Assessment of Automated Information Systems in two Nigerian University Libraries

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ABSTRACT

This study assessed automated information systems in two academic libraries in Nigeria; University of Lagos Main Library and Keneth Dike Library, University of Ibadan. Purposive sampling technique was used to determine the population of the study which comprises library users and staff. Six research questions were developed to guide the study. Data was collected through questionnaire and observation. The findings show that automated information systems in the two libraries are not fully utilized due to inadequate knowledge of the numerous benefits of the system. However, lack of funding, erratic power supply and inadequate orientation were identified as the inhibitors to the full utilization of the library facilities.

Keywords- Library automation, Information systems, Information services Information accessibility, Information and communication technology usage

INTRODUCTION

The need to improve human activities on earth informed the development of various technologies which were designed to meet various human needs, Libraries and information centres are not left out among the beneficiaries of the various technological innovations. Library automation is one of the by-products of this modern advancement in human knowledge. American library Association (ALA) Glossary of Library and Information Science (1983) defines automation as "the performance of an operation, a series of operation or process by self activating, self controlling, or automatic means. It implies the use of automatic data processing equipment such as a computer or other labour saving devices". Library automation is the most sophisticated electronic device invented by human be-

ing for processing enormous amount of raw data into meaningful and useful form of information with hspeed, accuracy and reliability.

There are two basic aims behind the desire to automate library processes according to Mclean (1981) these aims are "to be more efficient in what is already being done, and to offer services and support which could not be achieved manually". In another dimension Arua (2005) stressed that "the purpose and justification of library automation is to increase frequency and accuracy of records updating, decrease the time required to maintain records to improve the formats of the records and to provide multiple copies of records when they are needed.

Despite the numerous benefits of library automation, there are challenges associated with it and these challenges are more with the developing nations of the world due to economic crunch and political instabilities. Obajemuu, Ogunyade and Nwoye (2004) corroborated this assertion in their study of use of CD-ROM, according to them, poor facilities, poor f

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unding, foreign exchange constraints, expertise requirement and apathy constituted barriers to the use of CD-ROM resources in some academic and research libraries in Nigeria.

As a way of addressing the challenges posed by the new Information and Communication Technology (ICT) especially as it affects the developing nations of the world, several attempts have been made by researchers and stakeholders in the field of information towards finding solution to these impediments to full implementation of ICT. Idowu (1997) noted that several conferences and seminars have been convened to address the issues of computerization of library services/systems in Nigeria. Various themes have been put into focus at these conferences and seminars, which revolve round problems of establishing and implementing, automated system in libraries. However, there is dearth of research on the assessment of the new information system vis-avis its usage, relevance and benefits among the few libraries that have adopted or in the process of full adoption of automated information systems.

In view of this, the present research will examine the usage and accessibility of library automation in two first generation universities in Nigeria: University of Ibadan (UI) and University of Lagos (Unilag).

The university of Ibadan library was established in 1948. It is now made up of main library known as "Kenneth Dike Library" (KDL)

HISTORICAL BACKGROUND OF THE UNIVERSITY OF IBADAN AND UNIVERSITY OF LAGOS LIBRARIES

and College Libraries. The Kenneth Dike Library is the largest in Tropical Africa with over 500,000 volumes and 6,000 serial publications. KDL serves an estimated student population of about 17,000 and about 2,000 staff. The Kenneth Dike Library like other University libraries conceived the idea of automation in the early nineteen seventies (1970s) and started actively in 1978 according to Igbeka (2002) in the drive toward a successful library automation a task-force committee was set up for its uptake. The task-force had the privilege of obtaining or receiving advice from several library automation experts from the United States (US) and Britain as well as local computer-consultants.

The library Automation Committee projected three phase of the computerization project for the library. Phase 1: Database creation (current books & Retrospective Conversion).Phase 2: Setting up of the circulation module & linking the faculty libraries to the main library. Phase 3: Setting up the acquisitions module & serials module. The retrospective conversion exercise of the library was limited to only the post 1974 records and to aid in the processing of new books. LG CD-MARC was purchased and subscribed. The conversion exercise of the KDL took a long period of time due to frequent strikes by the academic staff of the university this informed contraction of the work to two consultants. One of the consultants was very knowledgeable in the software the library (KDL) was using, that is TINLIB. Despite these, the re-conversion exercise has not yet been completed.

