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ABSTRACT

The advance of artificial intelligence (AI) as a field of computer science that can impact and improve all sciences and human interactions is changing the information sector. AI is reconfiguring many library tasks such as classification, indexing, cataloguing, information retrieval, reference, information literacy, and even learning. It is the greatest usable intelligence that has the capacity of assisting librarians in decision making and administration. AI can also be employed in various areas such as speech recognition, machine transformation, and librarian robots. The very disruptive nature of any novel technology can be perceived as a risk to many organizations, including libraries. However, the ultimate acceptance and integration of artificial intelligence into library services is indeed possible and beneficial.

INTRODUCTION

According to Stern (2010), Artificial Intelligence (AI) is the science and engineering of making intelligent smart machines and devices, that are able to learn new concepts and tasks, reason and draw useful conclusions about the world around, understand a natural language, comprehend a visual scene and perform other types of feats that ordinarily require human types of intelligence. AI makes use of concepts from various fields including, cybernetics, information theory, psychology, linguistics, logic and computer aided instruction. Furthermore, AI assists machines to find solutions to complex problems in a more human-like fashion, which generally involve borrowing characteristics from human intelligence and applying them as algorithms in software programmes.

The most popular artificial intelligence programmes are the specialized computer systems that embody human elements of human intelligence and create electro-mechanical devices that are capable of performing tasks done by human beings as well as processing ideas and knowledge. This increases the rate of automation and mechanization where the routines and receptive jobs or operation are left to be performed by machines with little or no intervention by human beings. It also implies a lesser degree of human intervention, although it does not mean that automation does away with human beings. On the contrary, human beings are relieved of routine chores, giving them more time for tasks which require their intelligence.

Modern libraries have evolved from centralized, paper-based computer systems into distributed networks of digital and non-digital materials, providing innovative library services as well as traditional services. With the dramatic increase of available materials and user expectations, libraries are forced to exploit new technology to fulfill their missions with relatively limited resources. AI has great potential for libraries as it can perform routine computer-input duties. Artificial intelligence may also have the ability of reasoning, planning, learning and collaborating with users or other agents in libraries. AI techniques and tools have also been adopted in many areas, including industrial control, medical diagnosis, stock trading, personal assistance, games, scientific discovery, information retrieval, business management and even the military.

Library and information science also has developed in using intelligent computer systems. Library operation and management requires the performance of a number of repetitive, painstaking, labor and time-intensive activities. Hence, in order to increase efficiency and effectiveness, many libraries are moving towards automation of the majority of their activities. Artificial intelligence techniques give more accuracy to actuation of libraries. The ideas of the utilization intelligent system instead of classic system in libraries started from 1990. Intelligent library computer systems

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utilize artificial intelligence technologies to provide knowledge-based services to library patrons and staff.

The first industrial revolution attempted to create machines that could replace man's physical power and industrialization has transformed the society totally and brought immediate crises in later development. In actual fact, there are machines that can outperform human beings over the century's man's working ability and thinking process has seen a sea change. The society is becoming increasingly centered on information handling, processing, storage and dissemination, using microelectronic based technologies, today's computers can stimulate many human capabilities such as reading, grasping, calculating, speaking, remembering, comparing numbers, drawing, making judgments, and even interactive learning.

Researchers are working to expand the capabilities - the power of computers, by developing hardware and software that can imitate intelligent human behavior. For example, researchers are working on computer systems that have the ability to reason, to learn or accumulate knowledge, to strive for self-improvement, and to stimulate human sensory and mechanical capabilities. Experts are convinced that it is now only a matter of time for the present generation to experience the impact and utility of new applications based on artificial intelligence in offices, factories, libraries and homes. Hoefer (2005) noted that artificial intelligence mainly focuses on understanding and performing intelligent tasks such as reasoning, learning new skills and adopting to new situations and problems.

Mandel (2013) opines that the fundamental characteristic of artificial intelligence is that it includes demonstration of the thought development of skilled humans who are actually conversant with the certain problematic field of questions asked. For instance, if an artificial intelligence is to be constructed that will help as reference aide, it needs to be done by sitting down with professional reference librarians and requesting them to categorize the rules of thumb that help them in their decision-making resolution. Therefore, artificial intelligence machines integrate the knowledge of human professionals through consultation, human ability of cognition, and the methods of thinking of those human professionals.

FEATURES

Khoo, Rozaklis and Hall (2012) noted the following distinct features of artificial intelligence:

- Able to think with undefined data
- Able to describe itself in a practical method
- Provide advice as output

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- Premeditated to develop incrementally
- Have a clear distinction of knowledge and inference device
- Usually not certainly instruction-based
- Constantly constrained to a narrow field of knowledge

The knowledge is attained and collated during lengthy interviews with one or more professionals in the appropriate field and the knowledge is classified as a collection of evidences and instructions, which collectively contains the knowledge base of artificial intelligent machines ((Marquez and Downey, 2015). The instructions may be thought of as distinct production instructions, or as a semantic link, or sometimes in certain other ways and it is occasionally presumed that an artificial intelligence machine must be proficient in natural language and converse with the user (McAfee and Brynjolfsson, 2012). This observation nevertheless can be debated, amidst certain various prevailing computer systems that have no such characteristics. Up until computer systems begin to receive incessant verbal input, it is possible that the utmost proficient method of input will encompass choice from menus, maybe by a touch-sensitive screen; many computer systems will likewise need a device for the input of words or figures from a keyboard and the suitable combination will hinge on the problem area (Noh, 2015).

ADVANTAGES OF ARTIFICIAL INTELLIGENCE IN LIBRARY SETTING

The ability to use artificial intelligence machines essentially lies in the availability of funds required and these could be determined by individual circumstances but the overall benefits as summarized by Satpathy and Anijo (2006) are listed below:

- Experts can be freed from routine tasks and made available for more exciting, creative and demanding work.
- Expertise can be pooled when more than one expert contributes to the system development. The pooling exercise can assist in the refinement of the procedures and help to make them more consistent.
- Knowledge can be safeguarded, developed and distributed. Enormous sums of money are spent on training individuals, yet all their knowledge and expertise is lost when they die or leave the company. Artificial intelligences offer a way of capturing this expertise and knowledge and at the same time making it available to other people.

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- Expertise can be available. Since artificial intelligences provide explanations for advice given they can be used 24 hours a day without the presence of the expert.
- Artificial intelligences can be used for training purposes. The problem-solving and explanation capabilities of artificial intelligences are particularly useful in training situations. Training can also be distributed throughout a company and done on an individual basis at times suited to the employee.
- Artificial intelligences can provide a standardized approach to problem solving.
- The development of artificial intelligence machines offers the expert with an opportunity to critically assess and improve his problem-solving behaviour.
- The performance of non-experts can be improved over a period of time and they may eventually even reach expert status.
- In many situations, artificial intelligence machines can provide solutions to problems far more quickly than a human expert.
- Artificial intelligence machines have the potential for saving companies a vast amount of money, thus increasing profits.

LIBRARY AUTOMATION

Library automation is the application of computers and utilization of computer-based products and services in the performance of different library operations and functions in provision of various library and information services. There is a great impact of the application of computers and information technology on libraries which has brought great change to the institutions. Modern technology is tending to alter radically the nature of our society and affect the prevailing economic, political and social values and libraries are also affected in the process. Industrialized countries were the first to realize that in the context of stock of knowledge, classical approaches relating to storage, retrieval and utilization of the information were no longer adequate and effective and that the solution lay in making fullest use of new developments in electronics, computer, telecommunications and micro-recording etc.

Many developing nations are very much behind in computer application in library operations and services. The reasons could be many; however, the situation is changing fast. Conditions are turning to be favorable as the various governments are beginning to lay great emphasis on modernization, which covers libraries as well. Above all library professionals are getting motivated and showing keenness to get trained to take up computer-based work. Library automation implies a high degree of mechanization of various routine and repetitive tasks to be performed by human beings. With the advent of automation, the human intervention is reduced to

a great extent. The appearance of computer has greatly increased library automation (Kemdarne, 2012).

In addition to computer advancement, telecommunication and audio-visual technologies gave way to new possibilities in information handling. In India, the use of computers is limited to only some specialized libraries unlike the case of developed countries. Library automation includes use of computers and other semi-automatic devices like punched cards to reprography. These are semi-automatic because human intervention is greater in extent. So, when we talk of library automation, these days, it is principally the use of computers; associated peripheral media (magnetic tapes, disks, and optical media); computer-based products and services in library work.

NEED FOR LIBRARY AUTOMATION

The need of library automation has several reasons which include acquisition control, serial control, and cataloguing and circulation control. They are also used for library manager's evaluation of reports, statistics, etc. For the good administration of the library computers are used in all levels of work. Above all, the unique characteristics of computer made it the right choice for the library world. Computers right from the beginning are considered to aid man, in doing various operations. Hence computers help libraries in the following areas.

- Capacity to handle any amount of data and information.
- Participating in network programmers and resource sharing.
- Flexibility in information search.
- Standardization of library procedures.
- Speedy processing of information and its retrieval.
- Provide better bibliographic control at local/regional/national and international level.
- Facilitate interdisciplinary nature of research and information.
- Economic implication of latest information technology.
- Overcome geographical and other barriers to communication.
  (Kemdarne, 2012)

AREAS OF ARTIFICIAL INTELLIGENCE

Artificial intelligence focuses on symbolic, non-algorithmic problem-solving methods. Intelligence relies on ability to manipulate symbols and though artificial intelligence is a young discipline, it has great possibilities of transforming the

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society beyond imagination (Marquez & Downey, 2015). It is noted that some of the recent computational techniques and areas that are utilized in developing fields of artificial intelligence include:

Knowledge Based Computerized Computer Systems

Knowledge systems are the knowledge-based computerized computer systems which play a role of intelligence interface or gateway for providing access to database and to obtain relevant information. They range in scale from simple rule-based computer systems with flat data to very large scale, integrated developments taking many people and years to develop. Knowledge based computerized computer systems provide expert advice, decisions or recommended solutions for a given situation. The different components of artificial intelligences are: Knowledge base, Inference Engine and User Interface.

Natural Language Processing

One of the long-standing goals of computer science is to teach computers to understand the language spoken and the ultimate generation of computer language is the natural language (Marquez & Downey, 2015). Artificial intelligence scientists have succeeded in building natural language interface to a large extent using limited vocabulary and syntax and natural language processing which allows a computer to understand the main linguistic concepts within a question or solution (McAfee & Brynjolfsson, 2012). Its goal is to design and build computer that analyze, understand and generate language that human use naturally (Tseng & Poulter, 2006). The different components of natural language processing are speech synthesis, speech recognition, machine translation, linguistic approaches, information retrieval and information extraction (Satpathy and Anijo, 2006).

Pattern Recognition

Pattern recognition is an aspect of Artificial Intelligence. It is the process of establishing a close match between some new stimulus and previously stored stimulus patterns and this process is being performed continually through the lives of all living things according to R-Moreno, Castaño, Barrero and Hellín (2014). They argued that the pattern recognition is studied in many fields, including psychology, ethology, cognitive science and computer science. Furthermore, pattern recognition is based on either a priori knowledge or on statistical information extracted from the patterns. These patterns to be classified are usually groups of measurements or observations, defining points in an appropriate multi-dimensional space. The components of

pattern recognition used by Artificial Intelligent machines are data acquisition, pre-processing, feature extraction, model selection and training and evaluation.

Robotic

The field of robotics is often described as the subfield of artificial intelligence that is concerned with perceptual and motor tasks (Mandel, 2013). He opines that robots perform automation tasks, either according to direct human supervision or a pre-defined program or a set of general guidelines, using artificial intelligence techniques. According to Mandel, the components of Artificial Intelligence (AI) encompasses automatic programming, computer vision, artificial intelligences, intelligent computer-assisted instruction, natural language processing, planning and decision support, robotics and speech recognition. Thus, intelligent library computer systems utilize artificial intelligence technologies to provide knowledge-based services to library patrons and staff.

McAfee and Brynjolfsson (2012) argued that artificial intelligence can be difficult for non-specialists to understand, yet its ultimate promise is to create computer systems that rival human intelligence and this clearly has major implications for librarianship. Therefore, if libraries are making progress in the area of intelligent computer systems, they must have a well-developed understanding of artificial intelligence technologies, a historical perspective on accomplishments to date, and a realistic perspective of artificial intelligence as a tool with appropriate and inappropriate uses in light of current constraints. There have also been several good reviews of research and development efforts relevant to librarianship (Morris, 2002; Tseng and Poulter, 2006).

THE NATURE OF INTELLIGENCE

To understand intelligent computer systems, libraries must first attempt to understand the nature of intelligence (Bavakutty, Muhammed and Mohamed, 2006). They added that theories of human intelligence abound, but there is no consensus about what constitutes intelligence and this lack of a widely accepted definition of intelligence is an obstacle for artificial intelligence researchers. Based on a review of major models of human intelligence Bavakutty, Muhammed and Mohamed concluded that the following ten factors are most pertinent to artificial intelligence research:

- **Acquisition:** The ability to acquire new knowledge.
- **Automation:** The ability to refine procedures for dealing with a novel situation into an efficient functional form.

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- **Comprehension:** The ability to know, understands, cognize and deal with novel problems.
- **Memory Management:** The ability to represent knowledge in memory, to map knowledge on to that memory representation, and to access the knowledge in memory.
- **Meta Control:** The ability to control various processes in intelligent behaviour.
- **Numeric Ability:** The ability to perform arithmetic operations.
- **Reasoning:** The ability to use problem-solving knowledge.
- **Social Competence:** The ability to interact with and understand other people, machines or programs.
- **Verbal Perception:** The ability to recognize natural language.
- **Visual Perception:** The ability to recognize visual images.

This is certainly a very useful list for its intended purpose however, if libraries encountered a system exhibiting these traits, they would not consider that system to be intelligent by human standards. The reason is that the notion of human intelligence is quite likely determined by the entire form of human existence, the fact that humans are transient organic beings that possess five senses and feel as well as think. In short, computers lack: all that man is, all mere complexities, the fury and the mire of human veins.

APPLICATION OF ARTIFICIAL INTELLIGENCE IN LIBRARY SERVICES

Artificial intelligences have been used successfully in economic and industrial sectors, and increasingly they are being employed in service sectors including libraries and therefore today the technology can boast a wide range of application areas in the field of library and information computer systems, some of which are discussed below as noted by Kotem, Buckley and Zhang (2015).

Library administration deals with complex problems on a day-to-day basis and problems with budgeting, staff, and planning are just a few of the difficulties they face every day. During budget cuts, the administrator must determine what items to cut and by how much and if should staff be reduced, should serials be cancelled, will there be any money to buy books or equipment, and hence an artificial intelligence machine could provide clear data and reasons to support the right decisions. One AI machine could develop a system composed of the heuristics (rules-of-thumb) that librarians use to make these decisions.

In hiring, promoting and placement of the staff, an artificial intelligence might be useful and by using criteria such as qualifications required for the job and experience, an artificial intelligence could be used to assist in the hiring process. An artificial intelligence could be developed to determine which staff members should receive raises, disciplined, or dismissal.

An artificial intelligence using information from patterns and material usage could help plan for remodeling or new facilities. The system would help the administrator to determine where the circulation desk should be located, where the copy machine should be placed and where the OPAC (Online Public Access Catalog) terminals would get the most use.

More efforts have been made in developing artificial intelligence applications for technical services and the focus of these research efforts are witnessed in the areas of cataloguing, classification and collection development. Cataloguing Artificial intelligences have been developed to create MARC (MAchine-Readable Cataloging) record and to apply some of the rules in AACR-2 for cataloguing. Roy Chang developed a cataloguing artificial intelligence based on the rules in AACR-2 (Anglo-American Cataloguing Rule) (Olmstadt, 2000). Hence its usefulness is limited because the system had no means of interpreting the rules and in this opinion cataloguing problems today are too widespread for employing an artificial intelligence.

Classification

Classification is also a difficult area for an artificial intelligence and while there are guides to determine classification numbers and subject headings, there are no strict rules available, and the relationship between objects and classes are often ambiguous. Research is progressing in the development of computer systems for assigning subject headings and class numbers.

Collection Development

There are only two possible responses when one considers new materials for acquisition or old materials for discarding; yes or no and with only two possible responses, it is easier to develop an artificial intelligent system. There have been at least several successful attempts at building artificial intelligent systems for collection development in various libraries in developed countries.

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Reference Service

Artificial intelligences would be useful for assisting patrons in locating materials and information. Artificial intelligences may prompt the user for the type of information needed and display materials that may contain it.

Decision Making

Executive systems consist of two main elements: knowledge base and inference engine, where knowledge base is involving all information needed which human/librarian experts are using to make decision. This information present in knowledge base, are fact and rules. Executive systems can make much better decision than librarian decision makers because their knowledge base can involve experiences of team of best experts. To design rules of knowledge base; the manner of librarian experts to make decision is emulated. The rules consist of two main phases: If phase and Then phase. If phase consists of conditions and Then phase consists of results. The only thing which distinguishes executive systems from other computer systems is inference engine and the inference engine simulates human decision makings based on knowledge base and rule base.

Selection and Acquisition of Books

An obvious potential application of executive systems within libraries is for the selection of book sellers or other vendor of library materials carried to its logical conclusion, a system might be developed to select a vendor automate ethical based on past performance in the supply of publications of a particular type such a capability would be especially valuable in the acquisition of material that are less routine-conference proceeding. Certain technical report, publications in certain languages, publications from certain countries, and so on and other executive systems, designed to help library user satisfy their needs, have also include document orders aid. Computer systems have also been designed within the library community to aid in the selection process, computer systems of this type have been discussed by some of the researchers.

The term referral system, as used here, relates to computer systems that are designed to refer library users to information sources likely to provide the answer to a particular question of the factual of information type within the library community more work has been done on system of this kind than on any other executive systems. The objective of such computer systems is obvious: to guide library users to a reference suitable source when librarians are not available to help them form reference referral system cover knowledge as a whole in the coverage of a general

reference library while other are restricted to highly specialized domain. The librarian robot consists of a manipulator, which can recognize and manipulate books, and a mobile platform, which can localize itself and navigate using ambient Radio-Frequency Identification (RFID) tags embedded in a floor. Artificial intelligence techniques such genetic algorithm, artificial neural network, fuzzy logic or hybrid methods can improve librarian robots.

