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Digitization of academic library resources: A case study of Donal E. U. Ekong Library

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ABSTRACT

This study investigated the digitization of academic library resources in University of Port Harcourt. Five research objectives guided the study. The research design adopted for this study was a descriptive survey. The total population for this study was thirteen (13) library staff involved in digital library practices. As a result of the concise population, there was no sampling. The instrument for data collection was questionnaire. A total of thirteen questionnaires were distributed and distribution recorded a 100% return rate. Data were analysed using descriptive statistical tools (frequency tables and mean scores). From the analysis, the findings revealed that the need for digitization of library resources are majorly to preserving endangered collections, increasing the visibility of institutional outputs, enhance timeless access to library information resources and promote interlibrary cooperation. The result shows that the digitization of library resources in Donald E. U. Ekong library is at a very high extent and the librarians involved in the digitization of library resources are competent and possesses the necessary skills required. Digitization of library resources is challenged by several factors such as power supply, security of databases, infrastructure to contain the digitization process, staff capacity to manage the process, users' dependency in traditional library resources, etc. and that the strategies for enhancing digitization of library resources include the installation of alternative to power supply such as standby power generating set, solar power system, utility power systems, etc., installation of anti-virus, malware and hacks proof software, inclusion of digitization sections while planning for library buildings, library user education should include skills needed for use of digital libraries. The study concluded that in order to remain relevant in the present digital environment, libraries especially in developing countries should make every effort to digitize their local content for preservation and easy access.

INTRODUCTION

In the light of the recent developments in Information Communication Technologies (ICTs) and the rapid rate of information explosion, libraries and librarians have been charged with the responsibility of embracing and inculcating the use of these technologies in library services and processes. This has led to the need for the transfer of its existing print resources to formats and/or mediums readable with the use of these information and communication technologies. Digitization refers to a wide variety of steps involved in the process of conversions and making of historical and other materials globally accessible through the application of digital processes (Otubelu and Ume, 2015).

In striving for survival, libraries all over the world are fast embracing digitization processes of its resources to enhance its survival mechanism and increase its relevance in this era of gross information explosion and accessibility mediums. Mohammed (2009) noted that the development of ICT and its subsequent integration in library and information services have a greater impact on libraries and the level of its service delivery to the community. Digitization involves the transfer of tangible information materials to digital format; thus protecting the original item from damage while providing public access to materials that might otherwise be restricted as a result of location differences (Yaya and Adeeko, 2016). This definition brings into cognizance the aspect of digitization which sought to ensure the posterity of information bearing materials without necessarily restricting access and use by the general public. Furthermore, Akintunde and Anjo (2012) In Igwe and Uzuegbu (2013) pictures digitization as the process of preserving, liberalizing and internationalizing access to documents with the ultimate aim of improving their usability by converting them into digital form.

Thus, it could be agreed that digitization fulfills two of the major objectives of a library:

- Access to available information resources;

- Preservation and conservation of materials for posterity.

Despite the evidential benefits of digitized libraries and digitization processes, academic libraries in Nigeria have experienced a dearth in this facet of librarianship. The research carried out by Olatokun (2008) reveals that only a handful of academic libraries in Nigeria have embarked on partial digitization of students' projects, theses and dissertation. This has made the concept of digitization to be fantasized theoretically without a practical implementation.

STATEMENT OF PROBLEM

Previous studies reveal that few libraries in Nigeria have embarked on digitization of their collection. There is still a significant ratio in the inadequacy of current information available on the digitization efforts of Nigerian University libraries in recent times. There is, therefore, need to provide current information on digitization of academic library resources in Nigerian university libraries in recent times through a research of this nature.

Digitization of library resources has been conceived as a move for libraries to increase its relevance in this contemporary era of information communication technology (ICT) and has been observed to be numerously significant in budgetary and cost management. This is evinced by the rate of information explosion and its availability and accessible via internet irrespective of time and location.

For libraries to co-exist and maintain its relevance as a disseminator of information in this era, the need for librarians to embark on digitization of library resources becomes indispensable. Thus, with identifiable benefits evidenced in digitization of library resources in the acquisition, organization, dissemination, access, use, preservation and conservation of information resources, libraries in Nigeria seems to still be on the bench of the drive towards achieving a digitized collection. This has become a tropical issue in library and information service profession. Consequently, the need to investigate the status-quo on digitization of library resources in academic libraries in Rivers State, Nigeria using Donald E. U. Ekong Library, University of Port Harcourt as a case study has become necessary.

OBJECTIVES OF THE STUDY

In general, the purpose of the study is to examine the digitization of library resources in academic libraries in Rivers State, Nigeria using Donald E. U. Ekong library, University of Port Harcourt as a case study.

Specifically, the objectives of this study are as follows:

- i. To determine the need for digitization of library resources;
- ii. To examine the extent of digitization of library resources in academic libraries;
- iii. To ascertain the skills and competencies required for digitization of library resources;
- iv. To identify the challenges of digitization of academic library resources;
- v. To proffer measures to combat issues in digitization of library resources.

