



## The New Normal and Academic Libraries: Challenges and Prospects

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### Abstract

The paper explored the new normal in the context of academic libraries, focusing on both challenges and opportunities. It aims to identify innovative technologies for library adaptation to the new normal, examine the difficulties in implementing these technologies in library services, and propose potential solutions to these challenges. A literature-based approach was adopted to explore how libraries can leverage advanced technology to adapt to the new normal. The findings highlighted the importance of evaluating library service delivery in developing countries to promote awareness of technological advancements and ensure the sustainable efficiency of library services in the post-pandemic era. Since the COVID-19 pandemic, the use and popularity of technological advancements in organizations have risen sharply. Libraries and librarians had to adapt to the new normal as the pandemic disrupted traditional organizational methods. For Recommendation, the study suggests that libraries in less developed countries should focus on developing human capacity, promote self-improvement among librarians, and collaborate with libraries in developed countries to update skills.

**Keywords:** Academic libraries, new normal, cloud computing, blockchain technology

## Introduction

Libraries as gateways to information services, requires continuous innovation and creativity aimed at continual upgrading of its practices especially at a terrifying situation. The unexpected onset of the COVID-19 pandemic, threatens the survival and continued existence of academic libraries. The pandemic was identified in Wuhan, China in December 2019, and by the end of the second quarter of 2020, the entire planet had succumbed to it. Because of the virus's malevolent spread and increased mortality rate, schools, libraries, and other organizations where humans come into intimate touch with one another were closed, with the exception of health institutions, which function with maximal care to contain the infection. At first, it appeared that the world had ended, the closing of economic, social, and educational organizations, particularly the library, which is the last option for valid information in such a distressing scenario, was a dread to human existence. However, Saidu, Alabi, and Momohjimoh (2022) argued that library as information hubs is propelled by technological growth and advances, and so they continue to stay relevant organs of any surviving system. A review of library's disposition during the COVID-19 pandemic supports the assertion.

According to Dobreva and Anghelescu (2022), COVID-19 has three stages: closure, reopening, and new normal. The closure stage (from December 2019 to April 2020) represents the abrupt closing of libraries with a consideration to transfer to digital services, as digital transformation remains the sole option for survival. At the reopening stage from May 2020 through the end of 2020, certain libraries began to recover from the pandemic's shock and made modifications in terms of space, services, and safety measures to deliver useful information to users. However, the arrangement was at the institutional level because universal measures had yet to be discovered. From 2021 until the present, the third stage represents a period of increased planning for synchronized actions via library consortiums and associations, which resulted in the new normal. Today's library has settled into a new normal marked by changes and digital transformation. In light of the existing situation, COVID-19 pandemic is a wake-up call for libraries and librarians since it has broadened the reach of libraries and enhanced their services through the use of various technological innovations. The need for technological innovations in libraries cannot be overstated as it provides the life-blood for library's survival at any given situations.

Currently, various units of the library such as collection development, technical unit, public service unit and the like are deploying new innovations to promote effectiveness in library functions. Saidu, Alabi and Momohjimoh (2022) reveal that libraries in the advanced nations apply technological innovations in providing library services to users; and it makes them to easily adapt to the new normal. Significantly, creating awareness of technological innovations in libraries and librarianship in the developing nations especially in Nigeria is necessitated. The question is where are we in trying to adopt this new normal? It is not clear if we are aware of ways to adapt to the new normal. On this note, the study identifies various technological innovations to improve library functions in the new normal, examine their usage in various library sections, find out constraining factors to effective use of technological innovations in libraries in developing nations with specific reference to Nigeria and suggest strategies for their application in libraries in the third world countries.

