Automation Efforts in Public and Privately Owned University Libraries in the South-West of Nigeria

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Abstract

The concept of library automation is gradually gaining ground in Nigerian Libraries, particularly in the public and privately owned University libraries in the South-West part of Nigeria which is the focus of this study. The study examines automation efforts in Public and Privately Owned University Libraries (PPOULs) in the South-West, Nigeria. The study also identifies PPOULs that have been automated, the type of integrated library system(ILS) being used, its description, modules already activated, evidence of web presence of these university libraries and the common challenges being faced by these university libraries in implementing automation, among others. Structured questionnaire was designed, using Google form with a link to elicit information from the respondents. The questionnaire was sent to the Systems Administrator/ Librarian of each of the libraries via email. The response rate was hundred percent (100%).The data were analyzed using frequency counts and percentages which are presented in tables. The results of the findings showed that more than half (61.5%) of PPOULs in the South-West were automated; using either proprietary, open source or in-house developed Integrated Library System (ILS). The finding also revealed that Koha ILS is used by 50% of the university libraries in the South-West Nigeria. Cataloguing module was found to be implemented by all the libraries while serials module is the least implemented among the libraries studied. The major challenges indicated are that of erratic power supply, insufficient staff to carry out automation project and insufficient fund to maintain automation project. The study concludes that automation has a growing list of benefits, particularly when it is adopted and implemented in the university academic libraries. The initiative will enhance effective information services delivery and at the same time raise the profile and prestige of the library and the university it serves.

Keywords: Library Automation, Integrated Library System, University Libraries, Nigerian Libraries, South-West Nigeria.

Introduction

University libraries are very important in higher institution of learning because they support teaching, learning and research activities of the university. It is expected that university libraries acquire, process and disseminate information resources that will meet diverse needs of staff, students as well as researchers in their universities. The demand for information now is much higher than before and the traditional method of processing and disseminating information to users is no longer effective; therefore libraries must live up to their expectations so that they can be relevant in this information age. The implementation of automation in some libraries has actually helped them to meet the demands of users in various ways(Otunla, 2010).

Library automation is the application of computers/machine to library operations and services that are previously done manually. The application of computer into library operations witnessed integration of processes such as critical sections of the library; such as Cataloguing, Circulation, Serials Control and Acquisitions. The implementation of Online Public Access Catalogue (OPAC) to run in parallel with the traditional way of browsing library holdings saves users' time and caused paradigm shift in packaging and delivering information to users of the libraries. The OPAC which was initially implemented to be accessible within the Local area Network (LAN) setting has been improved and emphasis is now being placed on Web Public Access Catalogue (Web PAC). This new development has greatly enhanced libraries services to the extent that library users can access the library remotely from their offices, hostels and homes. As a result of the changes that automation brought to libraries operations and services many libraries are now involved in automation process so as to serve their users better. Also, library professionals, particularly in the academic libraries are getting motivated and showing keen interests in getting trained in order to keep pace with the new technology in which computer is seen as its nucleus (Harinarayana, 1991).

Globally, automation of library has witnessed various stages of development which can be seen from three perspectives; namely: Prototyping Phase (PP: 1930–1960), Local Area Network Phase (LANP: 1960 – 1970), and Interoperability of Information Systems Phase (IOISP: 1970 to date).The first phase is prototyping phase; according to Laxminaraya (1986) prototyping phase was first used by University of Texas USA in 1936 for circulation functions with the use of punched cards, sorters, tabulators, etc. Libraries in North America as well as in United Kingdom were also involved in prototyping phase. Reasons for

the failure of Prototyping phase according to Teddy (1977) are: inadequate computer technology as at that time, Librarians not sure of their requirement of computer based system and lack of understanding on the part of IT personnel on Librarians' requirement for computer based system.

