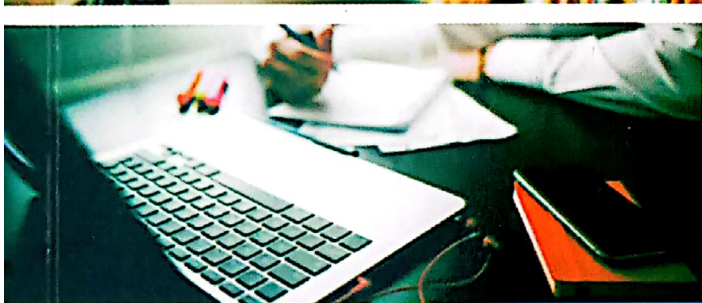
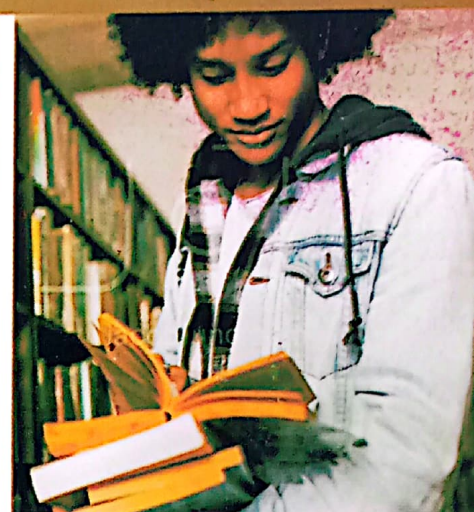


READINGS IN

LIBRARY AND INFORMATION SCIENCE

IN HONOUR OF PROF. (MRS.) BOMA B. OBI, Ph.D



Edited By

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Published in 2019 by

PEARL PUBLISHERS INTERNATIONAL LTD.

12-14 Njemanze Street
(Off Silverbird Cinemas)

Port Harcourt,

Nigeria

Tel: 08033123493, 08072430831

E-mail: pearlpublishers@yahoo.com

pearlpublishers2000@gmail.com

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ISBN: 978 – 978 – 57306 – 4 –8

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Printed and bound in Nigeria by **PEARL DIGITAL PRESS**

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Chapter Ten

DIGITAL LIBRARIES: GATEWAY TO GLOBAL INFORMATION ACCESS IN NIGERIA

By

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&

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Concept of Digital Library

Contemporarily, the Internet as a repository of information and information resources has enabled users' access to information and information resources from websites, online databases, electronic journals, online book stores and online periodicals sites, Social Network Sites and online information centres. This is a threatening situation that has raised issues on the eradication or death of the library. Ekere, Omekwu and Nwoha (2016) averred that libraries have evolved over time with technology as recently; traditional libraries containing a large number of printed documents are being transformed to paperless libraries, with the capacity for limitless volumes of information to be contained in digitized formats. Digital libraries are increasingly becoming part of school systems in many countries in Africa. Libraries have kept struggling with the aim to retain its position and role as the sole information provider. In order to meet the demands poised by the Internet, the libraries are adopting digitization processes.

Digital library is a library that has adopted digital formats in providing library and information services to the users. Digital library implies that the resources of the library can be accessed digitally, the information services are provided digitally and the users' patronage does not require physical contact with the library. Digital Library is a collection of information resources in organized electronic form, available on electronic and digital mediums. Li and Furht (2014) stated that digital libraries are systems that combine the machinery of digital computing storage and communication, in which the content and software needed to reproduce, emulate and extend that services of collecting, cataloguing, finding and disseminating information offered by traditional libraries based on paper and other materials. "They also viewed digital libraries as systems providing a community of users with coherent access to a large, organized repository of information and knowledge." Smith (2008) defines a digital library as an online database of digital

objects that can include text, still images, audio, video, or other digital media formats. In addition to digital information resources storage, digital libraries provide means for organising, searching and retrieving the content contained in the collection digitally. For a library to operate digitally it need to acquire Information and Communication Technology (ICT) facilities. Digital library is a medium through which the Library and Information Science (LIS) professionals can make themselves visible to users at the comfort of their homes, offices, business locations and places of leisure. Through digital library operation, the library 'includes the excluded' in the services it offers. This implies that users who geographical locations are barriers to accessing the information resources in the library and the services can easily patronize the library through the use of digital devices connected to the internet.

