



## The Role of Digital Librarians in Effective Information Service Delivery in Libraries in Nigeria: A Conceptual Review

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### Abstract

*The paper is an attempt to explore the crucial changing roles of librarians as information managers in effective information service delivery in libraries in Nigeria in this digital era. It sheds light on the development of hybrid libraries as a panacea for meeting the information needs of twenty first century library users who exhibit much dexterity in using new technologies. Therefore, in addition to the traditional library and information management skills, librarians now need to possess additional skills and expertise particularly in the use of modern Information and Communication Technologies (ICTs), automated information service, electronic publishing, digital Information management and knowledge management. Commitment to continuous improvement of skills, techniques and strategies and sensitive to network environment. The paper also discusses the various areas of application of ICTs in library and information services. It examines the different strategies that would help in building librarians' skills and competences required for effective ICT utilization in libraries and information service delivery in Nigeria and how to acquire relevant skills and competences to make their profession and roles relevant in this information driven age. It stresses that librarians should make efforts to acquire 21st century skills through personal training so as to be relevant and dynamic since the funding*

*situation in most libraries is always in adequate. This paper also discusses the challenges facing digital librarians and how the challenges can be surmounted. It then concludes by emphasizing on the different library services librarians can deliver, disseminates and transfer to their users in cyberspace today. The paper finally stresses that librarians should constantly be trained and retrained and libraries should serve as a catalyst in the promotion of education, information and knowledge through timely and up-to-date information dissemination in this rapidly changing period.*

**Keywords:** Digital librarians, Information, Information service delivery, Libraries, Nigeria.

### Introduction

The Information and Communication Technology has changed radically the way people think and work. It has transformed the functioning of individuals and institutions. The telecommunications, mobile technology, email, social media have brought in a new wave of change in all walks of life. World Wide Web has become the essential infrastructure of day-today life in the 21<sup>st</sup> century. The digital information is the most important source of information created in this century. Digitization or creation of information in digital form has enabled all the components of the information chain to be most dynamic. The authors, publishers, librarians and other information service providers are playing a new



role. They are further getting integrated in to a great extent in this chain. The new roles have resulted in the components of the information chain being converted in to digital artifacts. (Larson, 2016)

While attributes and the dynamics of the digital age are subject to study in several domains, they have received relatively little attention from scholars focusing on digital the role of digital librarian for effective information service delivery.

Currently, library professionals are also known as key evolving specialties in modern librarianship: digital librarians, system librarians, repository managers, digital curators, information managers e.t.c. The digital librarian plays a new dynamic role to easily accessing of ICT infrastructures and ICT enable services which held digital information including abstracts, indexes, full-text databases, sound and video recording in the digital formats. Currently, the role of librarians and information professionals is to facilitate access to documents over the networks at the global level. Librarians need to and are trying to build upon this foundation and leverage new technologies to build future services in libraries. As we become accustomed to the increasing transparency and mobility of ICT use, the role of information professionals as custodians or Information mediators is shifting dramatically. Information professionals are being transitioned. (Karen, 2014)

### **Concept of Digital Library and Digital Librarian**

Digital Library represents different meaning to different people and organizations. The digital library is not a single entity, but rather a combination of traditional and media collection (Larson, 2016). Digital libraries are organized collections of information resources and associated tools for creating, archiving, sharing, searching and using information that can be accessed. Digital libraries can store any type of information resources as long as it can be the resource can be represented electronically e.g. Audio, Video, Image, Hypertext , Computer etc. (Larson, 2016). This shows that digital Library

represents different meaning to different people and organizations. There are terms used in various contexts for use of the digital library, for example, referring to remotely related activities like multimedia database, information mining, information warehouse, information retrieval, on-line information repositories, electronic library, virtual library, image applications, digital preservation, digital archive, publisher databases, e-Journals, eBooks, etc. Digital libraries can be defined to represent two lines of thoughts. One concentrates on access and retrieval of digital content, which results from the work of computer scientists, engineers, researchers, etc. The second line focuses on the collection, organization and service aspects of digital libraries which can be considered the contribution of library and information professionals practicing at the ground level (Vijay, 2018).

