

Impact of Information Technology in Nigerian University Libraries

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Abstract

The paper is on impact of information technology in Nigerian university libraries. The population of the study comprised of all federal university libraries in South-South Nigeria. Data for the study was gathered through structured questionnaire from the respondents. Analysis of the data was done using frequency count and simple percentage. Findings show that ICTs are mostly used for acquisition and cataloguing processes and circulation routines, ICTs facilities are used in the library because they are easier, and faster and save the time of librarians. The study also revealed that librarians performance in using ICTs skills is very low. The following recommendations were also made; there should be adequate provision for training and retraining in ICT skills for librarians as this will change their orientation toward the use of information technologies; funds should be provided by the financier of the libraries for the procurement of ICTs facilities. Also good internet services should be provided without interruption as this will boost the effectiveness and efficiency of librarians in meeting the information needs of their clients in this 21st century.

Subject Areas

Information Technologies

Keywords

Information, Technology, Impact, University, Libraries, Librarians, Users Library Resources

1. Introduction

Before now the library was seen as mere stockroom of knowledge. These days information communication technology has reorganized library routines. Li-

brary practice that was done by hand is now being handled with ICTs. Information technology has change the system of acquisition, technical processing and circulation activities in library in a way that library patrons can get entry to their information requirement with no great effort. It is obvious that without computers and internet it will be difficult for libraries to provide their clients with sufficient information in this age of information technology [1].

Information communication and technology has changed the entire planet into a global village. This has hastened electronic librarianship with different library amenities and services to its clientele. The idea of electronic libraries OPAC, Hypertext, and teleconferences for the use of library and information services have become universal. Innovative scientific developments have deeply affected libraries and practically every task performed in a library has been taken over by electronic mechanization and telecommunication [2].

Information knowledge in library has to do with acquisition, dispensing, storage and distribution of information (textual, statistical illustrative and voiced). In other words, it is broad-based term comprising (acquisition) organization (casing) storage and recovery (distribution) of information that can be in textual or statistical (books, papers), vocal and instructive forms (audio-visual) or a syndicate of all the above (multimedia) by means of a mixture of processor and telecommunications plans [3].

Oni [4] is of the view that information equipment includes every electronic infrastructures and facilities used by librarians to advance and give competent services to clientele. Such services consist of hardware, software, connections the services outlets of one library and comparable outlets of a diverse library. Also, [5] sees information knowledge as the term used to cover the variety of processor and telecommunication technologies concerned in the transfers and dispensation of information. Connecting the computers jointly via the internet has resulted in an upsurge of the amount of information being manipulated every day. Nowadays, almost every society depends on information expertise.

Information has become significant element of our lives and should be accessible when desired. Information services are generated by means of new techniques to facilitate the right to information [6]. The development of information technology in the libraries has given birth to new forms of library services in other for clients' to get contentment. Electronic library service has emerged after the introduction of IT in the library and information centers.

Information technology has successfully transformed the individuality of information services being generated in libraries. The past two decades have seen immense transformation in library due to ICT. The technological expansion has made tremendous impact on the growth of knowledge and unlocking of human talent possible. In libraries, the impact is clearly visible in information resources, services, and people [7].

In another development, Issa [8] asserts that ICT has changed every aspect of our lives and that the processor is information equipment that does three things; receives data, process it and brings it back as information. The development of information and the addiction have cleared the way for the information users and afterward the knowledge civilization. Information has constantly been the major issue for the growth of civilization and is frequently regarded as a very important general resource.

[9] noted that libraries are social institutions, created to conserve knowledge; preserve the educational inheritance; provide information and strengthen teaching and study; and to serve as fountains of leisure. Presently, libraries are seen not as reading-rooms, but as "the foyer of existing thoughts that infuse and animate every area of national existence.

[2] pointed out that the Federal Government of Nigeria and International funding agencies are now involved in the universal growth of ICT in Nigerian universities. The Federal Ministry of Education embarked on the establishment of the National Virtual (Digital) Library Project, to improve access to national and international library and information assets and to distribute locally accessible resources with libraries all over the globe by means of digital machinery among other objectives. A model of Virtual (Digital) Library at the National Universities Commission (NUC) will be the laboratory of the university-based libraries.