University of Lagos Library was opened to readers in 1965, it has a total floor area of 63,360 square feet, with a capacity to hold 250,000 volumes and seat 800 readers. The library has built over the years a comprehensive collection of research and teaching materials in all major field of knowledge in support of the university's teaching and research programme. It now has a stock of over 330,000 bound volumes and subscribes to about 2,000 journal titles. The plan to automate the University of Lagos Library was

conceived barely ten years after the university's door opened to the public on October 2nd 1962. The interest then was to ease the problems affecting research, teaching and learning. To effect this, the university of Lagos library management considered the computerization of some of its operations and the series of activities in this direction culminated the commissioning of a Plessey library lending systems in September 1976 for technical reason, some of them, regrettably turned out to be still born babies (Adediji 1997). The library is presently using parallel conversion that is the automated and the manual card catalogue systems are both in use side by side. Since the retrospective conversion is still in progress.

The rate at which library and Information centers are embracing the new information technology of disseminating information calls for an assessment of the system, especially in a developing country like Nigeria where there are different obstacles to effective dissemination of information.

OBJECTIVES OF THE STUDY

The main objective of the study is to assess automated information systems in two Nigerian university libraries. The specific objectives are to:

(1) Find out the level of awareness and usage of automated information systems.

(2) Determine the attitude of users to the new information technologies.

(3) Find out how effective is automated information systems to users information needs.

(4) Find out how library automation influences information services of the libraries under investigation.

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AUTOMATION AND INFORMATION ACCESSIBILITY

(5) Identify the problems encountered by user when using the new information and communication technologies.

Library automation is a new modern trend in librarianship profession and it has over the years gained wider acceptance in libraries and information centers, especially in academic environment. Library automation as viewed by Zaid (2004) is the reality of the 21st century. It makes libraries smart and offers many opportunities to improve services to library patrons. Ifidon (2000) noted, that in an information age where there is hardly any field of human endeavor that has not been touched by the new Information and Communication technology, automation would be the answer to most of readers' services problems. He further pointed out that circulation of materials will be done much faster, the records of loans transactions will not only be in the computer memory but they can also be analyzed by type of materials, status of borrowers, and sex. Eyitayo (1996) agreed that automated library system has enormous potentials in the manage-

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ment of vast resource available in the library. Access to these resources is facilitated and the rising needs of library patrons can then be met effectively and efficiently.

Information explosion has catalyzed increased demand for IT related information services. Libraries and information centers have joined the rest of computer enthusiasts in introducing Information and Communication Technology (ICT) to improve their services. Libraries in African universities have not remained aloof in this regard (Nakondo 2004).Shibanda (2001) stressed that if Africa fails to embrace this wave of worldwide digital information technology, then, they may as well sink by it. He therefore

cautions that the existing fear and resistance on the right to communicate, access to information and exchange of experiences and ideas via Internet connectivity need not be tolerated. As noted by Nwalo (2000) application of computer to various human enterprises in Africa is still relatively new. In a survey carried out by Rosenberg (2005) on current status of university libraries in Africa, the finding revealed that majority-40 libraries (65%) of the libraries investigated had embraced automation system. Most began with cataloguing, but have neither finished that nor moved onwards to other processes. Thirteen libraries (21%) have not yet started any automation and only 9(15%) consider that they are fully automated. At the university of Zambia through a project known as Computers for Academic Management and Administrative Support (CAMAS) donor funding was secured and the library was able to install 200 computers through the university, that were among other things used to facilitate access to the library catalogue by students and staff (Chifwepa 2003).

Despite the numerous benefits of ICT Africa did not have much to show in the first and second evolutionary stages of automation. This according to Mutula (2005) was largely due to the fact that cost of systems was high and it was difficult to justify such systems. Nwalo (2000) also noted that computer engineers and Technologists are still very few in Africa relative to the demand. The effect of this according to him is that the cost of maintenance of automated library systems becomes prohibitive as libraries compete for the services of the very few maintenance personnel available in their localities.

Abolaji (2005) asserts that concerted efforts to automate library functions in Nigeria commenced in the early 1970s it was not until the last decade of this millennium that significant and widespread progress was made. Several attempts had been put forward by university libraries in Nigeria to automate their operations at one time or the other. In all these, attempts, automation of the total library have failed. However, the university libraries have not ceased attempting to automate ever since. Ehikamenor (1990) in his research to state of automation in Nigerian Universities found out and concluded that library automation is not a mirage in Nigerian University libraries. Benki (1991) equally surveyed thirty (30) Nigerian Universities libraries charging system and observed that non out of the twenty four (24) universities that responded to his questionnaire has computerized its system fully. Benki concluded that poor economic state

RESEARCH DESIGN

in the country and Africa at large may affect automation of library services in Nigeria. He therefore urged the National University Commission to sponsor automation project in three (3) universities he found that have large stock; Universities of Ibadan, Ahmadu Bello and Nsukka.

