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### Information and Communication Technology as a Tool for Effective Library Services Delivery and National Development in Nigeria

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#### **Abstract**

*This study x-rays information and communication technology as a vehicle for national development. To achieve the objectives of this study, some related literature which include what information and communication technology is all about, types of information technology, characteristics of information and communication technology, the role of information and communication technology and problems of adopting information and communication technology in Nigeria libraries were x-rayed. The study concludes that for any library to move forward, it must recognize the importance of information and communication technology. To this end, the paper recommended constant provision of power supply in libraries, the use of information and communication technology should be embraced by all libraries, federal and state governments should make reasonable budget allocation for information and communication uses and maintenance and a host of others for effective information and communication technology in libraries.*

**Keywords:** *Information, Communication, Technology, Vehicle, National Development.*

#### **1.1 Introduction**

The influence of information and communication technology is so important in libraries today that everyone, even in the most remote areas has seen or felt it. Anyone who watches the television, listens to radio stations or reads newspapers will surely experience the great impact of information and communication technology. The impact is felt in almost all aspect of human behaviour. Information and communication technology has introduced what were unknown but now very popular and useful inventions such as the Internet, VCDs, DVDs, digital TVs, digital cameras, wireless phones, computers, word processors, etc.

There is no doubt that information and

communication technology, has taken the centre stage in all library operations e.g. selection, acquisition, organization, storage and dissemination. It is quite clear now that no meaningful development can take place without the use of these advancements in technology. Information and communication technologies affect us both as individuals and as a society or nation. It has radically changed our environments and life styles and indeed, our general well being.

The term information and communication technology has been variously defined by experts. Ige (2005) views information and communication technology as the modern ways of handling information by electronic means, which involves access,

storage, processing, transportation or transfer and delivery of information activities. Ofojebe (2006) defined information communication technology as a generic term referring to technologies that are used for collecting, storing, editing, and passing on information in various forms. Information and communication technology is an advance form of science and technology. It is an applied technology of science and technology for effective and efficient generation, storage, organization, protection and dissemination of information in libraries.

## 2.1 Review of Related Literature

### 2.2 Types of Information Communication Technology

Information communication technology (ICT) has been categorized into five types by Ikelegbe (2006) and these include the following:

1. **Communication Technologies:** these are technologies that tie together and communicate information between the various kinds of technologies. Examples include fax (facsimile) machine, land and cellular telephones, computer network, telecommunication networks, television, radio, videos, and computers. A network is a group of devices that is linked together. While the Local Area Network (LAN) covers floors within a building or even a campus in case of the school environment, the Wide Area Network (WAN) covers a large geographical area, and use telephone lines, micro waves and satellite communication network.
2. **Display Technology:** These are essentially output devices. They make processed data available to human for use, either through sight or sound. Examples includes display screen, printers, photocopying machine, audio output

devices such as loudspeakers, etc.

3. **Sensing Technologies:** These are devices that help to gather information from the environment and translate that information into a form that can be understood by computer. Examples are data collection devices such as scanners, computer keyboards, computer mouse or track balls, electronic pens, touch screens, etc.
4. **Storage Technologies:** They help to store large quantities of information in a form that can be easily accessed. This is made up of secondary memory of the computer known as the secondary storage devices such as magnetic tape, magnetic disc, hard disc, optical disc (CD-ROM, Read Only Memory (ROM) Video Compact Disc (VCD), etc.
5. **Analyzing Technologies:** The computer hardware and software come within this category. The computer accepts information from sensing and communicating devices and then stores or processes the information.

