

Improving Library and Information Services: Use of Appropriate Information Communication Technology in Nigerian Libraries

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Abstract

The focus of this paper is on how to improve services in libraries and information centers in Nigeria by the use of appropriate Information Communication Technology (ICT). Nigerian Libraries as reviewed in this paper are still not fully ICT compliant. Five sub-topics were discussed in order to articulate the focus of the paper. These are: introduction, the implementation of ICT in Nigerian Libraries, Application of ICT to major areas in Libraries and the roles of Librarians in the Digital Age. The paper also looked into the problems of implementing ICT in Nigerian Libraries Finally, it is implied in this paper that libraries and information centers that do not have adequate and relevant ICT will lose their relevance and consequently fail to fulfill the purpose of their establishment. It is therefore concluded that as a matter of urgency, Nigerian Libraries and Information Centers should fully embrace ICT in order to avoid breeding information apathy in the country. Some implementable recommendations are also put forward.

Keywords: information services, library services, Nigerian libraries, ICTs, information centers

Introduction

Information and communication technology (ICT) is a general phrase used to describe a range of technologies for gathering, storing, retrieving, processing, analyzing and transmitting information. Wikipedia (2010) gave the definition of ICT as the technology required for information processing, particularly in relation to the use of computers and computer software to covert, store, protect, process, transmit and retrieve information from anywhere at any time. As such advances in ICT have progressively reduced the cost of managing information, enabling individuals and organizations to undertake information related tasks much more efficiently. Similarly, Aina (2004) defined Information and Communication Technology as an omnibus term that encompasses computer and telecommunication technology. It is concerned with the technology used in handling, acquiring, processing, storage and dissemination of information. As such the use of ICT in information handling and processing arises because of the need to cope with information explosion that requires greater speed and accuracy than manual processing.

The application of technology in information work, teaching, learning, research and entertainment is almost limitless. ICT therefore permeate and cut across all areas of economic, social, cultural and political activities. ICT resources are therefore all information and communication technologies, including information systems and services (e.g. web services), computers, telecommunication networks, etc. These resources are used for information processing tasks (Musa 2005). These tasks

are capturing (obtaining information in its point of origin), conveying (processing information to obtain new information), cradling (storing information for use at a later time), and communicating (sending information to other people or locations). ICT therefore give greater flexibility in information access and use.

Advances in ICT have facilitated the advancement of all professions. For instance, communication satellite, cable television networks, wireless telephone systems, computer networks systems and the internet have communicative powers that made much impact on the society. Thus, ICT have provided the solution to the problem(s) of delay in information access and use. With the aid of internet, literature searching has been converted from a rather tedious task involving sorting through card catalogues or printed indexes, to a stimulating, interactive process using online connection to remote databases often located thousands of kilometers away.

Wirsiy and Shafack (2002) observed that the internet and the World Wide Web have made it possible for an individual anywhere in the world to have access to a large quantum of information through websites, which are interlinked by search engines. The implication of this observation is the availability of new information products and services and their effects on the existing library and information services. Therefore Nigeria libraries can no longer ignore the fact that the use of ICT in the handling of information resources and services has come to stay. Hence efforts need to be made to intensify the availability, accessibility and utilization of these facilities.

Libraries and information centers therefore, cannot remain effective and efficient today without making use of ICT. It is only when the libraries have embraced ICT that clients can get satisfactory answers to their queries within the shortest time, and the librarians can perform their functions more efficiently. Additionally, libraries using appropriate commercial databases can locate selected materials and place orders. As such, books and journals that have hitherto been impossible to keep current copies in libraries, especially in developing countries, are now available electronically and instantaneously as they are published.

