



The Pervasive Challenges of ICT Integration in Nigerian Library Environments

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ABSTRACT

The integration of Information Communication Technology (ICT) within Nigerian library environments faces multifaceted challenges that impede its seamless implementation and utilization. This study explores the benefits and pervasive obstacles hindering the effective assimilation of ICT tools and systems in these settings. Fundamental issues such as financial constraints, limiting technological investments, and the scarcity of qualified personnel proficient in ICT usage profoundly impact the adoption of digital solutions. Moreover, inadequate support from management and persisting infrastructural deficiencies, notably unstable power supply and outdated equipment, significantly hamper ICT integration efforts. Furthermore, subpar internet connectivity, coupled with the low ICT literacy among library users, exacerbates the challenges, impeding the efficient access and utilization of digital resources. This study delves into the comprehensive array of impediments faced by Nigerian libraries in integrating ICT, underscoring the urgent need for targeted interventions and strategic approaches to surmount these barriers for sustainable ICT implementation in these crucial educational and research domains. The recommendations put forward serve as a roadmap for policymakers, stakeholders, and library administrators to navigate and surmount the challenges, thus fostering an environment conducive to harnessing the full potential of ICT in Nigerian libraries.

Keywords: Information and Communication Technology, ICT integration, Nigerian libraries, challenges, opportunities.

INTRODUCTION

The advent of Information and Communication Technology (ICT) stands as a remarkable advancement in modern science and technology, significantly altering the landscape of Library and Information Science (Anyim, 2018). ICT's integration with library operations has sparked a transformative shift, redefining libraries from mere repositories of books to dynamic hubs of intellectual information (Otulugbu, 2019). ICT has revolutionized the way libraries function, enabling them to serve as pivotal facilitators in accessing global information and knowledge repositories (Ezema & Akpom, 2018). Consequently, the influence and potential of information technology have become tangible realities, widely acknowledged and embraced. (Ogar & Tangkat, 2018)

Nigeria's libraries find themselves at an intersection of tradition and innovation, navigating a rapidly changing technological landscape. The advent of ICTs has reshaped the very essence of libraries, transcending their conventional identity as repositories of information to becoming dynamic hubs fostering learning, collaboration, and knowledge dissemination (Jerome, 2019). However, within this

paradigm shift, Nigerian libraries encounter a myriad of impediments hindering their stride towards holistic ICT integration. This study aims to delve deeply into these multifaceted challenges, examining their nuanced interplay and collective impact on the effective assimilation of ICTs within Nigerian library environments.

Concept of Information Communication Technology (ICT)

Information technology (IT) encompasses various technologies used to process, store, and transmit electronic information (Mngutyo & Elizabeth, 2018). This includes computers, communication tools, networks, and even devices like fax machines and pocket calculators (Chukwusa, 2019). The origins of IT trace back to ancient civilizations when writing systems were invented to record traditions and cultures, relying primarily on handwritten methods such as cuneiform in Mesopotamia, Hieroglyphics in Egypt, and later, Greek and Roman Alphabets (Abubakar & Airen, 2015).

The quest for more knowledge led to Johann Gutenberg's invention of the printing press in 1474, revolutionizing the dissemination of information and leading to a surge in printed document production (Adebayo et al., 2018). Subsequently, the invention of the telegraph in the 18th century transformed how information could be disseminated across distances, laying the groundwork for the modern information and communication technology revolution (Agboola & Ruth, 2019).

With the industrial revolution, mechanization took precedence, and in 1834, Charles Babbage conceptualized the "Analytical Engine," considered the precursor to the modern computer (Obuh, 2019). The evolution continued with the UNIVAC project in the 1940s, leading to the development of computers as we know them today, including subsequent generations and the advent of personal computers (PCs), which have been instrumental in the information revolution (Mngutyo & Elizabeth, 2018).

The concept of the information society has different stages of development worldwide, propelled by the force of information and communication technology (Chukwusa, 2019). This rapid transformation has reshaped the world into a global village, significantly impacting social and economic structures.