[10] stated that computing machinery, communication technology, and mass storage technology are some of the areas of incessant expansion that redesign the way, libraries access, recover, store, control, and distribute information to users. ICT has impacted on every area of library movement; particularly in the structure of the library, gathering, increase strategies, library building and consortia. ICT presents an occasion to offer value-added information services and access to diversity of digital-based information materials to their clients. In addition, libraries are also using ICTs to mechanize their center functions, implement competent and effectual library collaboration and resource sharing networks, put into practice management information systems, expand institutional repositories of digital local contents, and digital libraries and start ICT based potential structure programmes for library clients. Information and Communication Technology (ICT) has brought extraordinary transformation and change to university library and information services. Information skill has been variously researched by various scholars. Thus, Information Technology is concerned with acquirement, dispensation, storage and distribution of information-textual, arithmetical, symbolic and vocal.

In other words, it is measured as a broad term comprising the acquisition, organization, storage and retrieval of information that can be in textual or numerical (books, documents), vocal and pictorial forms (audio-visual) or a combination of all the above (multimedia), using a combination of computer and telecommunications devices. Management of knowledge symbolizes intellectual pillar on which the practice of the library profession rests. They represent the systematic base for the librarian's claim to professionalism. Use of information communication technology in library activities in the academic libraries raises the question of the depth of management of information. Availability of ICT amenities and peripherals have the impact of tumbling detachment, mounting the volume and extent of information that can be handled within a given time and escalating the simplicity of probing by clientele [11].

[12] observed that the application of technology for library and information services delivery have undergone different kinds of growth. An automated cataloguing, circulation and acquisition systems have led to better management of library activities and improved services. Today, ICT is providing libraries with dominant new tools to meet their patrons' information needs within their traditional printed resources. With internet connectivity, university libraries can reach beyond their walls to provide patrons with resources available in their libraries. Social media as typified in library 2.0 model are increasingly appropriate part of libraries and they are tools for enhancing library facilities and knowledge. Numerous libraries are successfully using twitter to commune services like opening times, new arrivals etc., while others have developed applications that enable users to search catalogs from within facebook. There is no doubt that the application of ICTs have provided one of the best innovations in the history of libraries and it is transforming the shape of libraries and role of librarians at an extraordinary shape.

Computer technology, communication technology, and accumulation storage technology are some of the areas that redesign the way libraries access, recover, store, control, and circulate information to patrons. ICT has impacted every area of academic library services particularly in the form of, library structure and consortium. ICT has brought unprecedented changes and transformation to academic library and information services. Conventional OPAC, user services, reference service, bibliographic services, current awareness services, document delivery, interlibrary loan, audiovisual services, and customer relations can be provided more professionally and successfully by means of ICT. This is because they offer suitable time, place, cost efficacy, quicker and most recent distribution and end users involved in the library and information routine process. The impact of ICT has characterized information services by transforming arrangement, substance and technique of construction, and delivery of information products [1].

2. Impact of Information Technology on Library Services

[13] discusses the impact of information technology on library services which has been labeled communication technologies. He asserts that these technologies are the nervous system of modern society by transmitting and distributing, control information and interconnecting a library of interdependent units. Information technologies are equal to communications technologies since the two are interchangeable. Both deal with the use of microelectronic based equipment, like computer, telephones etc. (hardware) to acquire organize, store and circulate information (software). Therefore the meeting of telecommunications and computing of information has resulted in what has come to be identified as new information and communication technology (ICT). There is no gainsaying that the impact of information skill on library services has contributed a great deal to the growth of a lot of organizations and also the nation. According to him, users in particular have a wider choice regarding the way they equip themselves than they once did. According to him, process in information technology and library services is rapidly changing. Apart from computers, other related information technologies used in library services include CD-ROM, Fax, internet and assorted audio-visuals.

[14] believes that the impact and significance of information technology on library services cannot be overemphasized. From time immemorial, information has been one of man's priceless commodity. His preoccupation therefore has been how to collect it, store and retrieve it, by the fastest means possible. Based on the importance of information to human beings, technologies are very fundamental and supreme as well as functional to economic and social well being of humans.

Information technology is rapidly transforming the content and services of libraries and information centres worldwide. This change is obvious in the adaptation of printed bibliographic sources into CD-ROM databases, direct access to distant database online and the copious move in information search strategies [4]. Also, [15], asserts that contemporary knowledge has more than any other issue help not only the storage but also the retrieval of information. As a result, it is now possible to know the entire resources of a particular library and those of others, and various information within a society as well as probing different files of bibliographic data and making them available online for immediate access.