Currently, information is increasingly being produced in digital formats and everyone involved in the knowledge production process, and give the preference of digital form. To manage the digital information resources and services in libraries, libraries need an ICT skilled library and information professionals such as “Digital Librarian”. A digital librarian, is a type of specialist or ICT professional who manages and organizes the digital library and manages the digital information services with mobile devices. Cox and Corral (2013) describe key evolving specialties in modern librarianship: digital librarians, system librarians, repository managers, digital curators, information managers and knowledge managers. Currently, a digital librarian is responsible for functionality of information storage, organizes, data curation, metadata creation, knowledge mining, digital reference services, electronic information services, distribution of information, coordination with aggregators, discovering and accessibility of information on the web, Internet-based WWW, multimedia access and retrieval Sreenivasulu (2000). Also, a digital librarian is responsible for providing the digital library services: e-journals, e-books, consortia based services, archives, e-learning content, multimedia content, E-Current Awareness Services, ask a librarian, virtual reference services, institutional repositories and a



plethora of similar services in a pro-active manner. The ICT trained librarians and information professionals are to be experts in information management, selecting, acquiring, organizing, preserving, repackaging, searching, sharing and disseminating in the digital environment. Today, modern libraries and information centres generate the need for creating a new position “digital librarian” to manage their digital resources and services. These modern libraries and information centres are emerging as knowledge warehouse at networking environment.

Most librarians are involved in the digital activities: subscribing e-books/e-journals, scanning of old print materials, software/hardware management, content selection, web page design, marketing/publicity of library products, outreach, usability analysing, technical troubleshooting, e-publishing, feedback analysis and committee coordination. Today, library professionals are actively involved creating digital collections and services, virtual reference service; research support services make it easier to 24/7 discovery and open access of information anytime and anywhere to fulfil the user expectations. Singh, (2017) explores the changing role of librarians in re-orientation of digital library services with mobile devices. Senthilkumar (2010) describes the changing different role of librarians in the digital era as Negotiator, Navigator, Facilitator, Educator, Entrepreneur (Marketing Library Services) and Information filter etc.

### **Development of Hybrid Libraries as a Panacea for Meeting the Information Needs of Twenty First Century Library User**

Traditionally, libraries hold print and handwritten materials (Bachynsaka and Salata, 2016). With the advent of ICT, new ways of storing information emerged and libraries transformed accordingly. It is now a common practice to use multimedia to enhance teaching, learning and research. They further stated that as we are now living in the digital world, computers now far outnumber office workers in many parts of the world. We bank by phone and fax carries out orders and communicate with each other through keyboarded thoughts, and it has long been the

responsibility of libraries and information centers to assemble, organize and protect documentation of human activity.

Libraries plays a very vital role in imparting education since primary level to university level students. It is an essential component of any educational institute. Library provides information to users. Presently, due to advent of information and communication technologies, there is tremendous change found in providing information to its users. Nowadays libraries are not only providing information to users but also having collaboration with users and due to this collaboration, users are participating with libraries and librarians (Shen, 2016). Libraries are using the application of interactive, collaborative and multimedia-based technology for library services and collection. Libraries are providing number of services to its users in different forms. Library services vary according to category of libraries i.e. public, academic and special libraries. Availability of advanced technologies gives libraries the ability to offer improved, customer-driven services to their users (Andrew, Wright, and Rasking, 2016). The library has changed from close-access libraries of earlier times to the present-day hybrid, digital, and virtual library. Librarians have modified from mere bookkeepers who were involved with the protection of books against stealing, mutilation, and pilferage, to that of information officers, navigators, and cybrarians who encourage the use of information material digitally (Fabunmi, and Asubiojo 2013).

