An Overview of Digitization Project in University Libraries in Nigeria: A Perspective from the Literature

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Abstract

The paper attempt to explore on digitization project embarked upon by the university libraries in Nigeria. The purpose of the project among others is to make the library services efficient and effective, and above all making locally produced empirical studies visible and accessible to all who desires. In order to attain the objectives of this paper, concept and history of digitization in university libraries is discussed. Problems associated with project have equally been identified by the paper. In conclusion, recommendations as measures that could assist in minimizing the identified problems as well as improving the project were offered for future progress and development.

Keywords: - Digitization; Digitization project, university libraries; Nigeria

1. Introduction

Computer revolution world over resulted to the desire for libraries to combine Information and communication technologies (ICTs) which are considered by many commentators and scholars as library infrastructures, that support and facilitate the selection, ordering, acquisition, processing, organizing and dissemination of bulk resources available in library to users in repackage, more organize, speedy and efficient manner there by making teaching, learning and research supportive by faculty members, students and other researchers. This assertion has since been supported by Raseroka (1999) who opined that "The convergence of information communication technologies (ICTs) as basis for providing information in the educational arena and society in general, has created a need for universities and their libraries to access and exploit ICT to support their co-businesses… University libraries must craft a role in this challenging arena."

The development of ICT and its subsequent integration in to library and information field have a greater impact on library and the community they serve (Mohammed 2005). One among the many benefit university libraries can gain from the ICT is building digital library to enhance services delivery, Adamowicz, Louviere and Swait (1998) had happily reported that, the level of interest regarding digital libraries has grown steadily; as a result, a number of institutions shown keen interest including among others archives and museums. In his own passion, Chisenga, (2004) further stresses that the accelerated adoption and use of Information and Communication Technology (ICT) has resulted in the globalization of information and knowledge resources. Bibliographic databases, full-text documents, and digital library collections are always available to users. It is perhaps because of these reasons; digital libraries are increasingly being implemented by several agencies, both in government and in the private sectors. (Including universities libraries). The impetus is attributed to, among other factors, the fact that digital libraries might make research easier for scholars, and may also ease budgetary constraints associated with acquisitions of print resources. Moreover digital library might solve preservation problems, or help libraries extend collections in to new media. In addition, it is believed that digital libraries will help society of users to make information more available, raise its quality and increase its diversity. (Mutula and Ojedokun: 2008 P.101). Equally, Mohamed (2006) observed that "recent years have significantly raised the speed of retrieval, storage capacity and the accessibility of much more complex, accurate and diverse Information sources. This has given a global dimension to local Information…"

This paper attempts to discuss the concept and history of digitization project being implementing in university libraries in Nigerian. It also discusses the concept as well as the history of the project. Moreover, problems associated with the project were also highlighted and measures that could assist in improving the project in institutions in questions were further recommended for improvement.

2. Conceptual Definitions: Digitization and Digital Library

In an opening remarks paper on a seminar with the theme: "Digitization of Library Materials Process and Tools" Ikpaahindi (2007), categorically made to observed that:

> Libraries are duly bound to acquire, preserve and disseminate
> information for whatever source, hence there is the need for such
> sources of information to be kept, preserved and make available in a
> more convenient and accessible format, this call for digitization
> which is the process of converting analog (print, caving, artifacts
> etc) material to digital/electronic format.

Quite a number scholars and authorities have defined the concept differently, for instance Levy (1996), writes that digital documents will be characterized by their materiality, boundaries, permanence, and variability. He further asserts that these properties will be socially or politically determined by the interaction of the documents and people. What will make up a digital library will be the combination of a collection of documents and individuals' work. He further noted that there is a complex set of relationships between documents, individual people, and the technology itself. How this complex relationship is developed and maintained will be a key factor in any of the distinct document's use. Ndor (2007) in his own passion sees digitization as turning information into binary digits. It refers to the process of translating a piece of information such as a book, sound recording, picture or video in to bits. Bits are the fundamental units of information in a computer; it is therefore a crucial transitional step from traditional to electronic library. Abby-Smith (1999) in Vakkari and telja (2006) considered digitization as one of the most important qualities of information in digital form, that is to say by its very nature, it is not fixed in the way texts printed on paper are. Digital texts are neither final nor finite and fixed neither in essence nor in form except when a hard copy is printed out then can they be change easily without trace of erasures or emendations. Flexibility is one of the chief assets of digital information and is precisely what we likely about text poured in to word processing programme. Furthermore, it is easy to edit, reformat and to commit to print in a variety of ways without the effort required to produce hard copy from the typewriter.

