

## USE OF SMART TECHNOLOGY IN UNIVERSITY LIBRARIES IN COVID-19 ERA

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### **Abstract**

*This study examined the application of smart technology in university libraries during Covid-19 period. University libraries are established to meet the varying curricular and information needs of staff and students of the institution. Access to physical facilities in libraries is threatened by the Corona virus pandemic. Virtually all public institutions including the university the world over are shut down to control the spread of the disease. This paper advocates the use of smart technologies by university libraries to meet the information needs of their users irrespective of their geographic location. Smart technology refers to those electronic devices that use artificial intelligence to access and process data via Internet protocol. Smart technologies can be used in library services such as in collection development, cataloguing and classification, circulation, reference services and other library activities. It is also possible to use smart technology to access social media platforms such as Facebook, Twitter, Google, WhatsApp, E-mail, YouTube, TikTok, WeChat and others to disseminate online information to university library users. However, despite the enormous potential of smart technology in university library services, there are some problems associated with its use. These challenges include high cost of smart technology facilities, poor Internet connectivity and access, inadequate supply of electricity and so on. The paper made some recommendations aimed at surmounting these problems. It recommends that Nigerian government should be involved in the creation of an appropriate smart technology infrastructure in the country. This will involve massive Internet access and connectivity, provision of steady power supply in the university amongst others.*

**Keywords:** *University Library, Smart Technology, Corona Virus Pandemic, Covid-19, Social Media Platforms, Nigeria.*

### **Introduction**

University Library, according to Anyaegbu (2016) is the academic nerve center of the university. This is because all the teaching, learning and research going on in the university revolve around the library collection. Information resources at the university library are carefully selected, acquired, catalogued, classified and organized to meet the varying needs of staff and students of the university. The outbreak of the corona virus popularly known as COVID 19 has affected every aspect of human life including library services. The nature of the disease and its spread is such it requires human contact from person to person. Many organizations including institutions of higher learning closed its services to the public to minimize the spread of the disease. Part of the World Health Organization (WHO) safety measure is to observe social distancing. All schools in Nigeria were shutdown, students sent out of school, and as a result of the pandemic outbreak, all academic programs were suspended to check the spread of the coronavirus. However, despite the closure of the university and the library, the gate of knowledge is not shut to library users. The varying needs of library users still has to be met. For the university library to remain relevant during and after the COVID era, the library has to devise alternative means of reaching its users even when the physical library is shut to the public. Some universities across the globe run their academic programs including library services online. The use of smart technology in learning and information service delivery would possibly bridge the knowledge gap.

### **Smart Technology**

Bower (2019) define smart technology as a technology that uses artificial intelligence, machine learning, and large-data processing to bring cognitive knowledge to items that were previously considered inanimate. Poslad (2009) had explained that smart technology is an electronic device, generally connected to other devices or networks via various wireless protocols, such as Bluetooth, Zigbee, Wi-Fi, LiFi, 3G, 4G network which can operate interactively and autonomously to some extent. In this study, smart devices are all modern artefacts that are made smart with computing power and linked to the Internet to form the Internet of Things (IoT). They range from small devices to wearable asset tracking devices that can be deployed to library services such as acquisition, circulation, cataloguing, reference services and other library operations. Using sensors, smart devices capture physical data such as light, temperature, presence and deliver the data to be analyzed and used. Such applications have a minimal collection of physical components and can be used irrespective of geographic location. They often come in different types, since they usually consist of a hardware layer (including a radio transmitting signals), a network layer (through which devices communicate with each other), and an application layer (through which end-user' order receives).

### **Smart Technology in University Library**

Different types of smart technologies used in university libraries are computer system, computer accessories, cellphone or smartphone and other communication devices including video conferencing devices, projector, scanner, printer, photocopying machines, digitizing machines, Microsoft printers, radio-electronic copiers and others. Some smart electronic devices such as Easy-to-Read-Books, Assistive Listening Systems and others that can support the deaf or the physically challenged in university libraries are decoder machines with built-in telephones that convert the electronic signals of a closed caption video system into words written on a screen along with the video images for the hearing impaired library.

Moreover, the smart technologies university libraries use to improve personal and interpersonal community interactions within Nigeria and other countries are mobile phone computers, handsets, cell phones, cellular phones. Mobile phones have various apps and can be used for personal, interpersonal, community and intergroup contact personally. To meet the information needs of users, the university library can use mobile phones and computers to reach their users wherever they are. First point of call of the library user is the library catalogue either physical or electronic. When the user finds online resources of his choice in the libraries via his smart phone, laptop or desktop, the user can access all the information he or she needs that are available online. Equally through Twitter, Facebook, Whatsapp, Gmail and other social media handles, the library can go into advocacy provided they are embedded in the library and university websites.

