

# EMERGING TRENDS IN THE USAGE OF DIGITAL LIBRARY IN TERTIARY INSTITUTIONS IN NIGERIA: PROSPECTS AND CHALLENGES

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## **Abstract**

*This paper focuses on the trends in the usage of digital library in tertiary institution in Nigeria. It examines the concept of digital library and its characteristics. The trends in the use of digital library/resources were discussed under library automated catalogue, Database and Computer Disk Read Only Memory (CD-ROM) E-books and e-journals and Networking or Resource Sharing. Some of the challenges in using digital library were discussed like building digital collection, copyright, maintenance and preservation, large mass irrelevant information, inadequate search skills, high cost of access and so on. Recommendations were made that librarians should be trained and retrained on digital library education, Library and Information science department in higher institutions should also run courses on digital library to meet the present day academic research acquisition.*

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## **Introduction**

Library is regarded as the heart of the intellectual system of an institution. It is the centre of knowledge in an educational environment. Thus, it can also be referred to as the “life wire” or “heart” of tertiary institution. The function of a library is to carry out and achieve the objectives and aims of setting up of an institution. With the advent of Information and Communication Technology (ICT) many libraries have witnessed significant changes in their operations and services. This has defined new roles for librarians in Nigeria. The technological changes are now bombarding the profession from every nook and cranny. The librarians have no choice rather than to move with the technological trends. Some libraries adopted digital technologies early, some are still on it while some are yet to commence. Despite this, some libraries are still faced with the problem of whether to do away with the traditional methods or combine the two together (manual and digital).

The digital library concept can be traced back to the famous papers of Scientists like Vannevar Bush and J.C.R. Licklider while identifying and pursuing the goal of innovative technologies and approaches toward knowledge sharing as fundamental instruments for progress. Bush introduced a device in which an individual stored all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. He also identified improved microfilm and support for knowledge discovery. Licklider realized that computers were getting to be powerful enough to support the type of automated library system that Bush had described and in 1965, wrote his book about how a computer could provide an automated library with simultaneous remote use by many different people through access to a common database. In the light of this, Licklider is also considered a pioneer of internet and its book established the connection between internet in the early 1990s when research and development

activity on digital libraries started. Digital library began fully in 1991, the year when the National Science Foundation (NSF) in the US sponsored a series of workshops on how to make digital libraries a reality and not just a dream. At the same time, digital libraries are an outcome of the revolution in computing telecommunication and information systems that began in 1965 (Calhoun, 2014).

The need for digital library in Nigeria started in October 2001 during the 31<sup>st</sup> General Conference of the United Nations Educational, Scientific and Cultural Organization agreed to re-focus its special Plan Action Programme for Nigeria towards establishing a digital library otherwise known as virtual library for higher institutions following a request made by the then President of Nigeria (President Olusegun Obasanjo). The idea was that given the low capacity of the higher institutions to stock their libraries with relevant books and literatures, it was imperative to exploit information and communication technologies (ICT).

Some libraries are now digitalized, some partially while some are yet to begin. Library must be positioned in such a way that its resources are readily available and accessible electronically. The implication for library is that it must be digitalized. While electronic and digital libraries are synonymous, virtual libraries on the other hand, consist of both digital and electronic libraries existing virtually. Digital libraries can exist without a virtual library but virtual libraries cannot exist without digital libraries. A virtual library provides remote access to digital collections such as electronic documents, digitalized pictures, sound and video.

Universally, digital libraries can be described as libraries in which all information resources are available in computer process through which

acquisition, storage, preservation, retrieval and dissemination of resources are carried out using digital technologies. Mutula and Ojedokun (2008) opine that it is a library that contains no conventional print information resources, but electronic books, journals and newspapers. They are of the opinion that it can occupy a physical space, where users can have access to electronic resources.

### **Concept of Digital Library**

What came to be called “a digital library” during the first decade had a number of names, electronic library, virtual library and library without walls. Various definitions have been given by various authors. Borgman (2000) notes that various definitions arise because research and practice in digital libraries are being conducted concurrently and by individuals and teams from different fields.

Calhoun (2014), in Lyman (1996), describes digital library as a managed collection of information, with associated services where the information is stored in digital formats and accessible over a network. Digital library in this context is synonymous with virtual library and electronic library. In view of this, suffice to describe what digital library is. Trivedi (2010) defines digital library as a library in which collection resources are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers. Aman and Norliyanan (2002) describe an electronic library as digital library or digital repository focused on collection of digital objects that can include text, visual material, audio material, video material, stored as electronic media formats (as opposed to print, microform, or other media) along with means for organizing, storing and retrieving the files and media contained in the library collection.

In a nutshell, digital library can be described as a library that contains no

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conventional printed intellectual materials like textbooks, journals, magazines and so on but electronic textbooks, journals, magazines, newspaper and so on.

