
THE IMPACT OF COMPUTERISATION OF LIBRARY OPERATIONS ON LIBRARY SERVICES AND USE: A CASE STUDY OF JOHN HARRIS LIBRARY UNIVERSITY OF BENIN

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Abstract

The use of computer-based systems in libraries and information units is now a vogue. The era of manual system in library operations is on its way to extinction. Recent developments in information world tend towards a globalized information communication technology (ICT). The library as a dynamic institution cannot afford to be left out in the ICT train. This work examines the impact of computerization of library operations on library services and use in John Harris Library, University of Benin, Benin City. Using the descriptive research design, the study observes that the use of computer in library operations has affected library services which has brought about effective use of the library. A careful study through observations and interview of the mode of operation before the computerization and also after the computerization era in terms of service delivery and use in John Harris Library reveals that computerization of library operation has had a considerable impact in the service delivery and use. Questionnaire were administered to the community of users of the library; their responses were analyzed using simple percentage in a tabular format and then conclusion was drawn and recommendation made.

KEYWORDS: Library Computerization, Library Operations, Library Services, Uniben

Introduction

Universities are important agents in the development of resources of any nation. The major role of a university in national development is achieved through its programmes of teaching, learning and research. Aguolu (1993) identified functions of universities inter alia;

- Conservation of knowledge
- Pursuit, promotion and dissemination of knowledge through teaching
- Advancement of knowledge through research, pure and applied and development orientation
- Provision of intellectual leadership.

The university library is at the forefront in the actualization of these functions through effective, timely and relevant information provision to serve the varied information needs of community of users; hence the adoption of ICT in universities libraries to enhance information provision is a necessity. The university library is the hub around which all academic activities (research, teaching etc.) revolve. The academic library is a resource centre. As a consequence, it is pertinent that such important academic department in the university be adequately organized in terms of its resources and information provision to meet up with the set objectives of its parent body. It is a known fact that the university is as rich in terms of its quality of knowledge delivery as its library resources and services; in other words, the quality of graduates from any university is a reflection of its library. These library resources and services must be well processed and easily made accessible to her users. The services rendered at the library can be improved upon through computerization of its operations and thus will bring about the maximum benefits derivable from its resources and services.

From time immemorial, information has been one of man's priceless needs. The libraries select, acquire, organize in a systematic way, store, retrieve and disseminate information to satisfy information needs of man. The library's main preoccupation is to communicate recorded knowledge to their users through the fastest means possible. In this era of Information technology, the primary role of the library, which is acquisition, processing and storage has changed to access to literature anywhere in the world. This is made possible because of application of computer to all facets of library operations (Igbinosa&Idiodi 2005). The computer as an information handling system appears to be the key solution to delay in information retrieval. Using the computer to retrieve information involves the

ability to scan, analyze, sift, select and present the needed information in the form that is intelligible and made available on time for it to be of use by the prospective clientele.

Fernandes (2001) emphasizes some of the functions of computers that makes it useful handling man's activities. He declared that "the rapidly accelerating advent of information technology is highly powerful, novel, widespread, and influential. Nowadays, electronic communications have become commonplace and indispensable; computers have proliferated becoming increasingly fast, powerful, small and cheap so that now there is scarcely any human activity in which they are not found, bearing an increasing share of the burden of repetitive information processing".

The revolution in information technology makes a great impact in all fields of knowledge. The field of library is deeply affected by the information technology revolution. The computer is at present the greatest gift technology has presented to the library for the overall improvement of library operations and services. Its capability is enormous. Chiemeka (2004) also gave credence to the usability of computers in the society; she stated that "computers have had tremendous impact on our society, in the manipulation of data, where complex tasks must be managed, or where there is a need for real-time access to centralized information from arbitrary locations". The academic library fit perfectly into the description above. With the aid of computers, library performance is greatly enhanced and augmented. It is a fact that in the modern age information explosion, no library can effectively give maximum satisfaction to client's demands placed on libraries world wide (especially the academic libraries), this call for alternative approach to manual processed of rendering library services. The use of computers in library operations is a welcome development in this era of information communication and technology. The imperative for service delivery which is "responsiveness" in the current dispensation can only be achieved through electronic service delivery mechanism, (Mohammed, 1991).