Digital library is one of the evolutionary creations of ICT integration in library and information service profession which has transformed the way library services are made available to the users and created a convenient platform for information access, retrieval and dissemination. The main reason is that ICT is contributing significantly towards the removal of geographical barriers across the globe (Prakash, 2017). Digital library is a revolutionary innovation to meet the demands in the changing role of the LIS professionals in the contemporary information services competition amongst information service providers. Shiri (2009) posits that digital libraries are organizations that provide the resources including specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily available for use by a defined community or set of communities. Consequently, Lynch (2013) averred that digital libraries provide users with coherent success to a very large, organized repository of information and knowledge'. Digital library has been interchangeably referred to as electronic library (e-library) or virtual library or in advanced degree an automated library. All these nomenclatures connote a form of library where all resources are digitized and library and information services provided digitally. Information resources are stored in the cloud for easy access and retrieval as such, are accessed online using computers or mobile devices.

Digital library retain several qualities of the traditional library such as a defined user community, information resources collections, long term availability, and possibility of selecting, organizing, preserving and sharing resources. But issues such as users' attitude and librarians' attitude towards library usage and library service provision are not prevalent in digital library as witnessed in traditional library setting. This is occasioned by the fact that physical contact between the librarians and users is not relevant. Trivedi (2010) views digital library as a library in which collections resources are stored in digital

formats as opposed to print, microform, or other media which is accessed through computers. The digital library is synonymous to the virtual library which is a library where services or collections of electronic resources are entirely virtual and accessed via a network. A virtual library does not have a physical space where users can visit to access information resources, instead, distribution of resources are done electronically or virtually. Digital library is a library existing in the cloud or virtual space which doesn't require physical contact with the library in order to access the resources.

Digital library operation requires that Library and Information Science professionals possess Information and Communication Technology (ICT) skills competency and knowledge. Digital libraries are characterized by the following features as noted by Costabile and Sameraro (1998) access to information, they are interactive (supports two ways communication with the users), they exist in multimedia format of text, video, graphics, sound and animation and it increases speed and effectiveness in finding information and to decrease mental effort put into each search of information in the net. Digital library is an organized and focused collection of digital objects, including text, images, video, and audio, with the methods of access and retrieval and for selection, creation, organization, maintenance and sharing of collection. Aman and Norliyanan (2002) stated that a digital library is focused on collection of digital objects that can include text, visual material, audio material, video material, stored as electronic media formats (as opposed to print, micro form, or other media), along with means for organizing, storing, and retrieving the files and media contained in the library collection. Rapid expansions in ICT brought revolutions to the libraries thereby giving birth to online libraries which in turn bring new demands and expectations for both library users and libraries. However, just like other technologies, effective use of the digital library would depend on users' acceptance. With the advent of digital libraries, users do not need to step out of their homes before accessing information in different libraries. They can do so from whatever location as long as they have mobile devices or computers that are connected to the internet with user authentication.

Recent developments and current trends in the information service profession and practices have helped bring some of Lancaster's paperless society to possible reality. The revolution in the world of Information and Communication Technology (ICT) has shifted the content of library resources from printed information to online information resources (Israel and Edesire, 2016). The concept of digital library evolves as research progresses. Within the context of libraries, digital libraries may be viewed as library services performed digitally. One of the potentials of digital library is that it creates room for libraries to form consortia or a network to enable information resources sharing and collaborative library services to the users. The e-libraries are 'a set of electronic

resources and associated technical capabilities' which are designed to serve specific users community.

Digital Libraries and Global Information Access

In the traditional or conventional library, access to library and information resources and services required users' physical contact with the library in order to patronize the library. This implies that the users were limited to only the information or information resources at the disposal of the library or in its collections. The implication being that a library with low stock would only provide information in low volume to users. More so, only the users' who are able to visit the library would be able to consult her services and information resources. In the traditional library setting, the librarian is like a dormant trader who waits for customers to come and patronize him because there is no mobility to carry the goods to their doorsteps. Yebowaah (2017) accentuate that ICT is also one of the greatest recent advancement in the world and has become a useful instrument that has nurtured the process of making the world a global village. As events unfolded, libraries began to integrate ICT resources in its services to users. Libraries began acquiring information materials in electronic and digital formats; libraries began subscribing to electronic databases e.journals, e.books and e.library resources.