#### **Features of Digital Libraries**

Marchionini (1999) asserts that among the basic features of digital libraries are electronic digital formats, persistent, fair use, guidance and referral, networked i.e. sharing of information, organization apparent. Cleveland (1998) also identified other characteristics such as digital materials that exist outside the physical and administrative bounds of any one digital library, encompasses both electronic and paper materials, include all the processes and services that are the backbone and nervous system of libraries, provides a coherent of all of the information contained within a library, no matter its form or format, serves particular communities that may be widely dispersed throughout the network, requires skills of librarians and computer scientists to be viable. Collier (2016) describes the characteristics of the digital library independently of the library environment, academic, national, public or commercial: Access to the digital library is not bounded in space or time i.e. it can be accessed from anywhere at any time, content in electronic increases while printed form decreases, characterized by textual, image and sound form, usage of electronic resources increase while usage of printed materials decrease, expenditure of information will be by subscription and licensing rather than ownership, electronic resources expenditure will increase while expenditure on printed materials will decrease, more equipment and infrastructure, usage of building will transform from stockholding to places for study, animation and citizenship, job training and retraining and recruitment will be re-profiled. However, digital library to

the researcher, should be able to manage resources using computer system, it should have ability to link users with information seeking from online and it should have ability to transfer stored, organized information to users through electronic channels.

#### **Trends in the Usage of Digital Resources**

With digital library, individuals' expectations for access to myriad of information have increased dramatically. Users do not need to travel to any library to locate or retrieve needed information, it can be accessed anywhere and at any time from any device that is connected to the internet with digital libraries, the following are possible: Access to library holdings worldwide through automated catalogue:

**Automated library catalogue** is the process by which libraries convert traditional card catalogue as computerize digital catalogue to a standardized format, i.e MARC 21 format (Ashikyzzaman, 2015). An automated catalogue contains same bibliographic information of a traditional card catalogue, but as a computerized digital format.

Bibliographic information of intellectual materials is stored as electronic format on a database on library server computer and shares this with other computers in the library. Users can easily search and retrieve bibliographic details of any information materials. With automated catalogue, librarians can create vast number of cataloguing entry within a minimum time, it has a high speed capacity to produce catalogue entry through computer, accurate and efficiency, orderly sorting i.e. dictionary base, author, titles etc order, accelerate search facility on the part of the users, saves time, staff and money, and it serves the purpose of union catalogue etcetra.

**Database and Compact Disc Read Only Memory (CD-ROM)** digital library has made the use of databases and CD-ROM possible. Database is a collection of information that is organised so that it can easily be accessed, managed, and updated (Rouse, 2006) it could also be described as electronic database - any collection of data, or information that is specially organized for rapid search and retrieval by a computer. Databases are structured to facilitate the storage, retrieval, modification, and deletion of data in conjunction with various data processing operations. A database management system therefore extracts information from the database in response to queries.

Several different types of database management systems have been developed. They are flat, hierarchical, network, relational and object-oriented. However, there are commercial databases and reference databases. Reference database contain bibliographies or indexes that serve as guide to the location of information in books, periodicals, and other published literature. Examples of these are subject databases like Political Science, Mathematics, English Language, Law, Medicine etcetra.

Compact Disc Read Only Memory (CD-ROM) was first, introduced at the American Library Association (ALA) midwinter meeting in January 1985. The first commercially available CD-ROM product, "The Library Corporation's Biblio File" was designed and develop for the library. Biblio file contain the complete Library of Congress (LC) MARC Machine Readable Catalogue database of more than 1,500,000 records. This database includes LC holdings both in English and in foreign languages of books, serials, Government publications, maps, films and music scores (Chaudhary, 2012).

With digital library CD-ROM systems resolve many of the retrieval issues of preservation, access, storage and security of libraries and information centres. Libraries with digital library must make it possible for people to use and become familiar with this media since the systems are expensive and beyond the budget of individuals. CD-ROM is physically portable and can be even mailed, no telecommunication facilities essential. The physical specification are standardized (ISO 9660 International Standards), less storage is needed for print product because of its high storage capacity, cost effective, helps in sharing resources through Local Area Networking etcetra.

#### **E-books and E-journals**

E-book has been described by Merriam-Webster.com as a book composed in or converted to digital format for display on a computer screen or handheld devices. Also, as a book that is published in electronic form, for example on the internet or on a disk, and not printed on paper (Cambridge.org). It is used when referring to the methodology of reading just about any mid-to-long-length electronic document that is viewable on a screen, including research papers, short stories and even magazines.

