



**THE EVOLVING ROLES OF LIBRARIANS AS CYBRARIANS IN NAVIGATING THE
DIGITAL ECOSYSTEM FOR EFFECTIVE LIBRARY AND INFORMATION SERVICE
DELIVERY IN THE 21st CENTURY**

Kamaluddeen Isa El-Kalash¹

Samaila B. Mohammed²

&

Abubakar N. Usman³

Corresponding Email: maimartabachief@gmail.com

Address: ^{1&2}Library Complex, Federal University of Education Kontagora, Niger State.

³Library Complex, Ibrahim Badamasi Babangida University Lapai, Niger State

Abstract

As a sequel to the emergence and utilization of Information and Communication Technologies (ICTs) in almost all sectors of the human enterprise, many professions have been propelled to leap into the evolving landscape of digitalization to enhance their operations and services. The library and information science (LIS) profession is not left out in this as information practitioners began to assume dynamic roles as "cybrarians", to effectively navigate the information dynamics of the 21st century. Hence, this article explores the transmogrification of 'traditional' librarians to cybrarians and their evolving roles in navigating the digital ecosystem of the 21st century for improved service delivery to their patrons. In the process, varying perspectives on a cybrarian were offered, the complex web of the digital ecosystem was analyzed, the required technological competencies for librarians to function effectively as cybrarians in the 21st century were outlined, and the library user expectations of librarians as cybrarians for improved service delivery in the 21st century are discussed. Further, the article recommends among others, the need for librarians to engage in professional development programmes, to stay abreast of the latest technological advancements and digital tools that are relevant to contemporary LIS practice. The article concludes by underscoring the significance of cybrarians in facilitating effective information service provision in the 21st-century digital ecosystem.

Keywords: Librarians, Cybrarians, Cyberianship, Digital Ecosystem, Library and Information Services, 21st century.



Introduction

We are in a century that is tagged “the 21st –century”. It is a century where, like many other fields, librarianship is experiencing a profound transformation, being a result of the advent of digital technologies. In the 21st -century, the traditional roles of librarians have gradually evolved into dynamic and multifaceted responsibilities, giving rise to a new breed of information professionals that are tagged - cybrarians. The transformation of cybrarians into the 21 digital ecosystem has continued to expand and reshape the way information is accessed and disseminated; as librarians find themselves at the forefront of navigating this intricate landscape.

With a focus on the 21st –century society, this article aims to illuminate the transformative journey librarians are undertaking, adapting to the digital terrain while preserving the core tenets of their profession i.e. information access, literacy, and service excellence. In other words, the article hovers around the defining characteristics of cybrarians, the challenges and opportunities presented by the digital era, and the strategies employed by librarians to offer quality service delivery that meets the evolving user expectations of the 21st century dynamic information landscape. As we struggle to unravel these intricacies, we aim to contribute valuable insights to the ongoing discourse surrounding the future of library and information science (LIS) practice in the digital age.

Concept of Cyberianship

The term ‘cyberianship’ is a coinage portmanteau that is struggling to get widespread acceptance in the library and information science domain (El-Kalash, Abubakar, and Abubakar, 2023). The authors posited that the concept got its roots from the word ‘cyber’, having a simulacrum with computers, and relating to many compound words that begin with the combining form cyber i.e. cyberattack, cybersecurity, cyberterrorism, or cyberwarfare, to explain.



Cyberianship entails the practice of securing, organizing/ managing, and disseminating information in digital formats, usually within libraries, archives, or similar information organizations. As stated by Joshi and Kamat (2016), the word 'Cybrarian' was coined by Michel Bauwens, an Information Officer at BP Nutrition in Antwerp, Belgium, to describe the staff in a virtual library. Dey (2012) posited that a cybrarian is an information specialist who deals with more Web content to reach his targeted user group, who directs the constant change, implements technology, manages access, educates users, and opens up an exciting new world to their constituents. The author stressed that a cybrarian is nothing other than the traditional librarian working in an automated environment, surrounded by digital products.

However, Saalasvuo (1996) noted that the terms "cybrarian," "information therapist," and "information concierge" are novel terms for the library and information science industry. By the aforementioned definitions, cyberianship entails the use of the Internet for sophisticated information-solving tasks including content migration, digital exploration, and library modernization (El-Kalash, Abubakar, and Abubakar, 2023). Put differently, cyberianship encompasses everything related to using the Internet to provide high-quality information resources and services.

Understanding the 21st Century Digital Ecosystem

The digital ecosystem of the 21st century is a very vast and interconnected network that comprises various digital entities like data, hardware, software, networks, and people. In other words, it is a constantly evolving structure that is driven by technological advancements, user behaviours, and market demands, encompassing all the digital technologies, platforms, and environments that facilitate interaction, communication, and collaboration in the modern world. The major drivers of the digital ecosystem are hardware components such as computers, smartphones, tablets, servers, and other devices upon



which the digital services and applications are built. They enable users to access, create, and share information across different platforms and channels.