Information and Communication Technology (ICT) is often associated with the most sophisticated computer-based technologies. According to Raji (2018), ICT is a generic term that refers to the technologies that are used to collect, store, edit and communicate information in various format. The use of ICT improves access to digital information, narrows down the digital divide and also improves the standard of living. Adoption of ICT in libraries is a way of improving on information services provided. This is an era, where people need to access timely information with ease, and this can only be done through the use of modern Technology. Modern ICT tools stand for Information and Communication



Technology tools i.e. digital infrastructure like computers, laptops, scanners, software programs, network e.t.c. He further stated that the adoption of ICT in library services is expanding the mandate handed down to the library which would require the use of modern tools in the delivery of library services. Today, library is functioning as a knowledge and support centre for learning, teaching and research for its parent institution. Library instruction is one of the core activities that all libraries over the world engages the library users that helps them to know the rules and regulations, how to access, locate, retrieve and use information sources which to an extent determine the success of students in learning and research. Library instruction otherwise known and referred to as user education" and information literacy is a well-planned academic program that is designed by the libraries for the purpose of sensitization, creating awareness and educating new and potential library patrons (Aliyu and Hafsat 2021). Digital libraries enable many users to use the same information source at the same time

Many digital libraries today are now hybrid libraries, consisting but collections in print and electronic media. Digital libraries usually provide access to materials that one doesn't own of which some are available for free and some may be provided upon payment of a fee. Digital libraries use appropriate mechanisms for filtering out what is unwanted as the problem faced is that of information overload. Appropriate mechanisms are put in place to support users with all the different levels of IT, subject and linguistic skills. Digital libraries usually allow enhanced searching and retrieval facilities. Different users can view and use digital information to suit their individual needs. Users from any part of the world are able to use digital library at any time and in any language thus breaking the barrier of time, space and language. (Chowdhury, 2003).

Most big libraries these days such as the Library of Congress (LC), British Library, OCLC, etc. Have built their collections in digital/multimedia format. Basically, most of these libraries use the reference and educational products. They also use databases (both bibliographic and full text),

electronic books, etc. Some libraries such as American Centre Library, British Council Libraries in Delhi provide multimedia PCs for internet and multimedia resources for their users. According to Ramaiah (1998) some of the general benefits of utilizing digital media include: Architectural information displays for example walk – through programmes for the new buildings or constructions/ already constructed buildings/ movements, Entertainment, leisure, home, Exhibitions such as conferences, trade shows, new product, facilities, museums, libraries, Interactive display in museums, hospitals, libraries, etc. But virtual networking has provided the ability to disseminate information to a wide range of users in libraries and other information centers some of these ways include:

1. **Improved Information Storage:** Media Library and information centres handle great amount of information in different formats. It is even worse in this 21<sup>st</sup> century with information explosion. With ever growing resources of the library, there is always a problem of storage space. Also there is a problem of how to retrieve relevant resources amongst overwhelming lot for library and information users.
2. **Optical media** has proven to be reliable in the mass storage of information. This disc can be categorised into three: read only memory, re-writable and Erasable. Coral & Jolly (2019) stated that key problem in management of library resources is the problem of storage. There's always the issue of lack of storage space appearing at some point in all libraries. They further elaborated that digital resources such as the CD-ROM have helped to solve such problem as these products can contain large amount of information in video, text, audio, graphics and animation all in one platform. Multimedia can be used in various library operations and services. The CD-ROM is a common optical storage media. It is a high-capacity optical storage device of 12cms diameter, that stores up to 650 MB of information, 2,40,000 pages of text or 70 minute of music or video; on a single 16gm platter on polycarbonate. CD-ROM's are used to store encyclopedias, dictionaries,



studio quality audio/video etc. and are largely used as a distribution mechanism for large packages. It has great potentials as an informative storage media and has revolutionized the concept of information retrieval also. The advantages of CD Technology are: accuracy, high storage capacity, rapid data access, low cost, simplicity, standardization and robustness.

3. **Multimedia Personal Computer (MPC)**  
Some big libraries make multimedia personal computers available for any interested library user. These PCs look exactly like the regular ones and of course does all the functions of the regular ones too. However, it has additional hardware, which allows it to run the vast array of multimedia software that is available. In order to provide some sort of reference for buyers of multimedia hardware and software, an organization called the MPC marketing council has established a standard for multimedia machines known as MPC specification (Boles, 2012).
4. **Hypermedia Information Retrieval System:**  
Hypermedia information retrieval system is a hypertext version of large and comprehensive unnoted bibliographic of hypertext/hypermedia information, compiled from a variety of sources including periodicals and online information databases. It is intended for education and training purposes.
5. **Virtual Library reference and General Collection:** A vast collection of information in form of optical storage device like CD ROMS, DVD etc. is available on digital format and can be presented to users virtually. This means that users view any subject at any time base on the information needs.
6. **Electronic Publishing:** The emergence of CD-ROM technology, CD-Writers and recordable CDs have solve many problems of archiving rare and less used materials Now several libraries have started publishing their

special collection, image database etc. on line.