Searching Relevant Information

It is mentioned that artificial intelligence is a branch of science, which deals with helping machines, finds solutions to complex problems in a more human-like fashion and this generally involves borrowing characteristics from human intelligence and applying them as algorithms in a computer friendly way. It can be used for natural language and help to search relevant information from databases, indexing and to reduce language barrier. In information retrieval process the user can state his information requirement in natural language making the searching more easily and fruitful this allows users to state complex retrieval languages. Many activities in the provision of library and information services involve expertise and thus provide application where executive systems techniques and technology to improve performance.

Analysis of the literature on the applications of executive systems in library and information science yields the application areas: Knowledge base indexing; Neuro-Linguistic Programming *(*NLP*)* and abstracting; Reference work; Cataloguing; Online information retrieval and intelligent interface, in particular interfaces for online information retrieval computer systems; subject analysis and representation, including classification, indexing and abstracting service; reference and referral computer systems; Hypertext and hypermedia; and Collection development.

By using this digital library based of executive systems, users can search the collection, reading collection, and download the desired collection by online system. Libraries can use system of intelligent library retrieval based on data mining. Also, data mining can use in on-line library system and help to find user's information needs and today, artificial intelligent systems have extended applications in the library computer systems. They help to end user to select suitable keyword/phrase in information retrieval and different studies are on the user-centered design of a recommender system for library catalogue and other divisions of the library system.

The concept of artificial intelligence belongs to a field of computer science and the artificial intelligence is well documented in literature from a computer science or engineering perspective, but not from a library perspective. Librarians play a key role in the artificial intelligence development and implementation in library environment. The artificial intelligence has potential in many library areas, such as

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information literacy, virtual reference, collection management, user search support and uses for routine.

Artificial intelligence consists of two main elements: knowledge base and inference engine. Knowledge base is involving all information needed which human/librarian experts are using them to make decision. This information present in knowledge base as fact and rules. Executive systems can make much better decisions than librarian decision makers because their knowledge base can involve experiences of team of best experts. To design rules of knowledge base, the manner of librarian experts to make decision is emulated and the rules are consisting two main phases: If phase and then phase. If phase is consisting conditions and then phase is consisting results and the only thing which distinguishes executive computer systems from other computer systems is inference engine. The inference engine simulates human decision makings based on knowledge base and rule base.

An obvious potential application of artificial intelligence system within libraries is for the selection of book sellers or other vendor of library materials carried to its logical conclusion, a system might be developed to select a vendor automate ethical based on past performance in the supply of publications of a particular type such a capability would be especially valuable in the acquisition of material that are less routine-conference proceeding. Other intelligent computer systems designed to help library user satisfy their needs, have also include document- orders aid. Computer systems have also been designed within the library community to aid in the selection process; computer systems of this type have been discussed by some of the researchers.

Referral system relates to computer systems that are designed to refer library users to information sources likely to provide the answer to a particular question of the factual of information type within the library community. More work has been done on system of this kind than on any other intelligent system. The objective of such computer systems is to guide library users to a reference suitable source when a librarian is not available to help around. The librarian robot consists of a manipulator, which can recognize and manipulate books, and a mobile platform, which can localize itself and navigate using ambient radio-frequency identification tags embedded in a floor.

Artificial intelligence techniques such as genetic algorithm, artificial neural network, fuzzy logic or hybrid methods can improve librarian robots. The architecture of the system is presented and its object-oriented design is described. It is mentioned that artificial intelligence is a branch of science, which deals with helping machines, finds solutions to complex problems in a more human-like fashion. This generally involves borrowing characteristics from human intelligence and applying them as algorithms in a computer friendly way. It can be used to search relevant information from databases, indexing and to reduce language barrier. In information retrieval

process the user can state his information requirement in natural language making the searching more easily and fruitful this allows users to state complex retrieval languages.

Many activities in the provision of library and information services involve expertise, and thus provide application where intelligent computer systems techniques and technology to improve performance. Analysis of the literature on the applications of artificial intelligence in libraries yields the application areas: knowledge base indexing, abstracting, reference work, cataloguing, online information retrieval and intelligent interface, in particular interfaces for online information retrieval computer systems; subject analysis and representation, including classification, indexing and abstracting service, reference and referral computer systems, hypertext and hypermedia and collection development.

The concept of digital library is utilizing artificial intelligence in the process of cataloging and searching digital collections. By using this intelligent system, users can search the collection, read collection and download the desired collection by online system. Also, intelligent computer systems can be used in on-line library system and help to find user's information needs. Today, artificial intelligent computer systems have extended applications in the library computer systems. They help end-users to select suitable keyword/phrase in information retrieval. Different studies are on the user-centered design of a recommender system for library catalogue and other divisions of the library system.

ISSUES RAISED BY ARTIFICIAL INTELLIGENCE

Artificial intelligence encompasses some exciting areas of development with positive benefits and is often construed as an inevitable change. However, there are a number of very significant issues with it that have raised public concern.

Privacy is central to these and thus commercial companies amassing huge amounts of user data ostensibly to personalize user experience, but also to target marketing, raise complex issues around manipulation, personal privacy and consent. This is especially the case because the companies concerned may be based in other legal jurisdictions.

Another important area of concern is bias: how far artificial intelligence can be trusted to make fair decisions. Given the complexity of the algorithms it becomes difficult to make the process of decisions intelligible. How are artificial intelligence computer systems to be accountable and transparent if their operation cannot be understood? There is gathering evidence of the biased assumptions built into many algorithms, e.g. created through choice of training data. This may not merely be a teething problem; it can also be seen as related to structural issues in the artificial

intelligence industry, such as the preponderance of male employees, and the origins of funding for artificial intelligence from state, including the military, and profit-driven commercial organizations.

Moreover, artificial intelligence is likely to be costly and that is the price is likewise a major obstacle to artificial intelligence in higher education (libraries). If it emanates to higher education it might be mostly in the form of patented computer systems. If commercial attitudes motivate development, this by itself might be the greatest difficult aspect for libraries. Totally, these concerns point to the necessity for the community to have more data mastery, for wider discussion of the issues, and for improved transparency of computer systems and their design. Artificial intelligence is likely to have an impact both on employment and social equality. There is a potentially affirmative building of collections, including licensing material, may put them in a strong position to play a role in creating artificial intelligence infrastructure.

This could mean the creation of new jobs. Librarians may be considered well placed to manage the process of introducing artificial intelligence to avoid privacy pitfalls and help users to develop critical information literacy. If artificial intelligence did impact work in the library sector, it could be to free up professional staff time from more repetitive tasks. Yet, there is clearly also a risk of direct replacement of library staff by artificial intelligence and predictions make grim reading for those in more routine roles.

BARRIERS PREVENTING LIBRARIANS FROM DEVELOPING SOPHISTICATED ARTIFICIAL INTELLIGENCE

The kind of equipment librarians are likely to utilize for instance low-cost artificial intelligence shells enforce fixed bounds on what could be accomplished (Marquez & Downey, 2015). Utilizing these shells, it is equally easy to build small computer systems with little knowledge sources; nevertheless, some significant problems need greater knowledge sources, more difficult knowledge demonstration structures and greater critical power than low-cost artificial intelligence shells presently provided (McAfee & Brynjolfsson, 2012). There is a substantial dissimilarity between building an artificial intelligence that endorses 60 reference works in a single field and a system that recommends 1,500 reference works in all fields (Thompson, 2015). The fact that several librarians have little or no artificial intelligence systems skills is another issue.

This absence of artificial intelligence skills restricts our conceptual perspectives, and it decreases the variety of technological devices that libraries can expertly use to build intelligent computer systems (Van, 2013). Divayana, Ariawan, Sugiarta and

Artanayasa (2015) cite that library departments will offer more detailed training to novel generations of librarians. As library staffs are hardly keen full-time to develop artificial intelligences, hardware and software resources are normally tight, resource limitations similarly enact restrictions on the kinds of computer systems that librarians can develop.

Lastly, threat aversion is an issue because when library managers invest limited resources in innovative developments, they generally presume achievement, preferably rapid achievement (Khoo, Rozaklis, Hall & Kusunoki, 2016). Regrettably, the nearer to the cutting edge a development is, the better the chance that it will flop to yield a completely operational system. Playing it safe usually translates to computer systems intended for achievement, not refined functionality McAfee & Brynjolfsson (2012) cite at the phase in the development of library artificial intelligences, more premeditated risk taking is required in system design efforts.

CONCLUSION

Through the use of artificial intelligence expertise, many expert intellectual library computer systems have been produced for classification, indexing, information retrieval, reference and other reasons; though, relatively few of these computer systems have developed into production computer systems that are employed in the daily activities of libraries. It is probable that the use of advanced systems combined with the thoughtful use of artificial intelligence systems can solve the more tractable portions of the whole information retrieval problem, as a result of more influential and beneficial computer systems. Intelligent computer systems have simplified many of librarian's activities such as classification, indexing, reference, information retrieval and other activities.

Artificial intelligences are the utmost usable expert systems in library and information science which simulates librarian expert's actions to aid decision and administration. But, independently using of this expertise is condensed in current studies. Various information computer systems have a closed relationship with knowledge and judgment of experts. Utilizing artificial intelligence skills for instance inference engine and fuzzy instruction base might increase the precision of them. Thus, the current information computer systems can be enhanced by incorporation of artificial intelligence knowledge. Librarian expert systems decrease a large quantity of repetitive and monotonous tasks in the workstation of shelves and at service points.

The worth of artificial intelligences in library and information systems will depend on growing power and effectiveness of hardware and software. To be able to provide knowledgeable systems services to their customers, libraries will have to be part of the development of model of computer systems, development of knowledge

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demonstration schemes, testing with knowledge-based indexing, conceptualizing and grouping imbued with Artificial Intelligence. Furthermore, testing with specialized development environs for specific fields of knowledge is needful. As knowledge based artificial intelligences develop and becomes more acceptable in the library fraternity, libraries will arise to develop, acquire and preserve interactive knowledge-based artificial intelligences for their customers.

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KEY TERMS AND DEFINITIONS

Artificial Intelligence: Is a field of computer science that stresses the development of intellectual technologies that operate and respond like human beings.

Executive System: Is a system that simplifies and helps top management in making organizational decisions.

Expert: Is somebody who has a lengthy or deep knowledge through training and learning in a specific area.

Library: Is a gathering of information materials and related information resources, made available to a distinct community for referencing and borrowing.

Natural Language: Is a division of artificial intelligence that aids computer systems comprehend, deduce and control human language.

Robot: Is a system similar to a human being and is intelligent to repeat certain human actions and tasks automatically.

Service: A valued act, effort and deed done to gratify a want or to satisfy a need.

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Chapter 10
Libraries and Innovative Thinking in the Digital Age

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ABSTRACT

Librarianship, as is quite obvious, is changing very fast with the high rate of technological infusion in every aspect of the profession. Books and other information resources that are managed by libraries and information professionals are being transformed to electronic platforms. Also, the information users are becoming more technology savvy as well as sophisticated in their information needs and the quest to satisfy these needs. Users are vast in the use of search engines, and it is like they do not need libraries and the services of librarians anymore. All these and many more developments have put great strains on libraries and librarians. This chapter therefore discusses how librarians can provide services for 21st century users through innovative thinking.

INTRODUCTION

The days are long gone when a library can, passively, assume that it will be recognized as an asset without having to defend that proposition and prove its worth (Lubbe, 2016). This is the Information Age, which, according to Wikipedia is a historical period in the Twenty-First (21st) century characterized by the rapid shift from traditional industry that resulted from Industrial Revolution through industrialization to an economy based on Information and Communications Technology (ICTs). The period is also referred to as Computer Age, Digital Age or New Media Age. This

is a period when information is expected to be delivered at the doorsteps of every human since all decisions and actions are information driven (Nwalo, 2018).

Libraries are facing many challenges and threats due to Internet and digital revolution and globalization (Oketunji, 2018). Today, library resources are being made available in a variety of digital formats and media, thus filtering and choosing the right information at the right time from the ocean of raw information is a major challenge even to users. The speed and time demand from information users is another issue; information is now readily at the fingertip of everyone (both present and potential library users, young and old, etc.) so libraries and librarians must be able to meet up with this challenge.

Revolutionary change, the challenges of new technologies, a paradigm shift; these are words used to bring one's attention to the need for adaptation and innovation by libraries. (Allen, 2011). Disruptive technologies that have driven the transition from manual to electronic library require new service models that challenge established organizations and the interests and expertise of the individuals within them. These changes are occurring in an environment of decreasing resources (human and financial) and increasing demands of users.

Librarianship is evolving very fast with the high rate of technological infusion in every aspect of the profession. Combined with social changes these developments have put great strains on libraries (of all types) and information professionals including librarians. Consequently, there has to be innovation in libraries and in the profession generally. There is an urgent necessity for librarianship to change with the times, embrace the new technologies and integrate them into its engagements with communities. The profession (and professionals) has to be strengthened and made more and more relevant in contemporary world.

Sweeney (2005), posited that in contemporary world, changing user expectations are more important than other trends that affect libraries, such as technology, organizational constraints, librarian expectations, library board expectations, building limitations, and traditional library services. Innovative technologies are extremely important and indeed support most of the new products, services, and improvements that are introduced in libraries. In the future, all organizations will have to meet these demands in order to sustain their own existence; libraries can, and certainly must, remain relevant to every new generation and its knowledge needs.

Purpose of the Library

Libraries have always been in the business of providing access to information. They are the hub of information and several activities dealing with the provision and rendering of related information services, hence, they provide essential support for development in all spheres: national, personal, economic, educational, and several

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others. To achieve this, libraries collect, process, organize and provide information sources in various formats (Emezie, 2018). More recently, libraries are creating an environment that accommodate present day needs. Kutu and Adesanya (2008) in Emezie (2018) declared that the library is one of the most important elements in a developing environment; it facilitates information acquisition, organization, storage and dissemination for effective decision making and development of socio economic progress in a nation.

Adopting the views of Chunli and Jinmin, (2011), the library has a long and notable tradition of providing rich and relevant services for users. The task of the library is to connect users with the information they are seeking. The incorporation of new information technologies has actually become the catalyst that changes the library into a more vital and critical intellectual center of life today. Libraries are about collections, but they are also about providing much more; this is a period of investigation for new services. Libraries must provide a user-focused suite of reference services. Also, Nwalo (2018), stated that the purpose of the library is the acquisition, organization, storage, preservation and dissemination of information to meet the broad and varying needs of individuals for their daily cultural activities; covering all human endeavours. A renowned sociologist, Wilmot (1982) cited by Nwalo (2018), stressed the interrelatedness of libraries with their cultural setting thus:

As repositories of intellectual production, libraries have an intimate interconnection with nations which both determine and are determined by the nature of intellectual production. Libraries, therefore, contribute to nation-building at the same time that they reflect the characteristics of the nation; its strengths as well as weaknesses. In strong productive nations, which respect intellectuals and intellectual productions, libraries will: be powerful tools of national development; enable the nation to attain its historic destiny, be inexhaustible fountains of national consciousness. Conversely, in weak dependent nations, libraries will be largely irrelevant, alien to the needs and destiny of the nation, largely ceremonial encrustations on a national consciousness without foundation or raison d'etre.

Libraries have always been at the heart of the communities they serve (Doherty, 2014). They are accessible and safe spaces, providing access to huge resources of information and knowledge. However, in recent times, they are at a turning point because of the way information is created, processed, managed, stored, accessed and consumed has changed dramatically in the 21st century, and this presents major challenges and opportunities for all library systems across the world. The introduction of new technologies has changed reading habits; and to survive in the digital age and stay relevant, there is the need for libraries to be brave and innovative as they seek new pathways for providing information and engaging their user communities.

They must adopt both the physical and virtual services, and offer more than just books. Existing and (potential) library users expect them to continue to provide the services they have provided for many years (and rightly so, the traditional' library of books, journals and quiet reading spaces should not just disappear); but on the other hand, they must react speedily to real transformations in users' behaviors.

LITERATURE REVIEW

In countries all over the world, with lowering user-numbers and inadequate funding, the traditional library system has come under massive scrutiny. There are now questions being raised on why physical libraries that are expensive to run should be maintained when rising numbers of people (both existing and potential library users) can already access the information they need from any location (Connaway and Randall, 2013). As a result, in recent years many public libraries, for instance, have been threatened with closure. But major reconsideration is being done in some countries as to how exactly the library should be serving the public (especially in the case of public libraries) and what the library of the future could and should look like.

In agreement with the views of Bruijnzeels, Bitter-Rijpkema and Verjans (2012), technological and societal changes structurally affect the main roles of libraries, therefore addressing the changing context and defining their future roles requires specific capabilities of new librarians. Apart from specific library proficiencies, the ability to lead strategic innovation towards the new functions of the library is crucial. Libraries and information centers provide numerous types of information resources and services which are changing with the passage of time. The internet has brought forth a new dimension to libraries of modern digital world and in order to keep pace with the cyberspace, such libraries are to be furnished with latest versions of sophisticated technology and librarians must also update their skills requirement for the profession. In this digital age, networking and communication facilities provide a worldwide platform over which the people and organization develop strategies, interact, communicate, collaborate and search for information. This platform includes, a vast array of digitized products such as databases, news, books, magazines, television and radio programming, movies, electronic games, musical compact discs (CDs) and software which are distributed over digital infrastructure anytime, anywhere in the world.

The setting for libraries is different for developed and developing countries, with the former having more to offer users than the latter, but challenges of survival in the Digital Age remain the same. Libraries have to modernize while still being able to satisfy their users; the same noiseless reading area will be there for those who require it, but the library should also be ready to accommodate innovations such

as maker spaces; being used as a cultural and social space where people can come together to watch theatre and film broadcasts, or take part in workshops, seminars, meetings, author talks fashion events, and other activities. The concept of library remains important in people's hearts and recent developmental efforts on the parts of many libraries all around the world have shown how the library can still be a huge source of pride.