University library users could use smart technology to access social media such as in Facebook to quickly track current awareness services in university libraries even without visiting the library physically. They could also use twitter apps for reference services, whatsapp for lending and preservation services, and skype for video conferencing and virtual meeting. Odu and Omini (2017) argued that university libraries in Nigeria are now sharing information resources, particularly in COVID-19, to accelerate work operations and foster cooperation between nations, states.

### **Smart Technology and Social Media Platform**

Social media platforms are interactive computer-mediated technologies that allow knowledge, ideas, career interests, and other forms of expression to be generated or shared

through virtual communities and networks (Kietzmann & Kristopher, 2011). Obar and Wildman (2015) stated that there are some common features of social media such as Internet-based applications; user-generated content (text posts or comments); digital photos or videos, and generated data through all online interactions. Users on social media platforms build service-specific profiles and identities for the website or app which organizations used to manage their library services.

Boyd and Ellison (2007) argued that social media should promote the development of online social networks by linking the profile of the user to that of other individuals or groups. Smart technologies, however, have applications that the users use to access social media services. Some of the applications are web-based applications on desktops and laptops or downloaded software that provides their mobile devices with social media features (smartphones and tablets). As users engage with these smart technologies driven services, they create highly interactive platforms through which individuals, communities, and organizations can share, create, discuss, participate, and modify user-generated content or self-created content posting online, especially in the university libraries.

### **Social Media and University Libraries**

Social media has been used for information resource collections and service delivery to users in university libraries for many years. Social media have different channels that the librarians used to provide services to their users. Macintosh and Shawn (2015) posited that some of the most popular social media platforms used in university libraries have websites, with far more than 100 million registered users. These include Facebook, Twitter, Google, WhatsApp, Email, YouTube, TikTok, WeChat, Instagram, Snapchat and others. Such social media channels are used to foster the understanding of public health through the development and distribution of information concerning COVID-19 pandemic preventive measures. To support research team, researcher, and faculty, they are used to provide information regarding the latest research and literature developments. They are also used to develop effective communication strategies that provide and expose the most vulnerable countries and populations to the public with actionable information such as how to identify symptoms and clear guidance for treatment aimed at ensuring people's safety.

Over the years, university libraries have used these smart technologies via social media networks to provide users with virtual support such as providing information, searching for document delivery and systematic feedback. As a result, several university libraries have introduced online webinars and sessions to keep in contact with their users via Google classroom, Google Hangout, Skype, or Zoom to discover, compile, connect, and disseminate content, educate users, and perform online teaching/learning, customer service delivery, and library outreach programmes. However, by connecting their users to various social media channels or websites for efficient communication, librarians use these social media networks to communicate and their users.

In Nigeria, in partnership with libraries, leading publishers such as Elsevier, Oxford, Willy, Emerald, Harvard, BMJ and others give free access to the new literature on COVID-19 journal articles and papers, commentaries, case studies. The libraries will subsequently share the information with faculty members, researchers, and students. Whatsapp and other related apps are smart technology applications that are used on social media sites to share knowledge about the Covid-19 pandemic. Whatsapp is one of the information-sharing sites in social media in the ongoing crisis. Libraries are sharing the WhatsApp links such as (<https://www.who.int/news-room/features-stories/detail/who-health-alert-brings-covid-19-facts-to-billions-via-whatsapp>) to provide authentic news to avoid the spread of fake news about symptoms of coronavirus, how to avoid being infected and spreading it. The required

precautionary steps, such as daily soap water washing of hands, use of hand sanitizer, covering of the nose and mouth with a facemask.

Additional health information is conveyed to the public via social media channels, such as food types to eat, self-quarantine practices, Covid-19 vaccination and care, and other health initiatives. The World Health Organization (WHO), for example, uses e-mail and SMS messages to transmit this information and has asked member states to translate it into their local languages. In collaboration with the International Telecommunication Union (ITU, 2020), the World Health Organization suggests that telecommunication companies, health organizations, and information organizations such as libraries to disseminate this information to check the spread of the dreaded virus. Libraries also maintain a live runtime dashboard designed to show up-to-date public health data around the world, including countrywide statistics on the number of patients infected, a mortality tracker, and statistics on the number of people who survived the virus.

### **The Smart Technologies Used for Effective Service Delivery in Libraries**

To access university library tools and facilities in the COVID-19 era, the use of Twitter, WhatsApp, Facebook, Email and other mobile devices includes the provision of wi-fi network to access it. Accordingly, university libraries in Nigeria is responding to the modern digital world. It has become imperative due to developments such as the growth of electronic guidance, globalization, the demand for knowledge of people, access to social media and public networks everywhere (Ogbebor, 2013). The Federal Government would have access to many online services in 2012, including electronic databases, CD-ROMs, open access journals, and e-books, wired and wireless networks power desktop computers (Bassy & Odu, 2015). Through this development, library users are able to access the resources and services available in the library remotely via the library website, using the appropriate access points to support their users in this pandemic period. Most libraries in Nigeria are still in their teething stage.