7. **Hybrid based databases:-**Now a days librarians uses multimedia to integrate all information from various forms and sources into meaningful subject base databases for day to day use.
8. **Training and Instructing:** Many libraries are now using digital resources as a tool to train their librarians.
9. **Electronic Library:** Many libraries are using multimedia to transfer their print media into electronic or digital libraries.
10. **Acquisition, organization and dissemination of the information:** digitalization has made the acquisition, organization and dissemination easy. Information can easily be generated because of easy access to diverse form of information in large amount. Digitalization has therefore helped to widen information horizon.
11. **Information Dissemination:** One major function of a library and information centre is the dissemination of information. The internet and the web multimedia has helped the library to perform this function with ease, efficiently and effectively. On request within a short time, information is disseminated to library users no matter their geographic location. A good example is online electronic newspapers read daily, promptly and available at all locations and at all times. Other ways include publishing, library networking, user education and staff training among others.

### **The Role Of Digital Librarians In Effective Information Service Delivery**

The level of sophistication of any society and nature of its development are largely determined by the availability of information channels. Multimedia technologies can be used for information service delivery through computer based training materials such as power point presentations, web-based training materials such as tutorials, audio and video collections (Mayer et al. 2002, Ali, 2013). Information services that



can be provided using multimedia technology include (1) web based services like media service (2) reference and information services (3) Current awareness services (4) Customer relation services etc (Ogubose and Ade Soye (2006):

Kanama & Kumbar, (2006) and Rao & Coughury (2010), these are what most be employed for effective transfer and diffusion of information and knowledge which is to rapidly utilized for different needs and purpose. Access to multimedia information could stimulate changes and creates conducive learning environment and make learning more meaningful and responsive to the localized and specific needs of learners, as libraries and information centers exists to promote knowledge and application of scientific information in direct support of an activity towards fulfilling the mission of an organization/institution. Information is organized to meet specific requirements using conventional or technically oriented information systems. It is inline with this that woods worth and Williams II (1993) defined an information services as a set of activities that provide individuals with relatively easy access to data or information. Information service refer to activities carried out to satisfy the intended customers. Quality service package delivery is a formidable task for institution/organizations. The main advantage of a digital format is flexibility in combining transmitting, manipulating and customizing the elements of the multimedia according to the needs of the customer. Basically are used in Libraries for the following reasons:

- 1) **Media Service:** the digital librarian provides media services to their client by supporting access and creation of audio-visual media as data and information. In the world of knowledge, media helps define our collection desire to experience subjects across the discipline especially those where seeing and hearing are the primary elements of understanding. The services are; general and research audio visual collections, media centric learning and teaching and staff who will be continuously trained to assist users

seeking to fully understand the use of multimedia world of information.

- 2) **Virtual Reference Service:-** a digital librarian provide digital reference services and electronic information services which is known as virtual reference is reference service. It is a services initiated electronically, often in real time, where library customers employ computer or other internet technology to communicate with reference staff, without being physically present reference include chat, video conferencing, voice user IP, co-browsing, email and instant messaging.
- 3) **Customer Relations Services:** The digital librarian acts as an intermediary in the task of massive digitization of information, its storage, dissemination, managing the library, and making available digitized networked information to the end users. Digital librarians and computers depend on each other for processing and dissemination of digital information and both are interrelated. Similarly, Neuhold and Neinderee (2013) posited that services for supporting the communication relations for example, services that foster community formation and services for supporting communication and collaboration between community members are provided by libraries through chat, discussion, forum etc.