The study employed survey research design to examine the impact of library automation on information accessibility in Kenneth Dike Library, University of Ibadan Main Library and Univer-

POPULATION AND SAMPLE

sity of Lagos Main Library. The Survey research according to Obasi (1999) is the process of eliciting data from a target population through either questionnaire or interview instrument and subjecting such data to statistical analysis for the purpose of drawing conclusion.

The population for this study comprised of 1,500 registered users and staff of the libraries under investigation. (U.I: 709 registered users

TOOLS USED IN THE STUDY

The tools used for the collection of data on this study were Questionnaire and Observation.

and 67 staff, UNILAG:649 registered users and 75 Staff) The researcher decided to use registered users and library staff of the two libraries because the actual facilities to be investigated are used in the library. Purposive sample technique was used to select 450 participants from the two libraries being the 30% of targeted population 1,500.

A total number of 450 copies of questionnaire were administered in the two libraries. The questionnaire was designed by the researcher and this consists of two categories. The first category is for the users of the library automated systems which comprises of a set of 19 questions aimed at

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investigating, identifying and determining the use of automated information systems in the two University libraries. The second category is for library staff in the two libraries. This consists of a set of 15 questions aimed at finding out the user interface of the library automated system and general constraint to effective utilization of the automated system.

In the course of carrying out the research, personal

VALIDITY AND RELIABILITY OF THE INSTRUMENT

observation of the libraries helped the researcher to establish facts about the general operation of the automated information systems in the libraries. This revealed some of the constraints users generally faced in their attempt to use automated information systems in the library.

To ensure the validity of the questionnaire used to gather data on this study, it was given to experts whose research areas are relevant to this study. These include Senior Lecturers from the department of Library, Archival and Information Studies, university of Ibadan. Their observations and suggestions were used to review the draft questionnaire before final adoption. To ensure the reliability of the instrument, it was administered on twenty participants out of the envisaged population of the study. A test-

retest reliability method of three weeks interval was conducted, response obtained were subjected to

DATA COLLECTION PROCEDURES

Pearson Product Moment Correlation method and a reliability co-efficient of 0.73 was obtained for the library users questionnaire while 0.72 was obtained for the library staff questionnaire.

The researcher personally administered the questionnaire. This was in order to ensure that the questionnaires were properly completed and returned. A total number of 450 copies of questionnaire were administered in the two libraries. This gave a total of 30% of the target population of 1500. The questionnaires were administered in this order; 400 questionnaire designed for library users and 50 for the library staff. Out of the 400 administered questionnaires in the two libraries, 380 was completed and returned. ; At the University of Lagos Main Library, 200 questionnaires were administered 195 completed and returned. While at the University of Ibadan Main Library, 200 questionnaires were administered 185 completed and returned. Out of the 50 questionnaires administered to the library staff, 39 were completed and returned. Meaning that out of the 25 questionnaires administered to library at the University of Lagos, 20 were completed and returned, while at the University of Ibadan 19 questionnaires were completed and returned.

METHOD OF DATA ANALYSIS

Descriptive statistics including frequencies count and percentage were used in reporting the findings.

Results

LIBRARY USERS

Table 1 : Awareness of automated information systems

Items	University of Lagos					University of Ibadan			
	Yes	%	No	%		Yes	%	No	%
Photocopier	186	95%	9	5%		180	97%	5	3%
Scanner/Printer	154	79%	41	21%		132	71%	53	29%
E-Classroom	132	67%	63	32%		144	78%	41	22%
OPAC	185	94%	12	6%		169	91%	16	9%
CD-ROM	146	75%	49	25%		140	76%	45	24%
Internet	188	96%	7	4%		176	95%	9	5%
Online Journal	119	61%	76	39%		164	89%	21	11%

As shown in the table one above, majority of respondents in the two university libraries indicated that they were aware of the availability of the various automated information systems in the library.

Table 2: Frequency of Use of automated System

Items	University of Lagos						University of Ibadan					
	Rarely	%	Sometime	%	Frequently	%	Rarely	%	Sometime	%	Frequently	%
Photocopier	23	12	58	30	114	58	25	14	65	35	95	51
Scanner/Printer	121	62	62	32	12	6	131	71	42	23	12	6
E-Classroom	68	35	99	51	28	14	105	57	46	15	34	18
CD-ROM	100	51	58	30	37	19	81	44	49	26	55	30
OPAC	99	51	72	37	24	12	120	65	60	32	5	3
Internet	25	13	50	26	120	61	41	22	57	31	87	47

From the table two (2) above, the frequency of use of the various automated information systems in the libraries varies, in the two libraries, the majority of the respondents indicated that they use photocopier frequently that is 114 (58%) and 95 (51%) from University of Lagos and University of Ibadan respectively. On the other hand, majority of the respondents from the two libraries rarely use scanner and printer in the library.