## **Conceptual Framework**

Technology is the result of man's learned and acquired knowledge or his technical skills regarding how to do things well (Khalil, 2000). In library setting, it is the knowledge, process, tools, methods and systems employed in library functions to improve service delivery. On the other hand, innovation is the application of knowledge, and the successful exploitation of new idea is the essence (Atata, Oji & Tom, 2014). Technological innovation is therefore a tool for growth and the application of those inventions to meet emerging organizational opportunities, and to meet social needs, and environmental challenges (Adeyeyetolope, 2014). The necessity for technological innovation has become more profound in the face of social unrest and changes in the external environment that create situations in which the organization must innovate in order to survive. Since the 21<sup>st</sup> century, libraries have undergone major changes which according to Anunobi and Nwabueze (2010) include developing from print or traditional environment to the automated, virtual and digital libraries as a result of the global technological revolution powered by the application of ICTs. The recent outbreak of COVID-19 pandemic unwrapped another turbulence situation which resulted to changes in organizational functions in the globe. With such frequent changes in knowledge society, Olowofila (2019) avers that libraries across the globe are challenged to create programmes, services, collections, and adaptive technologies tailored to their target user- community in the new normal.

## **The New Normal**

The term "New Normal" refers to the abrupt shift in people's way of life brought on by the COVID-19 pandemic. Tasks are now carried out differently in society, educational institutions, and organizations than they were before the COVID-19 pandemic began, and this difference has persisted long after the pandemic has abated. Working from home, for instance, is now the new norm in the global economy, zoom meetings and conferences etc. Many organizations, including libraries, have had to adapt to these changes as a result of the epidemic in order to exist in the post-COVID-19 world. Dadhe and Dubey (2020) advised that policy makers and service providers including librarians should adapt and adopt technology as a viable and valuable means to fulfil the educational needs of their users. In other words, Dobрева and Anghelescu (2022) assert that digital transformation is the only way for libraries to remain relevant in the face of the new normal. The actualization of the digital transformation has prompted libraries to acquire and use cutting-edge technologies

## **Technological Innovations for Improved Library Services in the New Normal**

The potentials of various technological innovations to effective delivery of library services have been observed in new normal. These among others are:

### **Smart School Manager (SmartSM)**

Smart School Manager (SmartSM) is a program intended to increase the efficiency, precision, and dependability of organizational duties. It was created over the last 20 years by Glasgow, UK-based software company Bridgeall Libraries. Since the inception of SmartSM, libraries have relied on it as a trustworthy toolkit for stock performance improvement (London Libraries Consortium, 2011). According to the London Libraries

Consortium, the software can significantly reduce waste by assisting libraries in making better use of their current holdings, spending book funds more wisely, and assisting them in providing better services to their patrons by increasing the availability of the appropriate materials in strategic locations to increase borrowing rates. As Evidence Based Stock Management (EBSM) tool, SmartSM uses circulation and usage statistics to direct new acquisitions, replacements, and redeployments of titles and media (Olowofila, 2019). As a result, the performance of a library's collection is improved, staff time is saved, unnecessary purchases are avoided, and customer satisfaction is raised. SmartSM has been shown to be helpful in library operations and services given the current demands of the new normal period. The need for the deployment of SmartSM in libraries has increased exponentially since the COVID-19 pandemic outbreak. This is so that new purchases can be made in response to customer demand, as the pandemic's increased number of online users has an impact on usage statistics. SmartSM will also assist in preventing unnecessary purchases in light of the library's fundamental problem of poor budget cuts.

## **Drone Technology**

Drone technology is formally known as Unmanned Aerial Vehicles (UAV) or Unmanned Aircraft System (UAS). It is one of the cutting-edge technologies available for document distribution in libraries. A drone is an Unmanned Aircraft System (UAS) that is flown remotely and is controlled by either a human pilot or an onboard computer (Rouse, 2018). Prior to a few years ago, drones were only employed by the military to track terrorist activity and provide supplies to injured soldiers who were stationed in remote areas (Santra, Bhowmick and Jana, 2021). Drone technology has recently been discovered to have possibilities in various organizations, including libraries. The technology gives libraries the chance to deliver documents to users' doorsteps whenever they need them, regardless of their age, location, or physical condition. Libraries may be able to offer the circulation service to their customers during difficult times through drone technology. During the Corona virus outbreak, Kelly Passek, a school librarian of Montgomery County public schools in Christiansburg, Virginia, employed drone technology for library document delivery service (Saloj 2021). The use of drone and other information communication tools to provide library services to people in remote area due to the COVID-19 Pandemic locked down, enable libraries to take their services to their users instead of waiting for users to come to the library (Saidu, Alabi and Momohjimoh, 2022). According to Nath (2018), the usage of drones in libraries would open up new opportunities for boosting demand for printed books in the age of electronic publishing. Santra, Bhowmick, and Jana (2021) list security among the other advantages of using drones in libraries, which include but not limited to referral services, interlibrary referral services, cleaning and dusting of library stacks.

