

## Management of Digitization of Theses and Dissertations in Federal University Libraries in Nigeria

Mercy E. Ukpanah and Ima-M.P.Usoro

University of Uyo Library, Akwa Ibom State

### Abstract

*Federal university libraries in Nigeria are into digitization of theses and dissertations for accessibility and visibility of these unique information resources. This calls for management of the project to enhance sustainability. The purpose of the study was to determine the extent in which the management functions of planning, organizing, staffing and budgeting enhance digitization of theses and dissertations in federal university libraries in Nigeria. Ex post facto research design was used in the study. Four federal university libraries from four geo-political zones in Nigeria that are engaged in digitization of theses and dissertations were surveyed. All 139 professional librarians in these four federal university libraries were studied. Mean and standard deviation was used to analyze the research questions while one way ANOVA was used to test the hypotheses. The result showed that these management functions highly enhance the digitization of theses and dissertations in federal university libraries in Nigeria. Recommendations were made on the management of digitization of theses and dissertations in federal university libraries in Nigeria.*

**Keywords:** Digitization, Federal University Libraries, Association of African Universities, Management Functions.

### Introduction

Rapid advances in information technologies have revolutionized the role of libraries in providing library services to the users. As a result, libraries face new challenges, demands, and expectations. Libraries are redesigning services and information products to add value to their services and to satisfy the changing information needs of the user community. This requires that individual university libraries become active participants in global information drive by making information resources available on the internet for global consumption. As printed materials continue to deteriorate rapidly, digitization of those materials would help to preserve original and reformatted copies for use. Many university libraries in Nigeria are, therefore, taking up the challenge of computerizing their libraries and few have taken some steps to digitize their library resources for easy web-based access while most other university libraries in Nigeria are involved in automation of their collections. Academic Libraries are in the forefront of this initiative.

Digitization is the process of converting print information resources in the libraries to electronic format through scanning and electronic preservation for online access.

In telecommunication, digitization refers to the

conversion of continuous analogue signals into pulsating digital signals (Reitz, 2004). Fatoki (2007) adds that digitization is a process of building digital libraries which involves taking traditional library materials typically in the form of books, theses and dissertations and question papers, and converting them to electronic format, where they can be stored and manipulated by a computer. Contextually, digitization is a process of converting existing theses and dissertations in federal university libraries through scanning to an electronic format so that they can be accessed globally on-line. It is one of the newest methods of managing information resources in the information age. This activity is opening up tremendous opportunities for innovative library products and services.

Federal university libraries are those libraries attached to federal universities in Nigeria. There are 40 federal universities and federal university libraries respectively in Nigeria. Preservation and access to knowledge and information is the main mandate of these libraries alongside supporting the mission of their parent institutions which is teaching and research. Nigeria's university system is supervised by the National Universities Commission (NUC), a parastatal under the Federal Ministry of Education. The universities depend solely on the Federal Government for recurrent subventions and capital grants used for day-to-day

operations. Nigerian university libraries also derive funds through the parent institutions to which they are attached apart from the limited funds generated from fee based services.

Digitization of theses and dissertations in Nigerian Universities started with the University of Jos and the Obafemi Awolowo University (OAU), Ile-Ife. This project as noted by Okiy (2008) was an initiative of the Association of African Universities (AAU) sponsored by the Carnegie Corporation of New York and AAU. The AAU is an international non-governmental organization which was set up in 1967 by universities in Africa with a number of objectives which include; collecting, classifying and disseminating information resources. Ezeani & Ezema (2011) also noted that the University of Nigeria, Nsukka started a digitization of theses and dissertations in 2008 as part of the efforts to preserve institutional repositories and to ensure global accessibility of these information resources from user desktops connected via an intranet/internet. Management of these resources is enhanced through the management functions of planning, organizing, staffing and budgeting.

Planning here includes the forecasting and selecting of objectives with the policies, programmes and procedures for achieving them. It is largely a mental activity which is characterized by the process of thinking before doing. Planning involves choosing tasks that must be performed to attain the digitization activity, outlining how the tasks must be performed and indicating when it should be performed. For any digitization project, the library is bound to consider various issues relating to its design and prepare a list of high level requirements. This normally includes information that the library contain; how that information will be generated and to what audience the information is intended for and how these data will be accessed through a well designed policy. Bist (2006) observed that digitization project also requires thoughtful planning, designing, implementation and evaluation. However, inadequate and unplanned project without sound management and control are likely to fail. Therefore an essential element of project planning is to ensure that the purpose or vision of the project is clear and well communicated. Organizing on the other hand provides the framework in which people can work happily, productively and effectively. It involves assigning the tasks developed during planning to various individuals or groups which are in the library.

