



INTERNATIONAL JOURNAL OF APPLIED TECHNOLOGIES IN LIBRARY AND INFORMATION MANAGEMENT

<http://www.jatlim.org>

International Journal of Applied Technologies in Library and Information Management 11 (1) 11 - 99 - 104

ISSN: (online) 2467 - 8120

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Manuscript Number: JATLIM - 2025-11.01/99 - 104

Utilisation of Emerging Technologies for Enhanced Information Service Delivery to Academic Staff and Students of Academic Libraries in Nigeria

Abstract

Academic libraries play vital roles in managing and supporting staff and students' development. Modern libraries and the internet ensure the application of diverse technologies to deepen access to global information networks by its users. The study investigated the utilization of emerging technologies for enhancing service delivery of university libraries in Nigeria. This paper adopted a literature review approach, drawing on existing research and scholarly articles from other authors to evaluate the information and form the basis for this paper. The paper concluded that emerging technology applications for service delivery in university libraries in Nigeria needs to be explored and employed. It portrays the ubiquity of internet, digital, and mobile technologies as enriching in teaching, learning, and research. It underscored the rare platform of modern technologies to expand the library resource base. However, findings, recommended that to effectively utilize emerging technologies, library staff should undergo regular training, professional development and training to update their library services. Librarians should also actively develop and promote services that leverage emerging technologies for enhanced information services delivery.

Keywords: *Academic Libraries, Digital Technologies, Emerging Technologies, Internet of Things, Managing Library Support, Information Services*

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1.1 Introduction

Libraries of today have undergone the previous norms of libraries and their usage and have moved forward towards technological usage and/or digital content application. Most libraries are faced with the need of how best they can meet the information needs of their users and the academic library is not different. As against physical book patronage in the physical library, the pendulum has swung to a variety of technologies to keep the learning and development in libraries and universities updated. Some of the emerging technologies

include: instructional system design, bibliographic citation management software, classroom management software, electronic copyright management system, library automation software, electronic resource management software, and integrated search software to mention but a few. These emerging technologies, however, pose great concern to the service delivery of librarians and information professionals if they must remain relevant in the service management to users. Academic libraries remain a valued place in the learning and teaching community. Itsekor and

Oyewole (2013) reiterated that academic libraries facilitate the reading, studying, and research needs of their clientele.

Drawing from the speedy and drastic changes in the world turning it to a global village, the academic library not being left out of this positive change; the use of various technologies has been introduced into the process of carrying out the diverse responsibilities of libraries. Some of these technologies include the use of computer systems, iPads, iPods, mobile applications, social networks, and other mobile technologies. With the influx of information resources in non-print formats, librarians in academic institutions are presently faced with the need to satisfy users' information needs in the best possible ways.

2.1 Literature Review

2.2 The Status of the Emerging and Digital Technologies in Academic Libraries

Libraries and library management have acknowledged the need for emerging library technology implementations for a favorable influence on the university's library and services. Different studies have opined that there are numerous instances of the solutions used by university libraries to improve services and innovation utilizing new technologies (*Vanen, Joseph & Joseph, 2024*). Modern education demands academic institutions to have enough information infrastructure to provide access through digital technologies, digital warehouses, the Internet of things, mobile computer systems, and social media platforms to education, learning, information, and knowledge resources (YouTube, Instagram, Twitter, and Facebook). E-learning, e-resources, e-information, and electronic archives must be furnished in a digital environment that must be expanded using contemporary technical resources and facilities such as artificial intelligence, social cloud computing, and the Internet (Makori and Mauti, 2016). Furthermore, Saibakumo (2021) stated that amidst the 18 new technologies, library

adoption is stumbling whereas, very few have the readiness and awareness of the cybrarian, library website, WebPAC, institutional repository, and social media. The utility and character of learning environments have been inclusively used in technologies like the Integrated Library Management System, the Library Guide app, RFID, and the Internet of Things. Understanding the impact of these emerging technologies on libraries will expand the horizon of learning and development in the library environment.

2.3 Roles and Attitude of Librarians/Information Professionals Towards Emerging Technologies

The role of libraries/librarians toward emerging technologies in learning and development is enormous. The attitude towards holding firms to indigenous knowledge of job execution should be jettisoned and embrace the current trend in technologies to satisfy the end users. As such, Funmilayo and Ayo (2020) suggested that librarians, however, are required to upgrade themselves along with the system to furnish user-oriented services through adherence to the latest online technologies utilized worldwide to furnish library services because any librarian who is unaware of trending problems and adoption of the newest technology will be redundant and left behind. Ajie (2019) expressed the changing responsibilities of librarians in this evolving information technology environment.

Abubakar and Attahir (2018) explained certain skills that must be built up in librarians from time to time to be in sync with the fast-growing world. These skills include leadership, interpersonal relationships, technological awareness and understanding skills, problem-solving, systems thinking and understanding, knowledge of intervention skills, etc. Libraries should give their best possible ways to acquire knowledge related to trends growing in this rapidly evolving world. Itsekori and Oyewole (2013) quoted Jones-Kavalier, and Flannigan (2006), that history provides examples of

societies trying to build connectivity into their communications infrastructures two centuries ago. They posited that in our 21st-century society -accelerated, media-saturated, and automated -a new literacy is required, one more broadly defined than the ability to read and write. They stated that in the technologies of this time, people sought methods by which they might communicate faster, easier, and better.