However, to offer an effective drone delivery service in the library, a mobile-friendly library website or a library mobile app is the first and most important prerequisite. The user must be able to log in and share their present location or the address of the area they want the documents delivered to. The library user will use the app or website to borrow documents from the library. The user of the library searches the collection via a mobile app or the web-OPAC on the library's website, selects the necessary papers, and sets up a loan (Saloj, 2021).

Drone technology has been adopted in many libraries in the developed countries to enhance library service delivery. Among the libraries are Dubai Public library, UAE, Rose Memorial Library, New York, NY Public Library, New York, University of South Florida

Electronic Library, USA Georgia Highlands College, Georgia, Christiansburg Middle School, Virginia, USA, Colgate University Library (Saloi, 2021).

## **Cloud-Computing**

Another technological innovation that can help libraries adapt to the new normal is cloud computing. The "cloud" is an unseen network architecture that makes use of a cluster or grid of computers to push applications and control massive amounts of storage (Saidu, Alabi and Momohjimoh, 2022). Cloud computing according to Idhalama and Fidelis (2020) is a technology for pooling information resources together for easy and unlimited online access. It is convenient and easily accessible hence it encourages sharing of information resources through the internet. Modern libraries especially academic libraries are gradually substituting traditional software licensing and operating systems in Favor of the cloud, due to its increasing visibility and accessibility to digital resources. Cloud computing offers significant potential for infrastructure cost saving and other tasks like shared resources, collaboration on documents, slideshows, and projects among people working from various places and using different devices. Cloud services such as e-mail, Google Apps, and Dura space among others are commonly used for communication and storage purposes in libraries.

## **Smart Objects**

Smart Objects are “simply any physical object that includes a unique identifier that can track information about the object,” such as RFID (radio-frequency identification), smartcards, etc. For example, car tires with sensors can report tire pressure and other information to a computer. In short, geographic and other information can now be attached to objects and can be read, used, and manipulated. There are numerous potential library uses of these technologies, such as tagging books or games with reviews, instructions, etc. It could also be possible to track the location of any library item within the library or even as a patron uses it. Smart tags such as RFID are already in use in libraries but remain too expensive for many libraries to employ (Saidu, Alabi, and Momohjimoh 2022).

## **Patron Driven Acquisitions (PDA)**

Patron Driven Acquisitions (PDA) is a model of library collection development in which libraries purchase materials that patron frequently demands. It is also known as Demand Driven Acquisition (DDA) or POD Patrons on Demands: is an innovation that allows libraries acquire e-books based on immediate needs and demands of use through statistical data generated by librarians using this software packages (Ginny, 2016). Collection development applies this method for acquiring electronic books according to preferences this enables users to contribute to the e-book selection process as well. Collection development unit of the library are responsible for building the contents of the library resources. They pay keen attention to the content selection and acquisition of library resources either in print or e-content both the format and container. Modern libraries are fast adopting and implementing new cataloguing modules for best library practice as most of their customers are online users.

## **Automated Book Delivery System (ABDS)**

This is an automated 24-hour-a-day book kiosk (large metallic bins) that holds a selection of books. On scanning a library card, a user can select from a variety of titles; a robotic arm retrieves the book and delivers it to the user in a hard, plastic case. The book may be returned to the kiosk in the same manner. Now, libraries are utilizing one or another form of automated book delivery to reduce labour-intensive book storage and delivery systems (Olowofila, 2019).