In an academic library like the John Harris Library, University of Benin, where clients need precision, speed and versatility in making their bibliographic

searching, automation of library operations becomes indispensable as to encourage effective use of the library. According to Ranganathan, “books are for use”, “every book has its user” and users’ time must be saved. As noted by Mohammed (1999), automation of library and information systems and services has today become an acceptable norm being the most realistic way and means of providing timely, accurate and efficient information services. It is obvious from the foregoing that computerized library and information system is the ultimate goal that must be achieved in this respect if any academic library is to be relevant in the scheme of information organization, storage, retrieval and dissemination to satisfy users in this era where our world is being technology driven.

As a result of the importance of computers to the library, most academic libraries have become automated so as to reap from its enormous benefits. John Harris Library, University of Benin has computerized its library operations; hence this research intends to find out, the impact of the computerization of the library operations on library services and use and also make some recommendations aimed at maintaining and improving the automation for better service delivery and effective use.

Pre/Post Computerization of John Harris Library

Before the computerisation of John Harris Library, library operations were carried out manually. In the cataloguing department of the John Harris Library where cataloguing and classification of books and non-books materials are carried out, cataloguers and classifiers catalogue and classify books on a catalogue worksheet, thereafter catalogue cards are prepared using typewriter and then interfiled in the library catalogue so that users can have access to the books.

However after the computerization of John Harris Library, cataloguing of materials is done on worksheet and later fed into the database by data entry personnel. There is a comprehensive computer format catalogue worksheet that allows you to create and manage catalogued records. Through an online interactive window, cataloguers can easily capture detailed bibliographic data about materials in the library and update is feasible. It is also worth noting that

duplication of titles is also possible. Computers are used to design catalogued cards, printed beautifully and trimmed to the size (3' by 5') inch before taking them to the library catalogue for interfiling. New arrivals from the acquisition department can be accessed online by the cataloguer to quicken the cataloguing and classifying process instead of starting from the scratch.

Before the computerization of John Harris Library, serials department carry out cataloguing and classification process manually like the cataloguing department. Serials are ordered, received physically and processed for users to have access to them. After the computerization, there is serial module that allows you to create and manage serial collection after the serials have been catalogued and classified. The serial module can be used to create serial catalogue records, track subscription holdings, manage serial expirations and renewals as well as maintain routing list. Once a material has been catalogued, classified and fed into the database, library users can locate it at the Online Public Access Catalogue (OPAC) computer. John Harris Library Management does not purchase all serials (hard copies) as it were before computerization, but subscribe to online journals (soft copies) to reduce cost of purchasing physical journals.

In the circulation department, library operation was manually carried out registration, loaning services etc. A borrower would have to register and have borrowing ticket (4 for students and 10 for academic staff) to have borrowing privileges. Each card for a book borrowed and the borrower needs to produce all the cards before clearance is given for the graduating students and retiring staff from the university service. In this process, a lot of human-induced errors occasioned by fatigue and other factors made this process unrealistic. After the computerization of John Harris Library, registration of borrowers was online and matriculation numbers for students and bursary numbers for staff were used as a unique number. This unique number that is assigned to individual is called patron number or account number. When a library user comes to borrow a book, with his patron number all books borrowed goes to his account. The circulation module is so structured as to enable circulation desk to easily manage loaning and

return books. No user can borrow more than the recommended number of books at a time and must return it before he can borrow another once the number allowed to be borrowed is complete. Fines are automatically calculated in case of overdue books. Arguments that usually arise during clearance by students and staff with the circulation personnel claiming that a particular book has been returned but is still held against their name have been drastically reduced with the computerization of John Harris Library as a result of the activity monitor module. This module gives statistics of the number of books borrowed: the title, author/editor, date borrowed and date returned.

The manual library catalogue used to be the first point of call for a library user who wishes to locate a material before computerization of John Harris Library then; now there is a better alternative OPAC. Using the manual library catalogue, a user may not know if the book has been borrowed or not and would spend a whole lot of time tracing the book on the shelf only to be told later at the circulation desk that such material is out on loan. OPAC has come to solve a lot of these “headaches” after the computerization of John Harris Library. OPAC helps users to have quick access through the use of location mark on the materials in the library. It gives information about the particular material that you are in need of. A library user that uses OPAC to locate material will be able to know:

- If the material is in or out on loan
- The number of copies of that particular material that the library has
- The edition of the material
- The location mark of the material
- If the material is for ‘reference only’, ‘book’ i.e. for borrowing or ‘TC’ i.e. the material that is in Textbook Collection Unit, and is meant for short term borrowing (hours) only.
- The related materials (subjects) to the material you sought (Global Software & Technology 2003).

