



The application of information and communication technology for service delivery in the serial unit of Bayero University Kano

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Abstract

The use of information and communication technology has become widely acceptable globally. This is because its application to the day to day activities of individuals, institutions and organizations is making tasks and work easier and efficient. This study investigated the application of Information and Communication Technology (ICT) for service delivery in the serial unit of Bayero University Kano, Nigeria. It examined the types of ICT facilities available, services rendered and method of application of ICT facilities as well as challenges of ICT application to user services. A qualitative research methodology was employed for the study. The population of the study comprises of eight (8) staff including the unit head, out of which four (4) were purposively selected using interview and observation methods for data collection, while thematic analysis was used to analyze the data generated. The findings revealed that various ICT facilities are available in the unit under study. Challenges ranging from inadequate ICT facilities, poor power supply, lack of internet access, etc. were identified. The study also recommends for: adequate ICT infrastructure, funding, training of library staff on ICT, provision of adequate electricity with back-up power plant, provision of internet access and institutional subscription to both print and e-journals among others.

Keywords: Information and communication technology, Library, Serial service, Bayero University, Kano, Nigeria.

INTRODUCTION

The use of information and communication technology has become widely acceptable globally. This is because its application to the day to day activities of individuals, institutions and organizations is making tasks and work easier and efficient. This therefore means that academic libraries are no exception to this global change because academic libraries are part of the university and so whatever affects universities has an impact on academic libraries. Some of these changes according to (Budd 1998) include alterations in institution's curricula, demographic changes in student bodies and additions to the media used in the classroom. This has resulted to a demand that cannot be met with current resources, structures and traditional/manual methods of delivering services. In order to keep track of these changes many

libraries started embracing Information and Communication Technologies (ICTs) to help them for effective library services.

Information and communication technology (ICT) has been viewed differently by various scholars. Victor (2004) defined information and communication technologies (ICTs) as "the application of computers and other technologies to the acquisition, organization, storage, retrieval and dissemination of information". This has transformed library services that were done manually: i.e. capturing/acquisition, processing dissemination and retrieval to now being performed electronically through the application of ICTs. According to (Ebijuwa 2005) and (Anyakoha 2005) ICT is viewed as a tool and/or a means used for collection, capturing, processing, storage,

transmission and dissemination of information. A tool here is any physical item or device that can be used to achieve a goal, in this context; library services. As such, simple and low technologies like pins, staplers, stamps, book stand, calculators and punching machines are also seen as ICTs. A similar definition is that of (Eseohe et al., 2014) who saw technology as "the tool and technique used for utilization and gathering of information". He gave examples to include physical devices like papers, pencils, biros, computers, etc.

Therefore, the use of information and communication technologies in the library simply means, performing traditional or manual library activities and services using technological devices. This according to (Eseohe et al., 2014) makes it easier for the handling of information generation, processing and dissemination in the library. Among these library services is the serial service which is a major concern for this study. Before the development and use of ICT facilities, serials operations were done manually as such the transition process to the application of ICTs may be accompanied with some challenges which may differ from one library to another, depending on the type of users, the parent body or type of library.

The application of ICTs in libraries can be traced back to the 1960s in Europe and US. This began with the simple rendering of administrative records and description of library holdings into machine readable forms (databases). Subsequently, libraries began to have their card catalogue converted into Online Public Access Catalogue (OPAC). Bayero university library commenced its automation plan in the late 1980s as a beneficiary to the sponsored program by the National University Commission (NUC) and World Bank where computers and DOS-based Tinlib library management software were supplied to Nigerian universities. This was installed in most university libraries and some level of data entry was achieved. This however, recorded low success because the staffs were not adequately trained in the operation and application of the system (Katsina 2004). Consequently, other attempts have been made to automate the library, but owing to challenges which are peculiar to developing countries, the library is yet to be fully automated. Meanwhile, concerted efforts are being made by the library management to move with current trends in technology by applying ICTs to render services in most of the library units.