Staffing involves maintaining the organizational

structure through proper and effective selection, appraisal and development of the personnel to fill the roles assigned to the employees or workforce. Staffing pertains to recruitment, selection, development and compensation of subordinates. There are many roles, providing different skills and abilities, that work together to build a successful digital library collection. Some roles may be filled by the same person, while other roles may require multiple personnel. Every project has different requirements, and every organization may choose to emphasize different roles for each project, particularly as an organization's digital library initiative matures. Personnel are the most important digital library's resource, not only during its initial creation and set up, but also for its operation, maintenance and provision of services. Staffing in the digitization process helps to determine whether the university library has sufficient skilled staff (including those who understand the technical needs of digitization) to effectively complete the project and the means to train staff and keep their training current. Schopfel (2013) observed that the success of digitization depends on the accurate assessment of the required human resources.

Budgeting is the process of expressing organizational and departmental plans and anticipated consequences of future operations in quantitative terms. Budgets correlate planning and allow authority to be delegated without loss of control. Budgeting allows the University Librarian to see clearly what capital will be spent by whom and where, and what expense or units of physical input or output the plans will involve. However, Weihrich & Koontz (2005) confirmed that many budgets are better expressed in quantities rather than in monetary terms. Thus budgets can be used to indicate the university authority's conception of the revenue and cost consequences in the process of digitization. Effective budgets can help university librarians to carry out digitization of theses and dissertations in the university libraries effectively. Building a digital collection as observed by IFLA (2002) is expensive and resource-intensive. Before embarking on digitization projects, some basic planning principles are offered for projecting the costs underlying the design, implementation, and maintenance of a digital library. Management issues related to budgeting for a digitization project include the cost of training staff and integration of new work processes; the acquisition of equipment and provision of a suitable workspace and the establishment of new systems of digital storage to ensure the preservation of digital heritage.

This study was carried out in four federal universities from four geo-political zones in Nigeria who are involved in digitization of theses and dissertations in their libraries. These are: University of Nigeria, Nsukka-South East, University of Jos, Jos- North Central, Ahmadu Bello University, Zaria- North West and Obafemi Awolowo University, Ibadan-South West.

**Statement of the Problem**

Theses and dissertations are documents submitted in support of candidature for postgraduate degree presenting the author's research and findings. These institutional resources are of very high value to academic institutions. The printed copies are preserved and accessed only in the individual university libraries where it is produced. Utilization of these resources are therefore restricted due to their locations and many scholars and researchers may not even be aware of their existence hence duplication of researches. Digitizing theses and dissertations publicizes the research output of the institution. Therefore, digitization being a project should be properly managed in federal university libraries. Literature and pre-research discussions with Librarians in federal university libraries in Nigeria have shown that digitization of theses and dissertations is not spreading fast in Nigerian federal university libraries and that the few libraries that are involved in digitization are experiencing some challenges. This necessitated the need for this study whose major purpose was to determine the extent in which management functions enhance digitization of theses and dissertations in federal university libraries in Nigeria.

**Objectives of the study**

Specifically the study intends to determine the extent to which the management functions of planning, organizing, staffing and budgeting enhance the management of digitization of theses and dissertations in federal university libraries in Nigeria.

**Research questions**

To what extent do the management functions of planning, organizing, staffing and budgeting enhance the digitization of theses and dissertations in federal university libraries in Nigeria?

**Hypotheses**

The hypothesis formulated to guide the study was:

There is no significant difference in the mean rating by Librarians in Federal University Libraries on the extent to which planning, organizing, staffing and budgeting enhance digitization of theses and dissertations.

**Methods**

The research design employed in this study was ex post facto. The population of the study comprised 496 professional librarians in federal university libraries in Nigeria. All (139) professional Librarians in the four federal university libraries who were purposively sampled from four geopolitical zones in Nigeria based on their involvement in digitization of theses and dissertations were used. The instrument for data collection was a structured questionnaire. Data on the research questions were analyzed using mean and standard deviation while the null hypotheses were tested using one way ANOVA at a 0.05 level of significance.

**Research Question One**

To what extent does planning enhance digitization of theses and dissertations in federal university libraries in Nigeria?