The second phase is known as Local area network (LAN) phase (LANP: 1960-1970): This period witnessed application of general purpose digital computer to execute library functions for packaging, processing, storing and retrieving of information. In this era, application of computers to handle library functions was done offline. The implication of this is that, performing library functions was being carried out on standalone systems. This era later ushered in networking of these standalone systems to create Local Area Network Configuration (LAN CONFIG.). This means that whatever library function being performed was limited by what Local Area Network (LAN) dictated because patrons had to register their physical presence in the library before anything meaningful in terms of access to information could be achieved. Teddy (1977) reported that during Local Area Networking (LAN) phase, Online Public Access Catalogue (OPAC) was undergoing prototyping stage in the United States of America (USA). Also, Machine Readable Catalogue i.e. MARC came into existence during this period at the Library of Congress, U.S.A for providing standardization in automation. The Ohio College Library Centre (OCLC) was set up in 1967 as an online system which marked the beginning of cooperative systems (Interoperability of Information Systems) and union catalogue. The distribution of records in the new MARC II format started in 1969 by the Library of Congress.

Interoperability of information systems phase (IOISP: 1970 to date): Interoperability of information systems (Cooperative Systems) was first witnessed in the 1970s. This initiative was embraced and adopted because people realized that no library was an Island; that is what a library does not have can be sources for and accessed from other libraries in the world, irrespective of geographical location of such library. This era ushered in implementation of consortium, that is, resource sharing, among libraries. This was achieved through reaching compromise on establishing minimum standards of connectivity in terms of hardware (specification of server with the same requirements in terms of configurations) and software (that is having common platform for harvesting contents) among those libraries engaging in consortium initiatives. The growth of library network and databases was witnessed during this phase. Also, external storage devices such as: magnetic tapes

and floppy disks (31/2and 51/4) were used for offline storage of information. In the 1980s there was intensive use of online systems networks, optical disks, CD-ROMs etc. Microcomputers were also introduced in the libraries to perform daily processes (Rajagopalan, 1986). The aforementioned gives the general overview of historical background of automation from global perspective.

Revolutionary change has begun in Nigerian libraries today, particularly university libraries, which are the focus of this paper. This development can be attributed to the adoption and implementation of Information Technology (IT) in the library systems in the country. In different fora of the gathering of information professionals, a lot of noise is being made about the need for libraries to be automated. Automation in essence is nothing but application of Information and Communications Technology (ICT) tools to perform library functions (Acquisitions, Cataloguing, Circulation, Serials Control, etc.) in order to reduce human interaction and enhance performance. By so doing, some of the inherent benefits such as: saving energy sapping exercise, quality of job done and throughput, accuracy and precision of the output generated, among others will be achieved.

The concept of library automation is gradually gaining ground in Nigerian Libraries, particularly in university libraries. While some libraries are implementing automation process others find it difficult to implement because of lack of fund, library personnel are afraid of losing their jobs if computers take over, sense of incompetence in using computer, level of infrastructural development in the country, etc.(Ogunrombi, 1992; Omeluzor, Adara, Ezinwayi, Bamidele and Umahi, 2012; Otunla, 2016) The study therefore runs through the memory lane of automation efforts in University libraries in Nigeria by presenting stories of successes and challenges. The focus of this study is to examine automation efforts in public and privately owned university libraries (PPOULs) in the South-West Nigeria by identifying university libraries that had implemented automation process. This study will be carried out under the following stated specific objectives:

1. Identify University libraries in South-West, Nigeria that have been automated.

2. Determine types of automation software being used in each of PPOULs

3. Give the description of automation software being used for automation in PPOULs.

4. Identify modules activated to perform library functions by PPOULs.

5. Determine their web presence through availability of accessible WebPAC/Online portal.

6. Identify common challenges faced by PPOULsin the South-West, Nigeria.

Literature Review

Library automation in Nigerian libraries started in the eighties and in the nineties, (Ogunrombi, 1985and Ossai-Ugbah and Ogunrombi, 2013). In spite of the fact that automation started in Nigerian libraries more than three decades ago, many libraries are yet to adopt and implement automation process due to paucity of funds. Some libraries who had implemented automation are migrating from one library software to another due to either failures of the library software being used or need for achieving flexibility and robustness in respect of operations. Academic libraries in Nigeria have made several efforts in implementing different automation software; this includes proprietary, open source and in-house library software but they are faced with different challenges. For example, Ossai-Ugbah and Ogunrombi (2013) recounted that the first concerted effort at automating library in Nigerian federal universities failed woefully. Ogunrombi (1992) stated that Ladoke Akintola University of Technology (LAUTEC) Ogbomoso library automation project commenced in 1991 with TINLIB but was hampered due to dearth of funds to maintain the project. In 2011, the library migrated to Koha Integrated Library System (ILS),open source software. Fatoki (2004) reported that the Kenneth Dike Library (KDL), University of Ibadan took a giantstep in automation in 1991 through embarking on the creation of its own database, using the mini micro CDS/ISIS software package. The library, according to the author migrated from CDS/ISIS to TINLIB in 1993 as a result of the need to convert to the use of Library of Congress Machine Readable Catalogue (LCMARC). In 1998, an upgrade to a newer version 300 was done. This initiative was taken in response to the National Universities Commission (NUC) directive that all the federal Universities in the country must use common platform for creating their databases. In the year 2000, as a result of teething problems encountered with TINLIB, the library purchased Integrated Technical Services (ITS) for windows. This was a cataloguing tool with LC records since 1968 till date.When the need for migrating to a more robust ILS which would provide flexibility was felt, the library migrated to Alice for windows. What necessitated the need for migration is that TINLIB was a Disk Operating System Based (Dos-Based) ILS which did not provide the