E-book is a book in digital format that can be read online on a wide variety of devices anywhere, anytime. Sasson (2016) refers to it as a book in electronic format. It is downloaded to a computer, PC, mac, laptop, tablet, smartphone or any other kind of reading device, and is read on the screen, it can have numbered pages, table of contents, pictures and graphics, exactly like a printed book.

With digital library, you can purchase and download e-books through the internet. Users don't need to connect to the

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internet again after purchase and downloading. It can be read offline or printed with your personal printer.

E-books are downloaded instantaneously, it doesn't require manufacturing papers to print, information can be gotten immediately, they take up less space, portables, and it can be read anywhere and can be carried to anywhere, it can show links for more information and one can search for more information by re-directing. It could be interactive and contain audio, video and animations which can enhance the message that the author is passing across, etcetra.

In the same manner, e-journal is a periodical publication which is published in electronic format, usually on the internet. e-journals possess similar benefits like e-books.

#### **Networking / Resource Sharing/Consortium Building**

Networking of libraries and information centres using computer and communication facilities became a reality in 1970s but networks of all types that is local, national, regional and global are operating in the world today (Chaudhary, 2012). The development of computerized library networks did not gather momentum until recently a decade ago, when libraries began to computerize their works.

The term 'Network' is used in the present times in place of 'resource sharing' or 'cooperative systems'. Two important reasons are responsible for this: potential improvement of library and information operations by interconnecting individual library systems with the more recently developed facilities for data and information transfer; and the significant role played by the computers, telecommunications and new reprographic techniques (Chaudhary, 2012). With networking, libraries can have access to the resources of many other

libraries in addition to their own. It is a way of achieving maximum results with minimum input.

With digital library, librarians in Nigeria now see a more compelling need for consortium building. The fact that libraries cannot do it alone and because we are in the era of information sharing made more readily possible with the use of digital library. Example of such consortium is the Nigeria University Libraries Consortium (NULIB) that was set up by the committee of University librarians of Nigerian Universities (CULNUS) with the support of EIFL.net in 2002. EIFL.net is an international not-for profit organization based in Europe with a global network of partners.

#### **Trends in usage of Electronics Resources**

Olasore, and Adekunmisi, (2015) found that electronic information resources were used majorly for research and lecture purposes, it was also revealed that electronics resources are less expensive, more informative, more useful and time saving. Adeniran (2013) also conducted another research on the usage of electronics resources. It was revealed that the use of electronics resources has tremendous impact on the academic performances of the undergraduate students of Redeemer's University. The study of Akppojotor (2016) on the awareness and usage of electronic information resources among postgraduate students in southern Nigeria revealed that postgraduate LIS students were aware and highly used electronic information resources and that they were skilled in their usage as well.

#### **Challenges confronting usage of Library Resources**

Many issues associated with digital library have been identified by Cleveland (1998). They are:

Building digital collections: In order

to build collections, intellectual materials e.g books, journals, photographs, sound recordings etc must be converted or digitized. Before this could be done, it takes a lot of time and requires more automated support for capturing data. This poses a lot of problems in building digital collection.

Copyright issue: Not everything on the digital library can be copied, but there is provision for fair use. Though digital library provides access to a wide variety of materials but this is in conflict with the duties of libraries and archives entrusted with care and management of materials. Some materials have privacy rights. One has to take permission before using such in terms of migration and back up of materials. Researchers also have to pay before using some materials on the internet

Creation and maintenance cost: Creation and maintenance of digital library is very expensive. High costs are incurred for production, provision of access, preservation and even for architecture in terms of migration and back up of materials. Researchers also are to pay before using some materials on the internet.

Preservation: This has to do with how best to preserve digital content, Files can be moved from one physical storage to another, but what happens when the formats (e.g Adobe Acrobat PDF) containing the information become obsolete? One solution to this is to do data migration, that is, translate data from one format to another, preserving the ability of users to retrieve and display the information content. Preservation of digital information will therefore mean constantly coming up with new technological solutions.

Other challenges are large mass irrelevant information, delay in downloading due to bad network, inadequate or lack of search skills, high cost of access, inaccessibility of some electronic resources, erratic power supply, inadequate fund, inadequate professionals with requisite ICT skills and so on.

### **Conclusion**

Digital library has become imperative in the world today. This is because of the globalization of the world and system in all sphere of life. It has become a significant tool for retrieving and disseminating information. With so many advantages associated with digital library, a library that is still lagging behind is said not to be growing. Therefore, libraries in Nigeria that are yet to embrace this should make it top priority in order to promote scientific research and development, facilitate distant learning environment and bring about national development.

### **Recommendations**

Librarians should be trained and retrained for digital education.

Librarians in training should be given education on digitization.

Institutions running library and information studies should be encouraged to offer certificate, diploma and degree courses in digital library education.

Libraries must be aggressively equipped electronically to meet the yearnings of today's scholars in searching for new development.

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