At the University of Lagos Library, 68 respondents (35%) indicated that they rarely use electronic classroom, 95 (51%) indicated that they sometime use electronic library while only 28(14%) of the respondents indicated that they make use of electronic classroom frequently. The situation is similar to the response from the University of Ibadan, 105 (57%) indicated that they sometimes use electronic classroom while only 34 (18%) indicated that they make use of electronic classroom frequently. However, the level of usage of Internet at the two libraries indicated that majority of respondents make use of Internet facilities frequently that 120 (61%) and 87 (47%) respectively. The table also shows that CD-ROM and OPAC are rarely used by patron at the two libraries as 100 (51%) respondents at University of Lagos indicated that they rarely use CD-ROM while 81 (48%) at the University of Ibadan also indicated that they rarely use CD-ROM.

The table 3 above revealed that majority of the respondents 142 (73%) and 131 (72%) from UNILAG and UI respectively showed positive attitudes to computerization. This type of attitude of user will continue to improve only when the systems function effectively without

Table 3 : Attitude of Users to Computerization

Institution	Positive	%	Negative	%
University of Lagos	142	73%	73	27%
University of Ibadan	131	71%	54	29%
Total	273	72%	107	28%

any hindrance to their use.

As shown from the table 4a above, majority of respondents 140 (72%) and 124 (67%) from University of Lagos and University of Ibadan respectively considered photocopier facilities in the library very effective while only 10% in University of Lagos and 6% in University of Ibadan considered it not effective.

room, while majority of respondents in University of Lagos 86 (44%) considered it not effective, the majority of respondents in University of Ibadan 112 (61%) on the contrary considered electronic classroom very effective the variance in the responses on e-classroom from the two universities might be as a result of conditions **at-**

Table 4A : Effectiveness of Automated Information Systems

	University of Lagos						University of Ibadan					
Items	Very Effective	%	Effective	%	Not Effective	%	Very Effective	%	Effective	%	Not Effective	%
Photocopier	140	72	45	23	10	5	124	64	49	26	12	6
Scanner/ Printer	39	20	67	35	89	45	35	19	44	24	106	57
E-Class- room	47	24	62	32	86	44	112	61	61	33	12	6
OPAC	82	42	49	25	64	33	46	25	34	18	105	57
CD-ROM	54	28	30	15	111	57	42	23	51	28	92	50
Internet	132	68	48	25	15	8	129	70	47	25	9	5
Online Journal	70	36	108	55	17	9	49	26	87	47	49	26

tached to the use of the e-classroom and its accessibility to library users.

On the contrary, the majority of the respondents from University of Lagos and University of Ibadan 89 (45%) and 106 (57%) respectively considered scanner/Printer not effective in the library. However, in the case of electronic class-

Table 4B (Library Staff): Contribution of Automated Systems on the Library's Information Services

Institution	Positive	%	Negative	%
University of Lagos	146	75%	49	25%
University of Ibadan	128	69%	57	31%

The table 4a, also shows that the majority of respondents in the two universities considered CD-ROM not effective while on the contrary, majority of the respondents 132 (86%) and 129

Table 5 : Influence of Automated Systems on the Library's Information Services

Institution	Positive	%	Negative	%
University of Lagos	146	75%	49	25%
University of Ibadan	128	69%	57	31%

(70%) in University of Lagos and University of Ibadan respectively considered internet search ing very effective.As shown in the table 4b above, the majority of respondents (Library Staff) in the two libraries 18 (90%) in University

respondents in UNILAG indicated that library opening hour does not constitute any hindrance to successful use of automated information systems while in the contrary, majority of the respondents 89(49%) in UI indicated that library

Table 6A : Obstacles that Hinder Successful Use of Automated Information Systems in the Library

| | University of Lagos | | | | | | University of Ibadan | | | | | |
Items	Strongly Agreed	%	Agreed	%	Disagreed	%	Strongly Agreed	%	Agreed	%	Disagreed	%
Opening/Closing Hours	62	32	30	15	102	52	89	49	64	33	32	17
Design of Lecture Time	66	35	39	20	88	45	84	45	62	34	39	21
Erratic Power Supply	145	71	42	22	8	4	105	57	46	25	34	18
Lack of Orientation	121	62	62	32	12	6	126	68	41	22	18	10
Poor knowledge of Computer	122	63	50	25	23	12	25	14	65	35	95	51
Position of the facilities	69	35	80	41	46	24	56	30	87	47	42	23

of Lagos and 14 (74%) in University of Ibadan indicated that automated systems of the library produced positive impact on the information services to its clienteles.