envisaged flexibility in terms of operation but a window-based ILS (e.g., Alice for windows) does. In 2008, the library migrated to VIRTUA (A web-based ILS that supports interoperability of information system) alongside other five federal Universities with support from Carnegie and MacArthur foundations. Currently, KDL is using VIRTUA together with in-house software, the University of Ibadan Integrated Library System (UIILS).

Zaid (2004) shared University of Lagos automation experience. The author reported that University of Lagos library is one of the beneficiaries of TINLIB (The Information Navigator Library Software). The Library adopted TINLIB in 1994 and by July 1999, the library systems were configured to access the web, giving the library full Internet Connectivity. The Library later migrated to GLAS (Graphical Library Automation Systems) in 2000 due to the inability of TINLIB to import data from window-based software and the frustrations faced by the users when they cannot easily manipulate the system to get what they are looking for in the library. The library is currently using Millennium ILS.

Otunla and Akanmu–Adeyemo (2010) reported that Bowen University Library, a privately owned university started her first automation project in 2007 with Koha, an Open Source Integrated Library System. The authors stated that all modules are in use and as a result it enhances the operations and provision of a robust information services delivery to users. The response from users' surveyed carried out by the authors showed that library users prefer the automated system to the manual system; because some users stated that OPAC search is easier, faster and better compared to a search through the card catalogue which is purely a traditional system that enables them to know the status of items in the library. Koha ILS has been in use since 2007 to date and there is no known major setback since its adoption.

Adegbore (2010) also gives an account of Nimbe Adebimbe Library of Federal University of Agriculture Abeokuta automation experience with TINLIB in 1994 and from TINLIB to GLASS. The library could not maintain the software because of high cost of annual maintenance fees. The library migrated to Koha ILS in 2013 and it is currently in use.

Adekanye (2011) also shares Lagos State University Library automation experience. According to the author, LASU automation effort started since 1984 but the actual process of computerization operation was between 2002 and 2004. In 2003, the library adopted the use of Alice for windows. The author concludes that the automation process enables the library to boast of functioning computerized integrated system which allows them to offer a great number of services and improve the quality of their services greatly.

Imo and Igbo (2011) stated that Obafemi Awolowo University started her automation process with TINLIB between 1996 and 2003 and like other federal Universities adopted VIRTUA in 2007. The authors also reported that Federal University of Technology Akure (FUTA) started with GLASS in 2003 and the library is presently using SLAM.

Omeluzor, et al (2012) recounted the Babcock University automation experience. The paper explains that Babcock library adopted X-Lib software in 2003, but the software has a limitation because it is not web based. In 2010 the Library migrated from X-Lib to Koha ILS andimported 23,274 records from X-Libinto Koha ILS. The paper established that there is no major setback since the implementation Koha at Babcock University Library except epileptic power supply which is a general problem to every automation project in Nigeria.

Mbakwe and Ibegbulam (2014) recounted automation experience at University of Nigeria, Enugu (UNEC) Library. The library at several times automated with TINLIB, X-LIB and LIB+ but later abandoned them due toinadequate funding, high subscription cost, shortage and lack of skilled manpower, erratic power supply and frequent system failure. Akpokodje and Akpokodje (2015) also reported that University of Jos started her automation in 2001 with the Integrated Technical Services (ITS) for windows ILS and later migrated to VIRTUAin 2007. In 2013 the Library adopted the use ofKoha ILS due to fire outbreak in the library. Studies have shown that most libraries in Nigeria are partially automated. This is because some of these libraries are yet to fully implement all the automation modules. Of all the modules, cataloguing modules is the most used, followed by circulation modules while acquisitions and serials modules are rarely used by libraries (Issa,Ayodele, Abubakar and Aliyu, 2011; Otunla, 2015 and Otunla, 2016).