## **Adoption of Technological Innovation for Library Services**

Since the COVID-19 pandemic broke out, it has been imperative for libraries to employ technological innovation for improved information service delivery. The COVID-19 epidemic has imposed numerous limitations on library operations, particularly with regard to delivering effective customer service. As a result, libraries should adopt and use technological innovations like robotics, cloud computing, Smartsm, Internet of Things (IoT), drone technology, and many others. This is essential in developing countries where the majority of libraries have not yet adopted the innovations. By implementing such innovations, users' experiences will completely transform, and information discovery will become more natural, accessible, and fun (Cotera, 2018). Odeyemi (2019) concedes that technology applications exponentially improve libraries' effectiveness and efficiency, provided such library could afford the infrastructure and resources required. Technology advancements have largely benefited library services by increasing efficiency and providing library users with instant access to information (James, Chidozie, & Chukwuma 2020). As a result of the physical obstacles being removed by it, libraries are becoming intelligent spaces.

The adoption of cloud computing in libraries promotes service and information resource sharing across the internet, enhancing best practices globally (Majhi, Meher & Maharana, 2015). Cloud computing does not only support online services, but also makes current awareness services reasonably convenient for users to stay up-to date on current trends in their preferred information demands. To enhance their offerings and operations, the majority of academic libraries use cloud computing services including OCLC Services, Google Apps, Ex-Libris, OSS Labs, LibLime, Polaris, Dropbox, and Dura space (Hosburgh, 2016).

According to Olowofila (2019), libraries are adopting SmartSM to grow their collections more effectively and to prevent wasting money on titles with low demand. Olowofila confirms that SmartSM bases new acquisitions, replacements, and media redistributions on circulation and consumption figures. Again, with the help of statistical information created by librarians using Patron Driven Acquisitions (PDA), it is possible for libraries to buy e-books in response to users' instant desires and needs (Ginny, 2016).

Because users need to be extremely precise, it is important to emphasize that the adoption of Resource Description and Access (RDA) in the cataloguing section can aid users in becoming independent in exploring library resources. Bibliographic records in RDA are more useful in an online environment since catalogues can aggregate similar entries to display numerous manifestations of the same work (Madireng, 2020). Additionally, RDA created metadata that provides a resource's description in order to aid users in locating, identifying, and selecting the information sources that best suit their information needs.

Although COVID-19 pandemic and other societal ills appear to halt the physical use of library resources, Nath (2018) revealed that the adoption of drones in libraries creates new prospects for the growing demand for printed books in the age of internet publishing. The technology according to Saloi (2021) was used by Christiansburg Middle School library, Virginia, USA, to deliver library materials to users during the COVID-19 pandemic. Since libraries offer an expanding range of digital library services and resources, which are simple for robots to track, adopting robotics in libraries will also be very advantageous and create opportunities in library operations (Owolabi et al, 2022). Other robotic technologies used in academic libraries include telepresence, chatbots, humanoid robots, autonomous shelf reading robots, and humanoid robots for maintaining circulation records (Tella, 2020).

### **Challenges Associated with Adoption of Technological Innovations in Library**

Since the COVID-19 pandemic's onset, technological advances have gained popularity and are being used more frequently in organizations. The distribution of information services has benefited greatly from its deployment in libraries. However, a number of obstacles have weakened the proper application of the advances for efficient library services. In order for librarians to best serve their online users, libraries are currently expected to be hybrid in nature and offer embedded services. Taylor and Francis (2014) point out that implementing technological innovations requires a high level of competence because it necessitates knowledge of customizing programs that facilitate browsing online catalogues. However, Inyang and Mngutayo (2018) point out that failure to invest in the development of human capacity has a negative impact on the skills and abilities needed by librarians to implement technological innovations in Nigerian libraries. Tella (2020), on the other hand, found that despite the presence of human resources that will make use of the resources easier, many African countries lack the infrastructure and regulations that will encourage access to and use of innovative technology. Mthembu and Ocholla (2019) claimed that because Nigerian libraries are underfunded, it is difficult for most of them to sponsor librarians to pursue the necessary skills to provide quality library services. According to James, Chidozie, and Chukwuma (2020), some librarians in libraries lack the training and new skills necessary to integrate technological innovation and provide pertinent library services to their large numbers of users in their remote locations. Inadequate financing also inhibits adequate provision of necessary ICT facilities for improved technological innovations in libraries. The problem has posed a threat to IT applications in African libraries (Irenoa, Emilian, and Ezu, 2019). Another debilitating barrier for the proper implementation of technology innovations in library services is the frequent network failure, limited bandwidth, and inadequate network connectivity. According to Zubairu et al. (2020), the lack of broadband penetration and inconsistent power supply in several regions of Nigeria deters most organizations, including libraries, from adopting and implementing technological innovations. Technological stress among librarians with limited ICT expertise, inadequate maintenance of the current ICT facilities, and frequent changes in technology are some additional barriers to libraries adopting and implementing technological breakthroughs.