Digitization is further sees as the process of translating a piece of information such as a sound recording, picture or video in to bits. This digitization process can be accomplished through a variety of existing technology, and may comprise any or all of the following steps:

1. Creation: this means that the making of digital copies of analog objects or modification of original digital objects for purposes of dissemination.

1. Dissemination: this refers to the provision of mechanism by which the target population of users can gain access to the digital materials in the collection and

2. Organisation: this is the provision of search tools and finding aids for users to access the collection of digitised or conventional objects effectively. (**http://www.collections.canada.ca/8/3/r3-408**)

In more precise, Akitunde (2007) differentiates between the two concepts 'library' and 'digitization' in the following way "in many cases 'digitization' is substituted for automation in libraries". He further maintains that lack of clarification and undue assumptions has complicated the technologies, while it is normal for library especially in the developing world to aspire to be relevant in today's technologically driving world, it is significant that librarians recognize that digitalization is one of the processes of automation," he asserts.

Other concepts defined for clarity include electronic library, which tenant in Gbaje (1999) posit that:

> An electronic library consists of electronic materials and services
> such as videotapes and CD-ROM. While a digital library consist of
> digital services and materials that are stored, processed and
> transferred via digital (binary) devices and networks: the virtual
> libraries on the other hand consist of both digital and electronic
> libraries existing virtually.

Gbaje further affirms that digital libraries can exist without a virtual library. However; virtual libraries cannot exist without digital libraries.

To summarize from the aforementioned definitions, digitization is the process through which library materials are converted from analog to digital form, so that materials can be accessed at any period in time and even printed if desired. Equally, one single book or document can be used by different users at the same time so that the problem of waiting for one user to finish and for another user to use is no longer there as far as digitization as concern.

3. Digital library Resources: For what benefits

For every meaningful project there must be designated objectives of initiating it, so also digitization. The following are some of the reasons why libraries could digitize it resources:

1. Libraries opt for digitization to enable her preserve it valuable materials from lost or damage especially due to deterioration often associated with paper collection. It is in support of this; Ochai (2007) emphasizes that a library embarks on digitization project so that "it helps to preserve rare and fragile

materials without denying access to those who wish to study them".

2. The ever decreasing trend in the budgetary allocation to libraries as well as physical expansion which could not be possible with limited fund allocated to libraries. In essence, digitization could help reduce the space problem which majority of Nigerian university libraries are experiencing. in support of this, Ochai (2007) further maintained that "electronic copies occupies much less shelf space then hard copies of materials"

3. Digitization project of libraries particularly university could help facilitate collaboration in form of resources sharing among libraries since it is believed that no library is self-sufficient capable of providing all the needed materials desired by its clienteles (Mohammed 2005). Although it has been argued by many scholars that digitization is capital-intensive project but yet it has brought about collaboration among many libraries. Akintunde (2007) states that "it has brought about collaboration and access to otherwise inaccessible resources through a costly project". To further site more examples in this regards, Gwinn (2008) reports that "ten major natural history museum libraries, botanical libraries, and research institutions in the United Kingdom and the United States joined in 2005 to develop a strategy and operational plan to digitize the published literature of biodiversity held in their respective collections and to make that literature available for open access and use as a part of a global "biodiversity commons"

4. In his perspective, Archimedia (2005) further stated other benefits to include:

    *   Reduction or elimination of volume of printed materials as well as operational space for its storage
    *   Reduction of maintenance cost for the printed materials.
    *   Faster searching and access to the required information through a terminal.
    *   Access possibility to the same information for more than one user simultaneously through a terminal.

    Other reasons advanced for libraries to commit itself to digitization project include:

    *   Increases access: this is the most obvious and primary reason, where there is thought to be a high demand from users and the library or archive has the desire to improve access to a specific collection.
    *   Improves services to an expanding users' group by providing an enhance access to the institution's resources with respect to education, (long life learning).
    *   Reduce the handling and use of fragile or heavily used original materials and create a "back up" copy for an endangered materials such as brittle books or documents;

    *   Give the institution opportunity for the development of its technical infrastructures and staff skill capacity

Digital libraries do enable the seamless integration of the scholarly electronic information, help in creating and maintaining local digital content, and strengthen the mechanisms and the capacity of the library's information systems and services. They increase the portability, efficiency of access, flexibility, availability and preservation of digital objects (Sreekumar: 2006)

The accessibility and availability of documents has been increased remarkably by the digitization of information. The growing supply of literature in electronic format in digital libraries facilitates effective searching for the material needed by scholars. A major advantage of digital libraries for academic staff is the convenience of accessing articles in any time from their desktop computers (Tenopir 2003) in Vakkari and Talja (2006). This development has increased rapidly scholars' exposure to a broader literature than would otherwise be available.