There are many challenges faced by libraries in Nigeria in the implementation of automation process. The challenges includes erratic power supply (Omeluzor, et al, 2012 and Mbakwe and Ibegbulam, 2014), insufficient funds (Adegbore, 2010; Egunjobi and Awoyemi, 2012; Ossai-Ugbah and Ogunrombi, 2013and Otunla, 2016), Librarians attitude towards automation, lack of specialized ICT staff and poor ICT skills (Ogunrombi,1992; Egunjobi and Awoyemi, 2012 and Otunla, 2016). These challenges have created setbacks for few libraries while others still recorded success in the face of these challenges.

Methodology

The research design for this study is descriptive research design using questionnaire to elicit information from the respondents. The

purpose of using this method is to obtain information and describe the current status of the automation in libraries under survey.

Population

   The population is made up of all universities in South-West Nigeria except Open University which is not a conventional University. There are thirty-nine (39) universities (Table 1) in the South-West geo-political zone of Nigeria as at March, 2016.The study used the total enumeration since the population size is small and also to ensure participation of all university libraries in South-West. Therefore, there is no need for sampling. Table 1 shows the number of universities in the South-West Nigeria by state.

TABLE 1: Population of University Libraries in South-West, Nigeria

State	Federal University	State University	Private University	Total
Lagos	1	1	4	6
Oyo	1	1	2	4
Ogun	1	2	9	12
Ondo	1	2	3	6
Ekiti	1	1	1	3
Osun	1	1	6	8
Total	6	8	25	39

Source: www.nuc.edu.ng

Instrument

   The major instrument used for data collection for this study is questionnaires. A structured questionnaire was designed using Google forms (https://goo.gl/forms/bwxvuLVKT9WHOWPR2) to elicit information and the link was sent to theSystems Analysts/Librarians of each of the libraries via e-mail. All the libraries responded therefore the response rate was 100%. Responses were collected by Google in an Excel sheet forma for analysis. Observation method was also used to observe Library Portals of each of the university libraries to determine their web presence and availability of their OPAC on the Web (WebPAC) in order to enable remote access to the library's holdings.

Data Analysis

   Data collected were analyzed using frequency counts and percentages which are presented in tables.

Analysis of the findings

TABLE 2a: Numbers of University Libraries with Automation

Option	Frequency	Percentage
Yes	24	61.5
No	15	38.5
Total	39	100

Table 2a illustrates that 24 (61.5%) of the universities libraries in South - West Nigeria had implemented automation while 15(38.5%) are yet to start automation process in their libraries. This finding indicates that more than half of the universities libraries in the South-West Nigeria are automated.

TABLE 2b: Number of University Libraries Automated by State

State	Federal University	State University	Private University	Total
Lagos	1	1	1	3
Oyo	1	1	0	2
Ogun	1	2	5	8
Ondo	1	1	0	2
Ekiti	1	1	0	2
Osun	1	1	5	7
Total	6	7	11	24

Table 2b shows number of university libraries that had implemented automation process by state. The Table reveals that University libraries in Ogun state top the list with 8(33.3%) among universities libraries that had implemented automation process. This is followed by Osun state with 7 (29.2%) university libraries, 3 (12.5%) in Lagos state while Oyo, Ondo and Ekiti states recorded 2 (8.3%) university libraries each. The Table further shows that all the Federal University libraries in the South-West were automated. Seven (87.5%) out of eight (8) State universities libraries were automated while 11(44%) out of twenty five (25) Private Universities libraries had implemented automation.