Once a book has been catalogued and classified at the cataloguing department, it is immediately accessible at the OPAC even though it is not available at the shelves. The researchers were able to have knowledge of this mode of operation as a result of the interview carried out on the members of staff and the personal observations made.

In conclusion, a lot of hydra-headed problems associated with manual system of operation have been solved by the automated library system. It is worthy of note that John Harris Library operates at present what is generally referred to as “parallel system of operation”. This means carrying out computerised system of operation and the manual system of operation simultaneously in library routine. A very good example of this is in the borrowing system whereby the borrower is asked to fill in his particulars on the book card first before asking for the patron number, and then the book is checked into his account in the computer. The ‘raison detre’ for this preference is not far-fetched. A lot of factors are responsible for this choice of operation. Among these factors are: fear of computer failure or breakdown, insufficient fund for maintaining a computerised system, problem of constant power failure, lack of technical manpower, there is also the problem of paradigm shift occasioned by the migration from the manual library system to an automated system. It is crystal clear from the foregoing that the computerisation of library operations in John Harris Library has made a considerable impact on library services and have also impacted on effective use of the library.

Automation is the reality of the day in the present age of information technology. It is therefore important that an academic library need to be automated to effectively and efficiently carry out mandate of information provision for all categories of users to satisfy their various information needs. Against this backdrop, this study sets out to investigate the impact of computerisation of library operations on library services and use in John Harris Library. University of Benin, Benin City.

Objectives of the Study

The ultimate aim of this research is to study and evaluate the importance of computerization of library operations and how it has affected library services and use.

Specifically, the objectives include investigating:

1. the level to which computerisation of library operations has affected library use
2. the extent to which services in this library have improved as a result of the automation
3. the effectiveness of the library software used in the library
4. Whether or not computerisation of library can bring about effective service delivery to library patrons.
5. the degree to which academic librarians have embraced application of information technology in their day-to-day operations
6. the major problems militating against the automation activities and maintenance.
7. measures put in place by the library to maintain and improve the library automation with a view to avoiding a break down.
8. to make suggestions/recommendations towards improving the library automation.

Research Questions

In order to carry out this research, there are some pertinent questions to guide the researcher's investigations:

1. What level of computerization has the library reached?
2. What are the library operations or services that have been computerized?
3. How robust or effective is the library software in transforming the library into a more useful resource centre?
4. What are the measures put in place by the library to ensure continuity of the automation?
5. How literate in terms of computer skills are the academic librarians?

6. What impact has library automation, on effective use of the library?
7. To what extent has the computerized library operations solved the information needs of the library clientele?

The study will have implications on the community of users, the parent body as well as the librarians. The findings will also provide practical value for library management team, human resource planners as well as the University Librarian in the employment of capable hands for the library. This will also provide perspective on the need to provide adequate fund to properly automate the library to the next level that will meet the standard required at anytime.

Scope of Study

The study covered John Harris Library, University of Benin. In this regard, we will focus on the computerization of the library operations and the impact it has on the library services and use. Computerization of key departments in the library will be discussed to ascertain the impact it has on service delivery.

The study is limited only to the community of users of the library: students (both graduate and postgraduate), academic and non-academic staff of the University of Benin that uses John Harris Library.

Literature Review

The review of literature for this study is done under the following subheadings:

- Historical background of library automation
- Reasons for automation of library operations

Historical Background of Library Automation

According to Ibrahim (2000), the increase in the number of people using libraries, coupled with the high demand of library and information services rendered the manual system of organizing and retrieving information less effective. Library had no choice but to embrace mechanized information retrieval system- He went further to say that "this mechanized information retrieval system was an

improvement over the manual system; only input and retrieval processes were mechanised as against other processes such as acquisition, circulation, cataloguing etc". He buttressed the fact that due to the high demand for information and the number of people wanting to use the system, the system was not able to cope with the challenges of time; hence the system was short lived. The advent of the computer age provided solutions to this problem. The mechanical way of library operation gave birth to computerization. Steig, (1990) rightly noted that never had human kind devised a more powerful or versatile machine than the computer. Computers do not find relevance in making it better and easier to perform.