2.4 Trainings and Re-training on Emerging Technological Compatibility in the Libraries

Libraries should inculcate the habit of bringing their staff to the current waves of discharging duties that are technology-driven. They should embark on training and re-training. Bharti and Verma (2021) stated that earlier training methods for the library's professionals were mostly designed for freshly enrolled graduates who were prepared for employee participation. Against this view however, the libraries should acknowledge that the development of new technology requires libraries to develop new ways of exposing professionals to new technological abilities; which is based on a collaborative employee learning model with the Maker Movement (Brown and et. al., 2017). This could be through seminars, on-the-job and out-the-job training, symposiums, etc. Makori and Mauti (2016) demonstrated that pedagogy, teaching, learning and digital literacy abilities, computer science and quantitative analysis, electronic resources planning, and business entrepreneurship are key to the academic and non-academic community of information professionals, academics, and professors. Technological abilities enable library professionals to more broadly control the knowledge and transmit the skills as suitable to the users. To bring about a change requires a great amount of mental stability as well as knowledge. Strate, (2024) stated that well before the pandemic, academics have been aware of video conferencing software and internet-based learning platforms, virtual classrooms and cyber schooling, online universities and various digital resources for pedagogy and research

2.5 Possibilities of Mitigating Barriers to the Implementation of Emerging Technologies in Libraries

To attain the appropriate acceptance and adoption of emerging technologies in learning and development, libraries should equip themselves with all gadgets to clear numerous barriers associated with the technologies. Some scholars have browsed some of these barriers. Lubanga and Mumba (2021) indicated that violators in research and innovation policies, lack of established research and innovation centers, unpredictable technological changes in the 21st-century landscape, and university culture without supporting research and innovating are key questions that hinder library R&D, creativity, and innovation in the libraries of UNILIA. Saibakumo (2021) added that inadequate financing, a lack of power supply, and poor maintenance are the major barriers that restrict efforts made to adopt new technology.

Others include an increase in information costs and quality. Infrastructure problems, lack of informatics/learning, and lack of government assistance might be due to fiscal restrictions, poor upkeep and culture updating, and record conversion issues. Appropriate finance for university libraries, effective communication, and the adoption of an excellent management style are some of the methods for efficient library management in a digital world (Enweani, 2018). Lack of staff time, restricted resources, lack of employee training, and institutional regulations have been reported as impediments to the introduction of new technology in the libraries (Golz, 2014). Fund crises and the unavailability of well-qualified staff in libraries are the fundamental issues of ICT deployment (Konwar, 2015). Moreover, Makori and Mauti (2016) highlighted the absence of skills and competence, insufficient knowledge, insufficient ICT infrastructure, insufficient information resources, sufficient social computers, and poor institutional and physical structures, which have an adverse influence on the use of digital technology.

Considering all these barriers, libraries need to improvise sufficient funds, have adequate manpower, and establish the needed technological applications to achieve the expected results in their services.

2.6 Demonstrate Proficiency in the use of Emerging Technological and its Applications

Since the role of libraries and librarians is expanding, they need to incorporate the emerging skill sets into a librarian's job responsibilities. This is prudent in today's emerging technology environment. So, staying on top of the technology learning curve is a critical professional activity for libraries/librarians but can be daunting at best. King (2018) opined that it is important to start planning to future-proof the libraries, having no plan for staying on top of technology change practically guarantees failure and irrelevance for libraries. Instead of that bleak outlook, it becomes imperative to learn to ride these technology changes as they happen, and be ready by responding adequately to our customers when they come to us with new tools and questions. All these will help both the libraries and the library staff to execute their jobs effectively and efficiently to the satisfaction of users. Access to and use of information technology products and services has increased the need for the development of our educational system. Users' expectations and requirements, the changing roles of academic librarians, and the distribution and access to digital information in a web-based, new technology environment are all that the academic librarian needs to take into consideration. MacWhinnie (2003) asserted that users now expect access to information in a wide variety of formats, including print, electronic, and multimedia, leading to a greater need for research assistance from librarians. According to Darga and Hu (2012), e-communication in academic areas enhances scholarship as e-Scholarship including e-publishing, open access to academic resources,

and various institutional repository systems commonly established in institutes to promote faculty research.

2.7 Challenges in Adopting Emerging Technologies in Academic Libraries

Faculty and students need much more in this digital age to embrace and use the internet and digital technology in their work than ever before. The digital age has further projected these challenges experienced worldwide. Forsman (2012) opined that the amount of electronic resources available and the library systems that handle them have multiplied leaving libraries in a challenging situation. These have constituted a challenge in the provision, maintenance, and management of information resources in many academic libraries all over the nation. There seems to be a lack of utilization of our libraries and library resources, and many faculty and students in Nigeria seem to lack the basic skills of locating information resources very easily and managing the influx of information.

Conclusion

The internet, digital, and mobile technologies help professionals of all works of life to develop skills that can add to their knowledge, and economic status and improve their overall standard of living. There is a need for faculty and students to learn to use the internet to acquire digital and mobile technology skills to access information so that they can use them to progress in their jobs and their careers. With emerging technologies, faculty and staff will be more equipped with the necessary skills for research, learning, and teaching via resource sharing, social networking, surfing the net, instant messaging, blogging, internet connectivity, cloud computing, databases, and systems management. The internet, digital, and mobile technologies can also help them in their jobs to assist users get desired information, knowledge, and education. The influx of information, globalization, and the use of the internet and ICTs has made the world a global village where

access to and use of digital technology have become commonplace.

Recommendations

There is a need for librarians to move ahead through the acquisition of skills that will make their jobs more interesting, easier, and stress-free to meet the information needs of both faculties and students. These emerging technologies will also help them to assist faculty and students to get their required information much more quickly, in good time, and easily information services delivery will be effective and efficient when all information professional and librarians are well equipped with knowledge and skills on contemporary adoption and use of emerging technologies.

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