The table 5 above showed that majority of respondents from the two universities indicated

opening/closing hours hindered successful use of automated information systems in the library. In the same vein, majority of respondents 88 (45%) in UNILAG indicated that the design of lecture time table does not affect their use of library facilities, while in the contrary majority of

Table 6B (Library Staff) : obstacle to effective Automated Information Services in the Library

| | University of Lagos | | | | | | University of Ibadan | | | | | |
Items	Strongly Agreed	%	Agreed	%	Disagreed	%	Strongly Agreed	%	Agreed	%	Disagreed	%
Power Failure	15	75	4	20	1	5	14	74	3	16	2	10
Technical Problem	13	65	5	25	2	10	12	63	3	16	4	21
Lack of Training	6	30	5	25	9	45	5	26	6	32	8	42
Fund	15	75	2	10	3	15	14	74	4	21	1	5

that the automated information systems in the library had positive impact on the use of the library facilities while, only 25% and 31% respondents from University of Lagos and University of Ibadan respectively responded in the contrary.

As shown in the table 6a above 102 (52%)

respondents 84 (45%) in UI considered the design of lecture time table as obstacle to successful use of facilities in the library.

However, the majority of the respondents in the two libraries indicated that erratic power supply affected successful use of automated information systems in the library, this finding is similar to

result of Ogunsola(2005) as one of the problem facing Nigerian libraries. In the same vein, the majority of the respondents in UNILAG and UI respectively indicated lack of orientation on how to make use of library facilities and inadequate knowledge of computer as factors affecting effective use of library.

From the above table 6b it shows that erratic power supply, technical problems and lack of adequate funding constitute major obstacle to effective automated information services in the two libraries under investigation. Only 30% and 26% respondents from UNILAG and UI respectively indicated lack of training as factor that hinder effective automated library services.

DISCUSSION OF RESULTS

The research findings have established the fact that users of the two libraries under investigation were aware of the existence of automated information systems in the libraries, however the level of usage of these facilities varies; while some are used others were rarely used by respondents. For example majority of respondents from UNILAG and UI respectively rarely make use of Online Public Access Catalogue (OPAC). This finding contradicts the study of Pease and Gouke (1982) whose report showed that 90% of the users of card catalogue who tried the online catalogue switched over to its use. However, the story is different in the use of internet as majority of respondents in the two libraries make use of internet frequently. This finding is corroborated by the result of a study by Chiemeke et. al (2007) which found out that the Internet enjoyed more patronage for the purpose of research because the users visited the Internet more often for research purposes. The variance in the Pease and Gouke research to this present research on the use of OPAC is no doubt connected to various obstacles to effective use of automated facilities in the developing countries and Nigeria

in particular. The findings in this research also revealed that erratic power supply, funding technical knowledge and lack of orientation on the use of the facilities in the libraries constituted factors hindering the successful use of the library automated information systems.

The finding generally revealed that majority of respondents show positive attitudes to various automated information systems in the libraries., This corroborated the finding by Savenije (2005) that users' of university libraries require no additional intermediaries to access library collections and that researchers, teachers and students will make use of the retrieval tool independently and will only require assistance from the library when they need specific instructions or are confronted with specific problems. However, this attitude of users did not translate to effective use of some of the automated facilities in the two libraries investigated, for example respondents from UNILAG and UI indicated that the CD-ROM facility is not effective.

CONCLUSION

As revealed from the findings of this research, the level at which our various academic libraries are making use of information and communication technologies is still at a very low percentage compared to what is obtainable in the developed nation. In order to improve this situation libraries and information practitioners must first recognize the numerous benefits of automated information systems to their information services and they should be able to convince the parent institution on the need to provide adequate fund for the procurement of the facilities. Also, adequate provision should be made for the training of library staff on the uses of the various information and communication technologies. The users of these systems must

also be put in mind when designing the systems. Orientation should be organized for the users in order to create awareness and the benefits of the automated information systems in the library.

Suggestions for further studies

In the light of the findings of this study, future research should be directed towards addressing:

- An assessment of automated information systems in academic and special libraries
- The status of automation versus digitization in African academic and Research libraries

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