[2] in reviewing the impact that information technology has had on library services opined that the advanced countries of the globe are heading in the way right now where users will not come to the library. The library will be accessible to them through terminals in their own homes or offices. He added that schools of library and information science in the United States of America have well equipped, well-stocked computer laboratories due to the support of many loyal Alumni and others. But some of the basic equipments are purchased by government. Each faculty member he further stressed has a personal computer on his desk and new students who are admitted into library schools come in knowing the basic microcomputer use. They can manipulate a database and can use their own terminologies. This they do in a variety of ways and so reorganize the database to meet their own perception and needs, which is a whole new way of learning and interacting with information itself.

Notably, information and communication technology as an electronic means of capturing, processing, storing and disseminating has brought many revolutions in human life. One very important impressive and effective revolution is the enhancement in the speed and span of information production, sharing, and recycling. It has changed the basic concept of proprietorship into sharing and preservation into access. Library science is among the fields which have been influenced by this revolution to a great deal [1].

3. Problems Militating against the Use of Information Technology on Library Services

The implementation or use of information technology in library services is not without some problems. [16] observes that the major problem is the general dearth of competent manpower to handle all aspects of automation and with the background to assume the function of system analysis. He went further to also state that there is the possibility of occasional machine malfunction which may take long time to repair due to inadequate professional technicians. Therefore, the issue of technical know—how is a paramount problem which could hinder the success of the whole process.

[9], observes that funding is the major constraint of information technology in library services and that it is more than just acquiring the hardware and software but updating and maintenance is very crucial in order to sustain it. Infrastructures, like effective air conditioning system is also a high cost implicating risk which is very essential in a mechanical library or office. He also stressed that uneven power supply is an immense problem in the library that is always making mechanized operations to stand still. Another serious problem of information technology use in library services is the inadequate knowledge of CPU literacy of most library professionals and users who in a short time from now may not be able to make utmost use of the library.

[7], states that the main problems that can face library as they become increasingly concerned with the use of information technologies in library services may be summarized as follow:

- General inadequacy in the level of relevant infrastructures, particularly telecommunication facilities and power supply.
- A largely unfair local processor market and unacceptable after sales preservation and support.
- Insufficient collection of related technological personnel and troubles of their conscription and preservation.
- Users conflict in accepting the application of online information.
- Database renovation problems.
- Recurrent transformation in technologies.

Also, [2] observed the following as problems militating against the effective use of information technology in libraries.

- Lack of rule or principles of ICT education/training programmes.
- Insufficient power supply.
- Inappropriate preparation for ICT facilities in libraries.
- Lack of maintenance of ICT facilities in libraries.
- Lack of ICT skills on the part of library personnel.
- Acquirement of outdated ICT amenities in libraries.

- Patrons not capable to apply ICT skill in libraries.
- Lack of automation in some areas of library.

Although many libraries in Nigeria are trying to become ICT acquiescent, they face a number of difficulties which include scarce finance, meager technological skills, unreliable electricity power supply, unexcited feelings of clients, political unsteadiness, environmental separation, insufficient infrastructure [3]. It is has been observed that the application of current information technologies to libraries activities and services in Nigeria higher institutions seems insufficient probably due to a diversity of factors. Not a few library practitioners also believe that there are many benefits that can be derived from the use of IT, thus giving preferences for manual library operations. Those who are aware of its benefits are afraid of being eliminated from their jobs even though they know that its application to library routines such as administration, acquisitions, cataloguing, and classification, circulation, information retrieval and serials control would facilitate effective and efficient job performance [8].

Growth in ICT has made substantial impact on all area of human services and activities such as banking, health, transportation, education and libraries. For the libraries, ICTs has especially transformed the organization of databases and including the ways services are rendered. Information communication technology has brought unexpected transformation and modernization to academic library and information services. Patrons services such as Online public Access Catalogue (OPAC), reference services, audio visual services and patron relationships can be provided more competently and successfully by means of ICT. The services rendered with the help of ICT are more expensive [11]. The use of ICT in the library simply mean, carrying out the physical services in networking. This makes it simple for the management of information production and diffusion in the libraries [10].

The growth in information communication technology has reshaped the way libraries access, recover, store, control and broadcast information to their potentials patrons. Computers, CD-ROMS, internet, electronic mail, online information etc. assist library functions such as expansion, management and organization, collection growth, serials organization, bibliographic anthology, inter library loan etc., thus overcoming some library routine problems such as time and cost [15].

