Library Implications of the Growing Power of Information Technology to Transform the Means of Research in 21st Centuries

Babangida Abba[1], Mujittafa Saidu[2]

[1, 2] **M. Libs Scholar, Career Point University Kota (Rajasthan) India**

ABSTRACT:

This paper is on Library implications of the growing power of information technology to transform the means of research, teaching, and scholarly communication. It also gives a representative overview of the attainment level of library staff in an important area of professional competence, and shows the importance's of addressing the gap between the desired levels of ICT literacy and the actual level as it helps in information dissemination in the libraries. The paper will give a clear insight on the Library Implications of the Growing Power of Information Technology to Transform the Means of Research, Teaching, And Scholarly Communication. The paper will also serve as a reference to other researcher that will embark on the related topic.

Keywords: Concept of Library, ICT, Challenges associated with ICT

Introduction

With the invention of Information and Communication Technology, libraries now use various types of technologies to aid the services they render. Everyday new technological advances affect the way information is handled in libraries and information centers. The impacts of new technologies are felt by libraries in every aspect. Computing technology, communication technology and mass storage technology are some of the areas of continuous development that reshape the way that libraries access, retrieve, store, manipulate and disseminate information to users. The academic library has been from its inception an integral part of institutions of higher learning, rather than an appendix or adjunct. As information procurement and dissemination organizations libraries all over the world have found themselves right in the middle of the ICT driven Global village" and in other to play active roles in the village, public libraries have no other choice than to boost their effectiveness. Libraries are becoming more aware that in order to play cartelistic roles in fostering access to information as the basis for the socio-economic development of their countries, they need to exploit ICT to improve the range and quality of service to their clientele (Ajibola and Tiamiyu, 2021). Oyedun, (2019) defines academic libraries as those libraries that are mainly found in tertiary institutions, they are established to support learning, teaching and research purposes. Over the past twenty-seven years, academic libraries have been affected by changes in information and communication technology. The rate of changes is still accelerating in this area. The introduction of various information and communication technology (ICT) trends has led to reorganization, change in work patterns, and demand for new skills, job retraining and reclassification positions.

The concept of Library

According to ALA Glossary of Library and Information Science (ALA, 1983). A library is a collection of resources in a variety of formats that is (1) organized by information professionals or other experts who (2) provide convenient physical, digital, bibliographic, or intellectual access and (3) offer targeted services and programs (4) with the mission of educating, informing, or entertaining a variety of audiences (5) and the goal of stimulating individual learning and advancing society as a whole.

An Overview on ICT

The Information and communication technology (ICT) is an extended term for information technology (IT) which stresses the role of unified communications. The term ICT is also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. Gilbert, (2018) defined information and communication technology as the acquisition, analysis manipulation, storage and distribution of information and the design and provision of equipment and software. Oketunji, (2019) stated that "Information and communication technology could be defined as an electronic means of capturing, processing, storing and communicating information". He went on to say that ICT is defined as a convergence between computing and communication technologies. Furthermore, he said that one early example of ICT convergence is the crossing of the photocopy machine and telephone, leading to creation of fax machine. But the most spectacular achievement in this area is the convergence of computer and telephone that resulted to the upsurge of the internet.

The Roles of ICT in the Provision of Reference Services

Ajibero, (2017) asserted that the role of ICT in the provision of references services to public library in Nigeria did not come over night. Libraries existed for many centuries without using ICT. But as technology emerged in the world at large, academic libraries embraced these tools as a means to avoid some of the menial tasks inherent in managing large collections. Online catalogues provide additional searching possibilities. Such system helps in communicating with one another about which book are held in the libraries and use the computer to borrow various materials form any other library through various inter library loan systems. Academic libraries can be transformed into a new information services unit, providing electronic cataloging, electronic online public access cataloged, electronic acquisition and serials controls, and electronic circulation functions and reference services. But it must be realized that most academic libraries in Nigeria are yet to adopt modern ICT. Etim, (2018) observes that the rapid pace of development in the field of information technology and the advent of networked information services have prompted a comprehensive review of the library and information sciences (LIS) profession. The global trend is now characterized with a fundamental shift from traditional information environment to an e-environment where emphasis is place more on the acquisition of eresources such as e-books, e-journals as well as online databases. However, traditional library and information services and functions are still relevant. Today, the contemporary practice in academic library services in the 21st century is being propelled with an information explosion, and the inclusion of information and communication technology (ICTs) in all aspects of library services. Access to library services has moved beyond geographical location. Technology has helped solved the problems patrons face in accessing a few copies of textbooks that are available in the library. Oyegbami, (2009) observes that ICT is an instrument of social economic renaissance and if properly used it could excellently stem national and international calamity. If properly used it will assist growth and development of libraries in our higher institutions in Africa, it has conferred new role on the library by bringing about the revolutionary journey from traditional to the digital libraries with new technology it has been possible to access a variety of information and knowledge sources in a manner that would be simple, easy and independent of time, place and subject disciplines. Supporting the above assertion

ICT in Libraries

ICT has changed the traditional methods of library activities and services providing new dimensions for teaching, learning and research in higher educational institutions. With the help of ICT tools, it is possible to store, retrieve, disseminate and organize information by creating websites and databases.