Alongside the hardware, there is also the software layer which includes operating systems, applications, and platforms. Operating systems like Windows, macOS, iOS, and Android provide the necessary interface for users to interact with their devices and run various software programs. Also, applications, ranging from productivity tools to entertainment apps, cater to diverse user needs and preferences, while platforms like social media networks, e-commerce websites, and cloud computing services offer infrastructure and services for users and businesses to connect, collaborate, and transact online.

Again, data and connectivity are other important components of the digital ecosystem. While data entails all the information generated, collected, and processed across digital platforms and devices, such as images, videos, text, sensor data, audio files, etc., connectivity is facilitated by networks such as intranets, the internet, and wireless communication technologies. It is the networks that pave the way for seamless communication and data transfer to occur between devices and users, regardless of geographical boundaries. The expansion of high-speed broadband, mobile networks, and Internet of Things (IoT) devices has further accelerated connectivity and enabled new digital experiences and services.

Nonetheless, the digital ecosystem is powered by the collective actions and interactions of individuals, organizations, and communities. While the users contribute content, feedback, and data, shaping the digital landscape and driving innovation, social media platforms, online forums, and collaborative tools foster community engagement, knowledge sharing, and collective problem-solving. Also, businesses have a significant impact on the digital ecosystem because technology is used to streamline business operations, reach out to customers, and drive growth.



Required Competencies of Librarians to Function Effectively as Cybrarians in the 21st Century

Many professional groups have utilized competency profiles to create goals and objectives and to measure professional advancement. A profession's competencies entail a range of skills, knowledge, aptitudes, and behaviours that characterize and enhance performance. According to the Federal Librarian Competencies (2008), competencies can be used to design and develop job postings, position descriptions, training and education programmes and performance evaluation programmes. Interestingly, the digital landscape of the 21st century is characterized by a multifaceted array of competencies that are required for librarians to function optimally as cybrarians. Technical prowess stands as the cornerstone, encompassing fluency in networking, operating systems, analytical acumen and the ability to decipher virtual security threats are indispensable. Also, effective communication skills that would assist in translating complex technical concepts into accessible language for diverse stakeholders are required.

This, is because the digitally oriented nature of the 21st-century library environment is a renewed picture of the traditional library setting that has been gulped and driven by new technologies. The situation has led Partridge and Hallam (2004) to use the “double helix image of human DNA” to argue that both disciplinary knowledge and generic capabilities “make up the genome of the successful information professional in the information age”. Orme (2008) categorised knowledge and skills required of librarians in a 21st-century transformed environment into discipline-specific knowledge (that is, the knowledge that relates specifically to the LIS profession), generic skills (general skills which apply to all disciplines) and personal competencies (attitudes, values and personal traits). The author emphasized them to be the top twenty most frequently sought requirements for librarians to thrive in the 21st century.



Similarly, Nonthacumjane (2011) offered some generic skills such as effective communication and interpersonal skills, critical thinking, problem-solving and teamwork as some of the basic requirements for information professionals to thrive in the 21st century library environment in both Norway and Thailand, while Nonthacumjane (2011) as cited in Howard (2009) highlighted personal competencies such as flexibility, adaptability and reflective thinking as being required for working in a digital library environment while Choi and Rasmussen (2009), stated that key disciplinary knowledge required for this digitally oriented environment include understanding metadata, and knowledge and experience in digital content creation and management.

Morover, other competencies that are required of the 21st century librarians for effective service delivery include:

- a) Digital Literacy/proficiency with digital tools and platforms like digital library systems, online databases, e-books, digital archives, and content management systems. It also requires the ability of librarians to create, edit, and manage digital content such as e-books, online tutorials, and multimedia resources.
- b) Basic Information Technology (IT) skills that relate to the understanding of computer hardware, software, networking, and operating systems. Also, cybersecurity awareness to protect digital resources and user data is also required
- c) The ability to analyze and interpret data, to inform decision-making and improve services. In addition, data curation and preservation skills are required for organizing, maintaining, and preserving digital collections.
- d) Ability to design and implement user-friendly digital interfaces that enhance accessibility and usability of information resources.
- e) The ability to use social media applications, navigate websites, blogs, and other digital communication tools to engage with patrons and promote library services.
- f) Skills on virtual reference services that would aid service provision through chats, e-mails, video calls, and other online platforms and the ability to use advanced



search techniques to efficiently retrieve information from digital resources is required.

- g) The ability to understand metadata standards, taxonomies, and classification systems for organizing digital content.
- h) Ethical and legal knowledge in relation to intellectual property rights/ copyright, licensing, and fair use in the digital context.