According to Adams (1986), computer application in library activities first emanated from USA in 1950. By 1960, computerization of libraries had gone very far especially when mainframe computer in large organizations were used to facilitate database development, management and information retrieval. The introduction of micro and later personal computers (PC) further facilitated and simplified the computerization process.

Brahim(2002) in agreement said that the above development soon enable quick change from traditional and mechanized system of processing and retrieval of information into computer compatible systems. Automated searching of files, coordinated indexing, and control vocabularies were introduced in response to the urgent need to create easy access to the contents of scientific journals. Automatic abstracts, or summary of document were then developed to further simplify access to research findings.

According to Tedd (1984) "library computerization in developed countries started during the 1960s when several libraries both in North America and United Kingdom began to experiment with computers". In the United States, much of this work was carried out in special libraries and university libraries. In 1961, H. P. Luhn of IBM developed programmes keyword indexes to titles of articles appearing in chemical abstracts and the Douglass Aircraft Corporation started to produce catalogue cards by computer. Atabor (2003) added that in the mid-1960, the Library of Congress (LC) in the United States started to experiment with the

production of MARC (Machine-readable) records. He further said that in Britain, British National Bibliography (BNB) co-operated in the development of MARC record structure and now many countries all over the world use the MARC format in the production of their national bibliographies.

In the late 1960 and early 1970, massive collection of documents were transferred to databases or converted to non-print forms: various searches could then be done by computer. It was also in the late 1970s that library application software made its debut. The software were developed to further provide effective and efficient automation process and also to provide enabling conditions for resource sharing and networking among divisions or departments/units of libraries, and/or branch libraries as Local Area Network (LAN) and among other library as Wide Area Network (WAN), Ibrahim (2000).

Reasons for Automation of Library Operations

Libraries have been termed “one of the pillars of civilization”. The World Bank Encyclopedia says that libraries are among the most important contributions to human culture and technology. The German Poet Goethe once described the library as “the memory of mankind”. The library as an agent of civilization has had a great influence on the spread of literacy in the world. The book, Library World Records states that “the French national library was the first library to provide full-text access to a great deal of its collections via the internet. The computerization of lib has provided unprecedented access to mankind’s storehouse of knowledge never before; the quantity of information available to the public is exploding (Awake 2005).

For effective accessibility, utilization and efficient service delivery in what the UNESCO termed “gateway to the knowledge”; computerization of library operations is of essence. Singh (2002) said that “library acts as a link between knowledge sources and users”. In the light of this Anaeme (2004) gave some advantages of library automation to include “provisions of update and readily available information and services to users, provision of effective inventory system and reduction of time effort required to obtain information among

others". All the advantages are likely to elude an academic library that is yet to be automated in spite of the fact that these qualities are highly essential in an academic library that is worth its salt.

It is evident that any library that applies information technology to its operations or services will surely have access to more information resources (regardless of space) and at the same time be open to the world. It is also necessary for academic libraries to embrace information technology so as to afford their faculty members access to knowledge so as to afford their faculty members access in a fast, current and dynamic way (Alas, 1998).

Research Methods

This study adopted the survey method, employing the use of questionnaire as the main instrument of data collection. Eighty copies of the questionnaire were directly administered to the community of users (students and staff of the university) of John Harris Library; also the Professional and Para-professional librarians as well as other library personnel constituted the population of the research. Of the eighty (80) copies of the questionnaire distributed among the user community, only fifty (50) - representing 62.5% - copies were completed and returned. All the copies of the questionnaire returned were found useable. Data collected were analysed using simple percentage calculation.

The main instrument in carrying out this study was a questionnaire for all categories of library users. The researcher's questions were aimed at exploring the impact automation has had on effective information provision and services. It also intends to find out if the automation of the library has brought about increased effective usage of the library resources and services. The population of this study is the community of users of John Harris Library. This comprises students and staff of the University of Benin. Other users that did not fall under this category are the non-staff of the University of Benin. The method used in the analysis of the data is descriptive statistics.