Amidst all these efforts, the upsurge and unprecedented advancement in ICT is gradually changing the mood of operations in every human existing profession for the positive. Rapid advances in Information Technology (IT) have revolutionise the changing roles of libraries. As a result, libraries are faced with new challenges such meeting the digital information needs of users and to overtake other information services providers. Libraries are redesigning its services and information products to add value to their services and as well satisfy the changing information needs of the community. Nnadozie and Nwosu (2016) posit that the content of libraries is not restricted to physical formats such as books, magazines or journals. Libraries are now shifting from traditional printed resources to the use of electronic-driven services. This redesigning approach is geared towards acquiring digital information resources and creating digital platforms of providing library and information services to the users.

Digital library adoption is the avenue for libraries to connect with other libraries across the world. Through digital library, a library can access the resources of other libraries, databases, websites and other information infrastructures. In the contemporary ICT and Internet era, a library that is not digitized could be deemed to be incapacitated, short sited and handicapped. This is because the scope of its services to the users is limited to the library building and to the resources it has in stock. Modern day libraries

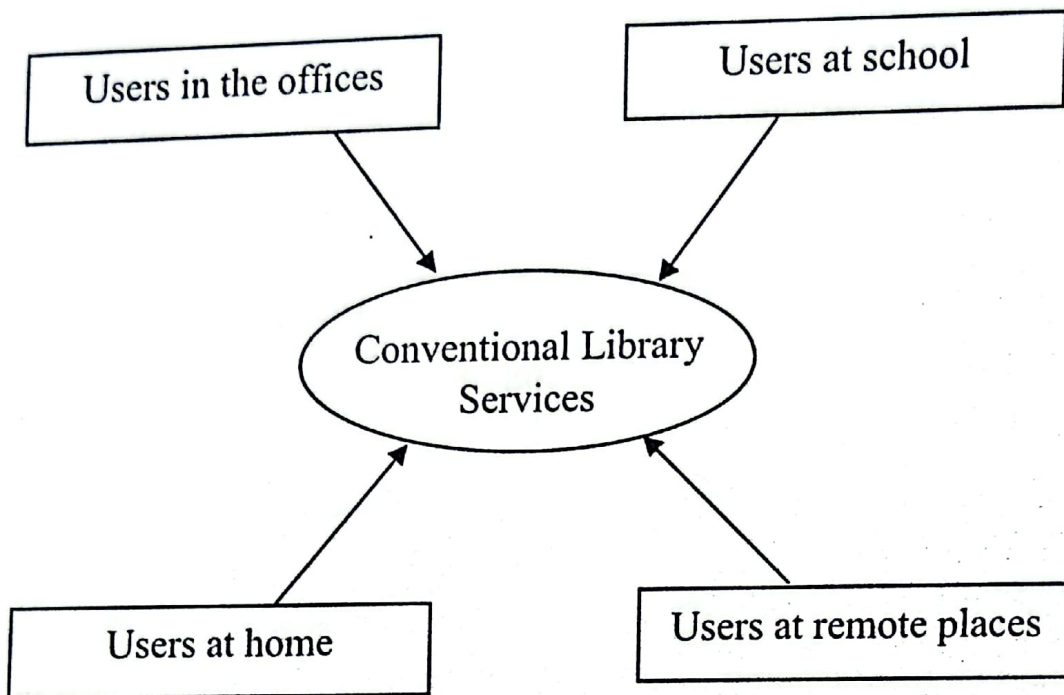
have both print and non-print documents with gadgets and equipment used to access information (Kumar, 2016). But a digitized library makes itself visible in the global information service business. A digitized library creates room for people around the globe, who are cut across geographical locations to locate the library through digital space to consult its information services and use the information resources in its collection.

To elucidate the potentials of digital library on global access to information, a comparative analysis of the characteristics of traditional library and digital library is presented below.