Problem statement

The development and availability of information and communication technologies (ICTs) in libraries have today not only improved and expanded the impact of information resources, but also placed more emphasis on effective and efficient service provision. This has made possible quick and timely access to information as well as in disseminating information that are scattered round the

globe. Because of the importance attached to the use of ICTs, many countries now regard understanding ICT and mastering its basic concepts as part of the core of education (UNESCO, 2002b).

The library, whose primary role is to provide information service to support the educational, recreation, cultural, economic and technological endeavors of members in their respective communities have no other option than to embrace the use of ICTs for effective service delivery especially in sections where they are most needed and useful such as serial unit (Afolabi and Abidoye, 2011).

However, despite the importance of ICTs in facilitating serial services in libraries globally, it has been observed that ICTs have not been fully adopted and utilized in the provision of services. For instance, (Afolabi and Abidoye, 2011) in their study on the use of ICT facilities for serial functions found out that there is a general low use of ICT facilities for serial functions. Also related to this finding is that of (Islam and Islam, 2007) that showed disparity in the use of computers and its accessories in library services in Bangladesh. It is based on the foregoing that, this study seeks to investigate the application of ICTs to services delivery in the serial unit of Bayero university library.

Objectives of the study

This study intended to investigate the application of Information and Communication Technology (ICT) for service delivery in the serial unit of Bayero university Kano. Specifically, the objectives of this study are to:

1. Find out the types of ICT facilities available in the serial unit of Bayero University library;
2. Find out the type of services rendered using ICT facilities in the serial section under study;
3. Find out how the ICT facilities are applied to the services rendered in the serial unit;
4. Identify challenges faced by the serial unit on the services rendered using ICTs.

This study therefore seeks to answer questions on:

1. What are the types of ICT facilities available in the serial section of Bayero University library?
2. What are the types of services rendered using ICT facilities in the serial section under study?
3. How are ICT facilities applied to the services rendered in the serial unit?
4. What are the challenges faced by the serial unit on the application of ICTs to the services rendered?

Literature review

The function of academic libraries is to collect, process, disseminate, store and utilize information to provide service to the university community. However, the

constantly increasing amount of information been generated and published, the expanding formats of information storage and retrieval, and ever changing education and research needs of library users make it difficult for any library to be an effective learning resource center (Afolabi and Abidoye, 2011). Since the ultimate goal of the library is to provide services in a manner most useful to the library's users, efforts are made constantly towards rendering effective and efficient services. The development in ICT applications came as a savior to this predicament by: Providing speedy and easy access to information from different sources and facilitates the reformatting and combination of data from different sources (Saleem et al., 2013). Many libraries have therefore, embraced the use of information technology to help them for effective library services (Afolabi and Abidoye, 2011). Such services include: reference service, document service, serial service, technical service, and e-library service also in the form of the library collection development strategies, library building and consortia (Krubu and Osawaru, 2011).

For many academic and research staff, the serials to which the library subscribes to constitute an important part of the resources of an academic library. This is because; they provide the current information on research and current affairs (Woodward 1999), and (Okoye 2008). Considering the special ongoing nature of serials, services rendered in such unit will have special need for control which is why (Woodward 1999) posits that separate and special attention be given the serials unit when studying academic library management. This is why the application of ICTs in serial service arose as a distinct area of concern in this study.

Types of ICT facilities in serial unit

ICT facilities are all encompassing. According to (Iwu 2003) cited in (Onyije and Opara, 2013) the types of information communication technology include: Sensory technologies such as scanners, sensors, keyboard, mouse, electronic pen, barcode sensors or readers, touch of digital boards, voice recognition system, communication technologies such as fax machines, telephone, e-mail, tele-communication system, tele-conferencing, electronic bulletin boards, Display technologies such as computer screen, printers and television, analysis technologies such as micro, mini and mainframe computers and Storage technologies such as magnetic tapes, disks, optical disks cassettes etc. According to (Badaru 2013) at least one but not all of these ICTs are already used in libraries across the globe.