TABLE 3: Types of Software and Modules Used by University Libraries in South–West, Nigeria

S/N	Institution	Type of Institution	Software Used	Module currently in Use			
				Acquisitions	Cataloguing	Circulation	Serials
1.	Adeleke University, Ede, Osun state	Private	Koha	*	✓	✓	✓
2.	Babcock University, Ogun state	,,	,,	✓	✓	✓	*
3.	Bowen University, Iwo, Osun state	,,	,,	✓	✓	✓	✓
4.	Federal University of Agriculture, Abeokuta, Ogun state	Federal	,,	*	✓	*	*
5.	Federal University Oye-Ekiti, Ekiti state	,,	,,	*	✓	*	*
6.	Fountain University Osogbo, Osun state	Private	,,	*	✓	*	*
7.	Joseph Ayo BabalolaUniversity, Arakeji, Osun state	Private	,,	*	✓	✓	✓
8.	Ladoke Akintola University of Technology Ogbomoso, Oyo state	State	,,	✓	✓	*	*
9.	Mountain Top University, Ogun state,	Private	,,	*	✓	*	*
10.	Osun State University, Osogbo.	State	,,	*	✓	*	*
11.	Redeemers University Ede, Osun state	Private	,,	✓	✓	✓	✓
12.	Tai Solarin University of Eduation, Ijebu Ode, Ogun state	State	,,	*	✓	*	*

13.	University of Lagos, Akoka Lagos state	Federal	Millenium	*	✓	*	*
14.	Covenant University, Ota, Ogun state	Private	″	✓	✓	✓	✓
15.	University of Ibadan, Oyo state	Federal	VIRTUA and In-house (UIILS)	*	✓	✓	
16.	Obafemi Awolowo University, Ile -Ife, Osun state	,,	VIRTUA	*	✓	*	*
17.	Federal University of Technology Akure, Ondo state	,,	SLAM	*	✓	✓	*
18.	AdekunleAjasin University, Akungba-Akoko	State	,,	✓	✓	✓	✓
19.	Lagos state University, Ojoo	"	Alice for Window	*	✓	*	*
20.	Olabisi Onabanjo University, Ago-Iwoye, Ogun state	,,	,,	*	✓	*	*
21.	Bells University, Ota, Ogun state	Private	Library Management (in house)	✓	✓	*	✓
22.	Crawford University Igbesa, Ogun state	Private	Kulmark (in house	✓	✓	✓	✓
23.	Ekiti State University	State	SLIM (open source)	✓	✓	✓	✓
24.	Pan Africa University, Lagos	Private	CDS/ISIS	*	✓	*	*

NOTE: ✓ stands for fully implemented while* stand for not yet implemented

Source: field survey, July 2016

The respondents were requested to indicate library software and the module used. Table 3 shows that 12 (50%) out of 24 libraries that had implemented automation are using Koha ILS, while Millennium, SLAM,

VIRTUA and Alice for windows recorded 2 (8.3%) libraries each, CDS/ISIS, Kulmark, SLIM and Library Management recorded one library each while University of Ibadan Integrated Library System (UIILS) is used by Kenneth Dike Library (University of Ibadan) to complements VIRTUAL ILS. The Table also reveals that cataloguing module has been implemented by all libraries, 11 (45.8%) implemented circulation module while 9(37.5%) had implemented acquisitions and serials module. Further result revealed that two of the libraries(i.e. Fountain University and Mountain Top University) installed Koha LIS less than six months as at the time of collecting data for this study

TABLE 4: Description of ILS Being Used by University Libraries in South-West, Nigeria

Description of ILS	Frequency	Percentage
Open source	13	52
Proprietary	9	36
Developed In-house	3	12
Total	25	100

n=25

Table 4 depicts that 13(52%) are using open-source software, 9(36%) used proprietary while only 3(12%) used in-house software. Further information provided by the respondents revealed that 4 libraries migrated from proprietary library software to Koha which is an open source, while one of the libraries that are presently using proprietary software indicated that the library will soon migrate to an open source because of the high cost of maintaining the proprietary software presently used by the library.

TABLE 5: Web Presence of University Libraries in South-West, Nigeria

Option	Frequency	Percentage
Portalonly	14	58.3
Portal and Web PAC	4	16.6
None	6	25
Total	24	100

Table 5 depicts the web presence of university libraries in the South West, Nigeria. Respondents were requested to indicate whether they

have library portal or not in order to determine their availability on the web.To determine the web presence, the authors searched online for each of the libraries under study to find out if they have a portal as well as Web PAC as at March 2016. The findings shows that only 4(16.6%) have both portal and Web PAC, 14(58.3%) have only portal while6(25%)have neither portal nor Web PAC.