ICT and Library Professionals

In a changing environment when most of the library services are ICT based, it is important for library professionals to be well informed and updated regarding developments in ICT. This section deals with different studies regarding the use of ICT based applications by library professionals, their attitudes towards ICT, skills in handling new technologies, need for training in the new technologies.

ICT Literacy Application in Libraries

Librarians apply their ICT literacy skills in the utilization of ICT for different library services .The application of ICT has caused significant changes in Libraries leading to automated cataloguing, circulation, information retrieval, electronic document delivery, and CD-ROM database. The advent of the internet, digitization, and the ability to access library and research materials from remote locations created dramatic changes by the twentieth century. Expert systems, wireless, virtual reference services, and personal web portals have brought changes in librarianship, where digital and electronic libraries complement, and in some cases replace traditional libraries.ICT brought a new leaf in library operation by impacting on various spheres of librarianship. The introduction of ICT has helped to heighten the rate of job performance and the quality of work done in a minimal time. ICT literacy is indispensable to be part of digital environment as it comes to play as the dexterity in operating in the new library environment. Librarians therefore apply their knowledge and skill of ICT in their emerging professional work. The traditional roles of librarians are changing from traditional library services to electronic library services. Oni, in Madu (2004) also stressed that ICT are used generally in libraries for housekeeping functions such as acquisition, cataloguing, circulation and serials. He then emphasized that ICT in cataloguing section facilitates the following activities; establishment and maintenance of catalogue database, name authority files, subject files and local authority lists, Online public access catalogue (OPAC),Inventory control and inventory statistics. Librarians need quick access to suppliers of books, journal, and electronic publications. And in respect of that internet is a simple and efficient method of accessing and updating documentation and a seamless interface to catalogue of all libraries. Oni, in Madu (2004) stated that computer applications in circulation section of the library helps to eliminate some of the repetitive nature of manual work such as charging and discharging of books, writing overdue notice, reservation of books and compilation of accession list of new arrivals, recording of fines and keeping statistics. ICT increases efficiency and effectiveness in the library work routine. It encourages quick information access and globalization as noted by Uchendu (2007) that through ICT, researchers can have access to information available on computer networks and online services across the globe. ICT is applied in libraries and information centers to ensure that information delivery is timely, accurate, precise and relevant. ICT literacy is a sine qua non to partaking in the knowledge society and many developing countries have low level of skills about computer use and internet navigation In the electronic environment, ICT literacy is required for effective library services delivery. Ayo, (2018) pointed out that ICT are used in libraries for database management, internet search, web management and general online service for their users. This simply shows that apart from the inroad of ICT into the traditional library operation, it has brought librarianship into a novel platform for operation (digital platform). Lwoga, Site ,Busagala, and Chilimo (2019) noted that the differences in the ability of countries, regions, sectors and socio-economic groups to access and use ICT often follows and reinforces existing inequality and poverty patterns. The benefits of ICT are unevenly spread between and within countries resulting in _digital divide'. There are also unequal distribution of ICT literacy skills among