LITERATURE REVIEW

In response to the threats to libraries in this ICT era such as the internet, it has become the primary objective of every library to involve in the digitization of its resources. The term digitization has earned a lot of research interest over the years. In the words of Baker (2007), digitization refers to “convert content from a tangible, analog form into a digital electronic representation of that content”. In agreement Omotayo and Aboyade (2009), asserts that “digitization refers to all the steps involved in the process of making collections of historical and other materials available online”. They further stated that digitization is not limited to libraries but also to other categories of information dissemination centers. Digitization addresses three main needs of libraries (Tuna, Zogo and Demirelli, 2013). These needs, according to Tuna, Zogo and Demirelli, (2013) are: preserving the document, making the document more accessible and ensuring reusability of the document. Digitization is an electronic process of converging information from a print format to a digital format (Egberongbe, 2016). Igwe and Uzuegbu (2013) defined digitization as “the transformation of an object from analog to digital.” They further noted that in the course of the ICT era several new technologies have emerged and are still emerging allowing the digitization of various formats of information materials such as artifacts documents photographs sound recordings etc. Quoting Akintunde and Anjo (2012), Igwe and Uzuegbu (2013) defined digitization as the process of preserving, liberalizing and internationalizing access to documents with the ultimate aim of improving their usability by converting them into digital form. Fabumi, Paris and Fabumi (2008) in their work see digitization as “the conversion of documents and art into digital images”.

Thus, from the definitions portrayed by these authors it can be deduced that digitization is a planned and systematic process of transforming hardcopies of information resources to its electronic formats say softcopy. Planning is the brainchild of every successful project be it library related or otherwise. In planning for digitization of library resources it is pertinent to inculcate the Copyright law its provision and limitations to such process.

Igwe and Uzuegbu (2013) identified five needs behind the digitization of library resources in libraries:

1. Preservation
2. Accessibility
3. Resource sharing and services delivery
4. Prestige and visibility
5. Technological development.

Preservation: According to Reitz (2004) preservation is the prolonging of the existence of library and archival materials by maintaining them in condition suitable either in their original or in a form more durable say digitization. There is need to preserve information resources through digitization especially for materials with limited supply such as manuscripts diaries grey literatures etc. Digitization reduces manual handling by so doing limiting mutilation through external forces and prolongs the lifespan of such materials.

Accessibility: the ease with which access and use of its materials is gained regardless of location. Digitization facilitates access to information resources. Also it improves the efficiency of information search mechanism. This is

based on the fact that digitized resources will be available online; the problem of location notwithstanding. Digital documents/files can be accessed retrieved and reused by any person at a wider coverage in comparison to the manual/analog library.

Resource Sharing and Service Delivery: According to the Feather and Sturges (2003) resource sharing is “a mode of co-operation where library resources and functions are shared in common by a number of libraries”. Igwe and Uzuegbu (2013) asserts that it is an activity that results from an agreement formal or informal among libraries usually a consortium or library network to share collections data facilities personnel for the benefit of their users and to reduce the expense of collection development. Digitization holds the advantage of providing a platform for duplicity of data and library networking.

Prestige and visibility: digitization can bring about prestige respect and visibility to a collection of information resources that is unique and of global importance. This is made true as information on the internet is viral unlike that in a library with controlled access and usage.

Technological development: the availability of technological advancements in ICT calls for libraries and information centres to embrace the drives in technological development to their benefits. Thus digitization is a contributory factor in building ICT era.

Responding to the rationale for the digitization of library resources, Fabunmi, Paris and Fabunmi (2006), notes that there are three major reasons for digitization of library resources:

- i. There is a need to preserve endangered library resources,
- ii. Improvement of the efficiency of information search mechanisms, and
- iii. Digitization improves access to library resources.

To conform the various assertions by the individual authors, the guideline provided by International Federation of Library Association (IFLA) and International Council on Archives (ICA) on digitization of library resources itemized three principal reasons for digitization of library resources to include:

- i. For enhanced access;
- ii. To facilitate new forms of access and use;
- iii. For preservation.

Others include:

- To improve services to an expanding user’s group by providing enhanced access to the institution’s resources with respect to education and long life learning;
- To reduce the handling and use of fragile or heavily used original material and create a ”back up” copy for endangered material such as brittle books or documents;

- To give the institution opportunities for the development of its technical infrastructure and staff skill capacity building in ICT;
- Form a desire to develop collaborative resources, sharing partnerships with other institutions to create virtual collections and increase worldwide access;
- To seek partnerships with other institutions to capitalize on the economic advantages of a shared approach;
- To take advantage of financial opportunities, for example the likelihood of securing funding to implement a programme, or of a particular project being able to generate significant income. (IFLA, 2002).