### 2.3 Characteristics of Information and Communication Technology

Information technology is by Anamakiri (2008) as a way of getting knowledge and facts through use of components that process inputs and produces output for individuals and researchers. Ohonba (2006) opined that information and communication technology is an umbrella term for acquiring, processing, storing and dissemination of information either in textural, vocal, numerical, pictorial, graphical, etc, form using computer and telecommunication. It is therefore clear that information communication technology is a

worthwhile product, which is found in form of hardware and software specifically geared towards bringing to knowledge whatever has been produced. Such other products can be in form of knowledge or tangible products. Other specific characteristics of Information and Communication Technology include:

- **Economies of scale** – After a large frontend investment, the cost of usage per increased resources is apt to be low. Moreover, access to very large amount of information can be obtained at low increment cost.
- **Accuracy** – Since accuracy is a watchword in library operations, the introduction of computers in libraries ensure the reduction of probable errors in operations.
- **Speed** – The speed at which transactions are made and results generated in a computerized system is automatic.
- **Mass customization** – Another major characteristic of information communication technology in libraries, is its offer of customization. By this, different applications are perfectly accommodated irrespective of each other's goal, process style, process resources, individuals' peace and operational times, etc. with a well improved convenience to all concerned.
- **Provides for practicability** – It is pertinent to note that the best way to learn technology actually lie in the actives, problem solving and simulation of real-life projects, and this is where ICT excel in libraries.

## 2.4 The role of Information and Communication Technology in National Development

It is no longer in doubt that positive effects of information and communication technology have continually been noted in business, production, education, politics, governance, culture and other aspect of human life. Library as a research institution cannot be left out. This view is corroborated by Agboola (2004) and Ayo (2006) that the growing rate of information and communication technology particularly the internet has influenced at an exponential rate on line interaction and communication among the generality of the populace.

Highlighting the impact of information technology in recent years, Rao, Melts and Mong (2003) observed that the 1990s witness the proliferation and hyper growth of internet and internet technologies which together are creating a global and cost-effective platform to communication and conduct commerce.

**Personal needs** – Information and communication technology helps pass and receive information regularly. Since no man is an island, there is always the need to reach out to others for one reason or another. Information and communication technology helps one to have contact with family and friends far or near. Infact, distance no longer matters, as the world has now become a “global village” (Agkporowho, 2003).

**Office or Industry** – One of the main reasons for the existence of any library is to disseminate information. Personnel must understand the use of information and communication technology in communication. Individuals are essentially concerned with time, money and procedures. Communication is one of the most important factors governing those variables because it prompts human behaviour.

**Education** – Computer and education are combined in a wide variety ways. Lecturers and students alike now access an array of educational treasures that were not previously accessible to them (Idolgho, 2006).

### **3.1 Application of Information and Communication Technology in Library Operations**

The advent of information and communication Technology (ICT) has brought about the creation of useful learning resources in libraries. There is also a convergence of roles of librarians within the library. Librarians are no longer compartmentalized into limited roles of cataloguing, serial, reference, instruction and circulation etc. there is convergence of roles for the librarians in the modern electronic library era. The librarians need to have an all-round understanding of the entire electronic and scholarly communication cycle in order to serve patrons well. The roles of librarians have been redefined by the new development in information access and delivery. The advancement in ICTs will continue to sustain the vitality of librarians and librarians in the electronic era.

Stove (1999) advised that all the technology putting pressure on librarians work routine should be faced, offering practical advice and appropriate training in order to make the changes in librarians work life easier and more understandable ICTs was seen by majority of librarians as opportunity and gladly embraced the technologies and services. Literature showed that something was changing in the library world and in librarians' professional life with the advent of the new technologies and the internet. There was real revolution and great opportunity for the profession. Librarians need to be proactive and not passive in delivering new services connected to ICTs no matter their years of working experience.

In the same vein, Jones (1997) stated that the roles for librarians will be futile if they resist the onslaught of the information content and new technologies, stressing that the constant organizing, classifying and evaluating role is still most important in the developing of ICT environment, user-centred services in the library, need human touch of prepared professional librarians. Sturges (2001) declared that librarians remain in demand and as such they must change and modernize their practice and attitudes as information scientist to meet the information age.