In the serial unit those ICTs applied are based on the functions performed within the unit. The functions as indicated by (Anunobi and Edoke, 2010) citing (Tuttle 1983) are acquisition, processing, public service and

preservation. These functions are synonymous with the functions performed in the library therefore; ICT facilities used in the university library are also applicable to those in the serials unit though with considerations to the special nature of serials. Some of these ICT facilities as outlined by (Afolabi and Abidoye, 2011) and (Mishra and Mishra, 2014) are: computer, bar-coding technology, database services, electronic books, electronic journal, networking technology, chat services, electronic resources (CD-ROMs), indexing and abstracting services, document scanning services, bulletin board services, Online Public Access Catalogue (OPAC), library management software package, RFID (Radio Frequency Identification, printing technology, Internet facility, video conferencing, electronic mail (e-mail), storage technology, the list is as exhaustive as the application of ICTs to library services can be.

Types of services rendered using ICTs

In the serials unit ICT facilities can be for the following services: subscription control, procurement process, order preparation, fund analysis and accounting. They can also be used for bibliographic file control, cataloguing of new serials, preparation of serials record entries and transaction control, serials additions, changes and deletions, servicing request for serials publication, binding control file, missing issues and holdings accession of want list (Alabi 1993), (Oketunji 2001), (Agbaje 2002) and (Oni 2004). Other services according to (Islam and Islam, 2007) include CD-ROM searching, online searching, online networking, photocopying, online information services and database searching services. According to (Woodward 1999) serial functions are: checking in/receipt, claiming, routing, binding, ordering and subscription renewal, financial control, management reports, union lists, online user access and circulation. These according to him are the routine services in serials unit that can be delivered using the ICTs.

Challenges associated with the application of ICTs

The availability, application and use of these ICT facilities however differ from one library to another; this sometimes may be due to some challenges that may be faced by the library as a whole or the serial service as a unit. Some of these challenges according to (Mishra and Mishra, 2014) are: poor infrastructural facilities, low level of ICT compliance, cost, poor maintenance of ICT equipment, frequent change in technology, poor funding, lack of ICT policies, inadequate technical/skilled staffs, erratic power supply. There is also the problem of data base conversion and frequent change in technology (Eseoho et al., 2014).

METHODOLOGY

The research design employed for the study was qualitative research methodology. According to (Gay 2006) qualitative research “collect non-numeric data in order to gain insight into phenomenon of interest, it aimed at gaining a deep understanding of a specific organization or event, rather than surface description of a large sample of a population”. This means that researchers study things in their natural settings, attempting to make sense of or interpret phenomenon in terms of meaning people give to them. Interview and observation was used for the study to obtain various perspectives on the research questions related to the application of ICT facilities to services rendered in the serial unit of Bayero University library. The justification for using interview, is that it gives new insight into the phenomenon under study as they allow the participants to reflect and reason on a variety of subjects in a different way (views, experiences, beliefs and motivations) (Folkestad 2008).

For the study population, purposive sampling was used to select four out of the eight staffs in the unit for the interview. According to (Dudovskiy 2016) purposive sampling (also known as judgment, selective or subjective sampling) is a sampling technique in which researcher relies on his or her own judgment when choosing members of population to participate in the study. This includes the head, two professional librarians (academic) and one para- professional (non-academic). Conducting interviews with the head of the unit and a mix of academic and non-academic staffs as key informants was seen as good option that will give insight into the phenomenon under study, highlighting other areas of corroboration or contradictions (Yin 1994).

In analyzing the data, a thematic analysis approach was adopted. Thematic analysis is “a way of seeing, making sense of related materials, by systematically observing situations, groups, interaction, culture and behavior” (Aranson 1994). This choice is also informed by the theoretical assumption of (Gibson 2009) that thematic analysis allows room for the researcher to examine the differences, similarities and relationships that exists from the data obtained from the participants.