Table 1: Mean and Standard Deviation of Responses of Professional Librarians on the Extent to Which Planning Enhances Digitization of Theses and Dissertations in Federal University Libraries in Nigeria

Items	(N = 115)	X	SD	Decision
Overall		3.200	.50	High Extent

Table 1 shows mean and standard deviations of the responses of professional librarians on the extent which planning enhances digitization of theses and dissertations in federal university libraries in Nigeria. The overall had the mean of  $3.20 \pm 0.50$ . This implied that planning, to a high extent enhances digitization of theses and dissertations in federal university libraries in Nigeria.

**Hypothesis One**

Table 2: Summary of ANOVA Table for Planning and Digitization of Theses and Dissertations in Federal University Libraries in Nigeria

Items	Source	Sum of Squares	Df	Mean j. Square	Sig.	Decision
Overall	Between Groups	.459	3	.153	.614	.607 NS

Table 2 shows that *F* ratio for the overall was 0.614. This value of *F* was significant at 0.607 but not significant at 0.05. This was because 0.05 was less than 0.607 ( $P = 0.607$ ;  $P > 0.05$ ). Hence the hypothesis was not rejected. So there is no significant difference in the mean rating by Librarians in federal university libraries on the extent to which planning enhances digitization of theses and dissertations.

Table 3: Mean and Standard Deviation of Responses of Professional Librarians on the Extent in which Organizing Enhances Digitization of Theses and Dissertations in Federal University Libraries in Nigeria.

Items	N=115	X SD	Decision
Overall		3.12 0.49	High Extent

Table 3 shows mean and standard deviations of the responses of professional librarians to each item on organizing and digitization of theses and dissertations in federal university libraries in Nigeria. The overall had the mean and standard deviation of  $3.12 \pm 0.49$ . This implied that organizing to a high extent enhances digitization of theses and dissertations in federal university libraries in Nigeria.

Hypotheses Two

HO<sub>2</sub>: There is no significant difference in the mean rating by Librarians in federal university libraries on the extent to which organizing enhances digitization of theses and dissertations in federal university libraries in Nigeria.

Table 4: Summary of ANOVA Table for Organizing and Digitization of Theses and Dissertations in Federal University Libraries in Nigeria

Items	Source	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Overall	Between Groups	1.336	3	.445	1.937	.128	NS
	Within Groups	25.511	111	.230			
	Total	26.847	114				

Table 4 shows that *F* ratio for the overall was 1.937. This value of *F* was significant at 0.128 but not significant at 0.05. This was because 0.05 was less than 0.128 ( $P = 0.128$ ;  $P > 0.05$ ). Hence the hypothesis was not rejected. So there was no significant difference in the mean rating by Librarians in federal university libraries on the extent to which organizing enhances digitization of theses and dissertations.

What is the extent to which staffing enhances digitization of theses and dissertations in federal university libraries in Nigeria?

Table 5: Mean and Standard Deviation of Responses of Professional Librarians on the Extent to Which Staffing Enhances Digitization of Theses and Dissertations in Federal University Libraries in Nigeria.

Items	N=115	Mean	SD	Decision
Overall		3.31	0.41	High Extent

Table 5 shows mean and standard deviations of the responses of professional librarians to each item on staffing and digitization of theses and dissertations in federal university libraries in Nigeria. The overall had the mean and standard deviation of  $3.31 \pm 0.41$ . This implied that staffing to high extent enhances digitization of theses and dissertations in federal university libraries in Nigeria.

Table 6: Summary of ANOVA Table for staffing and digitization of theses and dissertations in Federal University Libraries in Nigeria

Items Source	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Overall Between Groups	.320	3	.107	.524	.666	NS

Table 6 shows that *F* ratio for the overall was 0.524. This value of *F* was significant at 0.666 but not significant at 0.05, because 0.05 was less than 0.666 ( $P = 0.666$ ;  $P > 0.05$ ). Hence the hypothesis was not rejected. Therefore, there was no significant difference in the mean rating by Librarians in federal university libraries on the extent to which staffing enhances digitization of theses and dissertations.

Table 7: Mean and Standard Deviation of Responses of Professional Librarians on the Extent to Which Budgeting Enhances Digitization of Theses and Dissertations in Federal University Libraries in Nigeria

Items	N=115	X SD	Decision
Overall		2.65 0.69	High Extent

Table 7 showed the mean and standard deviation on responses of professional Librarians on the extent in which budgeting enhances digitization of theses and dissertations in federal university libraries in Nigeria. The overall mean and standard deviation responses of professional librarians on the extent of budgeting on digitization of theses and dissertations in federal university libraries in Nigeria had the mean and standard deviation of  $2.65 \pm 0.69$ . This implied that budgeting to high extent enhances digitization of theses and dissertations in federal university libraries in Nigeria.