Libraries, nowadays, function in a significantly new context; knowledge concentration, a fast speed of technological innovation and global economic dynamics which characterize today's societies. Due to these changes, the central role of books as sources of knowledge is being eroded and the exchange and communication of knowledge through a variety of multimedia formats (including e-books) is developing. This digital revolution has a huge effect on libraries as a place of knowledge centered on collections of books and information materials. Library users' behaviour is shifting, diversities in society are growing and developments are coming up in rapid succession. Endless transformation and re-invention have seemingly become part of the genetic make-up of the present digital era.

In the light of this, queries are being raised as to the present and imminent purpose of libraries in the digital age. In response, debates have held on the fact that libraries (all types of library) certainly do have a purpose in the digital age, but that they will have to drastically review their role and respond satisfactorily to new questions and needs arising in society. Stakeholders argue that they should not reactively develop strategies for the likely future, but should proactively take an innovative perspective, starting from a preferred future. It is argued that the new role of the library is to seek to enlist the economic, cultural and social participation of citizens in this digital society (Doucette, 2018).

To take part in the public space of the 21st century society, one needs to be an up-to-date individual, incessantly getting innovative skills for navigation and understanding of digital platforms for education, economic and social activities. The library's primary purpose as an information broker and contract place of books changes and libraries progressively transform into creative hubs, social interaction spaces and, places of engagement, co-creation and education. The library will have to regularly be on the look-out for communal changes and challenges and then reinvent itself to fit those requirements in collaboration with other institutions with like minds.

Conventionally, five (5) foremost chores were part of a librarian's job description: provision of information, updating the materials' collection, organizing and storing information, providing assistance to users in finding information, and collaborating with other libraries. All these tasks took place in a setting of somewhat high permanence, centered on the chief task of making a current collection of information materials (in physical form) accessible to users. In the digital age, the librarian's work is changing because of information explosion, especially in digital form on the

Internet and the snowballing complexities of search engines and reference systems. The job profile of a librarian is different from what it was twenty (20) years ago. The contemporary librarian is: skilled in using sophisticated online search engines, able to make novel connections, critical about the quality of information (sources), and enters into innovative affiliations with other organizations in pursuit of new connotations that fit users' needs. Hence, the job picture of a librarian has shifted from information technician to knowledge worker with a focus on innovative co-creation of meaning. The librarian functions on the intersection of society, culture and technology within the library in collaboration with a network of peers, stakeholders and partners. Surrounded by the force field of culture, society and technology, this new librarian is relentlessly watching out for the added value and quality the library can offer through its services to the users (Ijiekhuamhen, 2015).

The contemporary librarian combines a compliant approach, social consciousness, resourcefulness and cultural knowledge with management skills, knowledge of digital developments and the ability to enter into alliances. The librarian of the future is able to innovate based on content, format and platform of information resources. Not alone, but together with associates, other libraries and social partners. This entails passion, willingness to learn new things, and a large measure of professionalism and expertise of librarians. In summary, the modern library needs empowered library professionals with the competencies to handle their current and future roles as library knowledge workers and inventors. Consequently, librarians need to support users in the networked and print-based environment, and have need to develop, and continually update, their technology skills and competencies (Obadare, 2014).

Libraries and librarians have to be innovative in creative, inspired, and imaginative ways. Librarians are emerging from the stacks, stepping out from their traditional roles, and thriving in the (currently) evolving information provision environment. They also need to apply divergent thinking as a technique for more creative and untraditional services, that can inspire the remix of librarianship to meet the needs of 21st century users. Innovation means transforming ideas into new processes or products, or to make prevailing procedures or products more effective or proficient, with great potential for the organization undertaking the innovating (Rodriguez, 2017). Innovation is a core renewal process that permits organizations to grow their products and services endlessly to lead or support consumer markets or, with respect to libraries, user needs. Also, Emezie (2018) defines innovation as new ideas, inventions, changes as well as repackaging and rebranding of old procedures. Hence, innovation is creatively transmuting old processes coupled with creating and integrating new programs and practices to add value to organizations' products or services. Innovative services and practices are avenues through which transformation occurs in the library. However, innovative services seem to be organization-centered while innovative practices seem to be personnel-centered. In other words, the

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organization provides services by laying down infrastructure while the personnel connect these services through professional practice. The aim of both innovative services and practices is satisfying the end-user.

Innovation can be broadly thought of as novel ideas, new ways of looking at things, new methods or products that have value. It (that is, innovation) contains the idea of output, of actually producing or doing something differently, making something happen or implementing something new. It almost always involves hard work; persistence and perseverance are necessary as many good ideas never get followed through and developed (Cambridge Assessment International Education, 2011). The process of translating an idea or invention into a good or service that creates value or for which customers will pay is called an innovation; an idea must be replicable at an economical cost and must satisfy a specific need. Innovation can also mean the adoption of something new and useful in practice. It involves deliberate application of information, imagination and initiative in deriving greater or different values from resources, and includes all processes by which new ideas are generated and converted into useful products.

The above tallies with the views of Hargadon (2010), who posits that innovation is about the difference between an idea that quietly dies and the same idea, in another's hands, that changes companies, industries and organizations. Who will be successful and who will end up as a footnote depends on who builds the better network around that same innovative idea. Who builds, first, the networks that surround an idea (a research finding or market opportunity) with the right team and support to grow it into a viable venture and, second, the network that will transform that venture into a business that delivers growth and profit.

Innovation is about connecting the dots of different ideas and coming up with solutions to challenges. No idea will make a difference without building around it the networks that will support it as it grows, and the network partners with which it will ultimately flourish. There is no value, and there can be considerable harm, in talking about innovation without talking about both creativity (having a new idea) and entrepreneurship (getting it done). Further, it's not the presence of these two activities that make innovation successful, but rather the relationship between them.

Also, Brier (2014), opines that life is all about connection of dots and innovation is also about connecting unknown dots (notions, ideas, possibilities, imaginations and unexpected connections) in order to come up with results and products that can improve: services, the quality of life of the people and contribute to meaningful development. Innovation is not about having ideas only but it goes beyond the idea level to actualization; that is, generating ideas and developing them to function effectively. Also, an innovation may not necessarily begin and end with one person, idea(s) may originate from an individual while others build upon such idea(s) and come up with useful and beneficial products/services.

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Innovating in libraries means creating and growing new services and platforms that solve essential problems for new or existing patrons (Knight Foundation, 2017). Thus, it covers not just the creation of new ideas, but also their growth over time to outlast a single campaign, activity or event. Such ideas should solve important problems for both today's and tomorrow's patrons. While some new submissions might have the potential to move the field forward, an innovation might primarily move a single system forward, too.

Libraries have to be innovative in contemporary world for several reasons. As suggested by Elves (2015), there are three (3) key reasons why libraries should innovate. First is the need to adapt to a changing environment; two areas of change directly affecting libraries are: the move to digital and the changing way users search for information Second is the need to improve existing products and services and third is the need to make use of new opportunities. In present day world, information users assume their technology to be mobile and to be able to get access anywhere, anytime they want; they are looking for an ultimate portable device that incorporates all of their digital functions such as laptops, telephones, cameras, video games, televisions, etc. In fact, they expect technologies to offer one-stop shopping for all their technology needs (including the expediency of incorporation) whenever and wherever they happen to be. Nowadays, users cannot search all library catalogs and databases from a cell phone or any other typical portable pocket devices. Laptops still have some limited access to wireless connectivity although it is becoming much more accessible. As continuous wireless connectivity becomes available, library decision makers should expect that it will be adopted by many and they should make their library database offerings available on portable devices.

When libraries create innovative spaces (or spaces for innovation), they are mostly public spaces. They might be learning commons, maker spaces, collaboration rooms, digital production labs, 3D printing stations, innovation studios, booths, incubators, and other slogans for physical spaces designed to foster creative productivity through technology and collaboration. The term space refers to physical or online situations, be they offices, buildings, studios, or software applications Library after library has redesigned its public spaces to be more spatially appealing, welcoming, controllable, and interactive. Libraries of all types are transforming static rows of bookshelves into spaces for their users to produce knowledge and interact with gadgets. Bloom and Faulkner (2016), describe innovation spaces as physical or virtual spaces that aid and support creative problem-solving skill (technological or otherwise) of those who participate in the space. This definition lists the collaborative, joint characteristic of innovation spaces and reflects the regular technological component without making technology a condition for innovation. Innovation spaces should feature creative problem solving by the librarians. This requirement is regularly ignored. Most members of staff sit in stationary offices and partitions or at service desks.

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Staff spaces have not been converted along with public-use spaces, and well-defined motivations are missing for managers to order the transformation of employee spaces. Additionally, libraries need to adopt a hybrid nature, which is described as a setting with physical and virtual services assisting professional activities of the users at their workplace from the finding of information to the handling and exploration of the delivered resources.

Furthermore, Olorunsaye (2016), expressed that in the Google age, when the acceptance of libraries in the purview of the society is going down the drain, when students are no longer interested in reading, when the society is querying the existence of the libraries, there is the dire need for the profession to be creative, innovative and proactive. The situation cries out for innovative solutions and new approaches to how professionals think, what they do and how they do them. As a profession, there is the need to reach out for radical thinking; to be innovative.

There is the urgent need to focus on innovation, on new initiatives because firstly, in this digital age, users often discover that most of the information they search for through the Internet overlap or are unconnected to their need and do not know how to choose the right one in the information ocean. Secondly, with the proliferation of information technology and the increase of information resources, users are more motivated to choose various sources of information besides the library and ask for help only when necessary. Thirdly, library staff need to device adequate means of improving services to the patrons. In this digital age, librarians face puzzlement of getting users to know more about the services that libraries offer. The issue is how librarians can extract users' needs and provide personalized services; to transform services users seeking information to taking information to users even right at their doorsteps (that is, information seeking users).

According to Eich (2018), innovative thinking encompasses competencies such as creativity, critical thinking, communication, strategic thinking, and problem solving. These skills are needful for forming innovative solutions to 21st century complex challenges in the workplace. Four steps are outlined by Weiss and Legrand (2011), for applying innovative thinking in the workplace. First, specifying the areas (processes or services) in which innovation is needed and communicating with the staff on how innovations are needed in those areas. Second, having brainstorming sessions and assisting staff to develop ideas through thinking laterally and out of the box. Third, work out how to implement the ideas that have been generated to see the ones that are feasible and those that are impracticable. Fourth, evaluate, re-evaluate and finetune the innovative solution. According to Stack (2013), innovative thinking in a workplace such as the library can be sparked by having an open creative work environment that welcomes and listens to diverse views as Google News does to encourage innovations.

Librarians must begin to think outside of the traditional library box, they have to be innovative and creative in their thinking. Creativity and innovation go hand in hand; both tend towards inventiveness. According to Watkins (2014), creativity is not a mysterious quality; rather, it is cultivated through rigorous training and by deliberately practicing certain core abilities and skills over an extended period of time. Tepper and Kuh (2011) in Watkins (2014) further describe these skills as the ability to:

- Risk failure by taking initiative in the face of ambiguity and uncertainty;
- Heed critical feedback to revise and improve an idea; a capacity to bring people, power, and resources together to implement novel ideas; and
- Draw on multiple means (visual, oral, written, media-related) to communicate novel ideas to others.

When Ranganathan suggested his Five Laws of Library Science, he came out with an all-inclusive framework and guideline for evaluating library programmes, library activities, and for formulating library policies and strategies (Connaway, 2015). This is clearly shown by the fact that these declarations continue to be expansively quoted even today, more than eight decades after their publication. Apart from this, there have even been efforts at reformulating these laws to suit the present environment of the Web, e-resources, multimedia resources and the resulting developments in information services. Despite the fact that even at the time these laws were formulated books were not the only kind of resources: magazines, newspapers, films, audio recordings and even microfiche were already in use; Ranganathan stated his first law as "Books are for use." This only points to the fact that he used the word 'books' as an extra for all kinds of media that were at that time and those that might come into being in future.

"Every person his or her book" is a difficult, and thorough task necessitating knowledge of the information needs and preferences of users in the community and expecting and matching what they will need in the future. Delivering content to everyone demands great care, effort and consideration today than before. In this interconnected world, a new interpretation is proposed of Ranganathan's second law; this interpretation preserves its principles but recognizes the several changes in the information arena and encompasses an insightful sense of purpose for operating in present-day Web-dominated world. The modern-day rephrasing of this law is: know your community and its needs in order to think up innovative services that suit them. The idea is to spread its meaning outside those who come to the library and to include virtual users and those who do not use the library. The explanation of the law also extends to needs outside physical materials and digital content into the increasing demands of the dissimilar audiences wanting new skills, new services, or

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new collaborations. Mounting programs and services to meet some of these new needs will maximize library impact. Understanding users' needs is important to success in today's digital environment where several information service providers function and community expectations for libraries are being determined by experiences with user technologies. Failing to embrace these new challenges may drive the users elsewhere and reduce the library's role in content management and delivery.

The essential meaning of "books are for use" is about access, which remains a vital issue even after several decades after the initial identification by him. Currently, releasing books from the chains implies developing the physical and technical infrastructure needed to deliver physical and digital materials because it is not only the availability of these materials that matters, but the infrastructure (both physical and technical) that libraries put in place to capture and deliver them.

Today's users may lack in-depth knowledge of what a library has to offer in terms of materials, technology, or services. Librarians can build user consciousness to available information resources by innovative moves that will overhaul physical and technical infrastructure such as redesigning physical space in the library to make collaborative and inventive areas open to users. Once users have been wooed by the library, prospects present themselves to improve their awareness of the physical and digital resources available in and accessible through the library. There are opportunities to introduce them to new technologies and to provide assistance during use. It is also imperative to ensure that users trust their virtual environment and its offerings. Paying attention to the social forces at work in users' decisions to adopt technologies also must be part of the keys to successful libraries.

"Every book its reader" depends entirely on "every reader his or her book". In the networked world of the Web, there are numerous other information options and any patron (existing or potential) dissatisfied with the offerings of the library can search for solutions elsewhere, often opting for sources that may not be authoritative. Three values that are broadly applicable are: discoverability, access and use and librarians can strive to provide innovative services in order to aid taking full advantage of these values. This is a challenge in today's complex information environment when so many people are using countless powerful, new tools to discover, access and use information. Furthermore, librarians are confronted with the challenge of developing and updating collections and services to meet the needs of numerous cohorts of users with conflicting approaches to information seeking. What innovative librarians can do is to apply modern tools to facilitate the discovering and connecting users to information and services in the formats required as professionally and pleasingly as possible. It is challenging to determine the most appropriate approach to get pertinent and convincing content into the hands of users since preferred media change over time, access points evolve and social and cultural settings vary from one individual to another.

The library is still considered a growing organism considering the increasingly intimidating array of content facilitated by librarians for patrons to discover, access and share. Librarians have moved past their tables and circulation desks to bring information materials and repackaged information in different formats to their user community. This fifth law implies that there is a need for persistent development of the library based on the requirements and manners of existing and potential users. In today's linked and ever evolving information environment, an important area of a library that is capable of growth is visibility, which is indispensable to upholding growth and change in libraries across all the other measurements: library holdings, staff, facilities and patron use. In relation to this, three yardsticks for nurturing the library's growth are: relevance, visibility, and unique capabilities. These three suggest a significant variance in how libraries need to measure growth and success.

These five laws of library science may be restated thus to guide in designing and managing innovative digital information systems of the 21st century (Sun and Yuan, 2012):

1. Digital resources are for use.
2. Every user seeks digital resource.
3. Every digital resource needs its user.
4. Save the time of the user.
5. Digital library is a growing organism worldwide

As suggested by the Ivory Group Ltd. (2011), there are several ways and areas in which libraries can be innovative in the digital age.

Partnerships and Collaborations

The idea of partnerships is not a new one for libraries; but the pressure to collaborate with public and private sector organizations has recently intensified. Long-term plans for libraries now include strategies for identifying high-value partners and entering into agreements to share facilities, expertise, technology, programming, purchasing, and so on. Libraries, just like non-profit organizations, are enthused to woo potential partners for different reasons, including the chance to:

- Draw new customers, especially in traditionally hard-to-reach market segments
- Get grants that require collaboration
- Gather support of government officials
- Lessen costs
- Improve visibility and understanding of the library in the community

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- Launch the library as a leading community organization
- Increase the base of volunteers
- Enlarge programming capabilities

Recently, libraries have begun to extend their search beyond educational institutions and literacy providers to areas including social services, healthcare, recreation and sports, business, civic, cultural, and government entities. Having learned that affiliating just for the sake of affiliation has drawbacks; libraries are now choosing organizations with a shared mission and vision and often insist on a formal signed agreement which delineates responsibilities and financial obligations. It is being advocated that libraries begin to use Assets Based Community Development (ABCD) to for partnerships that will birth innovative services. This happens when libraries consciously engage with their user communities to identify the assets therein which may include residual skills, organizations, associations, groups, open public spaces and networks within the community. Libraries can work with them to understand their challenges as well as mutual benefits of collaborating with the community assets. A community that has skills of iron-smelting can work with the library to identify likely resource persons that can run classes on the skill for young people who wish to learn. Open spaces can be used with those in charge to provide information services. Organizations in the community can hold meetings in the library with the citizens of the area. Relationships and networks in the community can be leveraged on to source for funds and facilities for the library (Stuart, 2017).

On Demand Content

Collection development is progressively becoming content-driven with lesser attention being given to format, which is the container in which content is conveyed. Many libraries are working towards the implementation of a new cataloging best practice, RDA (Resource Description and Access), which allows patrons access all formats for a single title (print, audiobooks, films, e-books), easily arranged and reviewed by means of a solo search. Clientele will get what they want, when they want it, and however they want it.