For the attainment of a goal oriented objective, the digitization of library resources should follow a laid down process. Fabunmi, Paris and Febunni (2006) and Pandey and Misra (2014) in their works states the following as steps towards digitization of library resources:

Policy enactment: A policy is a guiding statement. The top management should enact a policy on the process. Such a policy will serve as a reference point and guide for implementing the process. The policy should contain the goals of the digitization project. Good goal setting is important for any new initiative. To make our materials more accessible on the web is not specific enough, There is a need to be specific, particularly on the categories of users that will access the collection, the type of material they may be interested in, how they will use it, how many people are envisaged to use it, the planned "procedure for its advertisement, and the benefit of the material to users and institutions, Contacting current and potential users is an excellent way of having clues to all these issues. One may consider sending out a survey to the project's intended audience in order to learn how they are currently using the material, and how they might use it differently if it was digitized. It may be helpful to contact other institutions that have digitized similar collections and learn from their successes and failures.

Policy approval: The policy should be approved by appropriate authorities before the digitization of library resources kicks off. For instance, a university library may need the approval of the university management and other funding agencies before any digitization project can be embarked upon.

Planning, budgeting and monitoring: It is most essential and desirable to set up a planning committee that will draw the plan and budget for the digitization exercise. Budgets for digitization of library resources should include the following:

- Salaries, wages and benefits (likely to be about 50% of the project cost);
- Staff training;
- Equipment and supplies;
- Services, contracts and legal fees;
- Overhead and indirect costs (including offices and workspace);
- Maintenance, licenses, and communications charges;
- Contingency (setting aside about 10% of the total project budget for unexpected expenses);

The purposes of the digitization process, the source of fund and the amount available for the project should also be taken into consideration. At the regional or national level, effective planning for digitization can bring together all types of libraries, museum, academic/professional societies, historical societies and archives to take advantage of the exercise.

Acquisition of appropriate technology: The plan drawn for the project will determine the appropriate technology to acquire. Technology here refers to all the equipment/hardware and software that are needed for the digitization process.

Administrative decision on the procedure to be adopted: Decision has to be made on the mode of operation, whether to just establish-links with existing digital libraries or to digitize in-house or to contract it out. There is a need to establish time limit for the digitization process.

Sensitization, psychological preparation and retraining of staff: In most places the staff will like to resist the digitization project. It is a common thing for people to resist change, just for the fear of the unknown. The library staff may fear that the success of the project may affect their jobs adversely. Those who are not computer literate may not be willing to adjust. It is the responsibility of the library management to educate them and allay their fear.

Legal/Copyright issues: Who owns it? Selection of archival materials for digitization should first be based on a clear understanding of copyright law and the rights of ownership (Tennant, 2000). Does physical ownership mean rights of reproduction? Physical ownership does not mean that an institution owns the rights to reproduce it. One of the most important selection criteria for digitization will be the copyright status of the original materials. Will it be possible to obtain permission to digitize? After digitization, will the institution be able to protect the digital assets by managing the rights to their use? If the institution does not have the rights to digitize, or the means to manage the digital assets, then digital project should not embarked on.

Data selection: In digitization it is important to develop selection criteria. The process of selecting specific item to be digitized will employ standard library selection criteria such as value, significance to the overall collections, user demand and interest, availability and fragility of the original.

Content verifications: Having selected materials for digitization, the next thing to do is to verify or ascertain whether digital copies of such materials already exist. Duplication of efforts is not necessary. However, re-digitization is necessary if the electronic resources created were carried out using older technologies. In addition, if the copyright permission to digitize resources was not in the public domain (that is, if it was for internal use only) and if the material or the institution concerned wish to embark on a wider area network such as the Internet or World Wide Web, there is the need to re-digitize the materials. In the past it was thought that when scholarly production was transferred to an institution the legal rights to reproduce the material are automatically made. Today institutions can no longer count-on "the fact that legal rights are transferable. For this reason, institutions must be assured that project objectives are attained within the context of the Copyrights Act.

Metadata description: Metadata simply means information about information that describes digital objects and enables users to find, manage and use digital objects. It represents the total historic record of the digital object and the totality of information about the object. For developing countries, good metadata is a key component of developing digital archives that are usable and useful for long term. Metadata helps to identify the work, who that created it, migrated or reformatted it, and other descriptive information; it provides unique identifying information about the organization's files, and databases that have detailed information about the digital contents; describes the technical environment in which the digital files were created, equipment, used, the software, operating systems and other things. The justification for digitization and provision of metadata is to enable it in future for without metadata there is no access and when there is no access, it would be difficult for users to learn from the past in terms of their successes and failure. These are the key issues which they should bear in mind whenever they are planning for digitization of their collections.