Table 8: Summary of ANOVA Table for Budgeting and Digitization of Theses and Dissertations in Federal University Libraries in Nigeria

Items	Source	Sum of Squares	Df	Mean Square	F	Sig.	Decision
-------	--------	----------------	----	-------------	---	------	----------

Overall	Between Groups	2.321	3	.774	1.674	.177	NS
---------	----------------	-------	---	------	-------	------	----

Table 8 shows that  $F$  ratio = 1.674. This value of  $F$  was significant at 0.177 but not significant at 0.05, because 0.05 was less than 0.177 ( $P = 0.177$ ;  $P > 0.05$ ). Hence the hypothesis was not rejected. So there was no significant difference in the mean rating by librarians in federal university libraries on the extent to which budgeting enhances digitization of theses and dissertations.

### Discussion

The findings from the study showed that planning had in a high extent enhanced the digitization of theses and dissertations in federal university libraries in Nigeria. It revealed that provision of facilities to be used during the digitization process; considering the goal and the mission statement of the library during the project planning for the attainment of efficiency in service delivery; identifying the number of personnel (librarians and technical staff) so that quick action can be taken wherever required and carrying out the feasibility study from other university libraries that have digitized their theses and dissertations could enhance the digitization of theses and dissertations in federal university libraries in Nigeria. This agrees with Reddy (2001) that planning for digitization includes the provision of necessary infrastructure like hardware, application software, trained manpower, book scanners, Optical Character Recognition (OCR), digital camera, large storage solutions, good network facilities, high bandwidth Internet connectivity, and carrying out a feasibility study. Alhaji (2007) in agreement with this view added that planning mainly involves identifying various tasks related to creating a digital library collection, developing strategies for handling these tasks, identifying required resources, formulating a timeline for accomplishing these tasks and conducting feasibility study to assess the viability of the project. The outcome of the feasibility study could be a formal proposal for obtaining management approval or grant for the project. Ifidon & Ifidon (2007) summarize that planning is a practical exercise in rationality which requires series of logical steps that must be followed religiously.

The result of this study revealed that all the items under organizing in this study: arrangement of tasks to match the skill set/level and available personnel; creation of new positions based on functions being performed; grouping activities according to line of authority and classifying activities according to fields of specialization in a high extent enhance the digitization process in federal university libraries in Nigeria. The analysis of data indicates that the difference in the mean ratings by Librarians in federal university libraries on the extent to

which organizing enhances digitization of theses and dissertations was not significant. This was shown from the summary of ANOVA Table No. 4 which showed that  $F$  ratio value of 1.937 was not significant at 0.128. This agrees with the position of Usoroh (2008) that organizing is concerned with: determining the specific activities that are necessary to accomplish the planned goals, grouping the activities into a logical pattern, framework or structure, assigning the activities to specific positions and people, and providing means for coordinating the efforts of individuals and groups.

The library's workforce is its lifeblood which needs to be managed appropriately. The result of the finding indicates that staffing generally had to a high extent enhanced the digitization of theses and dissertations in federal university libraries in Nigeria. This result revealed that staff development, objective appraisal, acquisition of ICT skills and adequate in-service training had in a high extent enhanced the digitization of theses and dissertations in the federal university libraries in Nigeria. This finding agreed with Price (2007) who opined that the most important asset in an organization is staff since the success or failure of an organization depends directly on staff management.

The result of this study showed that budgeting in a high extent enhances the digitization of theses and dissertations in federal university libraries in Nigeria. It indicated that preparation of budgets in every academic session, spending of the budgeted funds judiciously on the project when released to a high extent enhances the digitization of theses and dissertations in federal university libraries in Nigeria. Kanyero (2006) agreed with this view and stated that libraries require adequate budgeting for effective service delivery in this era of ICTs.

Similarly, the preparation of budgets by different heads of units in the library and the release of funds as budgeted has in a low extent enhanced the digitization of theses and dissertations in federal university libraries in Nigeria. This implied that heads of units though they prepare budgets for their units, these budgets may not necessarily be approved for them and the funds may not necessarily be released as budgeted but the funds released for the digitization as a project will enhance the development of the project.