4. Methodology

The study is on impact of information technology in Nigeria university libraries. Population of the study comprised of all Federal university libraries in South-South Nigeria. They are Federal university of petroleum Effurun (9) university of Calabar (14) university of Uyo (24) university of port-Harcourt (22) university of Benin (26) and Federal university, Otuoke (6). They are altogether 105 librarians. One hundred and five copies of prepared questionnaire were administered to librarians in the universities studied, but only ninety two copies were duly completed and used for the study. Data were analyzed using frequency count and simple percentage. Research question 1:

What are the ICTs in your library use for?

Table 1 revealed that the respondents to a high extent use ICTs for library operations. Of all the items listed, "used for acquisition process" had the highest 89 (96.7%), closely followed by cataloguing process, 84 (91.3%) and used for reference process, 57 (62.0%) as the lowest in the table.

Research question 2:

How would you rate librarians performance in using ICTSs for library operations ?

Table 2 shows that 90 (97.8%) of the librarians performance using ICT is low. 86 (93.5%) of them stated that they are undecided in rating their performance in using ICT for library activities. 81 (88.0%) of them agreed that their performance in using ICT is very high while 64 (69.5%) of the respondents agreed that their performance is high in using ICT for library operations.

Research question 3:

What are the reasons for using ICTs facilities in libraries?

Table 3 shows that 89 (96.7%) of the respondents agreed that the reason for using ICTs facilities in libraries is because it is easier and faster. 88 (95.7%) of them stated that their reason for using ICT facilities is because it saves time of librarians and users. Also, 80 (87%) of the respondents said they use ICT facilities because it is easy to use. The study concluded that the main reason for using ICT facilities is because it is easy to use.

Research question 4:

What are the (ICT) components used in libraries?

Table 4 revealed that 92 (100%) of the librarians use computers in their libraries, while in carrying out their job 90 (97.8%) and 85 (92.3%) of them use cell phone and printer as ICT component in their libraries. 75 (81.5%) of them use CD.ROM as ICT component. The study concluded that the mostly used component of ICT in the libraries was computer. However other components were also used to a high large extent.

Research question 5:

What are the problems militating against the use of ICT in library.

Table 5 indicated that 90 (97.8%) of the respondents lack ICT skills and it is the major problem militating against the use of information technology in libraries. Also, 87 (94.6%) of the respondents affirmed that there is nobody to teach them, while 86 (93.5%) stated that the problem militating against the use of information technology in libraries is high cost of ICT amenities. It was concluded that the major challenge in the use of ICT facilities was inadequate in ICT skills.

Research question 6:

What is the level of your ICT skills?

Table 6 shows that 41 (44.6%) stated that their level in ICT skill is fair, 9 (9.8%) agreed that they have no ICT skill. Furthermore, 35 (38.%) of the respondents noted that their ICT skill was good. The study concluded that the librarians' ICT skills were good.

| ICT in library | No. of Respondents | Percentage |
|---------------------|--------------------|------------|
| Acquisition process | 89 | (96.7%) |
| Serials process | 74 | (80.4%) |
| Cataloguing process | 84 | (94.3%) |
| Reference process | 57 | (62.0%) |
| Circulation | 80 | (86.9%) |
| Administration | 72 | (78.3%) |

Table 1. Library operations ICTs are used for.

Table 2. Rating of performance.

| Item | No. of Respondents | Percentage |
|-----------|--------------------|------------|
| Very high | 81 | (88.0%) |
| High | 64 | (69.6%) |
| Average | 47 | (51.0%) |
| Low | 90 | (97.8%) |
| Undecided | 86 | (93.5%) |

Table 3. Reasons for using ICTs facilities in libraries.

| Use of ICT facilities | No. of Response | Percentage |
|---|-----------------|------------|
| To ease the job of the librarian | 65 | (70.7%) |
| It saves time of librarians and users | 88 | (95.7%) |
| Because others are using it | 75 | (81.5%) |
| Easier and faster because it is easy to use | 89 | (96.7%) |
| Increased productivity | 80 | (87%) |
| Others | 63 | (68.5%) |

Table 4. ICT components used in libraries?

| | No. of Response | Percentage |
|-----------------|-----------------|------------|
| Computers | 92 | (100%) |
| Printers | 85 | (92.3%) |
| Server | 72 | (78.2%) |
| CD-ROM | 75 | (81.5%) |
| Facsimile (FAX) | 21 | (22.8%) |
| Cell phone | 90 | (97.8%) |
| Internet | 34 | (36.9%) |
| Electronic mail | 24 | (26.0%) |
| Total | | |

| Items | No. of Response | Percentage |
|--|-----------------|------------|
| Power cottage | 71 | (77.2%) |
| Network disruption | 85 | (92.4%) |
| Lack of ICT skills | 90 | (97.8%) |
| Nobody to teach me | 87 | (94.6%) |
| Insufficient computers in the library | 70 | (76.1%) |
| High cost of ICT amenities | 86 | (93.5%) |
| Lack of internet facilities in the library | 63 | (68.5%) |
| Total | | |

Table 5. Problems information Technologies in libraries.