Library-Created Content

Low-cost computer storage and high-speed scanners make it faster and cheaper to digitize local collections, newspapers, photos, archives, and documents, and to post them on the Internet. Affordable technology to record moving images, sound, and video files is also readily available. Virtually anyone can create and share content through the Web through popular sites such as YouTube. With increasing ability to

deliver links to this quality community content via social media sites like Twitter and Facebook, these initiatives have strong advertising as well as informational use and appeal. As the e-book market develops, with an explosion of reading devices like smartphones, dedicated e-book readers, tablets, and new devices fabricated daily, the library's role in providing innovative, distinctive, indigenous content will continue to advance even as many libraries now explore the possibilities of being publishers of content with opensource ware.

Customer Service

Some visionary libraries are exploring the provision of an all-inclusive customer experience and changing the library model as progressive technologies are showing librarians and customers that a sensational user experience can be created when vision and leadership are in play. While most libraries are slow to accept such dramatic changes, a number of well-managed strategic planning processes are integrating innovation; others are changing one service at a time, with decisions to remove fines, or redefining reference as a pilot service (Paraschiv, 2018). Reconfiguring the library space as done by the public library in Columbus, Wisconsin who removed almost all the reference books on its shelves to create more space for users as it reasons that they can access most of such materials online can be considered an innovation in customer service (AfLIA, 2019).

Self-Service System for Customers

Providing customers whatever they need, whenever they need it, and however they need it is an innovative that will be welcomed by users. Library clients and staff benefit from self-service alternatives that include self-check stations, self-serve holds shelves, resources selling units, booths, closets, and independent mini-branches that open with a swipe of the library card. Additionally, to compete with the sophisticated online solutions presented by entities like Google, Borders, Amazon.com, or Netflix, libraries find they must offer comparable facilities, such as online library card registration and renewals; online patron–placed holds; enhanced Online Public Access Catalog (OPAC) content that enables patrons to rate or share their reading.; ability to download audiobooks, music, videos, or e-books; fines payment via credit card; the choice of receiving holds pick-up notices by email or text. According to Holmquist (2016), Danish libraries adopted self service for users in order to keep the libraries open due to economic challenges. The libraries run an open system - a combination of hours staffed by librarians and some hours for self-service. The Open libraries idea has made libraries in Denmark to be active learning centers that have a broad reach.

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Library websites and OPACs can be given a face-lift for maximization of discoverability and mobile access by smartphones; even patrons who miss library programs can access podcasts and videos anytime, anywhere. These options come together to enable customers carry out library transactions when it is most suitable for them. Many libraries are discovering new keys to unlock successful 24-hour service with the added benefit.

Characteristics of Innovative Library Programs

As noted earlier, with the explosion of information and the popularity of the Internet, librarians are being faced with challenges of devising means of meeting users' demands and expectations. Innovation is a multifaceted process of creation, distribution and usage of novelties in order to enable library development and enhance performance as a social institution for the transformation of lives, livelihood and communities. Library innovation is a system of new ideas proposed by library and information science professionals thinking creatively or by a cross-disciplinary team which results in new or reformed/refurbished services and/or processes implemented by librarians in order to further satisfy the needs and expectations of the users. Basically, an innovative library program will do the following:

1. Provide efficient and accurate services;
2. Save the time and energy (both of library users and library personnel), space and resources;
3. Assist in providing high quality services and also increase the range of services;
4. Invent ways of resource sharing by co-operation and co-ordination;
5. Ease accessibility to, and content can be delivered directly to end-users and retrieved remotely;
6. Improve library image by providing better services in modern ways.

An innovative library program will adopt a large-scale use of Information Communications Technology (ICT) in its operations; both technical and reader services. It could be the application of the Internet, social media platforms for information dissemination, information literacy and 'ask a librarian virtual reference service', providing access to e-books via internet and intranets and handling internal electronic documents and business records and copyright of internally produced content that is available for users; and adoption of social networking tools.

Furthermore, an innovative library program will transform libraries from a physical space where basic traditional services of acquisition, storage, preservation, retrieval, access and display are provided to on-site library patrons to an electronic space where these same services have been enhanced by technological innovations.

Other characteristics of such innovative program will include but not limited to the following:

1. Conversion of different media such as text, graphics, and sound into multimedia resources;
2. Increasing demand for accountability, with focus on quality customer services, performance measurement, bench marking, and continuous improvement;
3. New forms of work distribution (work-teams) resulting in re-engineering, outsourcing etc;
4. Transition from paper to electronic media as the dominant form of information dissemination, storage and retrieval.

Also, professionals in an innovative library need to become proactive (co-) creators of meaning, instead of reactive guides or gateways to information; they should possess:

1. **Leadership Abilities and Skills:** Taking initiative, making things happen through effective interactions with others, have vision for future of the library and the profession at large; skills for community role/involvement and networking/ motivating skills.
2. **Management Skills:** Organizing personal activities and those of others; coordinating the use of resources to maximize productivity and efficiency in staff development; planning and budgeting and operations.
3. **Knowledge Areas:** Applying technical knowledge needed to do the job, including competence in library and information management.
4. **Cognitive Skills/Abilities:** Processing information effectively to learn new materials, identifying and defining problems, and making decisions.
5. **Interpersonal Abilities:** Interacting with others; and other personal traits.

Johnson and Wetheral (2017), posited that innovation involves weakening the fortress of routines and tradition as without stepping outside of the conventional, libraries risk being left behind in a changing world. According to Lubbe (2016), innovation would involve the following:

1. Presenting unique and new programmes in the library;
2. Offering library services in a different way;
3. Creative interaction with space;
4. Creative display of library collections;
5. Integrating technology into all services.

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Summarily, an innovative library program will have the following characteristics:

1. **Clearly Framed Innovation Problems:** What is the reason for innovation;
2. **Patron-Focused:** Patron-satisfaction is the major reason for innovation;
3. **An Identified Innovation Process in Place:** A framework for how the work of innovation would be done and who would be involved is already prepared;
4. **Experienced Innovation Project Leadership:** The people who have the mandate, time and skills to lead the process;
5. **Technical Proficiency and Resource Availability:** Building and integrating technology and digital solutions into what the library has to offer;
6. **Deliberate Storytelling and Marketing:** Getting people excited by the stories of achievements and how work is done.

Examples of Innovative Thinking in Libraries

1. An Innovative Library Program in Hillsboro Public Library, Oregon, U.S.A.

Hillsboro Public Library in Oregon introduced the Book-O-Mat with a grand opening on 1st December, 2015. Book-O-Mat is an automated book kiosk (that is, a self-service kiosk), which is monitored from the main library to track usage and identify usage trends and make recommendations. The Book-O-Mat is located at a very strategic point to bring the library closer to another section of the community in a high-traffic, high-visibility location. With farmers markets, festivals, and other events, the Downtown location will serve residents from around the City, in addition to those who work and live close to the Civic Center. This location reflects the desire to increase access to library resources without adding staff costs. The Book-O-Mat was initially loaded with about 200 items; library staff would continue to add selections and rotate the collection periodically to bring in fresh materials, which will focus on new and popular materials for adults and children. The Book-O-Mat is the first implementation of the City's new wayfinding program, an initiative to build identity and pride, and help locals and visitors navigate and discover Hillsboro. The kiosk was purchased at a discounted cost of $144,000 as against the original cost of $200,000+ per machine. The machine was funded through the capital improvements project that funded renovations to Shute Park and the second floor at Main, including donations to the Library Foundation of Hillsboro's Capital Campaign Fund (Oregon Live, 2019., Fuller, 2015).

2. An Innovative Library Program in Kenya, East Africa

Maarifa Centres in Kenya, Uganda and Tanzania

Initiated in 2007, the Maarifa Centres (Maarifa is the Swahili word for knowledge) are a project that aims through multimedia tools, to facilitate the exchange of ideas, experiences, and knowledge among communities to enhance learning for improved socio-economic empowerment. The project involves the establishment of community knowledge centres (CKC) in the rural areas of Kenya, Tanzania, and Uganda which, in partnership with other agencies, seek to bring information and communication technologies (ICTs) to rural communities to enable the documentation and sharing of local knowledge - in particular, knowledge relating to farming and natural resource management (Maarifa Knowledge Centre, 2019).

The initiator of the Maarifa Centres' Project is Arid Lands Information Network (ALIN); ALIN is an International NGO that facilitates information and knowledge exchange to and between extension workers or other infomediaries and arid lands communities in Kenya, Uganda and Tanzania. The information exchange activities focus on small-scale sustainable agriculture, climate change adaptation, natural resources management and other livelihood issues. A Maarifa centre is a room or a 'fabricated shipping container' where communities access information resources. The centre is equipped with computers and internet access. It is an information hub where local knowledge is documented by communities with the support of field officers and shared widely. A Maarifa centre also has a rich information resource base that includes publications, newsletters, research reports and electronically stored information that includes CD ROMs, audiovisual material and compendiums. The ICT equipment enhances information access via the Internet, content creation and skills development among rural communities. Maarifa centres are operated by field officers employed by ALIN (ALIN, 2019). An advisory committee drawn from a focal group oversees the Maarifa center operations in collaboration with the field officer.

A Maarifa centre offers the following services:

1. Easy access to information and knowledge resources;
2. Capacity to develop local knowledge databases /reservoirs;
3. Improved community livelihoods through access to new knowledge and innovations;
4. Engagement of youth in productive activities and access to IT skills;
5. Increased institutional capacities – the field officers have trained staff from organisations affiliated or in the vicinity of the centres helping to build their IT and information management capacities;
6. Global presence. Nguruman Maarifa centre was named as one among the 10 most remote parts of the world;

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7. Capacity to develop online marketing portals enabling communities to trade globally.

Challenges to Innovation in the Digital Age

The study carried out by Onuoha, Anyanwu, Ossai-Onah, Oyemike and Ameachi (2015), reveal the following as some of the challenges to innovations in libraries:

1. Inadequate training and retraining of library personnel, for instance, through organizing in-house trainings/workshops or even sponsoring them for outside ones locally and internationally;
2. Poor networking among library and information science professionals, partly due to poor or no attendance at conferences/seminars/workshops. Library and information centers need to allow staff to attend conferences and workshops as these are practicable platforms for acquiring innovative and creative skills. And such staff should also be encouraged to embrace Information Communications Technology (ICT) after attending conferences especially those that are ICT oriented;
3. Inadequate installation of modern technologies in libraries, this is directly linked to problem of poor funding because these modern technologies that are changing the scenery of librarianship are expensive and so heads of library may need to apply lobbying and advocacy to attract funds or intervention of NGOs and other willing agencies.
4. Lack of recognition of librarians with innovative and creative skills It is indeed disheartening many people who are innovative and creative are often labeled as being insubordinate or forward and this discourages professionals from trying out their innovative skills. For example, in-house training sessions can afford staff the opportunity to share innovative and creative ideas irrespective of their status or designation;
5. Inadequate financing of libraries, which is a major challenge world over, but especially in developing countries.

CONCLUSION

Gone are the days patrons must be physically present in the library to have access to information resources. The contemporary electronic information setting has unlocked avenues for endless access irrespective of time and location. A very important aspect of the current electronic age is the technological proficiency typical of present day patrons who live in an environment flooded with internet readiness,

huge development of digital content and overabundance of mobile devices. These developments have confronted libraries with the need to restructure their styles of service delivery while still remaining relevant to satisfying patrons' needs.

The following should be borne in mind:

Patrons will judge the service they receive in a library against comparable retail experiences, whether it's a bookstore or Apple store, [. . .] there's an expectation in terms of how patrons interact with technology [and staff]...that they bring with them when they enter the library. For the library to remain relevant and continue to engage their users, they have to step up their game. Enis (2014) in Johnson and Wetheral (2017).

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KEY TERMS AND DEFINITIONS

Digital Age: Also referred to as Information Age. This is a period in information demand for decision making is very high; with higher forms of technology to ensure satisfaction of these demand.

Digital Format: Information that is in electronic form.

Information Communication Technology (ICT): All devices that allow people and organizations to interact and function effectively in the digital world.

Information Professional: This is someone who deals with the handling (collects, records, organises, stores, preserves, retrieves, and disseminates) printed or digital information.

Information Resource: An infrastructure or material that provides content and information services for the user.

Innovation: Rendering library services in better and more creative ways as to make users patronize it the more.

Innovative Thinking: Thinking out of the traditional library box to device better means of doing regular tasks or accomplishing some things and achieving the same or better results.

Library Space: Place of involvement and interaction within the library.

Chapter 11
Innovative Thinking Skills for 21st Century Librarians

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ABSTRACT

Librarians in the 21st centuries need knowledge of innovative thinking to able to be relevant in their profession. Can they compete, survive, and thrive successfully in the midst of 21st century technological advances? All over the world, libraries are facing challenges. Already, there are reports of closures of public libraries. Many libraries are becoming underutilized while quite a number have to deal with stagnant or dwindling budgets. In order to adequately formulate workable solutions to these challenges, librarians need to consider new perspectives of offering services to their user communities. Also, libraries as living agencies are not to be stagnant but change and grow with the trends and their user communities. Innovations need to be introduced in the design and service delivery of libraries.

INTRODUCTION

The 21st century is known as the "Technology Era" where technological gadgets are seemingly competing with libraries in information storage, processing and dissemination. Easy access to computers and information via World Wide Web changed the library landscape, patrons now have options of accessing information at a click on their desktops, laptops or mobile devices and it appears that libraries and all that they offer might no more be the first port of call for information seekers. Search engines such as Google continue to expand their services in information retrieval with Google Assistant, Map and other features that link data sets, making

access to information very fast and inexpensive. The Internet became one of the fastest and inexpensive ways to obtain information about almost everything. Search engines are very popular and useful. Competitive production and marketing of laptops, smart phones and other devices soared as they became more affordable. Information became an economic commodity, a resource which could be bought and sold for profit.

Organizations that search, analyze and package information for consumption by particular clienteles in different subject areas sprang up. Furthermore, publishing of books, journal, magazine and newspaper articles which used to take time became easily available. Mobile telephony, social media sites and desktop publishing have made it easy for one to write a post on an online site, publish it immediately and within seconds, anyone from the other side of the globe subscribed to that site can see the post. The skill set of librarians had to expand to include computer appreciation, digital skills and how to search databases and online sites for information. Eze and Uzoigwe (2013), were of the opinion that "any library that does not develop services beyond materials delivery is in danger of losing its relevance to the community." Therefore, libraries are expected to be current with man and his varying demands for information to be able to attain effective service delivery. In addition to advancement in technology, other innovative areas for libraries which include areas like entrepreneurship, research, getting to the grassroots, marketing of the library services and other related area that will further bring out the relevance of librarians in the society, sprang up. How can libraries cope with the present information provision scenario and challenges? According to Nicholson (2017), as the world continues to witness changes, libraries need to experiment, test new ideas and be innovative in offering responsive and contemporary services in order to remain relevant and even redefine their roles in serving users. It was wrongly assumed by many that the coming on stream of digital media and decreasing finances that libraries will just go under and maybe disappear. Libraries are evolving into spaces of possibilities and offering of innovative services (Martin, 2015). Innovative services appear to be the way out.

The temptation is to brand anything new as innovative. However, Anthony (2014) has pointed out that innovative is something new that solves a problem, is useful, creates value by answering directly to the needs of the customers while addressing 21st century changing lifestyles and patterns of the user communities. Tiwari (2016), opines that innovations in libraries can be birthed through Web 2.0 technologies to remove physical barriers of accessing information and bring library services close through the click of a button on mobile devices. Innovative library services do not fall from the sky. They come into being when librarians begin to think outside of the mental constraints of 'routines', mediocrity, conformity and limitations of offering services from only the resources on the shelves to only those who come into the

library, and see information services from different perspectives as what can be beneficial to the lettered and unlettered in the society, to the elite and vulnerable groups, to students and senior citizens. Thinking through to understand the services that can be offered to all from different resources and for different purposes requires innovative thinking.

Innovative Thinking

Innovation is linked with creativity and the creation of new ideas and turning them into reality through invention, research and new product development. For, Dwyer (2018), innovation is the process of creating value by coming up with unique and fresh solutions to challenges. According to Swain (2009) change and innovation can be used interchangeably so that an innovation, or a change, is any idea, practice or object, which is seen to be new by the individual or the organization either adopting or rejecting it. Even though the idea has been around for a while and is known to other organizations, it is still considered an innovation or a change if it is new to the organization considering it. Innovations spawn wealth and help to grow the sustainability indices of organizations (Shukla, 2009).

Libraries are growing organisms. They cannot afford to be static in these changing times. Lubbe, (2016) stated that 21st century Librarian is a professional who:

- Learns and relearns
- Invest in people not just books
- Develops library staff to have more diverse skills
- Masters new ways to find information
- Embraces and uses constantly changing technology
- Understands and is part of the changing community

Being innovative involves continuous learning about new services and delivery; otherwise, one remains the same, unable to come up with novel solutions for innovative service delivery. Scupola and Nicolajsen (2010) opine that in order for libraries to remain relevant to their customers, they must follow the fundamental rule of business that is; to supply what is demanded by their market. Library can maintain its stand, only if it can shift services to the taste of its patrons. Every library must be able to render service to its patrons in compliance to their wants and occupations. That is what will birth innovations – when librarians look into their user communities to understand their needs and meet them those needs in the way considered most appropriate by the users.

Mulder (2013), defined Innovative thinking as an act of thinking out of the box and noted that it is an art that has great potentials for the growth of organizations.

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The development of innovative thinking and problem-solving skills is crucial for the survival of organizations in the 21st century. Doyle (2019), posits that innovative thinking is thinking laterally in order to recognize patterns, making inferences from such that will help is solving a challenge. According to Collins (2018), innovative thinking involves recognizing, thinking about a problem even if people have not yet realized that the challenge exists, combining ideas from different settings and disciplines, and making connections between ideas and situations. Innovative thinking has also been described as the passionate mental pursuit and exploring of possibilities in problem solving (Llopis, 2014).