Before computers, telephones were the primary communication tool globally. The emergence of computers and their networking capabilities introduced technologies like fax, telex, and eventually, the internet (Abubakar & Airen, 2015). This fusion gave rise to Information and Communication Technology (ICT), emphasizing the use of computers, software, networks, and related systems to access, analyze, exchange, and utilize data, information, and knowledge. (Adebayo et al., 2018)

Benefits of Information and Communication Technology (ICT) in Libraries

Information and Communication Technology (ICT) has brought several advantages to Nigerian libraries:

1. **Enhanced Access to Information:** ICT has widened access to information in Nigerian libraries, enabling users to reach a broader range of digital resources, including e-books, online journals, and databases (Ochogu, 2018).
2. **Improved Research and Learning:** ICT tools in Nigerian libraries facilitate research and learning by providing access to up-to-date information, aiding students, researchers, and academics in their studies and scholarly pursuits (Ajayi & Owolabi, 2019).
3. **Efficient Resource Management:** ICT has streamlined library operations in Nigeria, improving the cataloging, tracking, and management of library resources such as books, journals, and archives (Salisu & Ibrahim, 2017).
4. **Global Connectivity:** Nigerian libraries connected through ICT platforms have enhanced collaboration, allowing for knowledge sharing, joint research projects, and partnerships with international libraries and institutions (Ogunsola, 2016).
5. **Digital Preservation:** ICT enables Nigerian libraries to digitize and preserve cultural heritage and historical materials, safeguarding valuable resources for future generations (Ogundipe & Atinmo, 2020).
6. **Enhanced User Services:** Through ICT, Nigerian libraries offer improved user services, such as online reference assistance, virtual libraries, and remote access to resources, catering to diverse user needs (Idowu & Olatokun, 2019).

7. **Empowerment of Underserved Communities:** ICT-equipped libraries in rural areas of Nigeria empower underserved communities by providing access to educational resources and digital literacy programs (Ocholla & Manyasi, 2018).
8. **Support for Lifelong Learning:** ICT-enabled libraries facilitate lifelong learning initiatives by offering online courses, tutorials, and educational materials to users across different age groups (Ezeani & Nwagwu, 2018).

Challenges of ICT application in Academic libraries in Nigeria

The challenges of ICT application in Nigerian libraries are often influenced by specific regional factors as:

1. **Limited Financial Resources:** Marke & Waziri (2023); Shariful Islam & Nazmul Islam (2006); Genevieve & Obiano; and Durje (2022) identified inadequate acquisition and maintenance of the relevant equipment depends on the availability of funds. Mostly, there is paucity of funds in many libraries in Nigeria thereby, leading to inability to acquire the necessary ICT tools that would enable them to connect to the internet, make subscription to various online databases and obtain software licenses..
2. **Shortage of ICT Facilities and Skills:** Insufficient computers and facilities pose challenges for routine library activities. Additionally, (Haliso, 2011) noted a lack of ICT skills among librarians impedes technological adoption and innovation. Agboola and Shaibu (2019) investigate the impact of information and communication technology on information retrieval system peculiar to federal university Gashua library of yobe state of Nigeria, and found ICTs is low in terms of facilities and utilization
3. **Lack of ICT Policies:** The absence of workable ICT policies in African countries, including Nigeria, restricts the implementation of effective development plans and strategies, impacting the nation's sustainability. (Okoye, 2010)
4. **Poor Maintenance of ICT Equipment:** Inadequate space, high maintenance costs, and a lack of maintenance culture result in subpar maintenance of ICT equipment in libraries. (Egunjobi & Awoyemi, 2012) in addition, Onuoha & Chukwuemeka, 2019 cited Okoye 2010 noted that many libraries do not have space and conducive environments for keeping ICT equipment. Furthermore, most of the ICT facilities are not adequately maintained in most libraries as a result of the maintenance cost which is usually very high.
5. **Challenges related to Power Supply and Bandwidth:** Erratic power supply and insufficient bandwidth hamper library services, especially in developing countries like Nigeria. (Abubakar, 2010; Onuoha & Chukwuemeka, 2019). In the same vein, **Tamilselvan et al., 2012** observed that the current trend in the supply of electricity in Nigeria is so disheartening. Constant power outage does not encourage good use of ICTs in the libraries be it public, school, or academic. Most of the libraries cannot afford standby generator due to poor funding.
6. **Lack of Technical IT Knowledge by Library Staff:** A lack of technical expertise among library staff hinders effective operation and maintenance of ICT tools. (Madu & Ngozi, 2017). Most library staffs are not ICT literate thus they cannot give what they do not have. Most libraries do not have experienced and well-trained staff to run the system (Apotiade, 2002). Because of this, the achievement of the goals could be jeopardized or slowed down.
7. **Constant Change of Software and Hardware, Copyright, and IP Management:** Challenges associated with frequent changes in software and hardware, as well as managing copyright and intellectual property rights, impact library operations. (Abba, 2019; Enakrire & Dennis, 2017)
8. **Staff Attitude towards ICT Utilization/Technophobia:** Some staff's resistance to electronic systems due to fear of errors slows down automation processes. Older librarians may find it challenging to adopt newer technologies. (Kelvin et al., 2012)