### **3.2 Problems of Adopting Information Technologies in Nigerian Libraries**

The fast adopted and use of Information and Communication Technology (ICT) has resulted in globalization of information and knowledge resources in Nigeria libraries. Libraries are the primary hub in the network of information provision for students, researchers, lecturers, management and other users. With the new scenario of libraries in Nigeria, experiencing a period of radical change with ICTs, the libraries are facing challenges of implementation, maintenance and management of ICTs utilization in the libraries. The environment in Nigeria is changing and there is renewed recognition of the roles of libraries.

The libraries in Nigeria form significant part of the nation's transformation and development in providing quality education. Libraries are supposed to be made best information providers in the nation. The question now is, how far are ICT facilities available and problems of utilization by librarians and libraries in Nigeria

Problems and challenges militating against the use of ICT by librarians have been highlighted by some authors in the field of library and information science. Rosenberg

(2005), Amekuede (2005), Sani and Tiamiyu(2005) have reported problems of funds, electricity supply, telecommunication, connectivity and human expertise as factors militating against the use of ICTs by librarians.

Although the problem of funding has always been an age long phenomenon in library development, the advent of ICTs has help to break physical territorial boundaries and time to information accessibility. This has facilitated the utilization of information as a strategic tool and commodity for development all over the world. Librarians have to advocate for adequate financial investment in ICT based libraries by the stakeholders and government. Islam and Islam (2007) in their study of ICT in Bangladesh libraries both noted administrative barriers as problem militating against librarians using ICTs. The author explained that some library administrators and policy makers are not fully aware of the importance of ICT and as such have failed to make its importance clear to their librarians. Lack of knowledge of technological development creates problems to the installation or development of ICTs facilities in libraries. There is lack of a comprehensive collection development policy for e-resources. Omekwu (2005) noted that librarians in developing countries and in Nigerian in particular must address key issues of ICT if they would contribute too managing information and related technology in this knowledge age

A lot of factors are inhibiting the growth of information communication technology in Nigerian libraries. Such factors are:

1. Inadequate awareness about information technology and inadequate technical knowledge in effective use of information technology.
2. Negative attitude of government through inadequate funding at libraries.

3. Inadequate power supply. Inadequate and irregular power supply by the sole supplier of electricity in Nigerian libraries. That means that any library that wishes to use computerized system has to source for an alternative means of electric power supply.
4. Cost. High cost of buying computer, stationeries and maintenance have all constituted problems.
5. Insecurity of sensitive information transformation transmitted data and message from one point to another.
6. Internet frauds and the related cyber crimes may discourage full adoption of information communication technology concept by libraries and library users.
7. Unreliable telecommunication faculties because of the poor telecommunication network in Nigeria transactions information technology is greatly limited compared to what exist in other developed countries.

### **Conclusion**

The objective of this study is to examine information and communication technology as a vehicle for library development. The study notes the concept of information communication technology, types of information and communication technology in libraries, characteristics of information and communication technology in libraries. Information and communication technology is imperative for any nation to move forward and foster development in any country.

### **Recommendations**

The study, however, recommended the following strategies for effective information and communication technology in every library.

1. Government should as a matter of urgency provide constant power supply for effective operations of information communication technology in Nigerian libraries.
2. The use of information and communication technology should be embraced by libraries in universities, polytechnics and colleges of education in teaching, learning and administration.
3. All stake holders should extensively pursue computerization of libraries establish in all sectors.
4. Government should make policies that will mandate all library sectors to implement the ICT provisions.
5. Federal and state governments should make more reasonable budget allocation for information and communication technology uses and maintenance in libraries.
6. Every government in the federation should embark on massive enlightenment campaigns on the uses and benefits of information and communication technology generally.
7. All intended library users should be made to undergo proper training and re-training programmes on how to effectively use information and communication technology tools.
8. Educational institutions should review syllabus and place more emphasis on information and communication technology training.

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