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Assessing Library Automation and Virtual Library Development in Four Academic Libraries in Oyo, Oyo State, Nigeria

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The paper examines the level of library automation and virtual library development in four academic libraries. A validated questionnaire was used to capture the responses from academic librarians of the libraries under study. The paper discovers that none of the four academic libraries is fully automated. The libraries make use of librarians with background training in computer applications coupled with in-house and sponsored conferences and workshops. Again, none of the automation and internet equipments in these four institutions is assessed to be adequate. The paper recommends that parent institutions should give priority to the development of library automation and virtual library development through internet connectivity by voting adequate fund to this project.

Keywords: library automation, information and communication technology, virtual library, open access, online public access catalogue

Introduction

Library service delivery that is manually based may no longer cope with ICT (information and communication technology)-driven society of the 21st century. In reality, many academic libraries in Nigeria are yet to be automated without virtual library and internet service. This paper gives an up-to-date account of library automation and virtual library development in four academic libraries in Oyo town, Oyo State, Nigeria. Academic libraries in Nigeria like libraries all over the world are challenged by the network, information and technology revolution.

Despite the rising awareness and the springing up of cyber cafés and internet services in the urban centres in Nigeria, academic library automation and virtual library development are still very slow. Manjunath (2008) attested to this when he submitted that though library automation was very fundamental, it is yet to take off in majority of Indian libraries. He justified the need for library automation as more than cost effectiveness the benefits derived by the library users.

In library automation environment, there are a few barriers militating. These problems are nevertheless surmountable. The fear of adverse impact on employment can be reduced as man power saved in cataloguing could be utilized in retrospective conversion and analytical cataloguing or introducing new services. The apprehension that both the hardware and software technologies would be expensive has been addressed by the UNESCO (United Nations Educational Social and Cultural Organisation). According to Manjunath (2008), UNESCO developed a PC (personal computer)-based software titled CDS/ISIS (computerized documentation

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service/integrated set of information systems) and made available at a very nominal price to all the libraries in developing countries. It is in the light of this that UNESCO started the development of CDS/ISIS which is a generalized information storage and retrieval system. This has been expanded to include support for development of free and open source software.

The in-house training for handling the software is usually provided by the developers and one can choose the software which can suit their budget. The training of staff also depends on the level of automation. The fear of failure occasioned by mass failed automation projects in libraries has slowed down the enthusiasm in embarking on automation.

Objectives of the Paper

Objectives of the study include the follows:

(1) to determine the level of library automation development in the libraries;
(2) to find out the personnel and training requirements in automation development;
(3) to assess the level of development of virtual library project in libraries;
(4) to assess the provision of internet facilities in the libraries.

Research Questions

The research questions of this study are as follows:

(1) What is the level of library automation development in the libraries?
(2) What are the personnel and training requirements in library automation development?
(3) What is the level of development of virtual library project in libraries?
(4) What is the level of provision of internet facilities in libraries?

Literature Review

Perhaps, the selection of a software package may mar or make the effectiveness and success of any library automation project. There is no perfect software package and libraries must keep in touch with the development of the software in use because software is consistently being revised. For library beginning automation, Manjunath (2008) opined that to make a beginning, CDS/ISIS was the best suited as it involved minimum investment on both hardware and software. Once a database with bibliographic details is developed, the same data can be used for circulation activities. The selection of software becomes crucial.

In order to assist libraries in developing countries to overcome the huge cost and maintenance problems of acquiring software, UNESCO has championed the development of the CDS/ISIS software dated to 1985. Jean-Claude Dauphin has been working as a program specialist and project manager in software development of UNESCO for many years, and UNESCO has over the years produced a multilingual software that is distributed free-of-charge around the world. It started with the development of CDS/ISIS which was a generalized information storage and retrieval system for bibliographic information in the 1980s. It has, however, been expanded to include support for the development of free and open software culminating in the launch of UNESCO's free open source software portal in 2001. In 1985, UNESCO came up with Micro CDS/ISIS which was an advanced non-numerical information storage and retrieval software. A window interface between CDS/ISIS and IDAMS (internationally-developed data analysis and management software) has also been

developed which, of course, is the UNESCO software for statistical analysis. It must be stressed that CDS/ISIS software has undergone major development since 1980. There are different versions, such as December 1985, Version 1.0; March 1989, Version 2.0; June 1993, Version 3.0; November 1997, Version 1.0 of CDS/ISIS for Windows; January 1999, Version 1.311; June 2000, Java ISIS 3.0 and January 2001, Official Version 1.4 of CDS/ISIS for Windows.