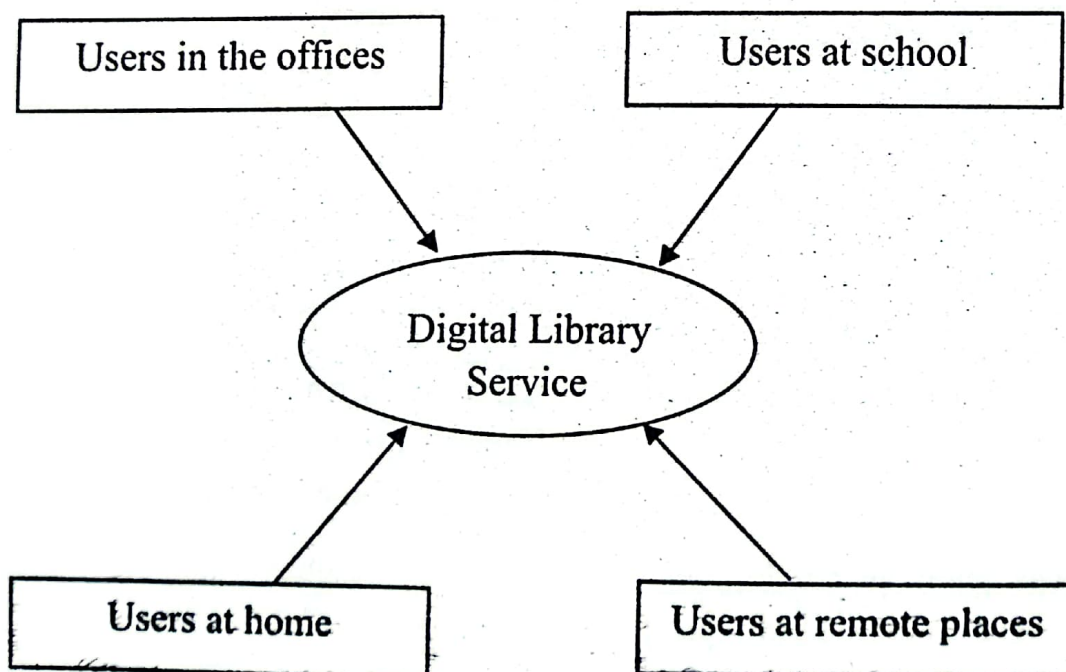
S/N	Traditional Library	Digital Library
1.	Manual information resources are predominant.	Information resources are in digital formats.
2.	Library service is provided manually.	Library services are provided on digital platform.
3.	Users would have to visit the physical library building before consulting or using the library.	Users could access the library through any geographical location with the use of electronic devices.
4.	Library services are limited to the library working hours.	Library services are on round the clock bases (24/7) thus users can access the library at any time of the day.
5.	It operates on physical space	It operates in the cloud.
6.	Meeting users' information needs is limited to the available information resources.	Information resources not domicile in the library is at the disposal of the library to meet the information needs of users through the internet.
7.	Libraries exists Islands.	Libraries form networks with other libraries to enhancing resources sharing amongst libraries is facilitated.
8.	Library services such as cataloguing and classification are done and provided manually.	Cataloguing and classification are done digitally or electronically.

The differences between user's access to information in conventional and digital libraries are illustrated with the below diagrams.

User's Access to Information in a Conventional Library



User's Access to Library Services in a Digital Library



Having established the differences between the conventional and digital libraries it is worthy to state that the digital library is a bridge that links the library to the locations where the users are. A digitized library creates room for easy access to global information. An effectively digitized library could be deemed to have attained automation. Library automation or digitization is an advanced aspect of library operation, thus; Naveen and Nagesh (2017) categorically stated that. Library automation is generally defined as the replacement of manual operations in libraries by computerized methods. Digital library entails that library's existence does not depend on the physical format of information resources.

Digital libraries come in many forms; they tend to provide instant access to digitize information resources which include multimedia and audio-visual resources. Okenna (2006) elucidate that digital libraries create easy access to records of human knowledge, room for resource sharing around the globe, interconnectivity among networked libraries, inter library activity such as inter-library loan and lending as well as up to date information to its users. The shift from traditional libraries to digital libraries is not merely a technological evolution but requires a change in the paradigm by which people access and interact with information. Randomly, while the traditional emphasis on print collection, stable with low evolution, individual object not directly linked with each other, flat structure with minimal metadata, limited access points and centralized management, physical and logical organization correlated, one way interaction, free and universal access, a digital library emphasis on dynamic and ephemeral resources, multimedia and factual objects, scaffolding of data structures and richer contextual metadata, unlimited access points, distributed collections and access control, physical and logical organization may be virtual, dynamic real-time dialogue, are as well free base.