Fostering Innovative Thinking in Libraries

Librarians need to think innovatively in order to understand the educational and literacy needs, economic challenges, skills levels, social concerns, and cultural interests of the users' communities they serve, and probable information services that they can offer to address their needs. Innovative thinking entails questioning widely-held assumptions, looking beyond the surface in seeking for solutions to challenges by employing the senses and intuition to make connections and create mental maps of new possibilities. This is only possible when the mind is open, unrestricted, imaginative and engaging with knowledge and others Brand, Hendy and Harrison (2015). Libraries can cope with the challenges of the 21st century information landscape through engendering innovative thinking among staff. However, it all begins with self, with individuals before gaining traction at the organizational level. According to Cashman (2013), to learn innovative thinking, one has to develop the ability to be curious, to listen deeply, to ask the extra questions that will allow imagination to stretch beyond mere office routines and to keep on probing for answers by taking in diverse viewpoints. Having moved from the Industrial to Information Age, curiosity is a fundamental skill and tool as inquisitive thoughts are crucial for formulating solutions (Vozza, 2016).

Allowing the mind to have space and time to relax and wander, having someone to share ideas with, finding time to shut out the hyperconnected world as well as the constant negative naysayers, and looking for things that are inspiring are some of the tactics for learning to be curious (Zafar, 2018). Being observant, keeping the doors of the mind to learn, unlearn and relearn about possibilities, never accepting knowledge at face value but moving further to ask questions to find out the what, how, why, who, where will engender a curious mind that is essential for innovative thinking (Latumahina. 2018). According to Stec (2016), consuming content outside one's comfort zone and interest area and learning/listening without passing instant judgement is an avenue for building curiosity. This will imbue one with the ability to embrace new thinking and be able to put on the pesonas of customers,

of competitors and imagine what are their concerns and challenges, what are they doing different, how do they see the library? Rinne (2019) posits despite the rise of automation, curiosity and imagination are the 'traits' that machines and robots are yet to have and are the 21st century skills required to bring innovative solutions to "solve complex problems and address challenges that do not have one answer and cannot be distilled into mathematical equations or contained by traditional borders". Librarians therefore need to learn to be curious, imaginative, lifelong learners in order to be innovative thinkers that drive 21st century information services.

The library as an organization has a role to play in making librarians develop innovative thinking skills. It starts with information. Secrecy, ignoring staff and working only with the management staff does not promote innovative thinking in workplaces. Creating an environment of learning in organizations as accurate information of challenges, competitors and strategic opportunities are shared helps staff to know the true status of the workplace, have a sense of belongingness and to activate their innovative thinking skills. Actively, listening to staff who come up with innovative ideas is the next step, naturally. This builds confidence and knowledge creation within the organization. Instituting a reward system for innovative ideas and experiments on service delivery will build up the culture of trust and staff thinking innovatively to find solutions to organizational challenges. (Self, Bandow and Schraeder, 2010).

Workplaces need to create avenues for generating innovative ideas. Having teams to work on challenges and come up with ideas is a workable way for achieving that as teams are expected to come up with novel ideas for solving problems (Hilton, 2017). Engendering innovative thinking that will spawn innovations requires teamwork. According to Cashman (2013), teamwork brings collaborative, abundance mentality that can birth innovation. Teamwork helps to harness ideas from different perspectives and sources as no one knows it all. Also, Llopis (2014), had pointed out that when people from different backgrounds, with different experiences converge as a team to seek solutions, ideas from these multiple sources are bound to be innovative. Also, some people are thinkers, while some are doers. A good team brings together those who are naturally intuitive and can come up with ideas at the snap of a finger and those who are planners and doers and will hunker down to sift through ideas and drive to implementation. This is important because innovative ideas that do not get implemented remain ideas and not innovative services for innovative solutions in the society.

Adopting teamwork may not necessarily be for librarians alone. It may involve other professionals in and outside the library. Cross disciplinary teams can bring new ideas to the table. Cross-disciplinary teamwork is a shift from operating in silos so that teams will have the strategic capacities to explore more effective options and solutions rather than being hindered by the same knowledge and skill-set (Mentorlist,

2017). Satell (2018), opines that the challenges of 21st century are quite complex and can never be solved by an individual working alone. Consequently, beyond building teams, innovative thinkers connect themselves to networks that can intentionally or unintentionally provide insights that can lead to innovative solutions.

Innovative thinking incorporates design thinking. This enables the welding together of what is desirable as observed and elicited from customers and user communities with viable technological options but in full consideration of economic realities of a workplace like libraries. It is a creative way of addressing challenges and being creative as it involves imagination, logic, analysis, systematic reasoning for exploration of possibilities, is solution-focused and action-oriented (Naiman, 2016). Design thinking in library can actually provide a process of solving all types of challenges including programs, spaces, services, funding and systems. It is a creative, intentional problem-solving procedure that puts the user at the centre of process at finding solutions. It is a method of creative problem solving that has historically been used in management and design fields and has become increasingly popular amongst educational institutions. According to IDEO (2015), it an emphatic and intuitive "creative approach, or a series of steps that will help you design meaningful solutions for your library".

Three phases of design thinking are recognized by IDEO (2015), inspiration Phase, ideation phase and iteration phase. At the inspiration phase librarians are expected to hear, interpret, discover, empathize and visualize the exact problem a user or the user community is encountering at a particular point in time as this will help him/her to design an accurate solution. The ideation stage incorporates the conceptualization of solutions to the challenges already visualized. It could involve brainstorming, sketching and coming up with prototypes of feasible ideas. The iteration stage is where those ideas that could turn into innovative solutions as they are tested and evaluated and if possible redefined and redesigned until the needs of the user or communities are met. Libraries are for users. The design thinking process can therefore be adjudged crucial for fully understanding, defining, and coming up with what their user communities need instead of providing innovative services that are not used at all because they were based on the assumptions of the Head Librarian or management staff of the library. This is important as the institutions will provide targeted services and such will significantly enhance their competitive advantage in the 21st century information provision sector (Netaq, 2018). Identifying what the community needs through one's familiarization with the entire community by engaging with other community stakeholders and institutions; and collaborating with agencies in the community to make the library a hub for community development is needful for design thinking to work for libraries. This will make library services and products to appeal to users.

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The above notwithstanding, various factors hinder innovative thinking in workplaces, libraries inclusive. Bureaucracy can stifle innovative thinking by librarians that are in the management cadre. Mulder, P (2017) defines bureaucracy as an organizational structure that is characterized by many rules, standardized processes, procedures and requirements, number of desks meticulous division of labor and responsibility, clear hierarchies and professional, almost impersonal interactions between employees. Bureaucracy is structured rules guiding the activities of organizations to ensure transparency in the provision of services. It has many disadvantages and a principal one is that make it can be hindrance to innovative thinking skills.

Another disadvantage is that bureaucracy is extremely dependent on regulatory and policy compliance which restricts employees to come up with innovative ideas, making them to feel like just a number instead of an individual. For 21st century librarians to stretch their innovative thinking to the core and contribute to development there is need for less bureaucracy. This can be achieved through building an organizational culture that incorporates innovations even in bureaucratic set ups. Bureaucracy is embedded in the workplace culture of government offices such as government funded libraries as communication is passed on and work is done through hierarchical rigid structures, rules, policies, maintenance of status quo, procedures, performance evaluations guidelines and manuals that need to be totally obeyed without a window of opportunity of acting differently or coming up with creative innovative ideas (Romero, 2012). According to Osuigwe (2016), liberating channels and formats of information sharing and welcoming of ideas across staff cadres in libraries with bureaucratic settings can engender innovations. This requires building up an organizational culture in the workplace that welcomes innovations and encourages interactions at different levels.

Lack of continuous training and exposure to scholarly publications, conferences, workshops and seminars can cause professionals like librarians to lack imagination and innovative thinking skills. As new technologies come on board in the information provision sector, librarians who do not attend such gatherings might not even know about the new technology, how it can be used to provide services talk more of being innovative with the technology. Lifelong learning is important and where it is neglected, it tells on the ability of the brain to come up with innovative solutions.

CONCLUSION

The 21st century information landscape is changing as people prefer to access information from places other than the library. Information brokerage is booming without libraries in the mix. All these are brought on by non-stop evolving

technologies in the information provision sector. In order to adequately formulate workable solutions to these challenges, librarians need to consider new perspectives of offering services to their user communities. Also, libraries as living agencies are not to be stagnant but change and grow with the trends and their user communities. Innovations need to be introduced in the design and service delivery of libraries. Businesses and organizations grow and develop as they welcome innovations that redefine their brands or make the existing ones stronger for better customer satisfaction. The 21st century librarian needs to develop innovative thinking skills through curiosity, observing, asking questions, working in teams both in libraries and outside the library as well as thinking like a designer can work. Despite the bureaucratic setup of most government funded libraries, Heads of Libraries can tweak the organizational culture to be more responsive to innovative thinking by allowing sharing of information across different cadres. Training can also help librarians to develop innovative thinking skills.

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KEY TERMS AND DEFINITIONS

Bureaucracy: It is a structural design in an organization in which ideas, suggestions and requisitions pass through some designated officers for their views for approval/disapproval based on the instituted ethics, budget, and rules and regulations guiding the organization.

Innovation: Introduction of new things to either enhance or abrogate the old ones.

Innovative Skills: They are the new skills that are introduced into a profession.

Innovative Thinking: It is a state of meditating on what should be the trend-matching things for a particular subject matter.

Librarian: A professional that has fulfilled the requirements in the science of library and information with the qualification to practice.

Teamwork: An assignment or duty carried out by involving other members or bodies to achieve a common goal.

Chapter 12

Managing Future Library Services for the Medical Sciences:
A Pharmacy Library Experience

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ABSTRACT

This chapter documents the experience of upgrading services in the Faculty of Pharmacy Library, University of Ibadan, Nigeria and future management plans. The participatory and "give-back-to-community" approach, future mappings of users, faculty and library management are documented using a descriptive survey with questionnaire and interviews for data collection. Data was analyzed using frequency counts and percentages, and interview findings are thematically discussed. It was revealed that users expected top rate technology facilities and learning commons with augmented and virtual reality-utilized classrooms and laboratories to replay lectures, experiments, and real-time demonstrations. Online reference-services, booking makerspaces with lecturers locally and internationally solving pharmaceutical problems in prime time, were expected. Strategic planning, technology training, crowdfunding, and human resources collaboration were recommended for implementation of these future services.

INTRODUCTION

Information remains the prime commodity of the present age and the library as information provider is no longer defined simply as a building or physical repository that houses information. The librarian is no longer given the primary 'gatekeeper' or guide to information role, but is proactive in services delivery in meeting the information needs and information utilization aims of users. The library is seen as a learning cultural and information centre. Its role has changed over time, becoming more faceted and multifarious (Abdulsalami, Okezie and Agbo, 2013) and for a special library or a library serving a particular special purpose, it is specifically designed to reach out to the local community it belongs to, and even beyond (Oyelude, 2003; Varheim, 2009; Johnson, 2010).

Library e-resources cannot be relegated to the background in library services usage. In the digital age, electronic resources are invaluable, creating opportunities to learn more from farther afield than close by or face to face. E-resources enable and aid librarians to provide better services to the user community. Kenchakkanavar (2014), summed up some reasons why libraries need e-resources as follows: E-resources can be quickly searched and accessed as information sources, by more than one user. The emerging technology of e-resources facilitates library users to access e-databases in large numbers. Realizing that services both analogue and electronic are invaluable to library users, the experiences of managing users and their expectations especially for future improvement after recent upgrade of facilities is the focus of this chapter. Serving and satisfying users in the basic medical sciences is the goal and how to do so, by monitoring and evaluation is what the exercise hopes to achieve.

BACKGROUND

The Faculty of Pharmacy Library, University of Ibadan was set up in the 1980/81 academic session. The Faculty of Pharmacy Library is a synergy. It has associate collaboration of all library information resources such as print, non-print and electronic databases with the central library called the Kenneth Dike Library, University of Ibadan. Its collections are anchored largely on the central library. Collections such as text books, reference resources and pharmacy relevant online electronic databases are adequately supplied by the central library while other information resources such as periodicals, projects and dissertations, off-line electronic resources were also supplied by the faculty for user consultation. Adequate provision of information had increased the number of users in the library which automatically indicates the satisfaction level of library users.

In the early years of the new millennium, the Faculty of Pharmacy Library had very limited resources and the library was small in size. The situation of things had changed for new users' experience of library user satisfaction currently. The conduciveness of the Faculty of Pharmacy library is now highly commended in the University. The present size has increased from its sitting capacity of 33 to 86 sitting capacity at a time. The library also acquired more current and relevant information resources for users' consultation. In addition to this, the library has installed air conditioners and separated e-resources section for users with available internet facility. Users' satisfaction in terms of library resources, conducive environment and provision of prompt library services are paramount to the library staff in the Faculty of Pharmacy Library. The act of decentralization of library is to take information services to the door step of users to satisfy their needs. All these essential roles are being played, to the Faculty of Pharmacy library users. The Library opens at 8.00am and closed at 4.00pm to readers. In this regard, the e-resources are working 24/7. The facilities and services offered to library users are enlisted as follows:

1. Circulation services
2. Orientation programme for Freshmen
3. E-Resources retrieval facility
4. Current Awareness Services of newly acquired books and other information resources
5. Reference/Information Services
6. Reservation of Books Services
7. Reprographic Services

The provision of the above-mentioned services are continually being worked upon at the Faculty of Pharmacy Library and delivered by the two staff in the library, and the remote support of the Main Library.

MAIN FOCUS OF THE CHAPTER

This study seeks to document the experience of upgrading services in the Faculty of Pharmacy Library, University of Ibadan, Nigeria and future management plans.
Specific objectives are to:

1. Determine what services provided by the Pharmacy Library have impact on future library users?
2. Investigate how the Pharmacy Library can enhance these services to improve the future library services?

3.   Determine what future services are desired by users of the Pharmacy Library?

METHODOLOGY

Using the participatory and the "give-back to community" approach, the future mappings of Pharmacy Faculty and the Library management as well as that of the users are documented. Feedback from the end users of the Pharmacy Library community was established through descriptive survey with questionnaire and interviews as data collection instruments. A mixed approach where both qualitative and quantitative approaches are executed was chosen since it allowed the researchers to enter into the respondents' personal world in order to gain a deeper and clear understanding of their knowledge, experiences and feelings (Sutton and Austin, 2015; Creswell, 2013). Analysis of data was done using descriptive statistical measures such as frequency counts and percentages while findings from the interviews were thematically discussed.

LITERATURE REVIEW

Library Information Services for Future Users

Libraries across the world are constantly reinventing themselves as they respond to changing community needs (Thorpe, 2017). Therefore, the libraries are always rooting for open space and access in the context of innovation for future services. Thorpe further emphasized that open access is necessary in future library service practice and also putting users at the heart of everything done in the library. Flexible spaces in the library is an innovation that is being explored with the same space revolving or evolving in use for different purposes set up as the need arises. The new trends are to shift, modify and be flexible, therefore librarians can have a role in self-reflective behaviour focused on new trends in librarianship (Deitering and Rempel, 2017). They look forward and fast-think on how better the library can provide services to clients in the future. Involving the clients fosters a sense of belonging, supporting people to gain knowledge in the information literacy programmes, and in using space (e.g. for independent research or study) and; implementing ethos of service, collaboration and partnership (Thorpe, 2017).

One trend librarians are bothered about for example is the open access movement which is now a global phenomenon aimed at providing unlimited resources to library users. Countries such as United States, Australia, England and Japan produced the "Finch Report" on open access suggesting that all journal publications funded with

public fund should be made available on open access (Hall, 2012; Kingsley, 2014). Librarians in Basic and Medical Sciences (of which Pharmacy librarians are a part) also join in this movement to ensure that open access information resources are made available in their library and for future use.

Tait, Martzoukou and Reid (2016) commenting on academic library services, noted that there is increased demand for 24-7 access to resources through a wide variety of platforms. This is in addition to staffing profiles that demand the librarians being embedded in their approach and collaborating with Faculty in the academic units. The adequacy in terms of library resources facilities and user satisfaction is very essential in libraries now and in the future. Oyelude and Oyewo (2017) discovered that freshmen in the Igbinedion University, Okada, Nigeria did not feel satisfied with library services due to the non-provision of internet facilities accessible by students, the far-out location of the library from their hostel, the shortness of the opening hours, and the fact that facilities to eat or refresh themselves were a bit far away from the library. They called for improved library services, increase in in-person communication with freshmen and skilled empathic staff among others, as well as 24-hour library services in a closer location to their hostels. Poor library resources (outdatedness, irrelevancy, non-currency of resources, etc.) negatively affects the smooth operation of academic libraries.

The use of research data management in the United Kingdom is a preoccupation within the academic and research institutions (Whyte and Tedds, 2011; Davidson et al., 2014). Data services management aids discovery and reuse of research information for future users. The effort is being made to render future services based on data management in the library as a means of preserving and connecting with other institutions. Library services based on research data management links one University repository with others in terms of consortia library services (Davidson et al., 2014). The information resources in one institutional repository can be accessed by other institutions via inter library online services. Indeed, online library services such as chat boxes, Facebook communication, mobile text messaging and other social media spaces have made librarianship services easier and fast (Connaway, 2013). Wenborn (2018) averred that adoption of new technology in future libraries and advancement in digital data management will bring about a situation whereby 30 years hence, libraries would have "paperless reading rooms, touch screen information portals and robotic assistants as guides."

Innovations in Library Services for Basic and Medical Sciences

Library innovation begins with just a step. Australian Library & Information Association (2016) posited that transformation in libraries is all about evolving purposefully leveraging existing services to innovation by making them serve users

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the way they want. Major flagship library projects for future services entail the digitalization process of hard copy works to digital format, or from general services to personalized services. Connaway (2013) and Tait, Martzoukou and Reid (2016) have acclaimed the fact that personalized services are desirable in future libraries. Innovative technological development for future users is a goal to be achieved by staff skill development that prepares staff for future library services. Emory University and The Ohio State University focused on identifying the need for new or retooled information services supporting health and biomedical researchers (Cain, Cheek, Kupsco, Hartel and Getselman, 2016).

Makerspaces focus on "electronics and robotics, woodworking, sewing, laser cutting, programming, or some combination of these skills" (Roslund and Rogers, 2014); while opportunity for democratizing new technologies such as 3D printing is considered a new innovation (Tait, Martzoukou and Reid, 2016). Makerspace is a general term for a place where people get together to make things. These things can be made in libraries where the use of digital recourses and internet for education and research in the library connote future innovative services. The use of Web 2.0 services such as blogs, conferencing and wikis in the library is also regarded as innovative library services.