The enormous significance of the application of information technologies to library services in recent times proposes a paradigm shift for librarians to acquire new skills in the digital information system management. In the words Sreenivasulus (1998), digital information system management refers to the overall competencies, knowledge, know-how, skills and attitudes necessary to create, store, organize, retrieve and disseminate digital information in digital libraries. Due to the changing nature of librarianship resulting from the increasing amount of information available in digital format, educating librarians to fit in with the dynamics and complexity of digital environment has become undisputable. The competency of digital librarian is represented by different set of skills, attitudes and values that will enable him/her to work as digital information professional or digital knowledge worker and communicator (Usman and Iyun, 2007). Igwesi (2010) quoting Sreenivasulus has categorized the necessary skills and competencies required by librarians on the digitization of library resources as:

- **Internet skills:** the ability to navigate, browse, filter, retrieve and access digital documents. The skill to provide digital reference, search network databases in number of digital sources and website. The competency to create home pages, content conversion, downloading techniques, web publishing, archiving, electronic messaging, web authoring, preservation and storage.
- **Multi-media:** the competency in multi-media indexing, image processing, interactive digital communications and visualization. The skills of speech recognition and conference techniques including teleconferencing and video conferencing.
- **Digital information system:** the skills of interfacing on-line and off-ramps, twists and turns of digital knowledge. The competency to digitize print collections and manage compact Disc-Read Only Memory (CD-ROM), design and development of database and conversion of print media into digital media.

To facilitate the process of acquiring these skills and competencies, Igun (2006) has emphasized on the training and retraining of the analogue librarians on the appreciation, use and consequent application of information and communication technologies to library services, mainly in the mode of a digital librarianship. Zhou (2005) itemized the responsibilities of digital librarians to include:

- Select ,acquire , preserve, organize and manage digital collection;
- Design the technical architecture of digital library;
- Plan, implement ,and support digital services such as information navigation, consultation and transmit services ;
- Establish friendly user interface over the network for the digital library;
- Design , maintain and transmit add-valued information products;
- Protect digital intellectual property in network environment; and
- Insure information security.

Ezeani and Ezema (2009) in their work advocated for training of Librarians in the technical knowhow of the digitization process to acquire the required competencies such as technical skills in metadata, checking and verifying of digitized resources for quality control and selection of hard and software. Usman and Iyun (2009) posit that the digital librarians are required to acquire skills and sophisticated competencies to:

- Manage the digital libraries;
- Organize digital knowledge and information;
- Disseminate digital information from the computer – held digital information;
- Provide digital reference serviced and electronic information services;
- Providing knowledge mining from the emerging knowledge warehouses;
- Handle the tasks of massive digitization, digital storage process and digital preservation;
- Provide universal access and retrieval of digital knowledge;
- Catalogue and classify digital documents and digital knowledge.

The overwhelming rationale/benefits of digitization of library resources notwithstanding, previous studies have identified various challenges associated with the process of digitizing the resources in academic libraries. Categorically, the staff of the National Digital Library Program at the Library of Congress have identified the challenges that is prone to occur if large and effective digital libraries are to be created during the 21st century as [building the resource](#), [interoperability](#), [intellectual property](#), providing [effective access](#), and [sustaining the resource](#). This justifies the assertion of Umar and Shittu (2014) who identified the following as factors impeding the digitization of library resources: constant changing of hardware and software copyright issues, technical support and security, difficulty in digitizing some materials, unavailability of needed materials, some chart diagrams and accompanying object are too large for the scanner to capture. Responding to the challenges of digitization of library resources, Yaya and Adeeko (2016) identified the following: digital illiteracy among library personnel, inadequate financial support, erratic electricity power supply, lack of modern Infrastructure, lack of technical experts.

In the promotion of the digitization of libraries resources in academic libraries, Ibinaiye (2012) is of the suggestions that the library management provides effective solution to the problems faced in the digitization unit by purchasing more equipment for the services such as digital camera, Photoshop software, a standby generating set, standardization on the supplied paper size and CD-ROMs, upgrading of the systems in order to meet the needs of modern day's technologies. The management of academic libraries also need to provide enough money for the

rebranding of materials and to also purchase additional modern computers. To effectively tackle the problems and challenges faced by the staff of the unit, more training opportunities should be provided for the staff of digitization unit such as workshops and seminars, conferences on digitization of resources, training on software management, maintenance of server and the D-space database management. She postulates that training will afford them opportunity to acquire skills such as technical skills needed to perform their duty efficiently, interpersonal skills needed to interact with fellow staff and users of the library resources, and conceptual skills when acquired will afford libraries the opportunity to acquire a holistic knowledge and understanding of their task and be able to devise a means to achieve organizational goals. To the digitization unit Ibinaiye (2012) advocates for more staff to handle efficiently the workload in the section. Provision should be made for the acquisition of more Utility Power Storage (UPS) and durable inverter batteries to sustain the power failure. The library should develop a copyright mechanisms that will allow them provide information without violating copyright law. In the same vein, Yaya and Adeeko (2016) suggests that back-up sources should be provided and manpower training and development to fit to the requirements of an electronic library environment. Furthermore, the staff of the National Digital Program of Library of Congress proposes ten ways to combat the challenges encountered in the process of digitizing library resources: develop improved technology for digitizing analogue materials, design search and retrieval tools that compensate for abbreviated or incomplete cataloguing or descriptive information, design tools that facilitate the enhancement of cataloguing or descriptive information by incorporating the contributions of users, establish protocols and standards to facilitate the assembly of distributed digital libraries, address legal concerns associated with access, copying, and dissemination of physical and digital materials, integrate access to both digital and physical materials, develop approaches that can present heterogeneous resources in a coherent way, make the digital library useful to different communities of users and for different purposes, provide more efficient and more flexible tools for transforming digital content to suit the needs of end-users, and develop economic models for the support of the digital library.