Resources and Facilities Required in Operating a Digital Library

Digital library services are provided on online (synchronous) or offline (asynchronous) modes. Irrespective of the mode, digital library usage requires that the users have electronic device such as desktops, laptops, palmtops, android phones, smart phones, iphones. ipads etc which could be used to access the library by connecting to the digital library website over the internet. Several resources and facilities are required for the operation of digital libraries. The resources are categorized into three which are: Information technology, Digital Resources and Personnel.

Information Technologies: Information technologies are need in the operation of a digital library. They could be also referred to as Information and Communication Technologies (ICTs). ICT resources could be seen as the engine room of a digital library

where all the technical and mechanical processes takes place. These resources help in the transmission of information from one location to another; it also facilitates communication between the librarian and the users. These ICT resources include:

Networked Computer Systems: There is need to have functional computer systems in a digital library. To achieve effective functionality and interoperability of the computer systems there is need to network them together. Computer systems could be desktops, laptops and palmtops.

Computer Web Cameras: Computer Web Cameras also called Webcams are needed in a digital library operation. A webcam is a video camera that feeds or streams its image in real time (synchronous) to or through a computer to a computer network. It is also a video camera connected to the Web continuously for an indefinite time, rather than for a particular session, generally supplying a view for anyone who visits its web page over the Internet. Webcams enables librarians providing digital library services to have live chats with the users through Skype, Imo, Whatsapp Video call, etc.

Printers: The need for reprographic facilities in a digital library cannot be overemphasized. Printers are needed to print downloaded information materials into a hardcopy of the users. Printers enable a library to have digital resources domicile on the web in a hardcopy format.

Photocopier: To ensure that information materials are in duplicate forms there is need to have photocopying machines in a digital library.

Facsimile Transmission Systems (Fax): It's often referred as telecopying or telefax (the latter short for telefacsimile), is the telephonic transmission of scanned printed material (both text and images), normally to a telephone number connected to a printer or other output device. The original document is scanned with a fax machine (or a telecopier), which processes the contents (text or images) as a single fixed graphic image, converting it into a bitmap, and then transmitting it through the telephone system in the form of audio-frequency tones. The receiving fax machine interprets the tones and reconstructs the image, printing a paper copy.

Scanners: Scanners are needed to reproduce a hardcopy into a hard copy for easy accessibility on the computer devices, and for easy dissemination through electronic mediums.

Mobile Phones: Mobile phones are needed to ease communication in a digital library. It is advisable that the library acquire android smart phones or iPhones which has lots of functionality. The mobile phones should have dedicated lines for easy contact with the librarians.

Internet Connectivity Devices: A digital library requires internet connectivity devices such as Modulation Demodulation (modem), Local Area Network (LAN), Wide Area Network (WAN) or Wi-Fi.

Digital or Electronic Resources: Digital or electronic resources are those resources that are not in physical formats but are in imageries and digital textual forms. Ugwu and Onyegiri (2013) identified them to include but are not limited to: web sites, online databases, e-journals, e-books, electronic integrating resources, and physical carriers in all formats, whether free or fee-based, required to support research in the subject covered, and may be audio, visual, and/or text files.

Databases: To ensure access to adequate information to meet the information needs of users, a digital library should subscribe to various databases such as HINARI, EBSCO, OARE, JSTOR, LEXIS NEXIS.

Electronic Information Resources: Contemporarily, ICT has made it possible for information resources to appear in digital and electronic formats such as e-books, e-journals, e-Encyclopaedia, e-books, e-Directories, e-Biographical, e-Dictionaries, e-Gazetteers or Atlases, e-Almanac, e- Handbooks/ Manuals, e -Review and Criticism sources, e-Historical Tables, Chronologies, Historical Yearbooks, e-Indexes and Abstracts, e-Bibliographies e-maps etc. These information resources should be adequately made available in a digital library.

Network with Libraries: In order to operate an effective digital library there is need for libraries to form a network in order to facilitate resource sharing.

Websites: A digital library needs to have a website through which users can be able to get information about it and make itself visible on the web.

Blogs: Blogs are digital mediums through which the digital library can publish information to the users. Through library blogs the library can publish information generated by on its own or by users and create room for users to comment and ask questions on issues, topics events etc.

Social Networks: This could be seen to be the most effective of the digital resources needed in operating a digital library. In order to ensure that users have unrestricted access to the librarian there is need for a digital library to have active accounts with social networks sites such as Facebook, Whatsapp, Instagram, Flickr, Twitter, Skype etc. Social networks facilitate real-time (synchronous) library and information services to the users.

