CHAPTER THREE

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) USE, AND THE SUSTENANCE OF THE CHANGE AGENDA IN ACADEMIC LIBRARIES IN NIGERIA

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Abstract

This paper discusses the effects of information and communication technology on academic libraries as sustenance of change agenda on national development in Nigeria's tertiary institutions. The results show that effective use of ICT in academic libraries have contributed a lot to improved technological know-how in our educational system. This has consequently served as a tool for positive transformation in Nigeria. The paper also discusses various types of library software packages that are used in academic libraries to perform library operations effectively. Similarly, it describes some of the database resources adopted in tertiary institutions libraries in Nigeria to enable downloading of research materials conveniently. The paper also identifies various types of search tools used for research purposes, and social media in a networked information environment. In addition, it enumerates how researchers can perform effective web searches in a networked environment, and their components. Finally, the study emphasizes some of the importance of ICT in academic libraries, its challenges, remedies and prospects toward a sustainable national development in Nigeria.

Key Words: Information and Communication Technology (ICT), Change Agenda in Nigeria, Academic Libraries.

Introduction

Information and communication technology (ICT) is one of the most important driving forces promoting economic change in the country. However, there is less of a consensus among economists on whether the impact of ICT also stems from higher total factor productivity (TFP) growth and improved efficiency of production (due to a better educated populace). It is noteworthy that during the last two decades

countries have invested heavily in information and communication technology to improve the living standards of their people. However, the use of information and communication technology in academic libraries has taken on more important role in tertiary institutions in Nigeria only in the last decade; although progress has been uneven. ICT has had a major impact on the education sector; on organization, on teaching and learning methods. Yet, there are considerably different expenditure levels for ICT products among institutions within the country. It has made access to knowledge and education (awareness) such easier and relatively cheaper. Awareness increases people's chances to be carried along in the ICT-driven global dynamism. Information poverty or digital divide however, impedes people's access to knowledge and education. This unfortunately reinforces their vulnerability, constraints and challenges. Such constraints and challenges usually reduce the socio-economic well-being of the people by pushing them into the abyss of exclusion, powerlessness and poverty. ICT is applied to the operation of libraries and information centres to ensure that the information delivered is timely, accurate, precise and relevant. The use of computers and other communication technology products in information handling and processing has arisen because of the need to ease the increased workload in coping with the need to access the ever increasing available information. In order to keep pace with handling the increased amount of information, server computers are utilized to handle information processing with greater speed and accuracy than could be achieved manually.

Information and Communication Technology (ICT)

ICT has taken a central position in all spheres of human life. Information and communication technology can be defined as the technology that enables society to create, collect, consolidate, communicate, manage and process information for different purposes. Haliso (2011) explained that ICT encompasses a range of rapidly evolving products, and they include computing and telecommunication products, like the personal computer, CD-ROM, cable TV, mobile phones, internet connectivity, and so on. The introduction of all these technological instruments into the operation of library services in Nigerian tertiary institutions brings about steady change in Nigeria's educational system.

Academic Libraries

Academic libraries play vital roles in tertiary institutions which include colleges of education, polytechnics, universities and research institutes. The library has been the centre of intellectual activities; a converging point for both staff and students of tertiary institutions. According to Akintunde (2004), the libraries in many tertiary

institutions have either earned the institutions accreditation (both institution and courses) or otherwise; because libraries are regarded as tools for academic excellence. Tertiary institutions libraries assist them in the discharge of their functions by acquiring all the varied and relevant in-depth information resources necessary for pursuing the teaching, learning, research and public services functions of those institutions. That enables them to produce high caliber graduates for the labour market to further national development.