**Current Awareness Services:** Current awareness services between as a way to receive automatic alerts about new articles in your specific research area current awareness services has been important means for keeping the customers up to date in their areas of interest. This may include bulleting contain bibliographic records of articles selected from current issues of journals or other materials etc. The digital librarian have the ability to provide users with access to information on demand at any location, which competitive advantage on individuals in an increasingly mobile world. The data from shared file systems; relational databases, object-oriented databases e.t.c.

While according to Chauhan 2004 information



services that could be delivered by digital librarian in libraries and information centers include:

- 1.) Reference service which can be used to store and forward multimedia mail as well as utilizing programs like chats, ask the librarian etc.
- 2.) Current awareness bulleting using predetermined search strategy
- 3.) Information literacy, user education etc
- 4.) Delivering services through varied media etc.
- 5.) Others include inter-library loan services, library education or information literacy and orientation among others.

### **Competences and Skills of Digital Librarians In The 21<sup>st</sup> Century**

ICT has catapulted the world in to an information driven society that relies on idea and information. ICT has collapsed barriers and promoted fast communication and interactions across boundaries. Prominent among several offshoots of information technologies is the computer. It is an all-embracing mechanism that is capable of accepting, storing, retrieving and processing data based on predefined instructions (Owoyemi, 2001). Before the advent of computer technology at the closing of 20<sup>th</sup> century, computers were rare in libraries. The basic function of librarians were carried out manually. The computer is capable of quickly accomplishing a large volume of what can be done manually. The computer has become a basic tool for generating and processing information.

Library is an organization for the acquisition, organization and dissemination of information for specified users. Therefore, using computers to make information accessible and consumable engages diverse skills and competences needed by information professionals especially librarians. Computer skills for academic librarians will mean the use of computers for giving service quickly

and inexpensively. Computers have enhance efficiency and librarians must acquire relevant computer skills and competences to make their profession and roles relevant in this information driven age. In addition to the traditional library and information management skills, librarians now need to possesses additional and expertise more so in the use of modern information and communication technologies, automated information service, electronic publishing, digital Information management and knowledge management. Commitment to continuous improvement of skills, techniques and strategies and sensitive to network environment.

In modern library services, the information professional handle various types of activities in relation to the use of computers and new information technologies in different areas that include some of the following:

- a. Handling and developing information storage and retrieval systems of specialize/ local data and materials.
- b. Managing different types of housekeeping operations
- c. Carrying out online searches for information users using modern equipment
- d. Exchanging g local databases and
- e. Sharing resources through networking
- f. Multimedia, indexing, image processing and object oriented processing
- g. Cataloging and classification of digital documents and digital contents
- h. Searching and retrieval of text, images and other multimedia objects.
- i. Speech recognition and image visualization
- j. Advanced processing capabilities exploiting digital medium
- k. Conferencing techniques including teleconferencing and video conferencing and;
- l. Conversion of print media into digital media

Additionally, most librarians are involved in the digital activities: subscribing e-books/e-journals, scanning of old print materials, software/hardware management, content selection, web page design, marketing/publicity of library products, outreach, usability analysing, technical troubleshooting, e-



publishing, feedback analysis and committee coordination. Today, library professionals are actively involved creating digital collections and services, virtual reference service; research support services make it easier to 24/7 discovery and open access of information anytime and anywhere to fulfil the user expectations.

In the present scenario, information is increasing day by day rapidly. In almost higher 71 educational institutions/universities, librarians setup and development an institutional repository in their institution. An increase in the advanced knowledge and use of ICTs, libraries should improve their research and academic system; Institutional Repository is one of the important parts. For setup and developing institutional repositories, library professions require the sound knowledge, skills and abilities of ICTs. To managing the IR in open access environment, Librarians have to play vital role as an Information Resource manager. Digital Library Administrator: In the digital era, library professions/digital librarians setup and develop the digital library using technical implementation, installation and customization of digital library open source software, creating metadata, creates usage reports and preserving digital information. There are many strategies systems and method to help build multimedia library skills and competence in the utilization digital/electronic/multimedia information technologies; some of this include the following:

1) **Personal computer knowledge:** A personal computer is known to be one of the best invention of mankind. Computer has undergone many changes with respect to size, memory space and portability. Computer is an extraordinary apparatus because of its ability to store information and process huge amount of information that is used to perform various technical task as well as used to create gadgets. The multimedia librarian must have knowledge about search engines, word processing, spreadsheet, virus/malware scanning, connecting a computer to a network, security and privacy etc. all these skills should be acquired by multimedia librarian and He/ She need to be competent in them.