DISCUSSIONS OF FINDINGS

The serial unit of the Bayero University library, Kano is one of the reader service units of the library. It houses collections like Newspapers, magazines, journals, government publications etc. a closed access service is been operated to ascertain security of items. The major holdings of the unit revolve around social science journals, humanities and education, those of other disciplines like agriculture, medicine, and engineering are distributed to their various faculty libraries. There are

eight staffs in the unit including the head of unit; four professionals and four para-professionals. Data generated and analyzed from the interview in relation to similarities and relationships deduced from themes (from Appendix 1) are presented below.

Research questions 1

Types of ICT facilities in the unit

Based on observation and data collected, the ICT facilities available within the unit are: desktop computers, laptops, printer, intranet and VIRTUA software package. Those ICTs centralized by the library but directly affiliated to the unit are: e-journals and photocopying services. Other low technologies in the unit are staplers, stamps, pins. This supports the definition of (Eseohe et al., 2014) who viewed ICTs as including physical devices like papers, pencils and biros.

Research questions 2

Types of services rendered using ICT

Generally, the services rendered in the unit as revealed by the participants are: Receiving, accessioning, stamping, cataloging, classification and indexing, distribution, charging in and out newspapers and journals, listings of items (new arrivals, distribution list, backset), photocopying services, user education, referral services, notification services, new arrival display.

The use of ICTs in the library has transformed the way traditional library service are been carried out, hence, making it easier for the handling of information generation, processing and dissemination in the library (Eseohe et al., 2014). Specifically, the participants identified the ICT based services to include: accessioning, stamping, Virtua data entry, photocopying service, subscription to journals and printing. This support the findings of (Woodward 1999) (Oketunji 2001), (Agbaje 2002), (Oni 2004), (Islam and Islam, 2007) who addressed areas of cataloguing, bibliographic file control, accessioning, photocopying as serial automated services. This therefore, justifies the application of ICTs to the service.

Research questions 3

Application of ICTs to services rendered

There are several information and communication technologies for various housekeeping, management and administrative functions of the library (Saleem et al., 2012). In the serial unit of Bayero University library these

ICTs and how they are been applied as revealed by the participants are presented below:

a. Computer

Computer on its own can be used to perform some library functions which according to (Afolabi and Abidoye, 2011) includes Serial management. In the serial unit of Bayero University library when items are received from collection unit, they are being processed and then entered into the computer system by way of listing using details such as; title, name of author(s), subject and number of copies depending on the purpose. The participants reported that the computer is used to perform the following:

- i. Entry of journal titles content for access into the Virtua database;
- ii. Entering of serial holdings (back set) into the computer by title. This is done with the use of Microsoft Excel;
- iii. Entering of received current and new arrival journals;
- iv. Recording local journal updates;
- v. Statistics recording of users;
- vi. For administrative purposes e.g. duty roster.

This finding supports (Anunobi and Edoka, 2010) who stated that ICTs can be used for bibliographic file control, cataloguing of new serials, preparation of serials record entries and transaction control.

b. Library management software package

Software consists of the step-by-step instructions that tell the computer what to do. In a University Library, the most common computer software used according to (Mishra and Mishra, 2013) is library automation software, database management software, antivirus software and application software. Bayero University library uses the VIRTUA software package. In the serial unit, VIRTUA is used to catalogue materials into the virtua database. This is done through a window based Graphical User Interface (GUI) that is integrated with the OPAC. Main feature of this software are the tags provided to guide the cataloguer.

c. Electronic journals

These can be journals, magazines, newsletters in electronic form that the university subscribes to. Many publishers who offer subscriptions to print journals, sometimes also offer subscription to the electronic version of the journal free of charge. The e-Journals subscribed to by the Bayero University are JESTOR, HINARI, EBSCOhost, Science Direct, and AGORA; these resources however, are centrally located in the E-library

and automations unit of the Bayero university library as such the serial unit make referral services to them.