It must be noted that there are a good number of CDS/ISIS application development tools. The windows version of CDS/ISIS can also be used as a platform for developing simple applications using its powerful formatting language. CDS/ISIS is continually undergoing changes and modifications. The ISIS basic version of UNESCO has metamorphosed to produce WEBLIS (Web-based library integrated system) software for library automation. And currently, most libraries in developing countries are now waiting to move from WEBLIS to ABCD (automation of libraries and centers of documentation) software for library automation.

ABCD development is promoted and coordinated by regional medicine library (BIREME). BIREME is founded in Brazil in 1967, under the name of regional medicine library (which the acronym BIREME comes from). Although, the name has changed to Latin-American and Caribbean Center on Health Sciences Information, it maintained the acronym. ABCD is Web-based integrated library management software comprising the main basic library functions. The author of ISIS (integrated set of information systems) held the aspiration to improve to a level where all the main library functions will be covered. The main characteristics of ABCD are the coverage of the main library functions, its centrality and its development and maintenance under the methodology of free and open source software. ABCD is aligned with ISIS 1660 Version 5.2 platform and will eventually be made compatible with later versions. ABCD is compatible with programming languages accepted by the GNU licenses, i.e., PHP (hypertext pre-processor formerly personal home page), Java and Java script.

Manjunath (2008) observed that with wide range of technology/products in circulation, librarians must keep a watch on the developments and to choose appropriate technology depending on the needs. It is therefore very necessary for librarians to interact with computer professionals as the library automation needs proper co-ordination among diverse professionals.

Virtual library has been defined differently. Gapen (2007) defined virtual libraries as the concept of remote access to the contents and services of libraries and other information resource. Okebukola (2002) described it as a collection of library resources in electronic form, which could be accessed and used with great ease with the aid of computer technologies for the purpose of promoting learning and research. Therefore, virtual libraries connotes conglomeration of electronic databases, e-books and e-journals store on large memory capacity server which can be accessed electronically. Such electronic storage device is also linked with the internet. These three stages in developing virtual libraries, according to Ramayah (2006), included library computerization, digitalization of library resources and subscription to online/electronic databases, e-books and e-journal.

To avoid failure in virtual library development, Ani (2005) identified three influencing factors which included staffing/human capacity building in ICT, level of computerization and level of infrastructure. In implementing library automation and virtual library project, a lot of challenges are faced by libraries. Okojie (2008) identified provision of electric power supply as very essential. Agbaje (2007) noted that electricity was needed for resources to be accessed at any time from any part of the world, and the web servers that host locally digitized contents and proxy server that provide authentication and remote access of digitization and uploading of content and maintenance of the software also depended on the availability of electricity. Libraries have

resulted to purchasing generating plants which are subject to the problems of maintenance, theft and shortage of fuel (Okojie, 2008). The other challenges include among others inadequate skilled staff, cost, sustainability, absence of national policy on information, communication and technology, intellectual property and copyright issues for local content.

A library can not afford to be an island to itself in view of the enormous intellectual materials available on the net. According to Maceviciene and Tolasis, the catalog of the Vilnius University Library was accessible via internet and OPAC (online public access catalogue) search facility that can be accessed from World Wide Web.

Academic libraries, therefore, stand to benefit immensely from the myriad of intellectual collections which can only be accessed if the library is linked to the internet. Libraries could take the advantage offer through open access resources in the internet. Since Open Access according to Bailey (2006) quoting the BOAI (Budapest Open Access Initiative) is regarded as the literature that should be freely accessible online which scholars give to the world without expectation of payment. In this category, there are two namely: self-archiving and open access journals.

Research Methodology

The target population for this study is the academic librarians with a minimum qualification of a BLS (Bachelor Degree in Library and Information Science) in the services of the four institutions. The total number of 21 academic librarians in the four institutions was enumerated. The total number, distribution of librarians and the names of the institutions involved in the study are shown in Table 1.