Abdullahi (2008) opined that the adoption of ICT in libraries requires the librarian to be versatile in three areas of skills: technical skills, managerial skills and ICT skills. Therefore given the current situation whereby ICT are being continuously updated or introduced and traditional formats are being replaced or supplemented by digital formats, there is the need for continuous and regular training of librarians. According to Ogunsola (2004), the library can benefit tremendously from the facilities provided by ICT. This is because they are indispensable equipment that can facilitate the sourcing, storage, retrieval and dissemination of information in the contemporary society. In the same vein, Ajayi (2003) noted that any organization that fails to embrace ICT has simply signed a “death warrant” in its relevance. Nigerian libraries, from these assertions, have no alternative to ICT if they have to remain relevant in the provision of efficient and effective services. For instance the consequences of non ICT compliance by university libraries in Nigeria are enormous. Womboh and Abba

(2008) observed that those university libraries where academic programmes were denied accreditation have revealed that most of them do not have adequate ICT facilities. On the other hand, most of the libraries in which the programmes received full or interim accreditation had adequate ICT facilities. Hence, ICT is a potent factor in information collection, organization, retrieval, dissemination and preservation in the 21th century (Ogunsola and Aboyade: 2005).

Gbaje (2007) lamented that, a library that is ICT compliant/virtual library has the potentials of providing access to databases, electronic journals, alerting services, online reference tools, and selected web resources. This implies that, it will result in providing value – added services and facilitates on-line access to an enormous current volume of information. In the same vein, Okebukole, (as cited in Russell and Dlamini, 2002), postulated that a library that has adequate ICT facilities would improve the quality of teaching and research through the provision of current e-books, journals and other library resources. Consequently therefore it will result to enhanced scholarship, research and lifelong learning through the establishment of access to shared global virtual archival collections. Since the general objectives of any library are to collect, organize, preserve and disseminate information to client, modern technologies (ICT) in libraries create a new forum for global information access. The objective of this paper is to highlight on how performance could be enhanced through the application of appropriate ICT in Nigerian Libraries.

Implementation of ICT in Nigerian Libraries

It is well recognized that libraries all over the World are undergoing transformation, especially owing to the development in information and communication

technologies. Traditional libraries are changing to digital libraries and new libraries that are being set up are increasingly of the digital kind (Mahesh & Mittal:2008).

The application of ICT in Nigerian Libraries, date back to 1980s with International Institute of Tropical Agriculture (IITA) Ibadan library and documentation centre catalogue being converted to an electronic format. This project was followed closely by the Federal Institute of Industrial Research, Oshodi (FIIRO) library in 1988. Since then, the application of information technologies has spread in the Nigerian Libraries (Ayo: 2001).

ICT application in Nigeria University Libraries on the other hand dates back to 1990s with the introduction of TINLIB (Oni: 2004). However, as early as 1988 some libraries in government parastatals and research institutes were introduced to Computerized Documentations System/Integrated Set of Information Systems (micro CDS/ISIS) software. Bozimo (2006) noted the significant contributions of National Universities Commission (NUC) towards the application of ICT in University Libraries. She observed that the introduction of Nigeria University Network (NUNET) e-mail linkage for Universities, the TINLIB library Automation Software, and the Nigerian Virtual library Project (NVL) are a major breakthrough towards the full

implementation and application of ICT in University Libraries.

Although, TINLIB was introduced to enhance access to information among federal university libraries, it was also reasoned that the common software would encourage the sharing of resources after the libraries automate their records. Unfortunately not enough thought was

given to the state of preparedness of the libraries; in addition, adequate training was not given by the local vendors to the library staff, who were expected to operate the system. When it was time to renew the license, many of the libraries, which have not even started using the software, opted out.

Similarly, the National Virtual library (NVL) was a proactive response employed by National Universities Commission (NUC) to deploy ICT techniques to tackle the problems of scarcity of up-to-date scholarly information for the Nigerian academic community. It was also designed to enable scholars to have free access to online resources; subscription based online resources and locally digitized resources. The prototype is already deployed and can be accessed through the web at www.nigerianvirtuallibrary.com.