Electronic Mails: A digital library needs to have a functional email account for offline (asynchronous) library services.

Web Chats: A web chat is a system that allows users to communicate in real time using easily accessible web interfaces. It is a type of internet online chat distinguished by its simplicity and accessibility to users who do not wish to take the time to install and learn to use specialized chat software. This trait allows users instantaneous access and only a web browser is required to chat.

Personnel: To operate a digital library, ICT skilled librarians are required. The librarians controls and manipulates other digital library facilities or resources in order to provide services to the users. The personnel are the most important resources needed in operating a digital library.

As trained Library and Information Science professionals and information experts the Librarians are in position to provide digital library services to the users. However the Librarian in a digital library needs to possess the following skills: ICT use competency, Internet surfing and navigation skills, data mining skill and efficient and effective communication skills. It is therefore important to assign the personnel with the right skill and attitude to handle the various tasks associated with the digital library project. Broadly speaking the personnel will be required for the following tasks:

- Project management
- Selection and preparation of resources
- Digitization and conversion
- Cataloguing and metadata assignment
- Quality assessment
- System administration and maintenance of digital library resources
- System analysis/programming for digital library application/interface development
- Promotion and provision of services

Importance of Digital Library as a Gateway to Global Information Access

The importance of digital library as a gateway to global information access cannot be overemphasized because of the great potentials and values it adds to the library and information science profession. Digital library has been identified as not only providing fast and error free service to information seekers but makes way for increased efficiency. Kasevan (2009) enumerated the following as the importance of digital library as gateway to global access to information.

- To increase access to resources and facilitate new research
- To aid conservation / preservation and add value to the collection of the parent organization
- To offer consistent access, give flexibility, provide enhanced capabilities for analysis and manipulation of information / data and to “save the time of the users” To support e- learning and online research
- To supplement traditional print resources, and integrate multimedia library resources on a common platform
- To increase productivity, and provide better service to users
- To make collections accessible to concurrent users
- To deliver a complete and complex round-the-clock set of aggregate information services irrespective of users’ location.

Consequently, Jie and Bao-Zhong (2012) states that the importance of digital library is essentially to collect, manage, preserve and make accessible digital objects and to: (i) provide friendly interface to users; (ii) Avail network facilities; (iii) Support library functions; (iv) Enhance advanced search, access and retrieval of information; (v) improve the library operations; (vi) Enable one to perform searches that are not practical manually; (vii) Protect owners of information; (viii) Preserve unique collection through digitization. The importance of digital library is:

Increased Information Access: Digital library promotes and enhances easy access to information resources in the library and information services of the library. Access to information in a digital library is not limited to library working hours because it is on round the clock (24/7) basis.

Wider Access: Digital library is not limited to geographical locations. Users from remote locations can have access to the library services and resources as far as they are

connected to the Internet with electronic devices such as computers, mobile phones etc. therefore digital library transcends geographical barriers to information access.

Improved Information and Resource Sharing: Through appropriate metadata and information exchange protocol, digital libraries can easily share information with other libraries and provide enhanced information services to the users.

Improved Preservation and Conservation: Digital resources are not prone to damage akin to the print resources. Another important issue is preservation - keeping digital information available in perpetuity. In the preservation of digital materials, the real issue is technical obsolescence. Technical obsolescence in the digital age is like the deterioration of paper in the paper age. Libraries in the pre-digital era had to worry about climate control and the de-acidification of books, but the preservation of digital information will mean constantly coming up with new technical solutions.

Cost: The cost of operating a digital library is relatively low compared to a conventional or traditional library.

Multiple Access: The same information resources can be used by many users at the same time unlike in the traditional library where users can dominate an information material.

Space: Digital library doesn't require large space as applicable to the traditional library. The operation of a digital library doesn't require spatial consideration. Digital storage devices (CD ROMs, hard disk drives, flash drives, memory cards etc) as small as they could appear could contain large volume of information resources.