METHODOLOGY

The descriptive survey was used for this study. The study was carried out in Donald E. U. Ekong Library which is located in the University of Port Harcourt, the capital city of Rivers State. The target population of this study was comprised of 13 academic librarians in the Automation Section and E-library section of the Donald E. U. Ekong Library. The instrument used for data collection was questionnaire. The researcher personally distributed 13 copies of the questionnaire to the respondents and retrieved within an interval of three hours. This is in order to have a quick return and also minimize loss of the completed questionnaire. The researcher used descriptive statistical tools to analyse each item in the questionnaire for the purpose of answering the research questions. For the responses on a 4-point Likert type scale, a mid point-mean of 2.5 which is the criterion mean was accepted as a positive response.

RESULTS AND DISCUSSION OF FINDINGS

Academic qualification of the respondents

Table 1. Percentage of responses on academic qualifications of respondents

S/N	Academic Qualification	Respondents	Percentage (%)
1.	Ph.D	2	15.39
2.	Master's Degree	4	30.77
3.	Bachelor's Degree	5	38.46
4.	HND/OND	2	15.39
	Total	13	100

The table above shows a 100% response rate. The result shows that Librarians with Bachelor's degree and Master's degree constitutes the majority of the library staff strength at 5 (38.46%) and 4 (30.77%) respectively. The result further depicted the presence of 2 (15.39%) Ph.D holders as well as staff with HND/ND.

Years of experience of respondents

Table 2. Percentages of responses on years of experience of respondents

S/N	Years of Experience	Respondents	Percentage (%)
1.	1-3	1	7.69
2.	4-6	3	23.08
3.	7-9	2	15.39
4.	10-15	5	38.46
5.	16-35	2	15.39
	Total	13	100

From the results presented in table 4.2 above, a prevailing majority of the staff are experienced. 5 staff among the total respondents has been in service for 10-15 working years with a percentage of 38.46%. This is seconded by a group of staff within the range of 4-6 years of working experience with a percentage of 23.08%. Others included staff with years of working experience as 16-35, 7-9, and 1-3 with percentages at 15.39%, 15.39% and 7.69% respectively.

Table 3. The need for digitization of library resources

S/N	ITEM	SA	A	D	SD	\bar{X}	DECISION
1.	To preserve endangered library resources	3	10	0	0	3.23	Accepted
2.	To increase visibility of institutional outputs	10	3	0	0	3.77	Accepted
3.	To embrace the benefits of information and communication technologies	3	10	0	0	3.23	Accepted
4.	To enhance timeless access to library information resources	9	3	1	0	3.62	Accepted
5.	To displace the role of librarians in library services	0	1	5	7	1.54	Rejected
6.	To promote interlibrary cooperation	5	8	0	0	3.39	Accepted

The table 4.3 above shows the mean responses on the need for the digitization of library resources. The result shows that the mean response on “to preserve endangered library resources” is 3.23 while the mean response on, “to increase visibility of institutional outputs” is 3.77. The mean response on “to embrace the benefits of information and communication technologies” is 3.23 while the mean response on “to enhance timeless access to library information resources” is 3.62. The mean response on the “to displace the role of librarians in library services” has the lowest score at 1.54 while the mean response on; “to promote interlibrary cooperation” is 3.39.

The study revealed that there are a lot of factors that prompt need for digitization of library resources; these include: improved library services, increased access, speedy retrieval of documents, effective preservation, and simultaneous search. This is quite revealing and the finding shows that the digitization of library resources is quite indispensable in the present digital environment. These findings corroborates that of Igwe and Uzuegbu (2013) who stated the needs behind the digitization of library resources in libraries as preservation of endangered materials, increase the accessibility to library resources, resource sharing and services delivery among libraries in a consortia, enhance the prestige and visibility of the library and promote technological development in library services.

Table 4. The extent of digitization of library resources in Donald E. U. Ekong library

S/N	ITEM	VHE	HE	ME	LE	\bar{X}	DECISION
1.	Co-operating with other libraries on a digital library network	7	6	0	0	3.23	Accepted
2.	Have just established and running a digital library	7	6	0	0	3.23	Accepted
3.	Completed an in-house digitization of library resources such as thesis, dissertations and project reports	5	8	0	0	3.39	Accepted
4.	Planning for a maiden digitization of library resources	1	0	5	7	1.39	Rejected
5.	Still dependent on analogue/ traditional system of librarianship	0	4	8	1	2.23	Rejected

The result shows that the mean response on, “co-operating with other libraries on a digital library network” and on “have just established and running a digital library” are at 3.23 each. The mean response on, “have completed an in-house digitization of library resources” is 3.39. The mean response on, “Planning for a maiden digitization of library resources” is 1.39 while on “still dependent on analogue/ traditional system of librarianship” is 2.23.