The University of Michigan and New York University Libraries provide services to their users in a new dimension whereby Web 2.0 services are constantly used (Thanuskodi and Ravi, 2011; Walmik, Ramakrishnegowda and Prithviraj, 2010 and Kumar, 2016). Mandalia and Parekh (2017), studied the awareness and utilization of digital library by users in ARIBAS, a biotechnological sciences college in India. Digital library services, e-books and journals were recommended to be added to the library collections because they contributed greatly to the library innovation as services provided for the future users. Thorpe (2017), encouraged putting users at the heart of everything done in the library, with the aim of fostering a sense of belonging services for future users, supporting people to gain knowledge of technology (information literacy), using space for independent study as services for future users, implementing ethos of services, engaging in collaboration and forming partnerships.

Patel (2017), identified solutions to a problem in pharmacy education. This involved getting the benefits of creating a physical and social space to discuss problems and solutions of pharmacy via Pharmacy Labs. This is a function of pharmacy labs which according to Patel "becomes a foundation for curriculum changes, projects and working with Partners." In actual fact, students' insight on faculty projects were noted to be such as "can help lead the project to funding commercialization from the University." In the same vein, for future Pharmacy Libraries, the physical and social space of the library can be made to create a Learning Commons that is beneficial in more ways than is expected to the user community.

Technologies of the Future Library for Basic and Medical Sciences

Use of technology facilities has come to stay in the library. Library users eagerly expect top rate technology facilities in advancement of their studies especially medical sciences library users. Some library services could be more effectively provided through the implementation of technology advancement. The common library services such as reference services, Selective Dissemination of Information (SDI), Circulation services, reproduction and printing services would be easily provided by newly innovative technologies. Romanian medical academic libraries in their service provision are urged to focus on "document digitization; the creation of databases; the creation at national level of an online platform for the dissemination of information; resources in the biomedical field; interlibrary collaboration; and provision of professional development for staff." (Madge and Robu, 2019). This is to ensure that technology is used to greater effect because indeed, the majority of users in academic libraries in Romania prefer electronic information resources and want mobile access to scientific information. They also express need for specialty assistance in information retrieval and a comfortable and adequate environment for study and learning within the library (Madge, 2016). Apart from these library services aforementioned, the library could also be managed by some other future library services that are mostly significant for medical science library users. The responsibility of a trained librarian is mostly to provide such useful services to the library users.

The Australian Library Association (2013) noted that over the last 4000 years, libraries have moved from 'exclusive' to 'inclusive', and the role of the library and information professional has expanded from the confines of collection management and preservation to encompass many other workflows. The workflows include knowledge management, information retrieval, search, IT and learning support, and program and event management. This may, of course, be a trendsetter in digital format and use. The Association predicted the future as one that would have technology-based entertainment including games, music, films and interactive books, which would be greatly in demand. New content in libraries will be 'born digital' and physical items such as print books, records and DVDs would be collectors' items by 2056. A Learning Commons ranges from relevant and useful innovative technology to those that augment virtual library services for Pharmacy Library users.

FINDINGS AND DISCUSSION

Questionnaire: A total of 76 respondents filled the questionnaire with 67% (51) females and 33% (25) males. More users were female. Most (75%) users fell between the 16- 25 years age bracket. 24% were between 26 and 35 years old and only 1% was between 46 and 55 years old. More 200 level students use the library, than 500 level students (that is, final year undergraduates). 300 level students ranked next while more Postgraduate students used the library than 400 level students. (See Table 1).

Many respondents (49%) had their highest qualification as Ordinary Level School Certificate. Users with B. Pharm as highest educational qualification were 36 (34%), and only one had a PhD that is, the only lecturer that uses the library constantly. Six (8%) and8 (10%) respectively had Higher School Certificate (HSC) and Masters' Degree as qualification. Frequency of use of the library is one of the indicators of satisfaction with library services. Users who are satisfied with services most likely come repeatedly. In the space of 4 weeks prior to the filling of the questionnaire, respondents were to indicate the number of times they used the library (Table 2).

Most of the respondents used the library once a week. 23.7% used the library more than three times a week. Frequent use of the library depends on what the library is being used for. Respondents of the study were mostly researching or doing assignments, or consulting reference materials and manuals. Not many 100 level students used the library as at the time of this study because the library hours were mainly lecture and laboratory time for them. They were as such exempted from the study.

On information sources used, or most preferred, it was found that textbooks were the most preferred or used. Textbooks written by lecturers were the next preferred, then library staff and journals. These information sources were what often led the respondents to use the library. Table 3 below contains the details of the sources most used (See Table 3).

Table 1. Level of Study of respondents

Level of Study	Frequency	%	Valid %	Cumulative %
200	24	31.6	31.6	31.6
300	14	18.4	18.4	50.0
400	7	9.2	9.2	59.2
500	17	22.4	22.4	81.6
700	9	11.8	11.8	93.4
PhD	5	6.6	6.6	100.0
Total	76	100.0	100.0	

Table 2. Frequency of library use

Times library used in last 1 month?	Frequency	%	Valid %	Cumulative %
None	9	11.8	11.8	11.8
1 - 5 times	42	55.3	55.3	67.1
6 - 10 times	18	23.7	23.7	90.8
11 - 15 times	6	7.9	7.9	98.7
More than 20 times	1	1.3	1.3	100.0
Total	76	100.0	100.0	

Asking their lecturers for information often resulted in them being referred to the library to get more information. Apart from use of information sources, respondents indicated their level of agreement to the following statements concerning library services they used in the Pharmacy Library. Library services used by the respondents is detailed in Table 4 below.

Photocopying services in the library were not used by majority of respondents. Readers' services were mostly used by 69.8% (agreed and strongly agreed). For Reference Services, 72.4% disagreed about reference services being a good service that the library provides. Computer Services were deemed provided by half of the respondents though another half disagreed. Not surprisingly, 82.3% indicated that borrowers' services are denied them. The library does not provide such services.

Table 3. Use of information sources

Information sources most used	Frequency	%	Valid %	Cumulative %
Journals	*6*	*7.9*	*7.9*	*7.9*
Textbooks	*47*	*61.8*	*61.8*	*69.7*
University Library	*1*	*1.3*	*1.3*	*71.1*
Faculty Library Staff	*6*	*7.9*	*7.9*	*78.9*
My Lecturers	*7*	*9.2*	*9.2*	*88.2*
None of the above (Pls. specify)	*9*	*11.8*	*11.8*	*100.0*
Total	*76*	*100.0*	*100.0*	

Table 4. Library Services used

Library services used	SD Freq. (%)	D Freq. (%)	A Freq. (%)	SA Freq. (%)
Photocopying services	48 (63.2)	28 (36.8)	-	-
Readers' services	17 (22.4)	6 (7.9)	30 (39.5)	23 (30.3)
Reference services (Consult a Librarian)	42 (55.3)	13 (17.1)	17 (22.4)	4 (5.3)
Computer services (Internet, printing etc.)	29 (38.2)	9 (11.8)	14 (18.40)	24 (31.6)
Circulation services (Borrowing, reserving books, etc.)	40 (52.6)	15 (19.7)	15 (19.7)	6 (7.9)
Teleconferencing (Conferencing online)	54 (71.1)	21 (27.6)	1 (1.3)	-
Use of e-resources in the Library	29 (38.2)	8 (10.5)	22 (28.9)	17 (22.4)
Others (please specify)	70 (92.1)	6 (7.9)	-	-

(Indicator: SD=Strongly Disagree, D=Disagree, A=Agree, SA=Strongly Agree)

The remaining number who agreed that it was provided apparently referred to the fact that reference textbooks like British Pharmacopoeia (BP), The United States Pharmacopeia (USP), Goodman & Gilman's Pharmacology, Martindale, BNF and other such textbooks are loaned out to the lecturers who use them in Laboratory practical and return after class, periodically. This service is because the reference materials are not enough for to be borrowed and their frequent use does not permit them being loaned out for long periods.

Teleconferencing is a service that the respondents do not yet have access to in the Pharmacy library. Only one respondent indicated having used the facility. This may not be unconnected to the fact that there is no dedicated space for such, except the Librarians office, and also, the limited access to internet facilities due to non-subscription to the University regulated internet services. Slightly less than half disagreed on the use of e-resources, while over half indicated their use of e-resources in the library. Other specifications by the respondents showed that circulation services are best used while borrowing was not allowed at all.

Interviews: Two users from each level of study in the Faculty of Pharmacy were interviewed using a structured interview checklist. The questions were to generate discussion on future expectations for the library after the upgrade; future facilities required for learning and research; their opinion on future use of robotics, mobile apps and open library services; and future funding plans envisaged for improvement of library services. The twelve users were randomly selected from the register usually signed IN and OUT on daily basis depending on their level of study. They were requested to stay behind 10 to 15 minutes after normal closing hours, at their convenience for the interview. The interview was recorded if the user agreed; otherwise, notes were taken instead. Seventeen users (8 males and 9 females)

participated. They are identified with their initials – AI, SO (PhD level); OA, DO (700L); T, A (500L); TOA, OOO (400L); TO, ANON (300L); WI, EA (200L). First year (100L) students were exempted as they usually were not available, but rather in their laboratory for classes at the times set for the interviews.

Findings from the interviews were thematically analyzed thus:

Question 1: What future library services do you expect after this upgrade?

1. *Free wifi provision and access to the internet. Wifi is highly needed for student use. Internet services with access passwords should be provided. More charging ports for phones should be provided also.* TOA, OOO, T (3)
2. *I expect an update in the pharmacy textbooks and journals so that the library can compete globally. Printing services should be provided and more current textbooks and journals should be provided in my discipline, pharmaceutical microbiology.* OA, DO (2)
3. *More bag racks should be provided. In future, the size of the library should be increased, with more air conditioners provided. Creating more space, the size of the library should be increased.* ANON, SO (2)
4. *The e-library should be upgraded. – upgrading the e-library according to each class of materials e.g. books, journals, videos etc.* AI, EA (2)
5. *24hours service is demanded. Closing time for the library should be extended.* EA, WI (2)
6. *Accessibility to computers, the e-library should be highly accessible.* TO, A (2)

It is indicated that having access to free wifi and being given passwords for this access is top priority for users of the Pharmacy library. Update in the textbooks and journals, as well as need for further expansion of the physical space was also called for. Future expansion of opening hours to 24/7 was also a service expected form the library. This corroborates the studies of Tait, Martzoukou and Reid (2016) and Oyelude and Oyewo (2017) on the demand of 24-hour services by students. If this cannot be provided, the alternative is to extend beyond the opening hours of the library from 3.30pm Monday to Friday as is currently provided.

Question 2: What future facilities do you require from the library to help further your learning and research?

1. *Make e-resources work well and the other online websites that are related to Pharmacy so that current science journals online would be available. Make*

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passwords available to log in to some websites like Science Direct, Jstor, Researchgate and so on. OA, T, A, ANON (4)

2. *The server that works 24/7 should be provided. The server being on and off should be treated with urgency. Free access to e-resources even after closing hours will enhance getting current issues and research.* SO, AI (2)
3. *The library should provide plagiarism software so that students can assess their final project before submitting e.g. Turnitin.* DO (1)
4. *Provision of the replay of activities in the classroom and laboratory through teleconferencing. Physical model of chemical structures for visual learning (looks like toys but they are structures. Provision of projection (realia, objects). Yes, it is in form of improvement and development to experience the use of library mobile apps.* EA (1)
5. *Provision of printing machine at a cheaper rate.* TO (1)
6. *Availability of bindery machine to bind textbooks, project, lab notes etc.* TOA (1)
7. *No comment.* WI (1)

In order of priority, to help further learning and research, users of the library required the future e-resources to be very functional and updated. Passwords were to be made available for easy access to the resources and the server well maintained. A facility to have plagiarism software available for use in the library instead of having to go to the Main library for it was also requested. For research and output of research to be disseminated, scholarly writing needs to be checked for plagiarism. Users of the Pharmacy library felt a need for plagiarism checkers to be provided right in the library. Printing and binding services were also felt to help further learning and research.

Question 3: Have you considered the use of robotics in the Pharmacy library? What is your opinion on its use in the Pharmacy library?

1. *Yes. Library Mobile apps should be available after daily service.* TOA, OOO, A, TO, T, ANON, IA (7)
2. *Yes. But there are some disadvantages in using it. A robotic cannot pick a related or so closed textbook for students from the shelf.* DO (1)
3. *Yes. It will enhance reading and research, so that the library should not just be a reading centre.* SO (1)
4. *It is supported if it can be maintained well.* WI (1)
5. *No. I prefer using my own time to browse the shelves than being served by a robot. I prefer using the library after closing hours. On the use of mobile library apps or open library system through creation of group forum that*

students can interact in, in the app for instance, the library can submit the important "search" to the app for others and group interaction at all levels but departmentalizing the group Forum. AO (1)

Of those who commented on the use of robotics for the library, majority (10) supported its use defining its advantages, and supporting the use of mobile library apps for communication outside library service hours. One user however objected to the use of robotics, preferring not to be served by a robot.

Question 4: What future funding plans do you envisage for future library services improvement?

1. *Alumni Association is being suggested. The librarian should try and lobby with the Pharmacy Alumni.* AO, TO, TOA, OOO, T, A, EA (7)
2. *The library could ask corporate pharmacy bodies for assistance. Those close to the pharmaceutical companies also in the university can help.* T, TO, OOO (3)
3. *None envisaged.* DO, AI, ANON (3)
4. *Funds can be sourced by collaborating with agencies like UNESCO and the like. Non-governmental organizations (NGOs) and others can help.* A, EA (2)
5. *Ask for donations or gifts on UI [University of Ibadan] website by advertising the services the library renders or offers to students. Seeking individual donations.* WI, OOO (2)
6. *Student's contribution to the development of the library services may be as low as possible.* SO (1)
7. *The library raising money by induction fees, or by increase in about 5% or 10% in school fees, especially the newly admitted students.* TOA (1)
8. *By using internally generated revenue from the library.* OOO (1)

On the issue of funding the library in future, 7 respondents envisaged that the Pharmacy Alumni would be able to help with funding in future. A few other respondents identified corporate pharmacy bodies and pharmaceutical companies as sources of funding for the library, while non-governmental organizations and agencies like UNESCO and others could also be of help in their opinion. Individuals, members of the university community, library internally generated revenue and even increasing student's fees by a minimal percentage were also suggested. The option of crowdfunding seemed to be most favoured for future funding possibilities.

The findings from the study indicated that the experience of the Faculty of Pharmacy Library which so far triggered the upgrading of library services for the medical science community is because it is mostly used during day time hours and

highly busy with students writing their laboratory reports and doing class work. They therefore wish for more time after that to do more learning and research. The future library services proposed will aid the medical and pharmacy communities to benefit maximally through innovative procedures of using digital tools that give ease of use and access.

Future Pharmacy Library Plans

The following itemized innovative technologies are being planned for the management of the Basic Medical Sciences libraries in the University of Ibadan, especially at the Faculty of Pharmacy Library, University of Ibadan, Nigeria:

1. **Digital Maker Spaces (DMS):** The application of Digital Maker Spaces in the Faculty of Pharmacy Library is a future proposal for the medical science community whereby the users will have enough opportunity to learn and use some of the most cutting-edge technology around the library. It will be a real change for the medical science community to make use of Digital Maker Labs as it involves the technology innovations such as 3D printers and Computer Controlled (CNC) routers for library users.

2. **Coding Clubs:** Coding clubs are newly developed device facilities that are viable for the medical science community. The use of coding clubs in the library is essential as it can be used for pharmacognosy coding, solving some pharmaceutical problems and designing solutions for each problem. The Faculty of Pharmacy Library is planning to manage this library service in future whereby the library will provide the coding clubs for the use of medical science community in solving some pharmaceutical issues and design solutions. For example, Microbit is a tiny programmable computer designed for teaching how to code different information, how to solve pharmaceutical problems and proffer solutions. It has been used and it worked in United Kingdom (UK) libraries therefore it can also be applicable at the University of Ibadan, Nigeria.

3. **Virtual reality:** The traditional library approach is being eroded by virtual reality (VR). Library users are now having hundred percent chances of learning and exploring other places in their comfort zone and time. The future library services of bringing services to the door step of the medical sciences community by creating virtual workshops, seminars, both staff and students training and teleconferencing of class lectures and laboratory experiments for diverse levels and categories of library users in prime time in the library has come. Virtual reality modules to suit the Pharmacy and Basic Medical Sciences community will be developed if ready-made ones are not available. A virtual reality and

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learning commons for all medical science students and its community will be provided.

4. **Mobile Library Apps (MLA):** The mobile app is a user's companion in which all downloaded information can be accessible in twenty- four hours. Mobile apps render some significant services to users. In terms of library collections, with mobile library apps, the pharmacy community will have access to the library catalogue on motion. The app makes it easy to the extent that the medical science community can interact with library resources by reading library electronic resources such as e-books and academic journal articles. Selective Dissemination of Information Services (SDIS) is quite possible on mobile library apps whereby all needful information will be placed on an app for the Medical Science community consumption. The apps being constant and easy to carry and access by users for any needful information, are subjected to constant review, and therein room will be given for community participation and the "give back to community" approach. This implies that the app will accommodate questions and answers from the end users, the Pharmacy Library community.

5. **Open Library services (OLS):** Open library services have become necessary for the Medical Science community especially the Faculty of Pharmacy Library. The opening and closing time of the library had been the bone of contention for a long period of time with users agitating for the extension of the library opening hours whereas members of staff are complaining of their own precious time. In addition, the research instrument used for this study revealed that the entire Pharmacy Library community frowns at the opening and closing hours of the library. It is therefore imperative for the library to plan for future library services to satisfy its intended users. The future library plan for the Medical Science community is to have twenty-four hours service delivery. This can be made possible through future plans for Open Library Services System (OLSS). Open library services extend the opening hours of accessing library information resources without side effect for library staff. It gives patrons and community an assurance of twenty-four hours services. As open services worked in other climes, it is slated that it will work in the Pharmacy Library as well.