To summarize from the foregoing, Lakos (2004) sum it up that:

> This new reality translates in to the need for making library web environments effective and useful. This trend is especially challenging for libraries, who were continue to see themselves as the traditional keepers of knowledge, which until very recently was housed in many millions of books and journals that are rapidly becoming digitized.

4. Digitization in Universities: state of the Art

Historically, digital libraries initially evolved to support preservation of cultural resources of human civilizations, especially materials that are in the forms of rear documents and archival records like manuscript, antiquarian books, paintings, photographs, historical records,etc these document not only having limited access to the scholars and general public but are also not in the usable condition. If these documents are physically and

regularly accessed there is high probability of permanent damage of such rare items; also there is security and other reasons for restricted access among others (Usman: 2008 p69).

 The term digital libraries were first made popular by the *NSF/DARR/NASA* digital library initiative in *1994.* The older names used electronic library or virtual library. The content of the digital library are solely digitized material that may be on any subject. The content is usually unique. It may be stored locally or accessed remotely via computer networks or rather through the Internet. (Wikipedia: 2009).

The Nigerian Universities Commission (NUC) had made a concerted effort by establishing virtual library project, which is clearly stated that "the aim of the project is to digitize materials and bringing electronic information to Nigerian universities and its closer community". (Ochai: 2007)

The National Virtual (Digital) Library Project has its mission thus: To provide, in an equitable and cost effective manner, enhanced access to national and international library and information resources and for sharing locally-available resources with libraries all over the world using digital technology." (UNESCO: 2002)

The major objectives of the Virtual Library Project are:

• To improve the quality of teaching and research in institutions of higher learning in Nigeria through the provision of current books, journals and other library resources;

• To enhance access to academic libraries serving the education community in Nigeria to global library and information resources;

• To enhance scholarship, research, and lifelong learning through the establishment of permanent access to shared digital archival collections;

• To provide guidance for academic libraries on applying appropriate technologies used in the production of digital library resources; and

• To advance the use and usability of a globally distributed network of library resources.

This project was designed to be carried out in five phases. The delivery of the Virtual Library was earmarked to be through the Internet, CD-ROM, and Wide Area Network (WAN). This laudable project has remained on paper for several years. (UNESCO: 2002).

Literatures so far consulted as well as researchers personal experiences have revealed that none of the Nigerian university libraries has digitized all of its holdings. However, some remarkable efforts were made by Nigerian university libraries in digitizing one aspect of its collection or the other. This is partly done to ensure the safety of the materials from lost or damage and above all increase in the range of service delivery to its clienteles who mostly comprises of faculty members, students and non-teaching staff.

Some of these giant universities in the forefront include University of Jos library. Ndor (2007) reported that "university of Jos library is at its best not behind in this new trend." The library embarked on the digitization project which emphasizes on theses and Dissertation authored by students of the university under the project titled Database African Theses Dissertations (DATAD). One good advantage that can be drive from the project including dissemination of African scholarly publications particularly locally research based, which can be viewed, and use by fellow scholars within and around the globe. This project was initiated and funded by the Association of African Universities (AAU) in conjunction with Carnegie Foundation (Ndor 2007).

In related development, Ndor (2007) further reported that "The University of Jos Library during the year 1993 has been making concerted efforts to make record and text available in digitized form to its clients". According to her the major achievement so far recorded in this direction include among others:
   1.   Catalogue of documents and special collections
   2.   Abstracts of theses and dissertations
3.   The general studies use of library
4.   University of Jos library strategic planning
   5.   Manual of library unit
   6.   Guide to know your library booklet and
   7.   University of Jos library Website.

Others university library doing similar project include Obafemi Awolowo University library popularly named 'Hezekiah Oluwasanmi' Library (HOL). Jagboros (2007) reported that, OAU has two ongoing digitization projects thus:
   1.   Digitization of Newspaper collection and
2.   Digitization of abstract of Master and Doctoral these and Dissertations authored by the students of the university.