The findings of the study on the extent of digitization of library resources revealed that thesis, dissertation, and projects reports are mainly the resources being digitized in the libraries under study. The result also indicated that the library already has an established and running digital library as well as have established a library network with other libraries. This shows that the university library embarks on the digitization of their local contents. The materials digitized are comprised of what has been produced within the institutions, e.g. theses and dissertations, research reports, papers presented at conferences and journal articles written by members of the academic staff. The findings are in line with the study carried out by Usman (2007) on the status of digitization in 30 Nigerian University libraries revealed that Nigerian universities are lagging behind in the pace of digitization of their question papers, theses and dissertations. On the other hand, the findings of this study revealed that efforts are being made in digitization of these materials.

Table 5. Librarians' skills and competencies on the digitization of library resources.

S/N	ITEM	SA	A	D	SD	\bar{X}	DECISION
1.	Ability to use the computer system	3	9	1	0	3.15	Accepted
2.	Ability to convert traditional library resources into digital images	9	3	1	0	3.62	Accepted
3.	Ability to develop system software for digitization of library resources	4	7	2	0	3.15	Accepted
4.	Ability to establish, run and maintain a digital library database	6	7	0	0	3.46	Accepted
5.	Ability to make use of the web and electronic databases	6	7	0	0	3.46	Accepted

The result shows that the mean response on librarians' ability to use the computer system is 3.15 while on the ability to convert traditional library resources into digital images is 3.62. The mean response on librarians' ability to develop system software for digitization of library resources is 3.15. The result also shows that the means response on ability to establish, run and maintain a digital library database is 3.46 while the mean response on ability to make use of the web and electronic databases is also 3.46.

The study having identified the need for digitization of library resources and the digitization efforts of the institution under study, the study went further to identify the skills and competencies possessed by library staff in response to the requirement for the digitization process. The findings revealed that the librarians possessed a good number of the prerequisite skills for the digitization of library resources. The skills and competences ranged from the ability to use the computer system, ability to convert traditional library resources into digital images, ability to develop system software for digitization of library resources, ability to establish, run and maintain a digital library database and to the ability to make use of the web and electronic databases. Due to the changing nature of library environment, educating librarians to acquire digitization skills in the dynamic and complex digital environment has become a high priority within library and information science schools. These findings support the dated research output of Sreenivasulus (1998) who early categorized the needed skills for the digitization of library resources as internet skills, multimedia skills and digital information skills (cited in Igwesi, 2010).

Table 6. Challenges to digitization of library resources

S/N	ITEM	SA	A	D	SD	\bar{X}	DECISION
1.	Funding of digitization projects	6	7	0	0	3.46	Accepted
2.	Staff capacity to manage the process of digitization	10	3	0	0	3.77	Accepted
3.	Intellectual property rights	6	6	1	0	3.39	Accepted
4.	Infrastructure to contain the digitization process	3	10	0	0	3.23	Accepted
5.	Users depend solely on traditional library resources	8	4	1	0	3.54	Accepted
6.	Hardware and software obsolescence	8	4	1	0	3.54	Accepted
7.	Power supply	7	6	0	0	3.54	Accepted
8.	Security of databases	5	8	0	0	3.39	Accepted

The result shows that the mean response on funding of digitization projects is 3.46 while staff capacity to manage the process is 3.77. The mean response on Intellectual property rights is 3.39. The result also shows that the mean response on Infrastructure to contain the digitization process is 3.23 while the mean response on Users depend solely on traditional library resources is 3.54, the table shows that mean response on Hardware and software obsolescence is 3.54, while the mean response on Power supply is 3.54. The mean response on the Security of databases is 3.39.

Despite the values inherent in digitization of library resources, the result revealed that there are problems militating against the digitization of library resources which include funding of digitization projects, staff capacity to manage the process of digitization, intellectual property rights, infrastructure to contain the digitization process, users depend solely on traditional library resources, hardware and software obsolescence, power supply and security of databases. These findings are in line with the reports of Umar and Shittu (2014) and Yaya and Adeeko (2016) on the challenges of digitization in libraries. This shows that a very serious effort should be made to curb these problems.

Table 7. Solutions to the challenges to digitization of library resources

S/N	ITEM	SA	A	D	SD	\bar{X}	DECISION
1.	Management should increase the library budget quota	7	5	0	1	3.39	Accepted
2.	Staff skill development in management of digital libraries	7	6	0	0	3.54	Accepted
3.	Copyright should exclude digitization practices by librarians	6	5	2	0	3.31	Accepted
4.	Inclusion of digitization sections while planning for library buildings	7	6	0	0	3.54	Accepted
5.	Library user education should include skills needed for use of digital libraries	9	3	1	0	3.62	Accepted
6.	Update of software data applications and hardware devices	5	7	1	0	3.31	Accepted
7.	Installation of alternative to power supply such as standby power generating set, solar power system, utility power systems, etc.	7	4	2	0	3.39	Accepted
8.	Installation of anti-virus, malware and hacks proof software	8	5	0	0	3.62	Accepted

The result shows that the mean response on “management should increase the library budget quota” is 3.39 while the mean response on “staff skill development in management of digital libraries” is 3.54. The table further shows that the mean response on “copyright should exclude digitization practices by librarians” is 3.31 while the mean response on “inculcating digitization sections while planning for library buildings” is 3.54. The result shows that the mean response on, “library user education should include skills needed for use of digital libraries” is 3.62 while the mean response on update of software data applications and hardware devices is 3.31. The mean response on installation of alternative to power supply such as standby power generating set, solar power system, utility power systems, etc. is 3.39 while the mean response on installation of anti-virus, malware and hacks proof software is 3.62.