Change Agenda in Nigeria

President Muhammadu Buhari who, in 2015, explained the change he has envisioned for the nation in a New Year message, pledged to: provide mass employment, adequate security, fights corruption, improve infrastructure, and provide good healthcare. According to a statement by the Director of Communications for Buhari Campaign Organisation, Mr. Dele Alake, change means:

- A country that you can be proud of at anytime and anywhere: where corruption is tackled, where your leaders are disciplined and lead with vision and clarity; where the stories that emerge to the world from us are full of hope and progress.
- A Nigeria in which where no one will have to fear for his/her safety, or that of others.
- A Nigeria where citizens get the basics that any country should provide: infrastructures that work, healthcare that is affordable, even free; respect for the environment, sustainable development, education that is competitive and result-oriented.
- A country that provides jobs for its young people, reducing unemployment to the lowest of single digits, and providing safety nets so that no one is left behind.
- A Nigeria where entrepreneurs thrive, enterprises flourish and the government gets out of the way so that everyone can create value, build the economy and aggressively expand wealth.

Statement of the Problem

Considering the enormous satisfaction derivable from the usage of ICT in our academic libraries it is quite obvious that its usage is still at the infancy. This is due to the fact that only few libraries employ the use of ICT infrastructure and automation systems in discharging their library operations effectively. This paper discusses ICT use, and the sustenance of the change agenda in academic libraries in Nigeria. The results show that usage of ICT in academic libraries has brought a

sustainable change in the area of technology use in our educational system, and this has consequently served as a tool for economic growth and development.

Objectives of the study

The following are the objectives of the study

- To critically examine ICT usage and sustenance of change agenda in academic libraries in Nigeria.
- To identify various types of library software packages and database resources used in academic libraries operations.
- To point out various types of search tools mostly used for research purposes, and social media in a networked information environment.
- To critically look at the roles of academic libraries in the change agenda in Nigeria.
- Finally, to emphasize on some of the importance of ICT in academic libraries, its challenges, remedies and prospects as change agenda in Nigeria.

Literature Review on ICT uses in Academic Libraries

Shakeel and Bhatti (2012) posited that the new information technology tools have absolutely changed the role and responsibilities of librarians. A number of studies have been conducted to explore the problems faced by libraries and librarians. The following section reviews the studies conducted at international level in general, and in developing countries in particular, to investigate the problems confronted by librarians. Ademodi & Adepoju (2009) investigated computer skills among librarians in academic libraries in Ondo and Ekiti States in Nigeria. It was found that the shortage of computers and lack of computer skills among professional librarians was high. The study recommended that more attention should be paid to, and funds should be provided for, training on and procurement of ICT infrastructure in Nigerian academic libraries. For computerization purpose, library administration could solicit funds and assistance from foreign agencies and foundations who are interested in the cause. Adomi & Anie (2006) in their research on computer literacy skills of professionals in Nigerian universities libraries, concluded that most of the professionals do not possess high level of computer skills, and that their use of computer and technology is still maturing. They recommended that library management and leaders should organize and offer in-house computer training programmes for librarians, and enough computers should be provided in this regard. Trushina (2004) discussed the issues related to the internet as well as the correlation of professional codes, and their implementation in library practice. He

stated that libraries depend on ethical principles more than any other institution, because library services are essentially human-oriented. He stressed that librarians must follow the intellectual freedom principle; and that they have a moral responsibility to the patrons.

Roles of Academic Libraries in the Change Agenda

According to Yacom (2011), academic libraries are institutions that are established to take care of the information need of students, lecturers, researchers and other scholars. In the words of Wolpert (1999), "academic libraries are cost effective information sources, and providers of knowledge products to a resident community of scholars. "The recourse to cost effectiveness is one of the major problems militating against the performances of academic libraries in Nigeria. Akintunde (2004) was of the view that libraries in many tertiary institutions have either accreditation or failed to be accredited because adequately furnished and equipped libraries are regarded as tools for academic excellence by the accrediting bodies. Academic institutions play a major role in the manpower development of any nation; providing the high, as well as middle level, manpower necessary for the acceleration of social, economic and political advancement of a nation. According to Okiy (2007), quoting Edoka (2000), the general functions of academic libraries is as follows:

1. academic libraries support the curriculum of the institutions for the provision of information resources/materials for library patrons,

2. they provide information materials required for the academic programmes of the parent institution,

3. research information sources in consonance with the needs of faculty and research students,

4. provide information resources for recreation and personal self-development of users,

5. provide study space in a useful variety of locations,

6. provide protection and security for study materials,

7. provide specialized information service to appropriate segments of the wider community, and

8. cooperate with other libraries at appropriate levels for improved information services.