Table 1

Distribution of the Respondents and Names of the Institutions

S/N	Institution	Number of academic librarians
1	EACOED (Emmanuel Alayande College of Education), Oyo	5
2	Federal College of Education FCE (Sp.),Oyo	7
3	Federal School of Surveying, Oyo	3
4	ACU (Ajayi Crowther University), Oyo	6
Total		21

Research Instrument

In this study, a questionnaire was used as instrument to collect information from the respondents. A validated questionnaire titled “Library Automation and Virtual Library Development in Tertiary Institutions in Oyo Town” was designed by the investigator. The questionnaire delved into the basic characteristics of the respondents particularly the qualifications and experience. The other areas that the questionnaire assessed include level of automation development, categories of personnel, their training requirements and virtual library development among others.

Since the institutions involved are located in the same environment, the investigator personally distributed and collected the questionnaire in each of the institutions. The whole 21 questionnaires were administered and retrieved indicating a 100% turnover.

Data Analysis

The data generated for research questions (1-4) were analyzed using descriptive statistics: percentages and

means. Tables were used to present data. The data generated through the questionnaires were processed to determine the mean scores. In doing this, 4-likert scale ratings were used to determine the degree of agreement with the statements. The scale used for all questions are rated thus: “Strongly agreed”, 5; “Agreed”, 4; “Disagree”, 3; and “Strongly Disagreed”, 2.

Results of the Findings

The respondents were analyzed according to their qualifications and experiences. The results showed that 21 (100%) were computer literate; 11 (52.3%) had bachelor degree in library and information science; nine (42.9%) had masters degree in library and information science while one (4.8%) had Ph.D. in library studies. Analysis of the experiences of the respondents showed that 10 (47.6%) have acquired five years in service, five (23.8%) have been on the job for ten years while six (28.6%) have put in 15 years and above in service.

In interpreting the Table 2 below, the rating is used in consonant with 4-likert scale ratings. For an item to be considered to have positive effect, it must have a mean score of 3.50 and above in this study. In this case, cataloguing and classification unit of the library can be adjudged to be fairing well. In all the libraries therefore, automation is still at the infancy as the mean scores of five out of six units are below the average ratings.

Table 2

Measuring the Level of Automation in Libraries (N = 21)

S/N	Units in the library	Fully automated	Partially automated	Fairly automated	Not automated at all	Mean $\bar{X}$
1	Circulation	-	24	-	30	2.57
2	Reference	-	28	9	22	2.80
3	Cataloguing and classification	-	64	-	10	3.52
4	Serials	-	-	-	28	1.33
5	Collection development	-	28	-	28	2.66
6	Book reserve and exchange	-	-	-	42	2.00

According to Table 3, items 1 and 3 had their mean scores above 3.50, meaning that the libraries rely only on librarians and library officers with background training in computer applications. None of the libraries was using library system analysts and computer scientists as their mean scores fell below 3.50.

Table 3

Mean Scores of Categories of Personnel Used in Automated Libraries (N = 21)

S/N	Personnel categories	Strongly agreed	Agreed	Disagreed	Strongly disagreed	Mean $\bar{X}$
1	Librarians with training in computer application	80	-	-	10	4.28
2	Librarians system analysts	-	-	48	10	2.28
3	Library officers with training in computer application	35	36		10	3.85
4	Computer scientists	-	-	30	22	2.47

The result in Table 4 showed that libraries favored in-house workshops/seminars/conferences on computer applications and sponsored workshop and seminars to train and retrain librarians to effectively handle the task of computer knowledge applications. This was established with items 1 and 2 having mean scores of 4.00 and 3.38 respectively.

Table 4

Mean Scores of Training Requirements of Librarians (N = 21)

S/N	Types of training	Strongly agreed	Agreed	Disagreed	Strongly disagreed	Mean $\bar{x}$
1	In-house workshops/seminars/conferences on computer applications in libraries	50	24		10	4.00
2	Sponsored conference/workshop/seminar in computer application in libraries	35	24	6	6	3.38
3	Self-development in computer use applications	-	52	6	6	3.04
4	Formal computer training in schools	-	28	24	6	2.76

In Table 5, the mean scores of items 1 to 4 are between 2.61 and 3.23. This implied that none of the items was adequate. For instance, the networking of library workstations had the mean score of 3.23 while other items had the mean scores of 2.61 each. By inference, parent institutions need to increase budgetary allocation to library virtual project.