TABLE 6: Common Challenges Being Faced by University Libraries in South-West, Nigeria

Challenges	Frequency	Percentage
Lack of constant power supply	24	100
Insufficient staff to carry out automation process	20	83.3
Insufficient funds to maintain the automation Projects	13	54
Librarians' attitudes towards automation	12	50
Hardware and software problems	11	45. 8
Poor ICT skills among Librarians	10	41.6
Lack of specialized ICT staff	10	41.6

Table 6depicts that all (100%) respondents indicated that lack of constant power supply,83.3% indicated in sufficient staff to carry out automation process while 54% indicated insufficient funds to maintain the automation process as the major challenges faced by University Libraries in the South-West, Nigeria. Lack of specialized ICT staff and Poor ICT skills among Librarians are the least challenge faced by the libraries with 41.6% respondent.

Discussion of the Findings

The study found that among thirty-nine university libraries in the South-West Nigeria, 24(61.5%) had implemented automation. The findings also revealed that all Federal Universities, 7 out of 8 state university and 11out of 25 private universities in the South West had implemented automation. Further finding indicates that Ogun state has the highest number of libraries(8) that had implemented automation. This finding shows that in spite of the fact that automation started over 3 decades ago in Nigeria some library are yet to embrace the benefit of automation. One would have expected that all university libraries in Nigeria would have been automated by now; surprisingly some are still

operating manually. Inadequate funding has been reasons preventing some libraries in Nigeria from implementing automation. Few of those that had implemented automation process are still at infancy stage while others are partially automated. Some libraries are still using the card catalogue with the OPAC claiming that the card catalogue is been used as backup in case there is no power supply. This finding confirms Issa et al (2011) and Otunla (2016)that some libraries are complementing their automation project with manual operation.

On type of software used, Koha, Millennium, SLAM, VIRTUA Alice for windows, CDS/ISIS, Kulmark, SLIM and Library Management, and University of Ibadan Integrated Library System (UI-ILS) are being used by the libraries under study. Koha was used by 12(50%) libraries. The highest percentage recorded by Koha ILS indicated that Koha isthe most used Library software by Universities in the South West Nigeria. This finding is in agreement with Otunla (2015)study on "Adoption and Users perception of Koha ILS in Nigeria". The finding revealed that Koha gained more popularity among libraries in the South-Westgeo- political zone of Nigeria.

On type of module implemented, cataloguing module has been implemented by all libraries, 45.8% implemented circulation module while 37.5% had implemented acquisitions and serials module respectfully. The finding indicates that some libraries are not enjoying full benefit of automation since all the modules are not fully implemented. This finding corroborates that of Issa et al (2011), Abbas (2014) and Otunla (2016) that only cataloguing module is mostly used by libraries in Nigeria while other modules are partially being implemented or proposed.

The study also found that 54% are using open-source software, 32% used proprietary while only 12% used in-house software. For example University of Ibadan uses proprietary (Virtual) and complement with in-house (University of Ibadan Integrated Library System (UI-ILS). This finding shows that more libraries are using open-source ILS. Some libraries indicated that they migrated to open source because they can no longer afford the high cost of annual subscription to proprietary software. Two of the libraries also indicated that they would soon migrate to open source. Open source may be the solution to libraries in Nigeria that are yet to implement automation process because of lack of fund.

Most of the libraries studied do not have a WebPAC. It was only 16.6% that have both portal and Web PAC; 58.3% have library portal while 25% have neither library portal nor WebPAC. In this technological

age, libraries and Librarians must ensure that they are visible on the web so that they can remain relevant to their users. It is important that libraries create web pages and platform where users can access their resources and use their services. Many library users now prefer e-resources because they can access anytime anywhere without necessarily coming to the library. If the Librarians do not take the library to them by been visible online, they will lose their customers. Libraries that had implemented automation process should take it to another level by creating an avenue whereby their users can access library resources remotely without coming to the library.