The economic development of a nation can be determined by the quality of human resource produced through the quality of education that a nation offers to her citizens. Therefore, knowledge revolution is now the new economic order; with the recognition that knowledge and intellect are the critical important ingredients in the

economic equation at the national, state, or local levels. The performance of knowledge in nation building is usually in consonant with the general functions of academic libraries in any nation.

Academic Libraries as a Tool for Change Agenda in the Educational System of Nigeria

Academic libraries are viewed as an important component of the massive educational effort of the Federal Government of Nigeria. Without the library no meaningful academic effort can be carried out. Library services improve knowledge and skills for positive productivity, and are a tool for national development. If education is to have a greater say in the moulding and building of a happier individual and a better society, the providers of education must go further than their roles as literacy facilitators to a more practical role of providing libraries for sustaining the newly acquired skills of learners. Organizing a library to aid education calls for an atmosphere of friendliness and a useful collection of materials or resources for study. Part of the goals of higher learning in Nigeria are: contribution to national development through high level relevant manpower training; developing and inculcating proper values for the survival of the individual and society; and developing the intellectual capability of individuals to understand and appreciate their local and external environments. Academic libraries will play a key role in the development of a society that is aspiring to be a developed economy that Nigeria is aspiring to become.

Library Software Packages and Database Resources

The following are the various types and features of good library software packages: CDS/ISIS; WINISIS; Software for University Library (SOUL); Alice for Windows; Lib Info; MIDAS Library Management System; Library Management System; Library System KOHA; PhPMyLibrary; LibSys; millennium; Tinlib; libplus; in-magic; Glas; Newgenlib – New Generation Library (Web based).

Database Resources

Database resources are information resources that are programed electronically in such a way that researchers can download research articles/materials online. Examples are; EBSCO-HOST, Myilibrary, JSTOR, Science Direct, Hinary, e-granary. The library should have the best software for managing its entire operations, and to satisfy the users. Besides storage and retrieval, there are other housekeeping functions which should be there in the software. Computerization of operation requires procurement of hardware and software. The first step towards this will be

the automation of the individual libraries, and information centers. For this, each organization has to follow and maintain certain standards. Several options are available for acquiring or upgrading a library management system. (Rowley, 1993)

1.   Buy or license a commercial software package
2.   Join or make use of the system of a cooperative software
3.   Develop own system

Different types of libraries require library software packages with different dimensions and capabilities. For example, in the university library, where big collections and heavy circulation work has to be performed, a fully integrated software package with good response time and strong searching facilities is required. Whereas, for research libraries or other special libraries, where the collections are limited but the readers have very specific requirement, a software with good search capability is needed. This will enhance the search, and present the result that is exactly required (Ahmad, 1993).

Even though software directories with the names and commercial details are available, they do not help librarians with critical selections. It is obvious that by looking into the brochure or by the demonstration of the software for picture etc., the internal capabilities and drawbacks of the software cannot be assessed. Some of the most important and basic things like the ease of inputting records, editing, cursor navigation, response time and user friendliness can be experienced only by using the software. The software should be tested by taking actual examples and by entering and manipulating several dozens of records into the packages (*Ahmad, 1993*). A software package used for library work and services should have at least the following qualities (Sharma, 1993)

1.   Database Management System (DBMS) features
2.   High Level Integration
3.   Data Entry Facility
4.   Data Updating/Editing
5.   Search/Inquiries
6.   Report/Display/Print
7.   Menu driven and user friendliness
8.   Compatibility
9.   Reputation of the sponsoring organization

Functions of Library Software Packages

A good library software package should be integrated for the entire range of library activities. The main functions of software packages can be listed as follows:

- Acquisitions
- Cataloguing
- Circulation
- Serial Management
- Online Public Access Catalogue (OPAC)
- Report Generation
- Inter-library Loan Management
- Community Information
- Import/Export
- Reference Service

Search Engines/Tools Used in a Networked Information Environment in Academic Libraries

Bertot (2003) defines the networked environment: "as the myriad of public, private, organizational, and other networks, systems, and applications used to provide users with access to electronic services and resources. These services and resources could be as simple as an online document viewed via a web page, or as complex as an electronic commerce/e-government interaction through which a user can purchase products and/or attain services such as renewal of a driver's licence."