6. **Cloud Printing, Copying and Scanning:** This is a unique identified service proposed for the Faculty of Pharmacy community whereby printing, copying and scanning will be made easy from their smart phones, tablets and personal computers (PC). The use of Princh's cloud-based printing machines for example, attached with mobile devices will provide solution to printing, copying and scanning of any needful information in the library. It seems that the library could provide this kind of services for the medical science community as an aid to information retrieval.

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7. **Kinetic Bike Services (KBS):** The use of kinetic bike in the library is a future library service proposed for the medical science community. This future library service will aid users of the Pharmacy Library and its community to charge their mobile devices and at the same time exercise their body system within the library premises while using it. Exercise is a component of pharmaceutical advice regularly given on health issues. It will be a sort of help if the library can be a participant in improving library users' health wisely by offering this future double purpose service.

SOLUTIONS AND RECOMMENDATIONS

In libraries, user experiences are documented in order to evaluate them and make positive and improved changes going forward. From the suggestion boxes, informal chats, interviews, observations and statistics taken, projections for the future are made. Budgets are drawn up and efforts made to execute the budget. The strategic plans generated from evaluation of the services are formally drafted into a document that the library management and the Faculty of Pharmacy can work with and work on, in phases. It is always recommended and desirable that future library plans be done in phases, to make it easier to implement and complete the plans drawn up.

Strategic planning activities are studiously carried out to ensure that the future library services are user-centred in the Faculty of Pharmacy Library, University of Ibadan, Nigeria. Funds are constantly sought to improve the Faculty as a whole, and the library is not left out. The administrative bodies at Faculty and University level are encouraged to map out funding strategies for the plans. Committees are set up, and implementing collaboration between the University and outside agencies to get projects or plans under way is initiated. In the case of the Faculty of Pharmacy, the Alumni of the Faculty who have made waves in the Pharmaceutical or other industries are contacted and urged to assist in funding the projects one after the other or simultaneously as the case may be. There is always a synergy between the Faculty and the Office of the Alumni Centre on campus.

Crowdfunding using social media is an option that could also be considered. This would require close monitoring by the University and the University library however. It could also be a last resort if other efforts to source funding for future library services prove abortive. It is expected that future endowments specifically to provide the services aforementioned will be made by University library management specifically for the basic medical sciences in order to provide world-class library services in support of the vision and mission of the University and its library system.

FUTURE RESEARCH DIRECTIONS

Libraries of the future will of essence depend a great deal on new technologies. The services will be technology driven for the most part and user expectations will change progressively to meet the needs. It will not be surprising to find libraries and library users interacting remotely, and less emphasis (if not all of 80% attention) shifting away from the physical book. Librarians' jobs and their job descriptions will have a complete turnaround in the future and most likely the world will have future librarians researching and carrying experiments on building robots that can serve clients faster and more precisely. Research likely will move towards developing more personalized apps for users and acquiring skills in the making of drones to perform mobile and rural library services, or even being "remote book counsellors' to their clients in real time. Research into the possibility of providing 3D, 4D, 5D and more specialized services by libraries could be an area of interest in the future. These researches could go so far as to find out how thinking of what to read, and how to access reading materials can result in provision of the reading materials and the needed access in the space of the seconds that it takes to think about it. In the twinkling of an eye! Future libraries loom large!

CONCLUSION

The vision of managing future library services for users in Pharmacy Library is a step up to future library innovation in Basic and Medical Sciences. Library users need a digital library whereby accessibility of information resources is made easier. The future library services are expected to deliver needful information to the door step of students, researchers and the community at large. Digital Maker Spaces (DMS), Coding Clubs, Virtual Reality, Mobile Library Apps (MLA), Open Library Services System (OLSS), Cloud Printing, Copying and Scanning, Kinetic Bike Services (KBS), free wifi provision and access to the internet, and service provision of twenty-four hours are future projected services in the Pharmacy Library. No doubt, future library services proposed for the Pharmacy Library will take the library to its peak of career services (PCS).

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KEY TERMS AND DEFINITIONS

Basic Medical Sciences: It is the body of knowledge in the generic knowledge area of the basic and medical sciences of which Pharmacy is a department.

Library Services: These are professional tasks rendered to library users in anticipation and on demand in meeting their information needs.

Pharmacy Library: This is the warehouse or custodian of all print and non-print information resources required by pharmacy students and other related users.

Chapter 13
Building Influence:
Strategising for Library Advocacy

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ABSTRACT

The poor perception of libraries by the general public and their unfavorable position in government corridors can be corrected by library advocacy (LA). While we all struggle to gain support for our libraries, there is need to "talk-up" the library by showcasing its relevance to national development in the 21st century. As a result of this, there is need for a text on advocacy in Africa and beyond, which prompted this chapter on strategizing for library advocacy. The chapter looks at introduction to library advocacy, building team for library advocacy, strategies for developing and getting messages out in library advocacy, media of library advocacy, and getting feedback and appraisal of library advocacy. The chapter concludes by affirming that strategy for library advocacy will create a roadmap for promoting libraries among stakeholders, thus retaining its place of pride as a social and information-based institution. Thereafter, recommendations were made on how to ensure effective strategy for library advocacy.

INTRODUCTION

The 21st century library is greatly challenged by the continuous evolving innovations in information technologies as well as the global economic meltdown that has led to dwindling funds for social services. All these have seemingly threatened the continuous existence of the library regardless of its relevance to individual and national development. The influx and adoption of Information Technologies (IT) by information users has obviously provided quicker access to a myriad of information even from a remote area. This has negatively influenced perception of the relevance of libraries especially in meeting 21st century information needs. Also, as the economy is challenged around the world, libraries are continuously experiencing closures and budget constraints which depict the unfavorable position of libraries in government scale of preference as pertains to attention and funding. However, to a large extent, library advocacy can ameliorate these situations.

Library advocacy is a planned and systematic approach to promote the library and ensure its survival and growth. According to the Canadian Association of Public Libraries (2011), advocacy is a "planned, deliberate, sustained effort to raise awareness of an issue or issues. Advocacy is thus an ongoing process whereby support and understanding are built incrementally over an extended period of time". Library advocacy involves speaking up for libraries mostly in times of reduced funding, personnel, resources, unfavorable policies and low level of use.

Library advocates continuously speak up for the library and also draw the attention of important people or decision makers towards the need of library, (Miller, 2009) and the strategies by which these activities of advocacy are carried out is crucial for its success. This chapter of the book therefore gives an understanding on the strategies for library advocacy. In view of this, the following specific objectives of the chapter are to:

1. Examine how to build team for library advocacy
2. Discuss possible strategies for developing and getting messages out in library advocacy
3. Investigate the various media for library advocacy
4. Examine how to get feedback and appraisal of library advocacy

BUILDING TEAM FOR LIBRARY ADVOCACY

Library advocacy is all about getting and mobilizing people who have good opinions of the library to speak to others on its behalf; to convince other people of its values and relevance to guarantee its survival. It is a deliberate plan that is designed to

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build influence and stakeholders support (School Library Advocacy, 2013). True advocacy is when stakeholders stand up and speak out on behalf of a cause, idea, or organization (Mlanga, 2014).

Sourcing for Library Advocacy

Indeed, library advocacy is an ongoing process that should not be left until when crisis looms. A library advocate will find out the agenda of decision-makers and demonstrate to them how activities or programmes of the library can advance that agenda. In cases where crisis looms, library advocates take, display and speak about facts that favourably justify reasons why the crisis should be averted as pertains to library funding and other such matters. In promoting a cause, advocates attempt to favourably influence the attitudes of individuals or a group geared towards the formulation of policies that will promote the overall well-being of the library. According to the American Association of School Librarians (2017), an advocate might take a set of facts that favourably describe a cause and then communicate them in a way that the benefits will be very clear to decision-makers so as to advance a course or avert a crisis.

Gathering People for Library Advocacy

Advocacy has a great deal to do with building relationships, partnerships, finding champions and collaborating with them. Often, the power of advocacy is found in the numbers of people who support the goal. Especially in democratic countries, involving large numbers of people representing diverse interests can provide safety for advocacy as well as build political support. Even within the library, internal coalition building, such as involving people from different units or sections in developing a new program, can help build good consensus for action (Canadian Association of Public Libraries, 2011).

Coalition Building

According to the en.v Initiative (2014) coalition building is an ongoing process of cultivating and maintaining relationships with a diverse network of individuals and organizations who share a common set of principles and values. Coalitions often work towards common goals to execute a specific campaign. Coalition building can happen at the local, national, regional and global levels. Different strengths and constituencies, working in coalition can be extremely effective and important, especially when there are broad goals such as legislative or policy changes. However,

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coalition must be with individuals or groups whose philosophy and goals resonate with your advocacy.

The success of advocacy depends largely on those involved in both formal and informal leadership positions of coalition. It is important to select individuals who have passion for the advocacy issue and the organizational skills to accomplish the goal as the formal leaders. Leaders are to coordinate the activities of the advocacy group, delegate duties to capable members of the group and also encouraged and support other members in their work. Advocacy leaders should possess the following leadership qualities:

- Ability to identify and initiate advocacy effort;
- Ability to inspire and attract interest;
- Ability to manage process; and
- Ability to mobilize support.

The use of human rights framework in messaging can also help to bring additional members to a coalition. This frames advocacy issue(s) as one of broad concern to all people and not as a specific issue relevant only to members of a particular group. Being able to show that the issue is supported by stakeholders other than the agitating individuals or organization is important. Alliances are critical to successful advocacy. While alliances can be challenging to identify and maintain, they build power, expand capacity, and help advocates work on the various direct, systemic, and root causes of advocacy issues (en.v Initiative, 2014; Canadian Association of Public Libraries, 2011).

It is important for a coalition to have regular meetings and continuous information-sharing; which can be physically or electronically via the use of social media platforms. It is damaging to any coalition effort when members of the coalition, either because of lack of leadership or poor or inadequate communication strategies, do not act in a coordinated manner and/or with a singular message. Internal struggles acted out in public are damaging to a coalition, its members, as well as the relationship with policymakers. Coordination is therefore essential in any coalition building (www.theadvocatesforhumanrights.org*)*.

Creating Coordinating Committees: Tactics for Success

The purpose of creating Coordinating Committee for library advocacy is to ensure that advocacy efforts become a reality and achieve the targeted aims. The Coordinating Committee is to ensure cohesion among each facets of the advocacy push, assign deadlines to specific tasks, or delegate specific tasks to others. They create an overarching timeline, and help ensure that deadlines are met. According

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to American Library Association (2009), the followings are questions to consider when creating a Coordinating Committee:

- Who will serve as the Chairperson?
- Who might serve on the committee?
- Who will contact and recruit members?
- When should the committee begin meeting?

Projects large in scope or of long-term require task forces or subcommittees to help complete specific tasks. In this case, the following questions should be asked in planning for subcommittees:

- Will you need other task forces to help achieve your goal?
- How many volunteers per task force are necessary?
- Who might be recruited?
- When should their work begin and be completed?

Types of Task Forces

There are many types of task forces that can be created in library advocacy to cover specific tasks. Some of these task forces include:

- **Oversight Task Force:** Referred to as the Coordinating Committee. The Oversight Task Force keeps the advocacy going smoothly. This task force develops talking points for the advocacy, sets up other task forces, and calls regular meetings of other task force chairpersons to ensure steady progress.
- **Publications and Design Task Force:** This task force creates designs for the advocacy so all materials can have a consistent look and be readily identified with the advocacy. The task force also develops materials for distribution and coordinates the distribution.
- **Media Task Force:** This task force uses created materials to get the advocacy message out. They determine the medium or media to be used in spreading the advocacy massage and ensure consistency in advocacy message. They also create Hash Tags for the advocacy.
- **Presentations Task Force:** Mostly useful in advocacies that requires rally. This task force determines the various venues advocacy volunteers can share information about the campaign. This task force will also recruit and schedule volunteers who are willing to go out and speak to identified civic organizations while using the talking points developed by the Media Task Force.

- **Finance Task Force:** This task force works with the Oversight Task Force to identify possible funding resources, and with other task force chairpersons or coordinators to determine what kind of funding will be needed to accomplish the campaign goals. They keep track of the campaign budget.
- **Evaluation Task Force:** Works with the Oversight Task Force to monitor the campaign as it moves along and makes recommendations for modifications where and when necessary. They ensure that acknowledgements are sent out to volunteers, including those who provide professional services, financing or in-kind support. This task force schedules the final meeting following the outcome of the campaign either to celebrate or to assess the strengths and weaknesses of the campaign, especially if the campaign needs to be continued for another year.

STRATEGIES FOR DEVELOPING AND GETTING MESSAGES OUT IN LIBRARY ADVOCACY

Strategies for developing and getting messages out in library advocacy are plans designed to develop messages and get same across to a target audience in advocating for libraries. These strategies are to ensure messages carry the right and intended information determined to be passed across as well as make sure messages are delivered through appropriate medium or media and in due time. The determination of the goal or purpose of the advocacy is the bedrock of developing these strategies. This involves asking questions such as:

- What library issue(s) are we here to address?
- What is the drive behind this advocacy?
- What do we intend to achieve by this advocacy?
- How do we intend to achieve our drive for this advocacy? Etc.

   In deciding on what strategy to use, the following must also be considered:

- WHO is your audience?
- WHAT is the best way to convey the information to the target audience: radio, TV, direct mail, other?
- What kind of image do you want to project?
- Will it be an effective part of your total communication effort?
- WHEN is the deadline? Will your message be distributed in time to be effective?
- HOW much will it cost? Is this the most effective use of available funds? And

- WHY is this strategy best for this audience?

Also, when strategizing for developing and getting messages out for library advocacy, the Library must set a goal that is intended to be achieved at the end of the period in view. What should be the outcome of the advocacy project must be clearly stated. The goals must be SMART.

S= Specific
M= Measurable
A= Action-based
R= Responsibility stated, and
T= Timed.

Collecting Information/Facts for Library Advocacy

Establishing the purpose or drive for library advocacy is the starting point of information collection. These are facts and evidences on issues warranting the need for library advocacy. These might be issues such as: the need for library development, maintenance or need for increased library funding, building a new library, influencing state or national legislation in favour of libraries, passing local library referendum, sustenance and funding of public libraries by State Government (Canadian Association of Public Libraries, 2011). Library advocacy is about collecting and documenting evidences in support of libraries which should not be left until crisis looms. Evidence collection and documentation should be made a part of library management style of reporting the effectiveness of libraries. The impact and effectiveness of every initiative undertaken in the library should be measured. Information on it should be documented and passed on in succinct updates to stakeholders. Happenings or policies that have the potential to militate against library success should also be documented and reported.

Information collection must be carefully done to ensure that only facts are extracted. Information should not be based on speculation but facts alone in form of statements, figures, pictures such as those that show dilapidated library buildings justifying the call for a new and better library buildings, charts, tables, etc. Information can be sourced from all stakeholders (School Library Advocacy, 2013; Mlanga, 2014).

Understanding the Target Audience

Advocates are the people with whom library have built a strong relationship over time to promote the library in the quest for continuous existence (Mlanga, 2014). They are influential in championing the services libraries provide and showcasing

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the library's holdings, as they know about the impact and value of library services and collections to the target audience. For this to be done effectively, they require an understanding of the target audience.

Library advocacy target audiences are all those who relate with the library either directly or indirectly. They are also known as library stakeholders. Generally, it is logical to conclude that everyone that has an information need for which the library can meet is potential target audience of the library advocacy. Also, users of the library which vary in accordance with the library type are also target audience of library advocacy. To all library users, potential users and the wider community, success reports from meeting previous users' information needs are used for justifying the need for their patronage in library advocacy (American Library Association, 2009; Mlanga, 2014).

On the other hand, Board of Trustees, funding bodies, Government agencies, Parent institutions, Library Management or/and proprietors which vary according to library type are also target audience to whom library advocacy is directed. This is essentially because setting of library in the right path for survival and growth rests on their policies and directives. Surprisingly, these policy and directives sometimes do not favour the cause of libraries, hence the need for library advocacy. Once the goals are determined, advocacy should be directed to the people with decision-making power; and, ideally, to the people who influence the decision makers, such as staff, advisors, bureaucrats, the media and the public (School Library Advocacy, 2013; Canadian Association of Public Libraries, 2011).

The target audience, especially the audience to whom library advocacy is directed, should be understudied to determine the construction of messages, the choice of words to employ (library terminologies), the type of advocacy to embark upon, date, time, and venue of advocacy activities and choice of media of message delivery. The understanding of target audience brings about effective library advocacy.

Structuring Your Message in Line with Your Audience

The first consideration in developing messages and getting messages out in every library advocacy is the target audience. In developing advocacy messages, consideration must be given to the audience to whom the advocacy is directed. The American Library Association Advocacy Institute (2009) advised that this consideration must capture what the library wants them to think? Do? Or feel? Feelings are what motivate people to act - compassion, concern, anger or joy.

Messages should be structured to spark a feeling, whether it's pride, frustration or outrage. Messages must reflect the most important drive of the advocacy and constructed to reflect the benefit of library users and the wider community from the agitation of the advocacy. Since library advocacy is getting people who have good

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opinions of the library to speak to others on its behalf and convince other people of its value, messages must show evidences of the value of library programmes and services to individuals and communities at large. The messages should be directed, in particular, to those who manage and govern the library, including those who make budget decisions and/or policies and legislations (Canadian Association of Public Libraries, 2011; American Association of School Librarians, 2017).

Key message(s) should be brief and used consistently in news releases, letters-to-the editor and other communications (American Association of School Librarians, 2017). It may also be distilled into pithy campaign slogans such as 'Fund Public Libraries' and 'Support Public Libraries'. Messages should be evidence based by emphasizing what the general public and individual users of the library stands to gain. Evidence based messages validates that quality learning outcomes can be achieved through libraries, hence the need for the advocacy. Moreover, messages via electronic media like social media should employ hash tags, for example, #PublicLibraryLove in driving the message across to the target audience. This message will quickly get the attention of stakeholders when it attracts a large amount of public engagement for instance, for in a twitter advocacy for libraries, the number of tweet engagement to include likes, retweets and reply are vital in advocacy.