With the use of smart technologies in university libraries, it is now easier for library users to access library services remotely through their laptops, desktops, mobile phones with Internet connectivity from the comfort of their homes during the pandemic lockdown. With the twitter, short communication bursts from one-on-one conversations into small news programs library users can tune in whenever news or information updates occur. Feedback can also flow in from library users in reaction to information on twitter.

In university library services such as circulation, reference services, exhibition, Selective Dissemination of Information (SDI), can be carried out with the smart technology. Odeh and Akpokurerie (2011) informed that an automated system facilitates the procurement process for ordering materials, receiving and preparing an invoice. Smart technologies can also be used in control services in the registration of new users, charging and discharging systems. Odeh and Akpokurerie (2011) pointed out that the automated system handles with great ease and speed these processes of registration of new users, charging and discharging of system. Such systems are often used to produce and classify the sum for users automatically, by increasing them on overdue notice. Smart technologies are also used in indexing, bibliographic services and document delivery.

Equally with the smart technology, the library management can interact with their users, book vendors, publishers and the general public through social media platforms such as Facebook, Gmail, Whatsapp to send and receive orders as and when due. Publishers and vendors can also send feedback on what information resources they have. Through this same media, approval for requests can also be conveyed. The Facebook platform is a popular social

media platform among library users. It is useful for document delivery. Health information about COVID-19 cases around the globe, can be disseminated via Facebook. Reference librarians can provide answer to reference queries without interacting with the user physically. It has helped the librarians interact with each other irrespective of geographic location.

### **Challenges of Using Smart Technology in University Libraries Under Covid**

Despite the inherent potential of using smart technologies during the COVID, university libraries face some challenges in the use of these technologies. They include:

1. **Paucity of Fund.** Adequate fund is lacking both for the purchase and maintenance of the smart facilities and manpower
2. **No Policy Guideline:** Butcher (2011) noted that lack of strategic policy formulation and lack of clear government support to advance the availability and usage of ICT present serious challenges for the successful use of smart technology in university libraries.
3. **Unsteady Power Supply.** Electricity supply from the national grid in Nigeria is unpredictable. This often times disrupt the use of smart technology in libraries.
4. **Shortage of Technical Manpower.** Most university libraries lack the technological expertise to use smart technology. It has contributed to low interest in the use of social media for library services among library staff.
5. **Poor Internet Connectivity and Bandwidth:** Nigeria's Internet connectivity and use is still a privilege. In Nigeria, not everybody can afford it.
6. **Weak ICT Infrastructure and Culture.,**
7. **Inadequate Telecommunications Facilities**
8. **Poor Digital Literacy** among library employees and users
9. **Resistance to Change and inadequate library technical experts** to deal with smart technology issues.

### **Recommendation**

The era of artificial intelligence in here and technology has come to stay. The application of smart technology is indispensable in university libraries, especially in this Covid-19 era. The following recommendations were made based on the challenges associated with using Smart technology in university libraries:

1. The government should increase the financial allocation to university libraries to facilitate and encourage the use of smart technology in library operations. University libraries should also source for viable internally generated revenue (IGR) to supplement what the government provides.
2. The government should make policies that will encourage legal use of smart technology in libraries.
3. The power supply should be adequate. The library should have the inverter and the standby generator made available.
4. Suitable technical experts should be attached to the library on smart technology. There is need for training and retraining of library staff on the use of smart technology in libraries.
5. Library management will encourage librarians to receive on-the-job training on the skills acquisition of smart technology.
6. The Government should provide adequate infrastructure for use of smart technology in university libraries.
7. The university management should provide robust Internet access for use of smart technology in the library.

8. Librarians should make bold step to embrace the use of smart technology in the library.

### Conclusion

During emergencies such as Corona virus pandemic, the use of smart technologies such as telephones, tablets, webcams, video text, among others, can be used to disseminate information to library users. University libraries can explore the social media platforms such as the Twitter, Facebook, WhatsApp, Instagram to reach their users. The use of the smart technology is imperative in the light of the safety protocols recommended by the World Health Organization among which is avoidance of physical distance. However, despite the enormous advantages of in the use of smart technology, the university library is faced with many challenges. These include paucity of funds, lack of operational guideline, shortage of technical manpower, unsteady power supply, poor Internet access among others. Based on these challenges, recommendations were made to overcome these challenges.

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