Networked Information Environment Quick Facts:

1. No easy or straightforward method to operationalize a definition for a network, because of its changing nature.
2. Definition of a library's "networked environment" continues to evolve.
3. All networked information is available in electronic or digital form.

Networked information must be delivered and accessible using computerized and networked facilities such as microcomputers, dumb terminals or other electronic or telecommunications devices in a networked environment.

Components of a Networked Information Environment

Technical Infrastructure: Hardware, software, equipment, communication lines, and technological aspect of the network;

Information Content: The information resources available at/on the network;

Information Services: The activities which users can engage in, and the services that users may use to complete various tasks.

Support: The assistance and support services provided to help users use the network better;

Management: The human resources, governance, planning and fiscal aspects of the network.

Terminology

1. **Internet** is a worldwide collection of links that connects businesses, universities, education institutions and individuals, etc.
2. **World Wide Web / WWW / Net / Web** is a portal of the internet. It consists of a collection of documents stored on computers around the world.
3. **Web page** is a document on the internet that can include text, pictures, sound, video, graphics, etc
4. **Web Site** is a collection of web pages.
5. **Search engine** is a software program you can use to find websites, web pages and internet files.
6. **Web browser** is a program that allows you to view and explore information on the internet e.g. Internet Explorer. Firefox, Opera, Google chrome, etc
7. **Browse** means to search the internet for information.
8. **Surf** - slang for browsing – to search for information on the internet.
9. **URL** each web page has a unique address called a Uniform Resource Locator. You can instantly display any Web page if you know its URL. For example http://www.google.co.za,http://www.google.com

Impact of ICT in Educational Sector, and the Sustenance of the Change Agenda in Academic Libraries in Nigeria

Libraries see themselves as central information providers for their patrons at universities or research institutions. But how do they define academic content? Looking at the practice of today's digital library portals, we get the impression that the internet is almost non-existent in the academic resource discovery environment. What we find are online library catalogues, electronic journals and (sometimes) e-books, which are mainly digitally converted print materials that have traditionally been the focus of library acquisition policies. Also, databases have been well known for a long time. Content is generally delivered through well-established service channels by publishers, book-houses or subscription agencies. The digitization of publishing and the advent of the world wide web have resulted in the proliferation of a vast amount of content types and formats that include, but are not limited to, digitized collections, faculty and research groups websites, conference web servers, preprint/e-print servers and, increasingly, institutional repositories and archives, as

well as a wide range of learning objectives and courses. If these resources are registered by a library at all, then they are in the form of separate lists of links or databases, but are not integrated into local digital library portals. Generally, ICT has increasingly played a critical role in all fields of human endeavours. It is being used globally to translate ideas into realizable goals, and develop same into concrete achievement. ICT is used as a sustainable change agenda in the following areas:

1.   ICT is readily useful in the areas of agriculture, engineering, medicine, law, architecture, aviation, commerce, insurance, banking and finance as well as maritime activities.

2.   ICT has the potential to contribute to substantial improvements in the educational system (Moursund, 2005). However, to date, relatively little of this potential has been achieved in spite of ICT having significant impact on traditional school system.

3.   They have provided innovation for teaching and learning, and have engendered advances in research about how people learn; thereby bringing about rethinking the structure of education (Lopez, 2003).

4.   It is also widely acknowledged that ICT can be used to improve the quality of teaching and learning in the education system (Yusuf, 2000). The prevalence and rapid development of ICT has transformed human society from the information age to the knowledge age (Galbreath, 2000). In fact, ICT is becoming a natural part of man's daily life. Thus its use in education is becoming fundamental.