According, the project of newspaper was commenced in the year 2003 with substantive grant from the Carnegie foundation of New York to carry out the project, among its eight campuses wide projects being sponsored for the conversion of some of its manually produced catalogue in to digital format and the digitization of its newspaper collection. Jagboros (2007) further reported that "although the initial focus of the project was on newspaper, a number of important text books have equally been digitized". (Jagboros: 2007). Substantive volumes of newspapers have been digitized. For example the university has been stocking newspapers published in the country since 1962 exactly the university was first established.

From the foregoing, it has clearly shown that two of the Nigerian university libraries have benefited immensely from the grants been extended by the two giant agencies (Carnegie corporation of New York and Association of African Universities (AAU).

The digitization effort of the Nnamdi Azikiwe library has clearly reported in their website which gave a brief but details on the project, who clearly reported that, the digitalization of the University's academic heritage is a collaborative effort of the University Library and the Management and Information System (MIS) department of the University. It is estimated that at the end of the project a total of 500,000 thousand files of theses would have been digitalized and uploaded on the university's website. Training commenced in earnest in April in the year (2008). Data entry operators, some youth corps members, and some library personnel were trained for the project. Theses from the University Library were sorted out documented unraveled by library staff and sent to the Innovation Centre, a place designated for the digitalization project. These theses were scanned and converted to PDF files. Meta data files were obtained through book marking. The bookmark helps to open several access points to a work. These are bookmarked and the paper capture is also done to ensure that the document is searchable.

In order to monitor the digitization activities the work done so far is therefore sent to professional librarians who go through the various stages of the digitalization process for ensuring that the work has been professionally executed searchable through the metadata files and also there are no typographical errors thereafter the work is digitally signed ensuring quality assurance among others The document is afterwards uploaded and linked in such a way that it becomes visible in the Internet.

Executing most projects is always goes with problems so also digitization the university in question reported to have completed the first phase of the work at end of July, 2008 this phase met with a lot of teething problems such as slow pace of scanning, occasional systems break down and lack of technical support. The second phase of the work has since taken off and apart from theses; publications and inaugural lectures of staff have also been added to the plethora of documents for digitalization. University of Nigeria (2009) the library further reported that "as at Friday 5th December 2008 we have scanned and bookmarked about 23, 477 theses; 8,106 CV's/Publications and 3,121 proposals and seminar papers. At the moment 13, 139 files have been uploaded and 12,130 files linked" which is quite commendable and need to be encourage by the University management.

Bayero University is not left out in this direction, as part of its effort to digitize its holding, in the recent past the university management has set up a strong committee with term of reference "to compile abstract of papers published by faculty members of the university. This is to be published in a university website" (Circular:BUK/R/ORG.01/VOL.II)
All this is part of the digitization effort by the university. In similar vein Gbaje (2007) revealed that Ahmadu Bello University, Zaria (ABU) embarked on the following digitization project:
• Conversion of non-digital born documents to digital format
• Scanning of abstracts of theses and dissertation started in August 2004
• Postgraduate Students have been requested to submit both soft and hard copies of their work to facilitate digitization

5 Challenges

Although digitization project is proved to be crucial and critical that can benefit the teaming clientele of library, however some impediments seems negating this viable idea thus:
1. Financial handicaps of majority if not the entire university libraries in Nigeria. They are lacking fund to render effective and efficient traditional delivery services leaving out digitisation project which require larger sum of money to be injected. This is a serious obstacle for library to embark on digitisation project. It is in this consideration Mutual and Ajedokun (2008) further stresses that "there is worry about funding for regular refreshing a preservation of digital resources".
2. Copyrights issue surrounding the intellectual property. This entails that library books and rest of them

cannot be digitized without obtaining permission from their originators (copy righters), which is very difficult within a short possible time. UNN Library (2009) shed more light in this direction that Institutions intending to embark upon a digitalization project need to be conversant with the copyright situation for items to scan and the legal position for accessing such documents. Copyright portends that an author's right to an original work   is legally protected, in addition it gives the owner the exclusive right over own work. However, when a work is made by an employee as a part of his/her employment responsibilities the employee is then considered the copyright owner. At the UNN this singular fact that the employer owns the work of its employee has not gone down well with some academic staff. Many, having spent several amount of money to publish their books and other scholarly works are reluctant to bring out these resources to the public domain as this would bring about so much loss of money

3.   Problems of technical know-how and show-how: majority of staff in Nigerian university libraries are poorly trained in technology based services handling, majority of them are not computer literate not to talk of mounting computer based services

4.   High cost of equipment (Hardware and software). Facilities are quite undermining libraries to embark on digitisation project because of the high cost majority of library cannot afford to acquire the necessary hardware and software for the project. And where they were able to secure any to maintain them is another critical issue to consider.