Factors Affecting Digital Library Operation in Nigeria

Several factors have been identified to affect digital library operation in Nigeria. Kamba (2011) notes that lack of policy framework at the tertiary level to guide the adoption of this technology to release its full potential benefits affirmed that 'it is a gradual process' this is because digital library project moves uncoordinated and unorganized pace. The poor state of Nigerian economy is not favourable to digital library development it is against this background that National Library of Nigeria-NLN (2006) affirmed that the maintenance of E-libraries is not possible without TETFund and other international bodies intervention. Nigeria is challenged by the trends in the global digital society which is associated with the use of ICT. The most challenge of Nigeria in coping with the standard existing in other parts of the world include i. The application of ICT facilities, ii.

Slow pace in provision of virtual reference service, iii. No defined strategy of information dissemination and access to the users through electronic access cards.

More so, the operation of digital libraries in Nigeria which have experienced backdrops in the following ways:

Poor Funding: Poor funding seem to be the major factor affecting all spheres of library operation and sectors in Nigeria. In order to operate an efficient digital library adequate fund should be allocated to acquire state of the art ICT facilities and for maintenance of the facilities.

Poor Attitude of Stakeholders: Parent Institutions of libraries are reluctant towards ensuring full library digitization in Nigeria. They are yet to create policies modalities and platform for digital library operation.

Poor Maintenance Culture: In developing countries, maintenance culture seems to be at very low level. Majority of institutions that have grumbled in Nigeria could be attributed to poor maintenance culture. Digital reference facilities and resources need to be handled with much care, maintained and preserved to ensure their longevity.

Poor Internet Connectivity: Poor internet connection is one of the factors affecting digital library operation in Nigeria. Digital libraries in Nigeria have become ineffective and dysfunctional because of poor internet connectivity.

Lack of keep to standards: As earlier noted, it is an issue coping with the trends associated with digital global society hence making it unbearable to cope with the standards existing in other parts of the world.

Lack of ICT skilled Librarians: It is a fact that librarians need more than basic ICT skills to be able to cope with the challenges of managing the digital libraries.

Poor power supply: The country constantly experience disrupts in electricity power supply, and more so; the attempts to have standby generators have been unsuccessful.

Strategies for Enhancing Digital Library in Nigeria

Various strategies to enhancing digital library in Nigeria. Some of the strategies to be adopted include: provision of adequate funds, constant power supply, training and retraining of librarians on ICT competency skills.

Provision of Adequate Fund: Adequate funding from both state and federal governments and some philanthropic organizations appropriate hardware and software infrastructure will be procured to improve more desired digital library service. When digital libraries are adequately funded, factors militating it desire operation such as lack of joint facilities, lack of competent search skills on librarians at both strategic and operational level will be well addressed by the management of the library.

Reorientation on Maintenance Culture: Librarians should be sensitized through enlightenment programmes on the need to embrace proper maintenance culture which includes handling the digital facilities with care.

Repositioning of Stakeholders' Attitudes: Library's parent institutions such as: academic institutions' administrators, ministry of education, private institutions etc need to understand the importance and advantages of a digitized library. Thus, make provisions for adequate fund, employ ICT skilled staff and create policies to sustain digital library operation in Nigeria.

Improved Internet Connection: Internet connectivity should be enhanced through increase in broadband, LAN, WAN and workstation facilities.

Improved Power Supply: Constant and uninterrupted power supply can be achieved through the help of the government, the government can build it by replacing obsolete power cables and transformers and around power generating stations that supply electricity.

Training of Librarians on ICT Competency: Training of librarians and paraprofessionals to appropriate skills and use of ICT is very vital. Training can come in many forms but the most important and cost effective one is on the job training. Knowledge organization systems (KOS) which are range of traditional and non-traditional system for the organization of knowledge can also enhance digital library operation in a number of ways.

Conclusion

Digital library is as Magoi (2014) noted that digital library services do not only allow reader to enjoy the convenience of resources sharing but also enable the resources of the academic libraries to get maximum utilization irrespective of time and space.

Recommendation

Based on the foregoing discussions the following recommendations are made:

- Libraries in Nigeria should adopt digitized library which has become one of the global trends and best practices in librarianship.
- Digital library has entrepreneurial potentials; therefore, Library and Information Scientists in Nigeria should invest in it to establish private owned information centres.
- Parent institutions of libraries should provide adequate fund to finance digitization of the library.
- Standard Internet connectivity facilities should be put in place to enhance or boost internet access.
- Sensitization programmes such as seminars, conferences, workshops and symposia should be organized on maintenance culture for the librarians.
- Efforts should be made to improve power supply in libraries by installing solar energies, generators and fix the electricity facilities.