Table 5

Assessing Virtual Library Project Development in the Four Libraries (N = 21)

S/N	Types of libraries	Very adequate	Fairly adequate	Adequate	Not adequate	Mean $\bar{x}$
1	Networking of library workstations	-	40	18	10	3.23
2	Virtual library facilities available	-	-	33	22	2.61
3	The workstations are well connected with the internet facilities	-	-	33	22	2.61
4	Students have free access to internet browsing	-	-	33	22	2.61

In Table 6, attempt was made to assess whether the libraries under study have acquired adequate automation and internet equipment. The results indicated that the equipment are inadequate. For instance, the number of computers had a mean score of 3.23, v-sat had a mean score of 3.23 while the provision of electric generating machine had a mean score of 2.42. Therefore, Tables 5 and 6 jointly confirmed the fact that access to virtual library and internet facilities in these libraries is yet to be fully developed.

Table 6

Assessing the Adequacy of Automation and Internet Equipment (N = 21)

S/N	Equipment	Very adequate	Fairly adequate	Adequate	Not adequate	Mean $\bar{x}$
1	Number of computers	-	40	18	10	3.23
2	V-sat	-	40	18	10	3.23
3	Bandwidth	-	40	18	10	3.23
4	Electric generating machine	-	-	51	10	2.42

OPAC provides access to library databases. The provision of this service is a function of students' accessibility to computer terminals that are linked with library databases. In Table 7, the use of OPAC to access books for reading, studying and researching, and for the purpose of borrowing was assessed. The results indicated that none of these services was fully developed as the mean scores of all the items in Table 7 were between 2.47 and 3.38.

Table 7

Mean Scores of Students' Use of OPAC (N = 21)

S/N	Open public access catalogue	Strongly agreed	Agreed	Disagreed	Strongly disagreed	Mean $\bar{X}$
1	Students consult OPAC to make reading list	35	36	-	-	3.38
2	Students consult OPAC to retrieve books for study and research	-	52	9	10	3.38
3	Consult OPAC to access real intellectual contents of the books via CD-ROM	-	-	30	22	2.47
4	Consulted materials in CD-ROM data base could be printed out for personal use	-	24	21	10	2.61
5	Consult OPAC to retrieve books for loan	-	28	27	10	3.09

Conclusions

From the analysis above, it could be inferred that library automation and virtual library development in the four academic libraries are yet to be fully developed. The need for internet facilities is appreciated by all the libraries, but the institutions have not shown enough finance commitment to the project. It can be concluded that library automation and virtual library development are yet to be given adequate attention, which deserves by various institutions management and by extension the proprietors of the institutions (i.e., the federal, the state governments and the private ownership).

Recommendations

From the foregoing analysis, it is recommended that each institution should accept in principle the need for automation and virtual library development. Besides, any library that is manually-driven, by now could be considered as not catching up with the trends in ICT development and its application in libraries. The parent institutions should vote enough capital to establish and sustain the project of automation and virtual electronic data base and internet access facilities.

References

Ani, O. E. (2006). Evolution of virtual library in Nigeria: Myth or reality?. *Journal of Information Science, 31*(1), 66-70.

Bailey, C. W. (2006). *What is open access?* [PDF document]. Retrieved April 21, 2009, from http:www.digital-scholarship.com/cwb/0ALiberaries2.pdf

Gapen, D. K. (2007). *The virtual library: Knowledge society and the librarian*. Retrieved February 11, 2009, from www.haworthpress.com /store /E-Text/view

Gbaje, E. S. (2007). Challenges of implementing virtual library for higher institutions in Nigeria. Paper presented at *the 45th Annual National Conference and AGM of Nigerian Library Association*. Abuja, Nigeria.

Maceviciene, V., & Tolusis, S. (2008). *Library automation in the lithuanian academic libraries*. Automation and Information Department, Vilnius Technical University Library, Lithuania.

Manjunath, G. K. (2008). *Library automation: Why and how?*. Retrieved April 18, 2009, from http://www.igidr.ac.in/lib/paper1.html

Okebukola, P. (2002). Key issues in the development of the National Virtual Library. *Education Today: A Quarter Journal of the Federal Ministry of Education, 4*(1), 3-8.

Okojie, V. (2008). Virtual library development in colleges of education in Nigeria: Concepts, challenges and the way forward. Paper presented at *the Conference of Colleges of Education Librarians of Nigeria*. Abuja, Nigeria, March.

Ramayah, T. (2006). Interface characteristics, perceived ease of use and intension to use an online library in Malaysia. *Information Development, 22*(2), 123-133.

The UNESCO micro CDS/ISIS software [Software]. (2009). Retrieved May 26, 2009, from mhtml:file:// E:\DR\UNESCO%20-%20webworld.mht