The review of the deployment of ICT in Nigeria libraries cannot be complete without mentioning the significant role played by the World Bank. The organization played a role in reversing the deplorable trend in resource provision in libraries in the early 1990s. In more recent times, particularly with the advent of Internet and subsequent growth of electronic publishing, new international

initiatives have been organized. This holds the prospect of dramatic improvements in enhancing access to information resources in Nigeria libraries. However, only libraries that are ICT compliant are able to enjoy those initiatives. Hence, the inevitable need for Nigeria libraries to embrace ICT to its fullest level.

Among the most important initiatives are the:

- (i) Open Society Initiative for West Africa (**OSIWA**). By means of a countrywide license of EBSCOHOST databases, libraries in Nigeria had enhanced access to over 8,000 scholarly, mostly full-text article in various disciplines
- (ii) The International Network for the Availability of Scientific Publications (**INASP**). It provided world-wide access to and dissemination of scientific information and knowledge either free or at highly reduced prices.
- (iii) Health Inter Network Access to Research Initiative (**HINARI**). It is providing abstracts and free full-text versions of articles in biomedical journals on-line to many universities and Research Institutes (Access Period ended in 2006).
- (iv) Access to Global On-line Research in Agriculture (**AGORA**). It is an electronic database in the field of Agriculture.

Application of ICT to major areas in libraries

Information and communication technology has become an important field

for all information professional. This is because of its relevance and applications to tasks in libraries and information centers. Madu and Adeniran (2000) opined that ICT is applied to operations in libraries and information centers to ensure that information delivered is timely, accurate, precise and relevant. ICT have therefore profoundly revolutionized the world of libraries, librarianship and information profession as in other works of life. Unfortunately libraries in Nigeria to some extent are not harnessing and utilizing the vast opportunities and resources which ICT offers.

Breakthroughs and developments in ICT have increasingly reshape the way libraries and librarians access, retrieve, store, manipulate and disseminate information to their potential users. Computers, CD-ROMS, internet, e-mail online data bases etc. facilitate library operations such as, circulation, cataloguing and classification, collection development, serials management, bibliographic compilation inter-library loan (ILL) etc, thereby overcoming some library's operational hiccups such as time and cost.

Oketunji (2001) classified library housekeeping functions into four sub-systems namely: acquisition, cataloguing, circulation and serials. Hence ICT can be applied in order to efficiently and effectively perform these functions.

- i. **Acquisition:** this section is concerned with the selection and acquisition of books and other materials by purchase, gift exchange and other means. Most of the functions of acquisition section of the library are repetitive. The

result is that there could be repetition in the ordering of the same material or multiple pay for the same thing. With the use of computer based acquisition such problems are eliminated. The computer can easily print order slips, produce reminders or cancellation notices as well as financial reports even at short notices.

ii. **Cataloguing:** one of the most important library operations is cataloguing. It is the traditionally most time consuming technical operations in libraries. The end products of cataloguing provide the much – needed access to library collections. Automating the cataloguing section can facilitate the following:

- Establishment and maintenance of catalogue database, names authority files, subjects file, and local authority lists,
- Online Public Access Catalogue (OPAC)
- Inventory control, establishment of shelf list control record, added copy control and inventory statistics.

One of the most important benefits of the application of computers to cataloguing that directly affects library users is the Online Public Access Catalogues (OPAC). According to Ajibero (2001), OPAC is a detailed holding of a particular library or group of libraries or a database and to which users have direct access. OPAC allows any member of the library's

public to search the catalogue database in order to see if the library holds a particular work to be informed of its location and if the catalogue system is integrated with other housekeeping operations, to be told whether or not the item is currently on loan. Since the systems are user-friendly, OPAC has encouraged use of library resources.

Machine Readable Catalogue (MARC) which libraries started using since 1968 has enhanced the automation of cataloguing process. Using MARC standard of cataloguing enables libraries to make use of commercially available library automation systems to manage library operations. It also allows libraries to replace one system with another with the assurance that their data will still be compatible. One of the advantages of this automated cataloguing resulting system is that it helps to solve the problem of “back-log” resulting from books waiting to be catalogued or waiting for catalogue cards to be made. Also human errors are eliminated (Madu & Adeniran:2000).