Responding to the challenges of digitization of library resources, the respondents agreed that all the strategies proposed by the researcher ranging from soliciting for an increased funding of the library budget, staff skill development in management of digital libraries, copyright should exclude digitization practices by librarians, inclusion of digitization sections while planning for library buildings, library user education should include skills needed for use of digital libraries, update of software data applications and hardware devices, installation of alternative to power supply such as standby power generating set, solar power system, utility power systems, etc., installation of anti-virus, malware and hacks proof software are appropriate approaches for effective digitization. Prior to these findings, Ibinaiye (2012) has suggested that the library management provides effective solution to the

problems faced in the digitization unit by purchasing more equipment for the services such as digital camera, Photoshop software, a standby generating set, standardization on the supplied paper size and CD-ROMs, upgrading of the systems in order to meet the needs of modern day's technologies. Usman (2007) noted that in digitization process, "planning involves identifying various tasks related to creating a digital library collection, developing strategies for handling these tasks, identifying required resources and formulating a timeline for accomplishing these tasks". Hazen (1998) in agreement to this contends that in order to achieve an effective digitization, it is imperative to set up a committee to draw a plan and draft a policy to establish the goals and objectives, the selection criteria, availability of fund, infrastructure and personnel requirement. From the foregoing, it is very imperative to make adequate plan before embarking on any digitization exercise.

CONCLUSION

Digitization of library resources has been found to be a key developmental factor in the present day libraries especially in an academic environment. This present development has continued to revolutionize library services delivery. For libraries to co-exist with the rapid growing information technologies, it has indeed become pertinent for libraries especially in developing countries to add up to their effort to digitize their local content for preservation and easy access. All these efforts are in response to the global need for nations to preserve their local contents and make them available over the Global Information Network (GIN).

This study has attempted to evaluate the status, process, rationale, challenges and strategies for effective digitization of library resources in Donald E. U. Ekong library, University of Port Harcourt. Findings from this study have shown that university libraries in Nigeria are digitizing their local contents for improved library services, increased access, speedy retrieval of documents, and effective preservation. The study revealed despite the librarians possessing the prerequisite skills and competencies for digitization process, emphasis should be made on retraining of librarians to acquire complex digitization skill in order to face the consequential challenges.

Notwithstanding all benefits inherent in digitization of library resources, there are still a lot of challenges to the effective digitization of library resources in Nigerian university libraries. In order to achieve effective and efficient digitization of library resources in university libraries in Nigeria, adequate attention must be given the strategies and recommendations given in this study.

RECOMMENDATIONS

Based on the findings of this study, the following four recommendations are made:

1. University libraries should seek for more financial aid from philanthropic organizations, like Mac-Arthur Foundation, Bill and Melinda Gate Foundation, etc. as well as should request Education Trust Fund to include digitization project in the library intervention fund every year to each library.
2. Emphasis should be made on training of library staff in order to acquire all the digitization skills. There should be provision of on the job training and more refresher courses for the library staff skill development

on digitization processes. In addition, regular training of staff through seminars, workshops, conferences, refresher courses and in-service training should be institutionalized as part of the development plan for digitization project.

3. Alternative power supply should be provided such as procuring high capacity generators and the use of solar electricity in order to leverage the problem of epileptic power supply in the country.
4. Procurement of digitization equipment such as good quality scanning machines; computers, scanners, internet facilities and digital cameras and proper selection of software packages that will be most suitable for digitization project. This will help to ensure the effective digitization of library resources. Poor software selection could frustrate the digitization process.