- 2) **Internet Knowledge:** Macauey (2006) observed that one important skill required of a librarian or library professional is internet knowledge. Before the librarian can guide library client on how to use the internet, he must have deep knowledge about how to carry out successful. He must be conversant with how to identify right information when found as well as how to navigate the web; librarians should have a clear knowledge about the notion of prevision vis-a-vis recall.
- 3) **Networking Knowledge:** The needs to possess knowledge on how to manage networks are being upheld as highly significant for proper library management in information age (Tuner 2012) specially connection of two or more computer through networking tools, internet protocol (IP) as well as various basic configuration will help multimedia librarian operations.
- 4) **Hardware Knowledge:** It is important that multimedia librarians have idea on how computer system are joined together to work respectively the components within computer systems ranging from mother board to other part, librarians needs to be equipped with knowledge about central processing unit (CPU), understanding of mouse, keyboard and monitor etc. in this age that library and library resources are formatted into electronic categories the computer competences of multimedia librarians must cover a high range of information and communication technology tools and their operations.
- 5) **Software Knowledge:** Different soft wares are today applied to library functions from simple routine of clearance to complex functions of as well as daily activities of office operations software are being used some notable software are content management system, library management system (CDS/ISIS/New general library etc.).

## METHODS OF ACQUIRING



## COMPETENCIES BY LIBRARIANS

Efficiency of a library depends to a large extent on the competency of its staff. It is assumed that to maintain professional competence, the professional must participate in updating activities. Adomi and Famola (2013) stressed that professional development is an important component of ongoing librarian education and is very critical to performance of their role. The library and information science profession is service oriented and therefore requires continually updated knowledge and skills for effective performance. Professional development for librarians fulfils a need for the continuing acquisition of knowledge and competencies that has not been met by either formal education or on-the job- training. This need is driven by the technological imperative (the rapid technological change that characterized contemporary libraries). Willian (2022) also suggested that, it is importance for librarians to keep abreast of the profession as it changes rapidly and listed ways of achieving this as: attending professional workshops, lectures seminars etc.

### Librarians' Job Titles

Below are some of the list of digital based librarian job titles as identified by Shahbazi & Hedayati (2013):

- 1 Data librarian
- 2 Database librarian
- 3 Digital and web services librarian
- 4 Digital archivist
- 5 Digital asset librarian
- 6 Digital collections librarian
- 7 Digital initiatives librarian
- 8 Digital librarian
- 9 Digital media librarian
- 10 Digital resources librarian
- 11 Digital services librarian
- 12 Digital system librarian among others.

## Challenges Facing Digital Librarians in Nigeria

Although Digital library hold great a potentials in supporting and augmenting existing information resources in libraries, but there are certain challenges that serves as stumbling block to the digital librarians in Nigeria that include:

1. **Inadequate Financial support:** Almost all African libraries and information centres do not allocate adequate funds in their annual budget for the preserved and conservation of information of information materials their holding. This has caused low priority or lack of desired attention given to the preservation of such information resources.
2. **Insufficiency of Materials/Equipment:** Lack of inadequate equipment and materials contributes significantly to the present poor status of preservation and maintenance of information materials in African libraries and information centers.
3. **Unfavorable Government Economic Policies:** The Economic policies of most African government do not favour library services, so preservation activities are not given priority attention they deserve.
4. **Maintenance Culture:** African countries generally lack maintenance culture have poor maintenance culture of infrastructural facilities such as telephones, electricity, water, laboratory equipment disaster control devices etc meant for preservation and conservation operations. Infact this factor is responsible for quick deterioration of their collection.
5. **Administrative Problem:** Majority of libraries and information centers concentrate much on the effective provision of information services to users. There is



lack of proper recognition of the need for presentation, conservation and restoration of information resources.