individuals even in the same profession and work environment. Akintude (2004) listed some of the uses of ICT in libraries as follows: Library management and administration, Processing of library materials, Accessing off-line resources, Processing of regular library services for users, Inter-library cooperation and lending, and Video conferencing. Therefore, ICT has become a veritable tool for information acquisition, processing and dissemination for both librarians and library users for the progress of librarianship as a profession. Farm son (2019) in discussing the impact of Information Technology in libraries noted that OPAC has made card catalogues redundant and brought efficiency among other benefits into bibliographical searching. The CD-ROM has greatly enhanced in-service training and helped great deal in self tuition. Madu, (2004) noted that C.CD-ROM is an information technology with great potential for libraries because of its storage capacity, compactness, portability, reduced shelf space and durability. In essence, it has some preservative function of the library materials. He maintained that CD—writable accessories have solved the problem of database creation in libraries which helps in storing archival materials. Library services are boasted by the ICT in libraries. Madu, (2004) summarized the use of ICT in libraries as house-keeping functions, users services, CD-ROM searching and networking .It facilitates library services in the homes by the online search of catalogue for books, place a book on hold or reserve and request an inter library loan. Faboyinde, (2006) emphasized that communication tools such as E-mail, fax, computers and video conferencing are being used to overcome the barriers of space and time and opens new possibilities for library services. Anunobi, (2004) stated that the implication of this is that librarians should be literate and competent in the use of basic computer tools for efficiency and relevance in their profession. There are electronic opportunities for users and librarians in network information resources environment. In electronic service concept, librarians' roles will become more prominent as educators, information managers, information management consultants, custodians of information, information providers, publishers, change agents and even as custodians of public library facilities. Therefore, the current trend is the digitization of the traditional libraries. It is worthy to note that digitization Process and the operation in the digital environment requires ICT literate librarians. Chiware, (2007) noted that ICT literacy which include the awareness of digital projects, the tools and resources for building digital collections, collection developing and management and marketing of the digital resources is applied in the digitization of African university libraries. In this sense, the acquisition of ICT literacy as part of training for the digital age helps in facilitating the digitization processes in the library. The computer and information-literate user who comes to the library for reference services can conduct searches and retrieve the results of such searches with minimum assistance from the librarian if he is ICT literate. User education is a means of achieving effective library services delivery. Librarians have the onerous task of teaching the library users how to use the ICT tools to achieve their information goals.

The Challenges Associated with The Application Of ICT in Libraries

i.   **Changing role of libraries and librarians:** Most and more library users are using digital technologies and have access to global information resources via the Web. Unfortunately, the huge amount of information available on the web is generally overwhelming information users. Further, a large number of Web users are still not able to use the web efficiently

ii.   **Funding of libraries:** Due to serve budget cuts and high price of books and journals subscriptions, libraries are faced with no options but to reduce expenditures on books and journal subscriptions. The introduction and use of ICTs in libraries has not made the situation any better. Money is required to maintain and upgrade the equipment and software, pay software license fees, pay for access to electronic journals and online databases, pay for internet connections, etc.

iii.   **Copyright management:** Digitization and provision of access to digital collections accessed via electronic networks, especially the Internet, is presenting bigger challenges to librarians. Unlike print-based documents, digital-based information resources can be accessed from anywhere via electronic networks, copied several times, manipulated (i.e. edited, modified, repackaged, etc.) or deleted.The ease at which digital information resources can be copied and manipulated may result in governments, under pressure from information producers, to put in place rigid copyright laws in which the rights of the right-holder are increased at the expense of users and this may affect the provision of access to digital information sources in libraries.

iv.   **Information access:** Whereas libraries generally contain and provide access to selected information resources, this is not the case with information accessed on the web. Distribution of pornographic materials and information produces for deliberate disinformation is very easy to do on the web and this presents problems to many librarians on how to exclude access to such types of information, especially on Internet workstations located in libraries.

v.   **Preservation of digital information resources:** The print-based library and archives environment, as opposed to the digital information environment, has evolved over centuries. Preservation methods and formats for print-based documents have also been developed and tasted. There are print-based documents are over 2000 years old in the world today and can still be read. The digital information era is in its infancy and already some of the information is stored in formats or media that cannot be accessed or read

vi.   **Legal deposit:** In the print-based environment, producers of publications are required by law to deposit copies of their documents with the national library or national archives, or any agency designated to receive and preserve such publications. In the digital information environment, the situation in many countries is still not clear as to who is responsible for the long-term preservation of digital information resources.

Summary

This study was on Library Implications of the Growing Power of Information Technology to Transform the Means of Research, Teaching, And Scholarly Communication. Four objectives were raised which included; To ascertain the level of computerization/automation in libraries, to ascertain the efficiency and effectiveness of using ICT in the libraries, to ascertain the impact of information technology aid in capturing, processing, storing and communicating information in library and to ascertain the challenges associated with the application of ICT in libraries. In line with these objectives, two research

hypotheses were formulated and two null hypotheses were posited. The total population for the study is 200 staff from all libraries Kebbi state, was selected randomly. The researcher used observation and questionnaires as the instrument for the data collection. Descriptive Survey research design was adopted for this study. A total of 133 respondents made up librarians, library technicians (senior and junior library officers) was used for the study. The data collected were presented in tables and analyzed using simple percentages and frequencies

Conclusion

From the report and discussions above on the need for the use of ICT in libraries in Nigeria, it is certain that there is need for improvement. More progress is required if Nigerian academic libraries will be relevant within the global academic community. The attitude of librarians and funding are major factors that can affect the deployment of ICT in the libraries. These are surmountable factors that can be transformed into productivity with the right motivation. In spite of the huge problems affecting ICT application in libraries, the prospect and possibilities are abundant. Therefore, there is a great need to improve ICT facilities in these libraries in order to facilitate the clerical processes (acquisition, cataloging and classification, circulation and serial) including the administrations in the libraries and also promoting effective research.