d. Printing technology

This technology is used to convert computer output into printed images (Mishra and Mishra, 2013). The participants reported that printers are used to:

- i. Print out new arrival or current journals for display;
- ii. Print out of dispatched journals to branches;
- iii. Print out of staff duty roster and other information or unit instructions worthy of display for both staff and users.

e. Photocopying service

This service is provided centrally at the ground floor of the library. Because of the delicate and sometimes fragile nature of serial materials whenever there is a need to make photocopy of an item, especially journals and newspapers, a staff volunteers to do it on behalf of users for a fee.

f. Intranet

Intranet according to (Bhojaraju 2003) means network computing environments which let the users share the information through the Internet and Web browsers. According to him, the primary benefit of an intranet in a library is the facilitation of information sharing. This is true because one of the uses of intranet in the Bayero university library is for information dissemination. Intranet can also provide access to online databases (Bhojaraju 2003) in the case of the library under study, VIRTUA database. Other uses of intranet in the serial unit are for information collection, updation and information access and control.

g. Electronic mail

In the serial unit of Bayero university library, e-mail technology is mainly used to make subscription for journals.

h. Mobile telephoning

This technology is used to make contact to vendors, users and also for communication and dissemination of information among staff.

From analysis, it is observed that most of the ICTs in the unit are computer-aided i.e. Interconnected in a

manner that most of these services are rendered through the use of computer.

Research questions 4

Challenges in the application of ICTs to services rendered

In the application of ICTs to library services, libraries can introduce, use and take advantage of the opportunities provided by these technologies. Unfortunately, in the case of libraries in developing countries, the situation is not so simple. There are several factors that are making it difficult for them to take full advantage of ICTs. From data collected aside from the general problems of inadequacies in ICT facilities, funds and power supply (Mishra and Mishra, 2014), other peculiar challenges faced by the serial unit of Bayero University are:

1. The participants reported that there is no direct link between the e-library and serial unit. Most of the e-journals subscribed by the library are fully managed by the e-library instead of the serial unit, hence, the users are been referred to the e-library unit.

2. There is no photocopying machine in the unit; hence, they are being forced to depend on the machine at the central unit or photocopying vendors within the library. This causes loss of time for both the user and the librarian.

3. Most of the available printed journals in the unit are out dated, this was based on the premise that the university subscribe to many online or e-journals (which was reported to have very low usage). It was however found that most journals bearing local content peculiar to Nigerian and African setting are hardly available online.

4. As important as the serial unit is to the university community, there is no internet service, hence, make it difficult for internet related services such as e-mail and use of social media.

5. As regards to ICT skills, the participants claimed some degree of skills but not specifically related to serial service. The participants reported also that they are aware of the application of ICTs for service delivery in the serial unit; however, the needed facilities are not adequate.

RECOMMENDATIONS

Based on the findings of the study and challenges identified the following recommendations were made:

1. Adequate ICT infrastructure, funding, training of library staff on ICT and provision of adequate electricity with back-up power plant is needed.

2. There should be a synergy between the e-library and the serial unit so that both units can have equal access to the subscribed e-journals.

3. A photocopying machine should be provided for the serial unit and other essential services rendering units in the library. By so doing, the library could generate income that will enhance or boost their internally generated income.

4. The university should continue on the subscription to printed journals especially local journals.

5. The unit should be provided with internet access. More so, the unit should have a social media platform through which they can create current awareness and provide selective dissemination of information.

CONCLUSION

Information and communications technologies (ICTs) have brought exceptional changes to library activities and information service delivery and without doubt have come to stay. Therefore, it is quite obvious that for libraries to function efficiently and effectively, the use of ICT facilities are required. Though, there were some challenges limiting their application based on the findings of this study, several measures are necessary to improve the use of ICT in delivering services to users in the serial unit.

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