The study also found that the major challenges faced by the universities library in the South-West Nigeria are lack of constant power supply, insufficient staff to carry out automation process and insufficient funds to maintain the automation projects. Omeluzor, et al (2012) and Mbakwe and Ibegbulam (2014) confirmed these findings. Lack of power supply is a common challenge faced by libraries in Nigeria because it has negative implication on the library data as well as the equipment that houses the data (Computer). In respect of data, if it had not been saved before the power source was interrupted; it is like starting data entry all over again which is considered to be time wastage. In terms of the equipment that houses the data, its components may be malfunctioning. In order to guide against inadvertent loss of data and equipment failure, there is need for a reliable power backup. However, few libraries had overcome the problem of erratic power supply. For example Otunla and Akanmu-Adeyemo (2010) reported that Bowen University Library was added to the priority areas that needs power supply in the university since their automation project in 2007.Also, Ojedokun, Otunla, Adigun, Adekunle, Oshiname, Olla, and Omotayo (2015) confirmed that Bowen Library now has her own power generating set since the library moved to her permanent building and their two servers were powered by inverters.

Another major challenge identified in the study is insufficient staff to carry out automation project. The available Information Technology (IT) staff to drive automation project in terms of setting up a sustainable platform for successful implementation in PPOULs is grossly inadequate. In most cases, a job that is supposed to be performed by three staff is being handled by one staff only. This undermines the integrity of the platform being set up for proper implementation to aid effective information services delivery, talk less of the associated health implications when the affected staff is being overworked. Lack of fund has always being considered as a major setback in previous automation

attempt in the past (Ogunrombi, 1992; Adegbore, 2010 and Egunjobi and Awoyemi, 2012). But today, library could go for open source library software to reduce the cost of automation since they will only pay for the hardware alone and not the software.

Lack of specialized IT staff among library personnel also contributed to major setback faced by libraries in South-west, Nigeria. According to Haider (1998) "emphasis on library education had previously been on traditional librarianship in Pakistan and as a result there is scarcity of Librarians who could plan, design, program and implement various components of automation". Librarians lack adequate knowledge about computers and its potential in implementing library automation. Also, lack of competent Information Technology (IT) personnel with adequate qualifications in the library schools aggravates the predicaments of graduates of our library schools in Nigeria. As a result, there is need to employ librarian with computer science background as Systems Librarian/Administrator.

Librarians' attitude toward automation is very important for a successful automation project. Attitude, according to Eagly and Chaikan, (1993) is "a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour". People naturally resist change; be it positive or negative and they work towards resisting the change without considering whether the change will benefit them or not. This is the case among librarians as many still want to stick to manual method of processing materials instead of going into full automation. There is need for Librarians to change their attitude towards automation project because implementation of automation will not harm the library operations instead it will benefit the library and add value to library operations and services.

Conclusion

The study surveyed automation efforts in public and privately owned university libraries in South-West Nigeria. Effort made on automation by different university libraries was also examined. The finding indicates that15 (38.5%) of university libraries in South-West, Nigeria are yet to implement automation process. All these libraries are privately owned university libraries. This shows that all public (both federal and state) libraries had been automated. The population of those that are yet to automate their libraries in South-West, Nigeria is still high considering the fact that automation effort started over three decades ago in Nigeria. Therefore all university libraries that are yet to implement automation process in their library should do so in order to meet various

information demands of their users. Libraries that had implemented automation process should also endeavour to maintain it and organized frequent training for both library staff and users. The positive role of automation in any academic library, particularly in the university settings cannot be over emphasized. It has associated growing list of benefits when it is adopted and implemented with unalloyed commitment on the part of both the management and staff of the affected library. The initiative will enhance effective information services delivery and at the same time increase output. There are many challenges highlighted in this study that libraries might encounter during and even after the implementation of automation process. These challenges vary from one library to another; therefore libraries should not be discouraged and make use of the solution proffered in this study because the benefits of automation outweigh that of the challenges they may face. Based on the challenges highlighted, this study hereby recommends that:

* Servers and computers should be powered with both strong and reliable Uninterrupted Power Supply (UPS). Each library should also have a dedicated generator or preferably inverter for university libraries that can afford it.

* Libraries should employ librarian with computer science background as Systems Librarian/Administrator who will be in charge of the automation project for effective information services delivery.

* As a result of lack of fund, libraries should adopt open source LIS where they will not need to pay annual subscription fee instead of proprietary software where they will pay higher fees annually.

* Librarian should be sensitized on the need for automation, stating its benefits to the institution and the community it serves.

* Librarians should also endeavour to change their attitude from traditional practice and shift to modern way of library operations and services.

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