Recommendation

Effective and efficient power supply supplement with standby generators should be made available to solve the problem of epileptic power supply which has become a thorn in the flesh of an average establishment or act as a breakdown to computers. Since Information and Communication Technology has become the order of the day with its advancement, all library users (staff) should be trained to be computer literates so as to flow along with the reforms and posses competent search skills.

References

Aguolu, C & Aguolu, I. E (2002): Libraries and Information Management in Nigeria. Maiduguri: Ed- Linform Services. 267pp.

Ani, O. E., Esin, J.E. & Edem, N. (2005): Adoption of information and Communication Technology (ICT) in Academic Libraries: a strategy for Library networking in Nigeria. The Electronic Library Journal, 23 (6), 27-37.

Aniekwu, A.N and Ogbeide, F.N. (2002): Information Technology and Technological Development in Africa. In Yusufu, A.K. (ed) Journal of Engineering Science and Applications (JESA). Faculty of Engineering and Technology, AAU, Ekpoma. 3 (2), 83pp.

Anunobi, C.V. (2005): ICT Availability and use in Nigerian University Libraries. Global Review of Library and Information Science.1 (1), 39-51

Adeyoyin, S.O. (2005). Information and Communication Technology (ICT) Literacy among the staff of Nigerian University Libraries. library Review, 54 (4): 257 – 266.

Aina, L. O (1995) Information and Agriculture in Africa. In Aina, L. O, Kanki, A. M and Ojiambbo, J. B. (ed). Agricultural information in Africa. Ibadan: Third World Information Services

Ajidahun, C. O (2007) The training, development and education of library manpower in information technology in university libraries in Nigeria. World libraries, 17(1): 1-15.

Akhigbe, O. O (1997). Professional skills required by Nigerian Library/ information centres of the future. Nigerian Libraries, 31(1&2): 1-11.

Akintude, S. A (2003) New and emerging tools for Library Practice in the New Millennium. Lagos Journal of Library and Information Science, 1(1):67-72.

Ani, O. E and Bassey, B. E (2008) Availability and utilization of information and communication technology (ICT) in Nigerian Law Libraries for Sustainable development. H – JOLIS Heartland Journal of Library and information Science, 2 (1&2):141 – 151.

Anumobi, V (2004) Computer Literacy Status of Librarians in Imo State, Nigeria. Gateway Library Journal, 7 (2): 32-41.

Ashcroft, L and Watts, C (2004). ICT skills for information professionals in developing countries: Perspectives from study on the electronic information environment in Nigeria. World Library and Information Congress: 70th IFLA General Conference and Council 22-27 August 2004. Buenos Aires, Argentina (Available on-line at) http://www.Ifla.or/iv/ifla/70/prog04.htm. Accessed 23/10/09

Ayo,T.A (2001) Information and communication technologies and the information professional in the information age: The Nigerian perspectives. A compendium of papers presented at the 39th Annual conference and AGM of NLA at Sam Mbakwe Hall, Imo Concord Hotel Owerri 17-22nd June.

Bryson, J. (1990): Effective Library and information Center Management. England: Gower Publishing. 165pp

Chisenga, J. (1995): The Skills of Information Technology in Zambian Libraries. African Journal of Library, Archives and Information Science. 5(1)19-24 pp

Cohn, Z. and Lefolli, S. (1995): Dictionary of Information Technology. London: Claremont Books. 75pp.

Ebijuwa, A.S. (2005): Information and communication technology in university libraries: the Nigerian experience. Communicate, Journal Of Library and Information Science, 7 (1&2).

Ehikhamenor, F.A.(1993): Information Technology and scientific and technological information in Nigeria: revolution and evolution". Africa Journal Of Library, Archives And Information Science. 39 (2) 113-123

Eyitayo, S.A. (1998): Relevance Of The New Information Technologies In Cataloguing. A paper presented at the Annual Cataloguing and Classification Seminar/Workshop, Ilorin (25th-30th October).

Idowu, A.O. and Mabawonku, I. (1999): Information technology facilities application in some Nigeria Research and University Libraries. Africa Journal of Library, Archives And Information Science. 9(1).