- 9. Inadequate Training and Technical Manpower:** Although staff receives training, there's a continuous need for skill acquisition, especially concerning current software usage (Asogwa et al., 2016). The shortage of technical expertise affects maintenance and repair of faulty equipment.

CONCLUSION

The challenges outlined above underscore the critical issues hindering the effective integration of Information and Communication Technology (ICT) in libraries in Nigeria. These challenges range from financial constraints, insufficient infrastructure and skills, to policy gaps, maintenance issues, power supply woes, staff resistance, and a lack of continuous training. The collective impact of these challenges poses a significant threat to the modernization and efficiency of library services in the country.

In particular, the limited financial resources restrict the ability of libraries to acquire and maintain necessary ICT tools, leading to a digital divide. The shortage of ICT facilities, coupled with a lack of skills among librarians, exacerbates the problem, hindering the adoption of technology in routine library activities. Additionally, the absence of comprehensive ICT policies further impedes progress, as there is no clear framework to guide development initiatives.

Moreover, poor maintenance practices, challenges related to power supply and bandwidth, and the constant change of software and hardware further undermine the sustainability and effectiveness of ICT integration. The lack of technical IT knowledge among library staff, coupled with staff attitudes towards ICT utilization and technophobia, creates internal resistance and impedes the successful implementation of ICT initiatives. Finally, inadequate training and a shortage of technical manpower contribute to a perpetual cycle of inefficiency and underutilization of available ICT resources.

RECOMMENDATIONS

- 1. Increase Funding:** Prioritize and allocate more funds to libraries, specifically earmarking resources for the acquisition, maintenance, and updating of ICT equipment.
- 2. Infrastructure Development:** Address the shortage of ICT facilities by investing in the necessary infrastructure, including computers, internet connectivity, and software licenses.
- 3. Policy Formulation:** Develop and implement robust ICT policies that guide the integration and sustainable development of technology in libraries.
- 4. Maintenance Support:** Establish mechanisms for the proper maintenance of ICT equipment, including providing adequate space, managing maintenance costs, and cultivating a maintenance culture.
- 5. Power Supply Improvement:** Work towards improving the power supply infrastructure to ensure consistent electricity, or explore alternative power sources such as renewable energy to mitigate the impact of power outages.
- 6. Training Programs:** Implement continuous training programs to enhance the technical skills of library staff, ensuring they are proficient in the operation and maintenance of ICT tools.
- 7. Change Management:** Implement strategies to manage staff resistance to change, especially among older librarians, by emphasizing the benefits and providing adequate support during the transition to newer technologies.
- 8. Collaboration and Networking:** Foster collaboration and information sharing among libraries to collectively address challenges, share best practices, and explore joint solutions.
- 9. Research and Development:** Encourage research and development initiatives in library sciences and ICT to find innovative solutions to challenges and stay abreast of emerging technologies.
- 10. Public Awareness:** Raise awareness among stakeholders, including policymakers, about the importance of ICT in libraries and the need for sustained support to overcome these challenges.

By implementing these recommendations, Nigeria's libraries can transform their ICT landscape, enhance efficiency, and provide better services to their users in the digital age.

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