References

- Aman, M. L., & Norliyanan, B (2002). Excellent People-Oriented Strategies for Digital Libraries *World Libraries*. Vol.,12. No.2 [Http://www.worldlib.org/vol12no2/aman.v12n2.html](http://www.worldlib.org/vol12no2/aman.v12n2.html).
- Costabile, M. F., & Semeraro, G (1998). *Information Visualization and the Interaction with IDL*. Available at <http://www.ercim.org/publication/DELOS8/costabile.html> accessed on 23/04/2014.
- Ekere, J. N., Omekwu, C. O., & Nwoha, C.M. (2016). Users' perception of the facilities, resources and services of the MTN digital library at the University of Nigeria, Nsukka. *Library Philosophy and Practice (ejournal)*. Retrieved from <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://www.google.com/ng/&httpsredir=1&article=3815> on 04/05/2018.
- Israel, O. & Edesiriu, O. (2017). Undergraduates' computer skills and the use of online information resources: A case study of library and information science students of Delta State University, Nigeria. *International Journal of Academic Library and Information Science*, 4(3), 87-93.

- Jie, S. & Bao-Zhong, Y. (2012). *Development and characteristics of digital library as a library branch*. A paper presented at the International Conference on future computer supported education held at library of Huzhong Agricultural University, Hubei. 4300070 PR, China.
- Kamba, M.A. (2011). Implication of ICT in libraries of higher education institute: A panacea of library development in Africa, *Desidoc. Journal of Library and Information Technology*, 3, 65-67.
- Kesavan, V. R. (2009). Digital library services: a practical approach for collection development, organization and management. *Journal of Lib. Inf. & Comm. Technology*, 1(1), 1- 20.
- Kumar, J. (2016). Webometric and technology analysis of journal of inequalities and applications. *International Journal of Library & Information Science*, 5(2), 79-88.
- Li, X. & Furht, B. (2014). Design and implementation of digital libraries retrieved from www.cse.fau.edu/borlo/chpter18ic.pdf.nd accessed on 02/05/2018.
- Lynch, C. A. (2013). The integrity of digital information: Mechanism and definitional issues.
- Magoi, J. S. (2014). *Sustaining academic libraries in Kaduna town through library consortium: A proposal*. A paper presented at NLA, Kaduna state chapter (AGM) held at Faculty of Education, ABU, Zaria.
- Naveen, C. L., & Nagesh, R. (2016). Status and problems of library automation in govt. First grade colleges of Hassan District, Karnataka: A study. *International Journal of Library & Information Science*, 5(1), 28-35.
- Nnadozie, C. O., & Nwosu C. C. (2016). Analysis of final year students' satisfaction with information resources and services in four Nigerian federal university libraries. *International Journal of Advanced Library and Information Science*, 4(1), 333-345.
- Okenna, A. (2006). *Delivering quality service: Balancing customer perceptions and expectations* New York: New York Free Press.
- Prakash, I. N. (2017). Resource sharing: A library perceptive. *International Journal of Library & Information Science*, 6(1), 19-22, <http://www.iaeme.com/IJLIS/issues.asp>.
- Shiri, A. (2009). Digital library research: Current developments and trends. *Library Review* 52(5), 218-202.

- Smith, A. (2008). *Strategies for building digitized collection*. Washington DC: Digital Library Federation. Available at <http://www.clir.org>
- Trivedi, M. (2010). Digital libraries: Functionality, usability and accessibility. *Library Philosophy and Practice (ejournal)*. Retrieved from <http://www.webpages.uuidoho.edu/~mbolintrivedi-diglib.htm> on 3/04/2018
- Ugwu, C. I. & Onyegiri, D. C. (2013) Management problems of electronic information resources: A case study of UNN Library. *International Journal of Library and Information Science*, 5(5), 126-133. Available at <http://www.academicjournals.org/IJLIS.r> Accessed 30th June, 2014].
- Yebowaah, F. A. (2017). Comparative study of library and internet use as a source of information by graduate students of the University for Development Studies, Ghana. *Library Philosophy and Practice (ejournal)*. Retrieved from <file:///C:/Users/USER./Documents/Uche'%20Work/FRANKLINA%20ADJCA%20YEBQWAAH%20MS%202017.pd>.