Findings and Discussions

In this study, questionnaire was mostly employed in gathering adequate information from respondents that make up the community of users of John Harris Library. A total of eighty copies of the questionnaire were administered and fifty were returned giving a percentage of 62.5%

Table 1: Distribution of the Questionnaires

RESPONDENTS	Frequency (NO = 50)	RELATIVE FREQUENCY (%)
Undergraduate	20	40
Postgraduate	5	10
Academic Staff	10	20
Non academic staff (Snr.)	5	10
Non academic Staff (Jnr.)	9	18
Non staff (Alumni)	1	2
Total	50	100

The community of users of the library that make up the sample population and their percentage distribution of questionnaire to this various sets are shown on the table. It is obvious from the table that undergraduates make up the highest number of users of John Harris Library. Having this in mind, the library management should be able to plan out a strategy of satisfying their information needs by having in place relevant and up-to-date information bearing materials for their use. This is closely followed by the academic staff. This could be as a result of easy access to available relevant materials for both teaching and research at the library occasioned by the automation. The postgraduate students and the Non-academic senior staff also make up the 10% of the respondents. The least of the category of users as depicted from the table is that of the non-staff

(alumni) who may have come just to read for leisure or undergoing a professional program outside the university.

It is obvious from table I that the John Harris Library entertains all categories of users who has registered at the library.

Table 2: Academic Background of Respondents

QUALIFICATION	FREQUENCY	RELATIVE FREQUENCY (%)
O'level	30	60
B.Sc/B.A/M.A/MSc	22	44
PhD/Prof	8	16
Total	50	100

Table 2 shows different academic background of the respondents that make up the community of users of John Harris Library. Undergraduate students will make a very high percentage of those in this category (60%) with O'level qualification. Also, 44% of the respondents belong to those with either a first degree or a master degree coming to use the library. The table reveals that out of the fifty copies of the questionnaire returned, eight (8) of the respondents making up 16% are those users that already have their PhD and also those who are already professors in their various fields.

The implication of this is that, the library caters for all categories of users with different academic background. They offer maximum satisfaction in meeting their varied information needs such as research, recreation, teaching etc. due to computerization of library operations and collections.

Table 3: Knowledge of the Library and Usage

S/N	Questions	Respondents		
		Yes (%)	No (%)	Total (%)
1	Do you use the library?	92	8	100
2	If yes to question 1, how often do you use the library?	70	30	100
3	Is John Harris Library materials and operation automated?	52	48	100

From table 3, 92% of respondents use the library and 70% of those that make use of the library consult the library very often to meet their information need; while 30% of the respondents are not regular library user. It is also seen from the table that 52% of the library users claim knowledge of the automation while 48% of respondents are unaware of it. This shows that even when the patronage of the library is encouraging, some of the library users do not know if the materials and operations are automated. This may be due to the fact that most of the users from faculty libraries in the University of Benin are not enjoying the computerization efforts of the library, hence ignorance of its existence.

Table 4: The Use of OPAC Computers

S/N	Question	Respondents		
		Yes (%)	No (%)	Total (%)
4	Are you computer literate?	85	15	100
5	Do you use the OPAC to Locate your materials in the library?	96	4	100
6	Are the OPAC computer enough for the users of the library?	36	64	100
7	Does OPAC save the time of users compare to the use of manual catalogue or browsing directly on the shelf?	96	4	100
8	Is there alternative provision for power supply in case of power failure in the library	88	12	100

Table 4 reveals 85% computer literate library users and 15% non-computer literate users. This is the reason why 96% of the library users utilize the OPAC in accessing their library materials while only 4% uses the manual library catalogue. It also goes to show that they enjoy the use of OPAC because of the benefits of saving their time as 96% agrees to this. However, 64% of these respondents indicated that the OPAC computers are not enough to take care of the teeming users of the library. The respondents (88%) agree that there is alternative provision for power supply in the library while 12% disagree.

From the responses as seen from table 4 above, it is so clear that the use of OPAC in gaining access to relevant materials at the library is highly needed. This is concomitant with the statement of Atabor (2003) that “libraries of nowadays have

introduced online public access (OPAC), that such catalogue allow many members of the library's public to search the database in order to see if the library holds particular work, to be informed of its location and if the catalogue system is linked to the circulation system to be told whether or not the items is currently on loan.