5.   Incessant power failure. Where library is capable to acquire the equipment there is serious problem of lightening which is considered one of the basic requirements of digitisation project. Sufficient power supply to enable the equipment to operate and render efficient services is lacking in Nigeria

6.   Poor state of infrastructures such as telephone service is not efficient, which could not permit digitisation project to be executed effectively and efficiently.

7.   Indifferent attitudes of librarians towards ICT and other computer related services could not encourage digitisation project to effectively take up.

8.   Poor condition of service and difficulty of working conditions of most workers working in university libraries.

9.   Inadequate skills in strategic planning and in writing grant proposals for digital library project. (Mutula and Ajedokun :2008)

10. Other noticeable problems such as slow pace of scanning, occasional systems break down and lack of technical support.(UNN, library report 2009)

6. Recommendations

Based on the aforementioned problems identified, the following suggestions were offered for possible improvement among others:

1.   Authority concerned with the establishment of university should provide substantial budget to universities and their libraries to enable them embank on digitization and other ICT related project for better services delivery.

2.   Absent of Policy from the literature consulted so far had not indicates the existence of it in most libraries

3.   Copyright permission could be sought from the individual authors, publishers and corporate bodies who are their works must be digitized by the library for efficient service delivery.

4.   Government through its agencies such as Education Trust Fund (ETF) and Petroleum Technology Development Trust Fund (PTDF) should assist in this direction by coming to aid libraries to sponsor digitization project. Training of staff for the technical know-how. Although they have been making concerted efforts in various library ICTs related project, which earn them commendation effort need to be redouble.

5.   Philanthropies and other funding agencies such as Macarthur Foundation, Ford Foundation, Carnegie Corporation to mention but few should come to the aid of Nigerian University libraries by providing them with:

- Funding for digitization and other ICT projects
- Experts' advice on how to go about it
- Necessary equipment and capacity building for staff Development. Among others.

Although these agencies have been rendering such kind of assistance to Nigerian universities and their libraries for example "Carnegie Corporation funded a 3 year project to provide technical and professional development assistance in library automation for 7 University Libraries in Ghana, Nigeria, Tanzania and Uganda for

$499,000" (UNESCO 2002). But, more of such gesture needs to be extended.

11. Appropriate computer hardware and software and scanners with appropriate specifications need to be provided by the university management and Nigerian Library Association should serve as advisory body for any library wishes to embark on digitization and related activities.

12. Government should redouble its effort in ensuring that the problem of incessant power failure and other infrastructural problems such as communication facilities in the country becomes a history. In addition, Standby generator is required for the project to be executed properly and adequately

13. Library staff needs to be adequately trained for the smooth take up of the project and continuing training and retraining is inevitable.

14. Government attitudes towards funding Universities and their libraries should change to positive by providing them with sufficient budget to enable them undertake meaningful project digitization of libraries inclusive.

15. Since digitization project is capital intensive, it is therefore advisable to recommend that two (2) or more universities to enter consortium or collaboration so that they can join hand to fund digitization project for their libraries as this will go a long way in reducing the cost substantially.

16. Nigerian Library Association (NLA) should act as an advisory body for any library ready to embark on digitization by recommending the appropriate hardware and software as well as other expatriate advice.

17. University management should seek the assistance from the ALUMNI to come to aid libraries to enable them execute meaningful projects such as digitization, as this will go a long way in making libraries to render effective and efficient services for betterment.

7. Conclusion

In conclusion, therefore, Nigerian University libraries are struggling to meet up with the opportunities and challenges brought by information and communication technologies (ICTs) to enable them follow the foot step of their sisters' universities abroad, by digitizing their resources for the benefit of their users. This noble intention, action and vision are threatening by many impediments such as limited fund, infrastructures, poor state of telecommunication, incessant power failure which is prevalent in the country, Lack of network and inefficient of constant internet connectivity, prohibitive cost of buying the necessary infrastructures, lack of staff with ICT skills, to mention but few. All these problems can best be address if the recommendations offered in this paper are properly looked in to and executed.

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