Table 6. Level of ICT skills of Librarians.

| Level of ICT skills | No. of Response | Percentage |
|---------------------|-----------------|------------|
| Excellent | 5 | (5.4%) |
| Very good | 2 | (2.2%) |
| Good | 41 | (44.6%) |
| Fair | 35 | (38%) |
| No skill | 9 | (9.8%) |
| Total | | |

5. Discussion of Findings

From the data gathered the following findings emerged. That ICTs are mostly used for processing and acquisition processes, cataloguing processes and circulation routines. The finding supports the finding of [3] that ICT facilitates library operations such as circulation, cataloguing and classification, collection development, serials organization, bibliographic compilation, interlibrary loan etc. thereby overcoming some library's operational hiccups such as time and cost. **Table 2**, revealed that the performance of libraries using ICT skill is low. This could be due to lack of training and retraining on the part of management and individual concerned. The study is in agreement with the study of [12] who noted that there is need for library managerial team to design and implement different methods for training and retraining library personnel by teaching them new skills that are needed for library information services delivery.

The study also revealed that the reasons for using ICTs facilities in libraries is because they are easier and faster, it saves time of librarians and users and it is easy to use. This is in line with [12] that librarians agreed that technology now makes their work very easier with increase in speed and accuracy. There was overall positive reactions to a set of statements that technology improves their job performance. Also [16] in their study reported that ICT in library has aided library personnel in providing users' need quickly, and that it has speeded up the process of cataloguing and classification of library materials. The study also showed that ICTs component that is mostly used for library services are computers, telephone, printers and CD-ROM. The reason for this could be the fact that they are put in strategic places in library. This is in line with [1] that majority of the respondents see the use of CD-ROM as something very significant.

The study revealed the problems associated with the impact of information technology in library services. They are: that there is nobody to teach the respondents, high cost of ICT facilities, lack of skills and internet interruption. This might be as a result of inadequate provision of facilities that are needed for libraries services by library authorities. This is in consonance with [17] that inadequate funding, power cottage, are the major problems affecting or causing hindrances to the application of ICT in Nigeria libraries. Also [2] opined that lack of planning for ICT in libraries and lack of ICT skills are the challenges encountered by libraries while deploying information technologies.

The finding of the study revealed that majority of the respondents agreed that they are "fair" in ICT skills, it was only 35 (38%) of the respondents who affirmed that they have "good" ICT skills. This could be due to management not being involved in training and retraining of their staff for new innovation in libraries. The study is in agreement with the study of [17] that majority of the librarians are sluggish in being ICT compliant and this pose a major problem in libraries.

6. Summary of Findings

From the findings the researcher was able to gather the following findings;

- Library operation that ICTs are mostly used for acquisition processes, cataloguing processes and circulation routines.
- The performance of librarians in using ICT skill is low.
- ICT facilities are used in the library because they are easier, and faster and save time.
- ICTs component that is mostly used for library services includes computers, telephone, printers, and CD-ROMS.
- Challenges facing information technology implementation in libraries is that librarians (some) have nobody teach them ICT skills, high cost of ICT facilities, lack of skills and internet interruption.

7. Recommendations

- There should be adequate provision for training and retraining in ICT skills for librarians to enable them fit into digital age.
- Funds should be provided by the financiers of the library for the procurement of ICT facilities.
- Good internet services should be provided without interruption of any kind as this will boost the efficiency of librarians in meeting the information needs of their users.

8. Conclusion

Significant of ICT in libraries cannot be ignored. ICT is immensely used in the libraries studied and it is something inevitable for the present day libraries, if librarians are to function well and carry out their duties in this 21st century. They must be skillful so as to cope with acquisition and information in the library. Librarians need to be up and doing with emerging trends in information technology. Effort should be made on the part of librarians to acquire all it takes to function well as professionals in this digital age: the cost and stress involved in acquiring these skills notwithstanding.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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