Table 5: Impact of Automation of library services and use

S/N	Question	Respondents		
		Yes (%)	No (%)	Total (%)
9	Is the computer borrowing system effective?	60	40	100
10	Has the computerization of the library operation aided	48	52	100
11	Has the computerization of library collections and operations motivated you to use the library more?	62	38	100
12	Do you think the computerization of library operations and collections can help in the organization of the library in terms of service delivery?	96	4	100
13	Do you think the library software (SLAM) is effective enough in transforming the library into a more useful centre?	54	46	100

Table 5 is structured to elicit information from the respondents on the impact of automation on library services and use. The computer borrowing systems are effective according to 60% of the respondents. It is seen also that 52% of respondents claimed that the computerization of library operations has not aided effective reference service while 48% said it has impacted on effective referenceservice. The library software, SLAM has been seen as effective in transforming the library into a more useful resources centre as agreed by 54% of respondents. From the response given by the library users, 62% of the respondents agreed that the computerization of library collections and operations has motivated them to use the library more while 38% disagreed.

It is evident that computerization can improve service delivery, facilitate efficient use of library and as such academic libraries should endeavour to rise up to the challenge of meeting the information needs of all categories of library patron.

Conclusion and Recommendations

The academic library as it were, is an information reservoir; it is a resource centre where all categories of library users go to meet their various information needs. In order to render effective service to its patrons there is the need to ensure that academic libraries are automated; library personnel are trained while fund should be made available for library development.

The main reason for libraries to introduce the use of computer in their operations has to do with effectiveness, speed in processing and retrieval of information to enhance service delivery to users. Another reason is the increase in work load as a result of information explosion and increase in students' intake into institution of higher learning. John Harris Library, university of Benin has done well in adapting to this effective information provision to her numerous clientele. As it were, ICT in library is capital intensive and this has been the bane of the library in meeting her roles in the University as an academic department of the University. In order to achieve their goals of adequate information service for effective teaching, learning and research which involves keeping abreast with current information in the world of academics, application of information technology in the library cannot be shoved aside. There is the urgent need for all libraries to automate their operations so as to enhance information service delivery. From the research carried out the following findings were made:

- The computerization of library operations has impacted positively in terms of services rendered to patrons of the library.
- There is a change in the way of library functions, and this has impacted on service delivery to its users. –
- The library software, SLAM, in use in the library has been very effective in transforming the library; there have been no hitches since the beginning of the automation of the library in 2001.

- Some of the library personnel (especially the academic librarian) have fully embraced the application of IT in their day-to-day library operations.
- There is alternative power supply (electrical generator) to combat power failure at the library.
- Maintenance agreement is reached between the library management and the software developer as a measure to ensuring automation maintenance and improvement of the database (update) if needbe.
- Not all aspects of the library operations and services have been fully computerised; e.g. The Special Collection Unit and The Reference Section are yet fully integrated into the library database.
- Majority of the library personnel are computer literate.
- There has been a significant improvement in library usage and OPAC services as well the computerized borrowing system has been highly patronized, but the OPAC computers (terminals) are inadequate to serve the teeming patrons.
- Though there is internet facility, it is not fully operational yet for the library patron at main library but library users are encouraged to use the newly opened e-library centre which has 50 computers linked to the internet, with e-granary database for researchers.
- There is problem of inadequate funding of the library to meet the mission and vision of the library. This has made it difficult in maintaining the ICT devices.

Based on the findings, of this research, these recommendations are presented:

- * Necessary machinery should be set in motion to introduce regular induction course, seminars workshops to keep the library personnel (from the library management to the library attendant) abreast of new development in the field of computer in John Library, University of Benin.
- * For academic libraries to remain alive to the aims and objectives for which it was set up by the parent institutions as well as to play their role effectively

in the societal growth development, the librarians must reinvent themselves as dynamic engines for knowledge and information society.

- *. Computerization is in different stages, the John Harris Library Management should endeavour to computerize the Special Textbook Collection and Reference Sections as well as other faculty libraries making OPAC services available to all patron of the library.
- * There is need for regular maintenance of the library standby power generating set so as to be effective as a backup to supply of electricity From the national grid.
- * The library need to maintain the e-library and made qualified hands available. Computer literate personnel should be employed as library staff. Subscription of Internet should be made as when due.

The university administrators should devote the statutory 10 percent of their annual budgetary allocation to library development. In fact, there should be more budgetary allocations for library ICT development. International finding agencies can be sought for financial assistance, such as Ford Foundation, Carnegie Corporations of New York, etc. Also, Educational Trust Fund, Petroleum Trust Fund, Telecommunication Company such as Globacom and MTN (e.g. MTN University Connect).

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