## Strategies for Adoption and Implementation of Innovative Technologies in Libraries

Some strategic measures for adoption and implementation of innovative technologies in libraries include but not limited to human capacity development, librarian resourcefulness, alternative sources of funding, provision of alternative power supply, improved internet connectivity, improved budgetary allocation, and readiness of libraries to adapt to technological changes.

More focus should now than ever be put on human capacity development due to the regular changes in library practices brought on by technological and ecological development. The embedded library services that today's librarians are expected to deliver can be learned through training. By adapting to innovations to introduce new ideas, methods, and processes of best practices in the library and as well as to compete with their contemporaries in the developed countries, training gives Nigerian libraries the chance to move with the current trend in the world (Basahuwa, 2017). The use of technological advancements to better information service delivery is therefore fundamentally dependent on the training and retraining of librarians to maintain and improve their ICT proficiency, particularly in emerging trends in the library profession. Additionally, librarians need to adopt the spirit of self-development because it will inspire them to be resourceful and innovative to ensure effectiveness in running the affairs of the library given the demands of the new normal and the current economic situation where libraries are constantly experiencing shrinking budgets. Adetunji and Oladokun (2020) claim that libraries can take advantage of the chances offered by social media sites and other technology advancements to connect with users' right where they should be. According to the authors, other alternatives for librarians to exploit effective digital information services even without incurring major costs to the library include open source software and open access repositories. Adeoye, Oladokun, and Opaleke (2020) described a variety of open source programs that can be used for digital reference services and user education in academic libraries, including jing, screener, and Skype. They claim that this software enables librarians to record brief videos demonstrating how to use library resources and services. A strategic approach for implementing technological innovations for better library service delivery is, once more, to assess the degrees of preparation in terms of digital infrastructure, regulatory framework, and human capacity development in libraries. Ifijeh (2014) stressed the necessity of national policy guidelines to accelerate ICT adoption in diverse Nigerian economic sectors. Other tactics include providing adequate funding (Imam, Muhammad, Abba, and Ijekhuamehen, 2020); finding other sources of power, and enhancing internet access (Zubairu et al., 2020).

## Recommendations

Based on the conclusion, the study recommends:

1. Collaboration between libraries in developed and developing countries as this will pave way for librarians in the less developed nations to be acquainted with the emerging technology and upgrade their skill on their usage.
2. Libraries in less developed nations to put precedence to human capacity development and encourage their staff through on the job and/or off the job training



3. Academic librarians should imbibe the culture of self-development for knowledge and skill update.
4. There is need for written policies to guide access and use of innovative technologies in libraries.

## **Conclusion**

The popularity and use of technological advancements in organizations has grown significantly since the COVID-19 pandemic. Libraries and librarians were forced to adjust to the new normal since the pandemic disturbed the traditional organizational practices. To achieve optimal service delivery to their user groups, libraries in developed countries have made use of numerous technological innovations like drones, cloud computing, SmartSM, etc. Therefore, libraries in the third world countries in general and Nigeria in particular are advised to benefit from such developments in order to optimize their advantages and reach new levels of information service delivery.

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