A clear, precise and cohesive message is invaluable when advocating for a cause. Not only will it provide decision-makers a clear point of focus, it will help keep staff, volunteers, and allies focused on the goal before them. If and when advocates are working within a coalition, it is especially important for everyone to use the same key message, tags and hash tags.

Conclusively, when structuring your advocacy message, it should be BASIC;

B= Brief; avoid the use of too many words in order not to disrupt the message been passed.

A= Accurate; be objective, ensure the message are verified facts void of sentiment and falsehood.

S= Specific; give the exact facts and be specific in your statement.

I= Informative; your message should contain facts, figures and pictures that inform the audience about the state of the issues been discussed.

C= Courteous; be polite in your message, avoiding rude, foul comments or statements.

Passing Your Message Accurately

Passing advocacy messages across accurately begins with determining the talking points. What stories or examples support the key message? Using descriptive, local examples is an effective way to get the attention of decision-makers. These may change based on the needs and interests of the identified audiences. Librarians may

need to be very cautious when advocating for their own programs and jobs (Mlanga, 2014). This is because when librarians speak out for libraries or librarians, it can sound self-serving, hence the need for "friends of libraries" to participate in library advocacies). Passing messages accurately, according to the American Library Association Advocacy Institute (2009) involves ensuring that messages are brief, capture key advocacy drive, carry pithy sentences, campaign slogans and tags, are evidence based, shows facts, figures, or pictures, tag people who will have a wide audience for message, reflect the relevance and benefit of libraries and librarians to individuals and the society at large.

Schuman in ALA Advocacy Institute (2009) gave tips for writing advocacy messages, best fit for an online advocacy campaign. In view of these tips, advocacy messages should be simple, concise, have a punch line, confidential, appropriate and solution oriented.

MEDIA FOR LIBRARY ADVOCACY

Media of library advocacy are mediums through which advocacy messages are delivered to target audience(s). They are the communication links between library advocates and their target audiences. They provide the platforms from which libraries can pass on advocacy messages. The role of the media is to generate and reflect public opinions on the issue of advocacy in order to influence policy makers to act in favour of the library. Media for the propagation of library advocacy must therefore be carefully chosen with due considerations to the target audience(s). The following are some of the determining questions to ask in choosing a medium or media for library advocacy:

- How best can the target audience be reached with the advocacy messages?
- Is the target audience technology compliant or computer literate or are there other means of reaching them?
- Is the target audience active on social media platforms?
- What communication medium will reach them in good time without message alteration?

Media for library advocacy are powerful tools used to pass information that inform the public and pressurize policy makers to change or institute policies that affect the survival and development of the Library. They also provide platforms that enable libraries to gain influence, as they give extensive coverage to libraries and library advocates, allowing them to tell their stories in their own words. They give communities more control by letting residents who might not otherwise be

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heard have a stronger voice in the drive to change the policies and situations that affect their lives.

Media for library advocacy can generally be grouped into two different categories. The first category reflects the nature of advocacy and size of the target audience. It is categorized as personal or word of mouth advocacy media and mass advocacy media.

1. **Personal or Word of Mouth Advocacy Media**: Library advocacy can be carried out in a small but impactful scale using word of mouth. Here, the library representative or advocate uses his or her speech power to communicate with specific target audience on the relevance of the library in a bid to boost the library image. Usually in this media of library advocacy, the communication and interpersonal relation skills of the advocate determines to a large extent the success of the advocacy. In using word of mouth, advocates are expected to be courteous, empathetic and patient. Examples of word of mouth include one-on-one meetings, group meetings, public meetings/forums, telephone conversations.

    Library users who are satisfied with library services rendered to them can also use this medium for library advocacy by sharing their experience at the Library and speaking in favor of the library (Chen, Huang, Hsu, Tseng & Lee, 2010; Solanke, Utulu & Adebayo 2014). Personal or word of mouth media give room for the discussion of the impact and benefits of libraries as well as the challenges facing it with library stakeholders one-on-one. Advocates using word of mouth must be eloquent and fluent enough to sound convincing to stakeholders.

2. **Mass Advocacy Media**: This type of library advocacy is carried out to reach a wider range of target audience who are geographically dispersed in good time. This type of library advocacy requires high engagement of tools and technologies to enhance its actualization. Examples of mass advocacy media include as electronic mails, faxes, promotional materials, instructional materials, news releases, blogs, websites and social media platforms. The major value of mass media is that it can quickly reach large numbers of people. Some mass media medium such as billboards requires a great deal of money, specialist expertise and equipment. Although this type of mass media can be expensive to use, there are also less expensive types, such as Posters and Hand Bills. According to Akporhonor and Olise (2015) mass media are potent means by which libraries and library advocates can reiterate the relevance of libraries to stakeholders. Mass advocacy media involves the use of every public relations and marketing tool: public meetings, lobbying, news conferences, advertising in all media, surveys, focus groups, strategic partnerships, a huge variety of print promotional material and much more. Book marks, book bags, program

flyers, membership renewals, direct mailings for membership drives are materials that gives opportunities to pass advocacy messages out. Pro-library bookmarks can be left at offices and other places that people frequent. Local grocery store can also be asked to put advocacy message on their bags for a given length of time of the advocacy.

The second categorization of library advocacy media takes cognizance of the format with which the advocacy message is packaged. Here library advocacy media can be further categorized as either physical or electronic media for library advocacy.

1. **Physical Library Advocacy Media:** This type of library advocacy media uses physical formats that can be tangibly related with, to convey advocacy message to the target audience. Some of the types of physical media for library advocacy include:
   ◦ **Letters/Faxes**: Letters/Faxes are written advocacy messages addressed to policy makers, group of people or individuals from which coalition is sought.
   ◦ **Library Newsletter/Bulletin**: This gives the "power of the press" to the library. Library newsletter/bulletin is published periodically by the library to amass support for the library. Contents of the newsletter/bulletin usually carry information about the library that boosts its image and harness support from stakeholders and the general public. Such publications of the library can include advocacy messages or slogans for the library with explanations as to what is behind the messages/slogans. According to American Library Association Advocacy Institute (2009), special events in libraries, news about special visitations, user statistics, special days in the library such as overdue books amnesty days, library displays and exhibition, community services rendered by libraries and other events and activities that promote and boost the image of libraries as well as speak in favour of library advocacy should be published in Library Newsletters/Bulletins
   ◦ **General Promotional Materials**: Book marks, book bags, programmes flyers amongst others are opportunities to get advocacy messages out. The goal of promotional materials is to promote the library, giving stakeholders positive perception about the library, thus increasing the value of the institution.
   ◦ **Newspapers**: This can be used to relate advocacy messages to a wider reach of stakeholders on a daily basis. Advocacy messages or slogan can be featured on the same page and spot on national dailies. A major drawback on this is that placing messages in newspapers can be

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expensive. However, it can be achieved if academic, public, school and special libraries can team up and also form coalition with newspaper houses.

○ **Letters to the Editor**: Letters to the editor in every daily, weekly or monthly newspapers and magazines are widely read. A good way to "hook" library promotion into a letter to the editor is to respond to a big issue that the press is covering showing how libraries can make a difference. People have use this medium to tell happenings in their environment, express their fears as well as air their views and opinion on issues of public interest. Library advocates can also employ this medium to call attention to libraries. Letters to the editor, according to ALA (2014) publication on "Letter to the Editor for Banned Books Week", must include the name, address, telephone number and credentials of the person submitting. An example is given in their "Sample Letter to the Editor" publication:

Dear Editor:
I am writing to express my concern that hours may be cut at our branch libraries. As a cost-cutting measure, the City is recommending that the library close all branches on Mondays.
I am a staff member at the XYZ Branch, and I work weekday afternoons. Each day, as school closes, dozens of students file into the library to do homework, use the library's 13 computers, or socialize in a safe place. Many of these children would otherwise go home to empty houses, and the library is the one place that provides a secure, supervised alternative to being home alone.
Our library has put several after-school programs in place to give students who are not doing homework something constructive to do; and other library customers have told us that they are surprised and delighted that the young people are so well-behaved. Teachers have called to say that some of their struggling students' work has improved since spending afternoons at the library. Parents have told us they are grateful for the library's welcome to their children. Closing on Mondays will be a major disruption for these children, and I am certain there are other ways to save money without risking their safety and the productive use of their afternoons.
I urge your readers to contact their City Council representatives and urge them to vote to keep libraries open! Contact information is on the library's website at www. (provide a web address).
Sincerely,
Your name and address. (Your address will not be published.) (ALA, 2014)

- ◦ **Opposite-Editorial Page Pieces**: The library may have a well-known citizen who is a library user write it. Tie it to a major issue facing the community such as Computer literacy, waste management, and sustainable development; and show how the library helps in solving such issues. This promotes the library and serves as a means of library advocacy. (

- ◦ **Rally/Walk**: This is the coming together of a group of people for the purpose of making their voices heard on a particular issue. An ample number of people marching on a route from one significant site to another to highlight their commitment to a particular issue. It usually gets public attention and forces policy makers to listen to them and the issues raised. It often involves the use of placards and customized wears with the advocacy message or slogan written on them. The timing of rally or a walk is a particularly crucial one. It should be timed to just before or during a major event that the demonstration can influence, the local visit of a political or controversial figure or group, or a national day honoring or commemorating library issue (Community Tool Box, 2016).

  The single most important piece to organizing a demonstration is its planning beforehand. It must have a coordinator and a group of organizers who work together before, during, and after the event to plan and carry it out. They need to decide what the demonstration will be like, and to anticipate potential problems and plan for them as well (Community Tool Box, 2016). There is need to galvanize community members widely for rally or walk as rally or walk with a few people hardly get advocacy message across. Libraries can seek partnerships with different organisation for the customized rally/walk wears. Customized wears with advocacy slogan or pithy easily draws the attention of stakeholders to advocacy issues. Advocates must ensure that rallies and walks are peaceful. They must also inform security agency of advocacy rally/walk before hand

- ◦ **Paid Advertisements**: Paid advertisements gives a great deal of creative control – it allows one to choose preferred media outlets (like electronic bill boards), times and places that the advertisements will be run, the wording and the style, etc. The major drawback, of course, is that they can be expensive.

- ◦ **Press Conferences:** This is an event in which statements about libraries, usually about its achievement or newsworthy events are made, answers are given to questions, and announcements made to a roomful of people who represent different media outlets, with the sole purpose of promoting the image of the library.

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2. **Electronic Library Advocacy media:** This type of media for advocacy uses electronic formats to promote libraries. It employs electronic technologies to communicate with the public on library and related issues in a bid to boost the image of the library. Some of the types of electronic library advocacy media include:

   ◦ **Press Releases**: These are write-ups – usually one page – that inform the media about advocacy issues that relates to the library. Press releases are usually read to a group of press men who broadcast it to the masses via radio, internet and/or television. It helps control what to say and when.

   ◦ **Public Service Announcements (PSA):** Although similar to paid advertisements; PSAs are free because broadcasting stations use them to fulfill a regulation requiring them to "serve in the public interest". Public libraries, especially, can use this medium to air advocacy messages daily. While PSAs can help keep library advocacy issues before the public, they give very little control over when and how messages will be aired, and the content is usually very short.

   ◦ **News Media**: Television and radio can provide a broad and in-depth coverage on library advocacy issues. This could be in the form of an interactive program or an informative program broadcast to the public on libraries and the services they offered as well as their relevance to the society. It could also be in form of special programmes for special days such as World Book and Copyright Day. Libraries can also write to partner Radio and Television houses to air packaged programmes.

   ◦ **Phone Calls**: This is a medium for one-on-one, or word of mouth advocacy; effective for personal advocacy. This media of advocacy is channeled to a particular person or group of persons considered important to the survival of the library. Phone numbers can be sourced from directories as well as the library database of registered users. It is important to write down important facts and detailed description of the advocacy, rationale for the advocacy and prepare for counter-arguments so as to respond positively before making the calls. The legality of cold calling is not well established as it has been used by scammers. One of such example was when a group of impostors posed as members of the Microsoft support team (Wikipedia, 2017). It is therefore important to give your name, address and contact information first in the conversation, state the issue that prompted the call and what action you are seeking for. Also, write down the name of the person you called as well as the time of the call. Express yourself clearly, assert yourself calmly and

follow up on the call. Call back once or twice until the advocacy goals are met (Rogers and Williams, nd).

- ◦ **Electronic Mails**: These are electronic letters/faxes, written and addressed to policy makers or groups/individuals from which coalition is sought. Like letters/faxes, they are effective for personal advocacy media. They are sent to raise the need for advocacy by librarians as done by the American Library Association (ALA) concerning the cutting of funds to the Institute of Museum and Library Services (IMLS). ALA has employed electronic mail in sending how to take action, talking points and background information for advocacy for funding IMLS to librarian. The medium has also been employed in seeking support from the House and Senate and then get as many signatories as they can for the "Dear Appropriator" letter; basically saying "We the undersigned want this area funded in the budget." (North Water Library Service, 2017; ALA Connect, 2017)
- ◦ **Social Platforms**: Social media platforms are viable electronic media that allow the spread of advocacy messages to virtual audiences. Social media platforms have the capacity to widely spread messages by allowing others to like and/or share advocacy issues to more and more virtual audience e.g Facebook and Twitter. (Akporhonor and Olise (2015). For example, tweets and post can be liked and shared by as many people as possible. Each share and like transmit the message to a wider range of audience. Policy makers are easily reached through social media platforms because trending issues on social stages are considered as important and needing attention by them. The attention is usually positive as policy makers want to be viewed by all as helpful in solving societal ills. Viable social media platforms for library advocacy include Twitter, Instagram, Facebook, WhatsApp, SnapChat, YouTube and LinkedIn.

Getting Feedback and Appraisal of Library Advocacy

Every advocacy endeavor has an agenda, a goal that is intended to be achieved and an expected end that is hoped for. Library advocates must therefore track their efforts and monitor progress to see how well the aim of the advocacy is being met. This is why feedback is necessary both to measure advocacy progress and to guide future actions.

Feedback is an integral part of every communication process. When advocating, communication is made and this could be one way or two ways. While a one-way communication is such that do not require feedback, two ways communication

requires feedback from the receiver on how well the message has been understood. Georgievska and Sommario (2011) gave a succinct conclusion on the concept of feedback in communication chain when they assert that effective feedback appraises and evaluates the processes in a communication cycle in order to improve subsequent performance. Feedback also provides information on how well the programme or activity is realizing its stated goals and objectives, as well as help create a roadmap for greater accomplishments.

The communication model developed by Shannon and Weaver in 1948 shows the place of feedback in the communication process which according to Dima, Teodorescu and Gîfu (2014) is a basic element of communication. The Shannon-Weaver model depicts a systematic process of communication which reflects how message from the sender gets to the receiver through a medium. It also shows a feedback from the receiver to the sender, showing a two ways communication process.

Library advocacy is appraised through feedback which helps the library in:

1. Getting feedback and appraising library advocacy. This helps to evaluate how well the goal was accomplished at the end of a given period of time,
2. Determining the effectiveness of advocacy strategies and reveals the strength and weakness of the platforms used for advocacy.
3. Improving upon the strategies and media employed by advocates in reaching their target audiences.
4. Encouraging dialogue between the library and her advocates as well as the public by giving the library an opportunity for image building and invariably gaining the loyalty of its community of users.
5. Gaining useful information on improving library services, thereby enabling the library to fulfill the main objectives for its existence.

Figure 1. Shannon-Weaver's model of communication

CONCLUSION

Library advocacy is essential for the sustenance of libraries in the 21st century. The process of advocating for libraries is systematic and requires deliberate efforts. One of such fundamental efforts in effective library advocacy is strategizing, which gives an elaborate and systematic plan on how the advocacy vis-à-vis its goals and objectives will be accomplished.

Strategizing for library advocacy starts with building an advocacy team consisting of people who are passionate and persistent in speaking up for libraries. The team makes a plan on how to develop and get their messages out to their target audience using the appropriate media at the right time in view of what they intend to achieve. Moreover, it is germane to set up feedback mechanisms in order to evaluate and appraise how well the goals and objectives of their advocacy was accomplished and establish modalities to enhance better performance.

An effective strategy for library advocacy will create a roadmap and an action-plan for promoting libraries among stakeholders thus retaining its place of pride (both in funding and patronage) as a social and information-based institution.

RECOMMENDATIONS

While it has been clearly asserted that library advocacy is crucial in the 21st century, the following are recommended to ensure effective strategy for library advocacy in a bid to speak up for libraries:

- There should be well stated goals and objectives that the advocacy intends to actualize, making it easy to monitor and evaluate performance.
- Advocacy team should be made up of people who are dogged and resilient. Also, there should be a clear job description, workflow and task timelines to guide advocacy activities.
- An advocacy team should be headed by someone who can effectively initiate an advocacy effort, inspire the required interest in team members, manage the advocacy process and mobilize support for the effort.
- There should be strategic use of media for library advocacy. The nature of advocacy message, target audience, time and space should be factors taken into consideration to ascertain the type of media to employ in library advocacy.
- Advocacy messages must be clear, fact-based, purpose-oriented and free from prejudice.

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- There should be effective mechanisms setup to get feedback from the communication process in order to evaluate progress and strive towards better performance.

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KEY TERMS AND DEFINITIONS

Coalition Building: The bringing together of people with similar interest in a particular course in order to achieve a purpose.

Feedback Mechanism: Is a structured communication system by which messaged is routed back to the sender.

Library Advocacy: Is a planned and systematic approach and activities engaged in to promote the library and ensure its survival and growth.

Library Advocates: An individual who carry out library advocacy as a conscious effort and with clear intentions.

Social Media: Information technology-based platforms that allow people to create and share content over the Internet usually in a synchronous manner.

Target Audience: Specific set of people for which an activity like advocacy is aimed at.

Task Force: A small unit or group consisting of individuals with clear responsibility of promoting a cause, carrying out certain activities or achieving a goal.

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