The analysis of data indicated that the difference in the mean ratings by Librarians in federal university libraries on the extent to which budgeting enhances digitization of theses and dissertations was not significant. This was shown from the summary of ANOVA Table 8 which

showed that *F* ratio value of 1.674 was not significant at 0.177. This strongly indicated that there was no significant difference between the mean rating of librarians in federal university libraries and the extent to which budgeting enhances digitization of theses and dissertations in federal university libraries. Similarly, Stefano (2001) advocated that budgeting is essential so as to be able to continue with the digitization exercise after the conversion programme. This study revealed that there was no significant difference in the way which federal university libraries in Nigeria prepare budgets to enhance digitization of theses and dissertations. In line with IFLA (2002) each library involved in digitization of theses and dissertations must budget for cost recovery, staff training, facilities management, operational expenses, selection and preparation of source material for digitization, digital conversion, metadata capture, data management, managing storage and delivery systems.

### Recommendations

The following recommendations were made in line with the findings:

- There should be a digitization committee in federal university libraries to plan for digitization of theses and dissertations before the actual implementation of the project.
- There should be in house training and staff development awards to librarians to expose them to skills acquisition which will enhance the success of the project.
- Digitization has opened up new audiences and services for libraries, and it needs to be integrated into the plans and policies of the institutions to maximize its effectiveness.

### Conclusion

Digitization of theses and dissertations is an essential task in modern day libraries because of the current challenges and the need to go digital, that is, provide online services. This project promotes resource sharing, visibility and accessibility. Through digitization of these information resources in federal university libraries in Nigeria local information content will be developed and preserved. For effective management of this project in federal university libraries the study has revealed that the application of the management functions of planning which involves the determination of the time frame for the project, the personnel to be involved whether in house or outsource, the infrastructures that will be needed and the other management functions of, organizing, staffing and budgeting can highly enhance its success.

### References

- Alhaji, I. O. (2007). Digitization of past question papers, dissertations and theses: A case study of 30 Nigerian University libraries. *The International Information & Library Review*, **39** (3/4), 228-246.
- Bist, R. S. (2006). Digitization at Gandhi *Smriti Library ofLbsnaa: An initiative*. Retrieved March 15, 2010 from <http://ir.inflibnet.ac.in/dxml/bitstream/handle/1944/1194/80-90.pdf?seauence=>
- Ezeani, C. N., & Ezema, I. J. (2011). Digitizing institutional research output of University of Nigeria, Nsukka. *Library Philosophy and Practice 2011*. Retrieved September 13, 2014 from <http://unllib.unl.edu/LPP/ezeani-ezema.htm>.
- Fatoki, C. O. (2007). Digitization of library materials in Nigeria: issues and considerations for information professionals. *African Journal of Library, Archives and Information Science*, **17**(1), 15-21.
- IFLA. (2002). Guidelines for digitization projects: for collection and holdings in the public domain, particularly those held by libraries and archives. Preservation and Conservation Section. Retrieved January 21, 2008 from <http://www.ifla.org/vii/sl9/sconsv.htm>
- Kanyero, C. W. (2006). Managing digital information resources in Africa: Preserving the integrity of scholarship. Paper presented at the bridging of the North-South Divide in Scholarly communication on Africa. Threats and opportunities in the digital era. Leiden, the Netherlands, 6-8 Sept 2006.
- Reddy, R. E. (2001). A proposal for action plan for digitization of university libraries. Retrieved January 20, 2009. <http://drtc.isibang.ac.in:8080/xmlui/bitstream/handle/1849/59/Reddv.pdf?seauence>
- Reitz, J. M. (2004). *Dictionary of library and information science*. London: Libraries Unlimited.
- Schopf, J. (2013). Adding value to electronic theses and dissertations in institutional repositories *.LibMagazine.RetrievedJune2* <http://www.dlib.org/dlib/march12/schopf/12schopf.html>

doi:10.1045/march2013-schopfel.

Stefano, P. (2001). Selection for digital conversion in academic libraries. *College and Research Libraries*, 62,58-69.

Usoro, Ima-M. P. (2008). Organization as a management variable: A survey of Nigerian university libraries in the South South Zone. *Library Philosophy and Practice* 2008(April)4,1-6. Retrieved May 23,2009.

[http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1190&context=libphilprac&si-redir=1#search="organising+digital+libraries+nigeria](http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1190&context=libphilprac&si-redir=1#search=)

Wehrich, H., & Koontz, H. (2005). *Management: A global perspective* (11th ed). New York: McGraw Hill Inc.