Amidst this dynamic landscape, the above competencies would certainly equip cybrarians of the 21st century with the skills needed to effectively manage digital resources, engage with users, and deliver high-quality information services in the digital age.

User Expectations of Librarians as Cybrarians for Improved Service Delivery in the 21st Century

The 21st century has no doubt brought about some shifting user behaviours and expectations from LIS professionals amongst which are user-centric or personalized services. In the 21st century era, the old notion of librarianship as gatekeepers of physical resources has been replaced by a more dynamic and interactive approach to information supply, driven by rapid technological breakthroughs. In support of the above, Haber (2011) averred that while providing books was a standalone function for libraries throughout the last few centuries, their offerings have evolved with the digital age to meet the changing needs of their patrons. By implication, librarians have to be experts at navigating the intricacies of the digital ecosystem in addition to curating and organizing enormous digital resources. To put it differently, the 21st century is not merely about adapting to change; but about harnessing the potential of technology to enhance the effective provision of library services in an information-saturated world.

Ramzan (2004) asserts that developments like expert systems, wireless networks, virtual collections, interactive Web interfaces, virtual reference services, and personal Web portals have brought about greater changes since the start of the new millennium. These changes have made information seekers of the 21st century expect librarians to provide



services that are tailored to their evolving needs in the digital age. One of the foremost expectations is seamless access to a wide range of digital resources and services especially as library patrons anticipate user-friendly interfaces for accessing e-books, online databases, and other digital collections, as well as remote access options that accommodate their busy schedules and diverse learning styles.

Moreover, with the mass amount of information out, coupled with the proliferation of misinformation and fake news online, which has metamorphosed into information overload, users expect librarians to offer robust support for information literacy and research skills. In other words, library patrons look to librarians for guidance in navigating complex information landscapes, evaluating sources, honing critical thinking skills and one-on-one consultations that empower users to become discerning consumers and creators of digital content. By fostering information literacy competencies, librarians can equip users with the skills needed to navigate the digital world with confidence and competence.

In addition, users increasingly expect librarians to leverage emerging technologies to enhance service delivery and user experiences. In support of the above, Ikhemuemhe (2005) opined that if librarians are to continue to make substantial contributions as information disseminators, they will have to understand and exploit ICT infrastructure and emerging technologies in delivering services to their clientele. As such, virtual reality, augmented reality, artificial intelligence, and other innovative tools hold the potential to transform the way users interact with library resources and services.

Nonetheless, users expect librarians to embrace a user-centred approach to service delivery, prioritizing inclusivity, diversity, and accessibility. This could be achieved through the creation of welcoming and inclusive spaces that reflect the diverse needs and interests of contemporary user communities that are both online and offline. Centering the needs and perspectives of their users, librarians can foster a sense of belonging and



engagement that enhances the overall user experience and strengthens the library's role as a vital community resource in the 21st century.

Conclusion

It is evidenced from the preceding paragraphs of this article that the role of librarians is gradually changing in the digital age as librarians are evolving into cybrarians, who can successfully navigate the intricate digital ecosystem to provide 21st-century library and information services. The situation has no doubt, propelled information users to have some new sets of expectations from library personnel. These expectations include the teaching of information literacy, providing user-centred services, and being technically proficient amongst others, all of which are very essential in contemporary information service practice. More so, it makes digital resources more accessible and enhances the utilization of new technologies to improve user experiences. Moving forward, cybrarians may guarantee that libraries and librarians continue to be lively and important avenues for the provision of effective information services by embracing responsibilities and adjusting to the changing requirements of user demands, to fulfil their mission of empowering individuals and enriching communities through access to knowledge and information.

Recommendations

Based on the above exegesis, this article recommends the following:

- i. Librarians should engage themselves in professional development programmes like workshops, seminars, etc. to enable them become abreast with 21st century technological services including virtual reference services like online chat, email support, and video consultations, to provide timely and efficient assistance to users. This could be achieved through their personal efforts or through support by their institutions.



- ii. Libraries should invest reasonably in state-of-the-art digital infrastructure, including high-speed internet, advanced computer systems, and secure digital storage solutions, to enhance effective digital service provision. Also, they can explore the vast potentials of emerging technologies such as artificial intelligence, virtual reality, and blockchain to enhance service delivery and user experience.
- iii. Library policies should be tailored towards digitalization and proper funding should be allotted for the acquisition and maintenance of digital resources such as e-books, online databases, and digital archives.
- iv. Libraries and librarians should foster collaborative initiatives with allied information centres, technology companies, and educational institutions for resource sharing and best practices.
- v. Libraries should implement user-centered design principles when developing digital platforms and services to ensure equitable access to information and the needs of diverse user groups.
- vi. Libraries should offer digital literacy programs that would assist patrons in developing the required skills for an effective navigation and utilization of digital resources.

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