6. **Technology:** The pre-requisite hardware/software to set up ICT based library is still very expensive and requires large investors. A wide range of multimedia software is not available to integrate, control co-ordinate, manage and adapt different media for the latest home computer interfaces is lack of support software facilitating the authorizing, composition and production of multimedia content. Poor support technology in the area of multimedia data and document storage and manipulation, lack of software support technology for groups, decisions making and co-operative decision making and working. Also converting multimedia resources into digital media is difficult.
7. **Skilled Manpower:** Lack of skilled manpower for the development and management of multimedia databases. Good multimedia content creation requires multi disciplinary knowledge, multi technological skills and experience. The main barrier to the widespread use of multimedia technology is the absence of standardization among various platforms and between hardware and software. Yee (2012)
8. **Poor Networking:** When facilities are reluctantly switched on, the rate of downloading information are normally slow and in most case fool, when information is being shared from a far networked.
9. **Erratic power supply:** The effectiveness and use of multimedia technologies depends largely on effective and constant power supply. Most of this technology cannot operate without electricity for electric power supply. It is therefore necessary for the libraries and information centers that which to operate these technologies should make adequate

provision for constant electricity supply since NEPA which is now known as PHCN has become epileptic. A generating set is mostly used in libraries and information centers in countries like Nigeria this situation in most cases affect the effectiveness and of such multimedia technologies libraries and information.

10. **Cultural factors:** language is one of the major factors that hinder the easy assimilation and used of multimedia technologies by many developing countries this hinder the transfer of technologies. The Radio, TV programmes, computer software and printed text produced in different countries bearing cultural backgrounds among others.

### The Way Forward

The followings are some of the possible solutions to the identified challenges:

1. Adequate funds should be allocated to library and general education sector in Nigeria.
2. Government should ensure adequate provision of ICT based facilities at cheaper price.
3. Strengthened regulations and Policies on the use
4. Strengthened Maintenance and Management Concept: This implies that you mustn't wait until multimedia equipment breaks down before it is maintained.
5. There is a need for heads of libraries to create an avenue for technical staff to constantly improve their professional skill. There may be a need to train library staff and users as well.
6. Librarians and other library staff should accept and embrace the new technology



since change is inevitable. They can do this by embarking on in-service training, attending workshop and seminars on basic computer and use of computers in information access, dissemination and transfer.

7. The curriculum of study for training of new librarians should be upgraded to include basic computer skills such as operating systems, desktop environment, use of the internet, software design, database management and web 2.0.
8. The government should ensure increased funding of the libraries in Nigeria irrespective of the type. Also, the library should source for fund from Philanthropists around their community and introduced fee-based library services to attract fund to the library. Also, a certain percentage of the money provided for the library should be kept for the acquisition and maintenance of ICT appliances.
9. Nigerian government should improve on the availability of power supply in the country. The library should provide alternative power supply through acquisition and use of solar energy and generators to supplement when there is no electricity.
10. Library users should be encouraged to embark on personal computer training to master how to use the computer in information access and retrieval.
11. The internet bandwidth should be increased in order to increase the speed in the network provided for the retrieval of information.
12. A digital web preservation management policy needs to be formulated. this may be done by adopting digital preservation policy of IFLA

## CONCLUSION

It is noticed that in the 21st century libraries need of ICT expert library professionals “Digital Librarian” as an essential requirement in libraries for proper management of digital information resources and services. The paper has established that libraries in Nigeria need to make sustainable efforts to ensure proper provision of digital library services to their clients for better development in the country, as ICT have enabled libraries to automated housekeeping operations and make cost effectively to efficient delivery of information services to user on their mobile devices. In the digital environment, rapidly growth of digital information resources almost modern libraries collect, store, organise and disseminate the information to users over the internet. Hence, the benefits of using ICT in carrying out library operations cannot be overemphasized. It has made libraries and librarians to be relevant in this digital era. It has also reduced the work load of library staff, most of all the library routine services are performed faster using computer. Librarians and other information professionals are bound to fail and perhaps fade out if they refused to undergo retraining to enhance their skills. However, it has been identified that ICT based library services in Nigeria have been working on daunting set of challenges for several years now, the libraries have to overcome this inhibitions and look ahead for the betterment of information services in the country, through financial sustainability, awareness, training, policy as well as proper maintenance of the digital library materials.

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