REFERENCES

- Asogwa, Brendan Eza. (2011) Digitization of Archival Collections In India for Scholarly Communication: Issues, Strategies and Challenges: University of Nigeria. *Library Philosophy and Practice*. <http://unllib.un1.edu/LPP/>
- Dadzie, Perpetua Sekyiwa and Walt, Thomas van der (2015) Planning for Digitization of University Libraries in Ghana: Challenges and Prospects. *Library Philosophy and Practice (e-journal)*. Paper 1206. <http://digitalcommons.unl.edu/libphilprac/1206>
- Egberongbe, Halima Sadia (2016) Digital resources utilization by social science researchers in Nigerian universities. *Library Philosophy and Practice (e-journal)*. Paper 1424. <http://digitalcommons.unl.edu/libphilprac/1424>
- Ezeani, C. N. and Ezema, I. J. (2009). Digital preservation of the cultural heritage of University of Nigeria, Nsukka: issues and current status. In: *Libraries creates futures: building on cultural heritage. Paper presented at the 47th National Conference Annual General Meeting of the Nigerian Library Association, 2009*. Ibadan: HEBN Publishers.
- Ezeani, C. N. and Ezema I. J. (2011) Digitizing Institutional Research Output of University of Nigeria, Nsukka. *Library Philosophy and Practice* Retrieved from <http://unllib.unl.edu/LPP/>
- Fabunmi, B. A., Paris, M. and M. Fabunmi. (2006) Digitization of library resources: Challenges and implications for policy and planning. *International Journal of Africa America Studies*, 5(2), pp. 23-36.
- Feather, J. and Sturges, R. P. (2003) *International Encyclopaedia of Information and Library Science*. 2nd ed. London: Routledge, pp. 138.
- Hughes, C. A. (2000) Lessons learned: digitization of special collections at the University of IOWA Libraries. *D0 Library Magazine* 6(6), Retrieved from: www.dlib.org/dlib/june00/hughes/06hughes.html.
- Ibinaiye, Dorcas I. (2012) Challenges and prospects of digitization of library resources in Nigeria universities: The experience of Kashim Ibrahim library. *European Journal of Globalization and Development Research*, 5(1)

- Igun S.E. (2006) Human Capital for Nigerian libraries in the 21st century. *Library philosophy and practice* 8 (2) spring, 2006. p.2
- Igwe, K. N. and Uzuegbu, C. P. (2013) Automation in libraries and information centres. Lagos: Zeh communication Ltd. p.37
- Igwesi, U (2010) Status of digitization of Federal University libraries in South-Eastern Zone Nigeria. An unpublished MLS project submitted to the Department of Library and Information Science, University of Nigeria, Nsukka.
- International Federation of Library Association (2002) Guidelines for digitization projects for collections and holdings in the public domain, particularly those held by libraries and archives <http://archive.ifla.org/VII/s19/pubs/digit-guide.pdf>
- Jagboro, K. O., Omotayo, B.O. and Aboyade, W.A. (2012) Digitization of Library Collection in Developing Countries: The Hezekiah Oluwasanmi Library Experience. *Library Philosophy and Practice (e-journal)*. Paper 823. Available online at <http://digitalcommons.unl.edu/libphilprac/823>
- Olatokun, S. A. (2008) Selection and acquisition of materials for digitization in libraries. Paper presented at the national workshop on digitization of Library materials: processes and tools by the National Library of Nigeria, at the University of Jos, Jos, Plateau State
- Omotayo, E. A. and Aboyade, A. (2009) Best practices, standards and techniques for digitizing library materials: a Snapshot of library digitization practices in the USA. *Online Information Review*, 28, 338-345. Retrieved from www.emeraldinsight.com/1468-4527.htm
- Makori, Elisha O. and Mauti, Norah Osebe (2016) Digital technology acceptance in transformation of university libraries and higher education institutions in Kenya. *Library Philosophy and Practice (e-journal)*. Paper 1379. <http://digitalcommons.unl.edu/libphilprac/1379>
- Mohammed, Z. (2009) Towards establishment and management of institutional digital repository. Libraries Create Future: Building on Cultural Heritage. Paper presented at the 47th Annual National Conference & AGM of Nigerian Library Association, at Ibadan, 26 – 31, 99 108
- Otubelu, Blessing Nnenna and Ume, Leonard Emenike (2015) Digitization of library resources in academic libraries: challenges and implication. *IOSR Journal of Mobile Computing and Application*, 2(2) pp. 35-40
- Pandey, Prabhat and Mishra, R. (2014) Digitization of Library Materials in Academic Libraries: Issues and Challenges. *Journal of Industrial and Intelligent Information*, 2(2) pp. 136-141
- Sreenivasulus, V. (1998). Roles of information technologies in electronic information transfer and in providing value added information services. *DESIDOC Bulletin of Information Technology*

- Tennant, R. (2000) Selecting collections to digitize. *Library Journal*, 125(19) pp. 26
- Umar, Aminu Musa and Shittu, Musa (2012) Digitization of library resources in Kashim Ibrahim library: processes, challenges and the impact on the services of the library. Being a paper presented at Kaduna State chapter of NLA/AGM conference 12th Dec. 2012
- Usman, I. A. (2007) Digitization of past question papers, dissertations and theses: a case study of 30 Nigerian University Libraries. *International Information and Library Review*. p229. Retrieved from: <http://www.elsevier.com/locate/iilr>.
- Usman, I. A. and Iyun, A. .M. (2007). Greenstone Digital Library software: the librarian's role. *Paper presented at the national workshop on digitization of Library Materials: processes and tools Organized by the National Library of Nigeria, at the University of Jos, Jos, Plateau State*
- Yaya, Japheth A. and Adeeko, Kikelomo (2016) Digitization of educational resources in Nigerian academic libraries: prospects, challenges and the way forward. *International Journal of Information Research and Review*, 3(1) pp. 1594-1600