5.   Moreover, the pace of change inICT field currently exceeds the pace of progress in making effective use of ICT in education. There is a lot of transformation through ICT. There is an international consensus on the importance of intellectual input in creating value, underlining the need for investment in education and skills in general, with a special focus on ICT skills and research development.

6.   ICT has changed the face of modern researches, enabling research organizations to be linked to each other through advanced network that is connected to the rest of the world. ICT provides resources and services to support the education, research and public services missions of universities.

7.   ICT also enhances the development and implementation of policies and procedures necessary to ensure the effective, secured and appropriate utilisation of universities information resources and services.

8.   ICT provides a lot of services to students, including distance learning programmes, inexpensive printing, cell phone plans, internet connectivity, free dial-up, technology equipment, rentals, classroom media stations, etc.

Lecturers and students get relevant materials needed through the internet. Such quality materials are used in equipping the students and upgrading their knowledge in their fields of study.

Constraints of ICT in Academic Libraries in Nigeria

The challenges that face the use of these new technologies in developing countries have been described as the "poor country's problem". They can be classified as follows:

1. **Economic problem**

   The economic structure of most African countries does not encourage effective utilization of ICT facilities, especially in tertiary institutions. This is because their economies are not buoyant. Since ICT is capital intensive, it becomes difficult for such countries (Nigeria inclusive) to procure and maintain the equipment that are required for information technology from their foreign counterparts.

2. **Manpower problem**

   The shortage of trained manpower is obvious in developing countries, when one examines the need for highly qualified manpower to handle the operation of the equipment. There is also difficulty in recruiting, training and retaining specialists; especially for library work. After recruitment and training of many experts, they prefer to go to banks and oil companies where they believe they are better enumerated.

3. **Technological Challenge**

   Library automation succeeds through the work performed by hardware, software, and people. The technological challenge is a big problem in library automation in tertiary institutions. The digital divide in the academic libraries of Nepal, for instance, vary from the availability of infrastructure facilities for use of ICT, to skilled staff to handle the new technological challenges being faced by those libraries.

4. **Lack of Fund**

   Poor funding is a major challenge to libraries in tertiary institution. Lack of funds and lack of information resources have been problems for academic libraries for many years. Most of the universities and public colleges are non-profit organizations. Consequently, they depend largely on poor or low government subventions to finance their activities.

5. Others constraints include lack of expertise, lack of training, lack of interest, lack of constant uninterrupted power supply, National Information Policy

(NIP), computer literacy/education, poor electricity supply, LAN/WAN, maintenance.

Solution and Prospects to These Challenges in Academic Libraries in Nigeria

Looking at the list of various challenges discussed above, the only and major solution to all these constraints with the utilization of ICT in all our tertiary institutions in Nigeria is to make an urgent and adequate financial provision to tackle the challenges, and also to focus on the following prospects:

1) Focus on the users
2) Multimedia integration
3) Interactivity
4) Linking information
5) Documents and information delivery
6) Provision of teaching and research facilities

Conclusion

The advantages of ICT on education overweighs the disadvantages. ICT therefore can be said to have a positive effect on education; but nevertheless, the manner in which the courses are taught has a larger effect than the mere use of ICT. If the teachers do not adapt their methods in order to make the best use of ICT, then the purpose of using ICT will become defeated. The attitude of the educational establishment towards the provision and usage of ICT also seems to have a greater impact on the teaching and learning process. Also, it is obvious that lack of funds and lack of information resources have been major problems for most academic libraries in Africa for many years. In addition, automation of information resources and services pose new problems. These include the acquisition, selection, and cataloguing of online information resources, the construction of databases, providing information literacy education for library users, and the new skills required by, and continuing education for, librarians in this digital age.

Recommendations

The following recommendations are put forward

There is need for stability in the country in areas of social, political and educational system. Government must encourage the use information technologies in all sectors. The economic structure of most African countries must be tilted towards encouraging effective utilization of ICT facilities, especially in tertiary institutions. They must procure and maintain the

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