Circulation: the use of computer in the circulation section of a library helps to eliminate some of the repetitive nature of manual work. Work in the circulation section of the library involves:

- Charging and discharging of books
- Writing of overdue notices
- Reservation of books
- Recording of fines and keeping statistics of library use with the use of computer. These jobs are performed faster, neater and with high level of accuracy with application of appropriate ICT. The boredom resulting

from repetition of routine work is also eliminated.

- Automatic generation of library statistics

The application of ICT in this section eliminates the keeping of many files in paper jackets. Thus charging and discharging out of books would only require an addition or removal from existing records. The correspondence in the circulation unit for instance, overdue notices can be generated automatically by the use of computer in the form of letters, printed and dispatched to concern individuals.

Serials: The serials sections handle publications issued in successive parts at regular or irregular intervals. Maintaining the operation of this section in a manual system or environment can be cumbersome. The situation is totally different in a fully automated system.

Oni (2004) also observed some areas of ICT application in libraries. These include user service, CD-ROMS searching, and networking.

User Service:

Service is at the heart of library operations. Information technology is playing a major role in the delivery of quality service to the users. Some of such services which have been revolutionized through the use of IT are:

- i. Book Borrowing: to the user the changes occurring in the library because of automation become evident when a book is checked out. Bar codes and laser scanners have replaced hand stamped cards; due dates and patron fines are

stored in a database, not in file drawers.

- ii. Library Services in the Home: Rapid advancement in technology has made the provision of home services a pleasant reality to the users. Patrons with a terminal and modem in their home or place of business are able to search the on-line catalogue for a book, place a book on hold or reserve, and request an inter-library loan.

CD-Rom Searching:

The Compact Disc-Read Only Memory (CD-ROM) is an information technology with great potential for libraries in general. Its potential lies in storage capacity, compactness, portability, reduced shelf space and durability. The CD-ROM has been found useful in storing information that does not change over a substantial period of time. CD-ROM combines text, graphics, audio and moving images and these can be accessed using multimedia facilities. Existing features of CD-ROM are its ability to play a wide repertoire of materials such as books, journals, directories, movies, games, video and educational materials. Database on CD-ROM are durable, have huge storage capacity and retrieval is easy, browsable and fast. CD-ROM will continue to be relevant in our libraries because of its relatively cheap production and maintenance cost.

Networking:

A network is a way of connecting computers so that they can communicate with each other and share resources like printers and storage space. The internet is

the biggest global computer network where individual computers are connected for greater efficiency and better information management via telecommunication links. The Internet offers a wide range services which can enhance library operations. These include electronic mail, electronic commerce, WWW (the World Wide Web) Bibliographic services, Telnet, etc.

1. Electronic Mail (e-mail)

Electronic mail is a simple way of sending text message to other people who have Internet access. It is a fast, easy and inexpensive way to communicate with other Internet users around the world and an important tool in the library. Inter-library Loan service can be provide with it.

2 E-Commerce

Goods and Services are advertised or purchased through the Internet. Libraries are supposed to provide this service to their clients. Acquisition of library materials can be done on the Internet.

3 Bibliographic Services

These are also known as information utilities and are essentially libraries on disk. Bibliographic services are available virtually round the clock from any place where there is a computer with a modem. Through bibliographic services hundreds of clients can use the same materials at the same time

4 Telnet

Telnet is a powerful internet tool that enable remote login to another computer. It was developed for the purpose of long distance. Computer scientist located at any remote location can have access to library information

anywhere in the world. Libraries use it to offer electronic and catalogue services. The CD-ROM catalogues are made available through this service.

5 The World Wide Web (WWW)

The WWW allows all kinds of documents containing texts, videos, sound and dynamic graphics or pictures to be hyperlinked together. The entire collection of these documents, stored in computers system (called web site) around the world is what is known as the WWW

Roles of Librarians in the digital age

ICT create new opportunities for the organization of library services that overcome the time and place limitations of print materials. They have brought about a completely different way of accessing information, thereby redefining the role of libraries and librarians. Thus, librarians with ICT skills will be required to facilitate easy and quick information retrieval, and to serve as an interface between the user and the information so as to help evaluate what is retrieved. Covi and Cragin (2004) asserted that library clientele increasingly demand and prefer access to networked information. This is a clear indication that to meet the information needs of the library clientele, libraries must provide online information services.

Kaufman (as cited in Gbaje 2007) acknowledged that ICT have brought about some radical changes within the library's organizational structure and in the ways information and services are provided. As such, the emerging roles of the librarian in the electronic/digital age include the following as observed by Anderson (1996):

- i. Selecting electronic resources and evaluating their quality.
- ii. Developing expenditure and effective locator tools to make the complex web of resources more readily accessible to both sophisticated and naïve users.
- iii. Bring value-added components and indexing to the morass of resources, which will continue to proliferate since anyone can now, in effect, publish on the web.
- iv. Delivering information services where libraries are not merely the passive catalyst that direct inquiries to relevant sources, but provide the information that users actually seek analyzed, evaluated synthesized and transferred in its most useful form.
- v. Teaching novices how to locate relevant resource outside their own disciplines and even within their own fields.
- vi. Teaching critical evaluation skills, which include assessing the authenticity and quality of what is found and determine whether an identified document is worth downloading.
- vii. Functioning as a bridge between system designers and users, by having sufficient credibility with programmers and by understanding users' needs. Librarians can serve as the user's advocate with the system designer while also interpreting to the user what or may not be technically feasible.

In the same vein, Gbaje (2007) opined that the managing of subscription to e-resources and negotiation of license, identifying open access and free web-based materials also constitute some of the emerging roles of the librarians in the digital age.

Impediments of ICT implementation in Nigerian Libraries

Although many libraries in Nigeria are trying to become ICT compliant, however, there are a number of problems and challenges they face. These include among others, lack of adequate finance, poor technical skills, erratic electricity power supply, lukewarm attitude of users, political instability, geographical isolation, inadequate infrastructure, and corruption as observed by Asukwo (2009) and Abubakar (2004).

Implications of the study

It can be deduced so far that Nigerian libraries are yet to fully embrace ICT. This is evident for instance as postulated by Abdullahi (2008) that public libraries in Nigeria to some extent are not harnessing and utilizing the vast opportunities and resources which ICT offer. Akintunde (2006), Womboh and Abba (2008) observed that ICT is not fully embraced by most of the tertiary institution libraries in the country. The danger of these as opined by Ogunsola and Aboyade (2005) is that libraries that do not have adequate and relevant ICT will lose their relevance and consequently fail to fulfill the purpose of their establishment.

Conclusion and recommendations

This paper has been able to highlight the obvious necessity for the full implementation of ICT in Nigerian Libraries. Hence any library of whatever type has no alternative to ICT. The inability of any library in Nigeria to fully embrace ICT will result into denying libraries clientele the opportunity to have access to the huge and diverse information resources that are available virtually and which could be useful to them. The end result of this scenario is continuous information apathy in Nigeria.

In view of the observations pointed out, the following recommendations are made:

- i. There is the need for compulsory IT education at all levels of our formal education system.
- ii. There is the need for libraries in Nigeria to source for alternative power supply other than from the national grid. The use of solar energy will be a good alternative.
- iii. Libraries in Nigeria should explore vigorously alternative sources of funding such as Carnegie corporation, Bill and Melinda Gates foundation, McArthur foundation etc
- iv. Librarians and information managers should be trained on regular basis in the area IT and web technology to be abreast with current trends in those areas as they affect library and information service delivery.
- v. More digital librarians should be produced from library schools in Nigeria. This requires the review of library and information science curriculum to incorporate IT and related

areas in Nigerian library schools.

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