

# LIBRARY AUTOMATION IN NIGERIAN UNIVERSITIES: A HISTORICAL PERSPECTIVE

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## Abstract

*This paper provides a progress and developmental report of automation in Nigerian universities from the early 1970's to the present period. The report covers both the Federal and State-owned university libraries. Private universities were excluded from the report because they are still in their infancy. The report shows that all the university libraries in Nigeria are at one developmental stage of automation or the other. While some university libraries have fully automated their operations others are making some progress along this line while the challenges of library automation are discussed and solutions proposed.*

## Introduction

The emerging global trend in information technology and its incontestable relevance to the information retrieval systems have decisively propelled and compelled libraries worldwide to critically consider the application of information technologies to enhance provision of efficient information services and increase productivity. The application of such technologies to facilitate services and access to information in libraries is widely acceptable. Adediji (2001) has also equated library automation with computerization since computerization is considered as a viable operational demand in most parts of library automation. One of the factors that have facilitated automation of library systems is availability and accessibility of computers. Librarians depend on the computer to perform a variety of functions, including acquisition, cataloguing, circulation, and serials.

According to Adeyemi (2001), advances in the field of information technologies over the years have expanded the frontiers of new information technologies applicable to library operations beyond the computer. Such new range of technologies which are available to libraries and information retrieval systems include CD-ROM, telecommunications (telephone, facsimile), satellite, networking and the internet. While the computers provide the necessary facilities for the processing, storage and retrieval of information, CD-ROM and telecommunications provide the enabling operational services for the transfer or recording of data and information.

Obviously, advancements in information technology, computer technology, software engineering and communication technology have continued to pose serious challenges to Nigerian university libraries where, according to Sonaike (2001) they are needed for various aspects of information handling like acquisition, cataloguing, circulation, literature searches, compilation of bibliographies and Selective Dissemination of Information (SDI) services. The application of information technologies will not only facilitate the processing, dissemination and utilization of information, it will also play a tremendous role in the socio-economic, political and technological development in Nigeria. This paper therefore, is an appraisal of the general stage of development of library automation in Nigerian universities down the years with a view to examining the challenges facing individual university library.

## **LIBRARY AUTOMATION IN NIGERIAN UNIVERSITY LIBRARIES**

The automation of library operations in Nigeria is relatively a new phenomenon. The early noticeable automation debut was recorded at the Nnamdi Azikwe Library, University of Nigeria Nsukka in 1977 when the library successfully generated and produced a computerized catalogue of its serial collection. This feat was possible because of the assistance of the Computer Centre of the University. This confirms the result of the survey conducted by Mutula (1998) on library automation practices in 14 institutions in Kenya. The research shows that the positive working relationship between the Computer Centres and Kenyan libraries enhances the development of automation of library operations in Kenya. With the cooperation, the library was able to automate some its services such as cataloguing, circulation, serials and office documentation. Members of staff of the library are being trained in the areas of systems analysis, programming and information technology.

In the early 1980's, there were serious arguments and counter-arguments for and against the automation of the University of Lagos Library. Arikebi (1981) argued strongly for automation of the acquisition system of the University of Lagos Library owing to astronomical increase rate of the Library's monographs. He was of the view that the University would benefit greatly if the acquisition process was automated first. Subsequently, the University of Lagos Library made a bold attempt at automating its services in 1982 by commissioning a Plessey Library Lending system. The project which was a turnkey circulation system did not succeed due to technical reasons (Ehikhamenor, 1993, Ogunleye, 1997, Adediji 2001). Also, between 1994 and 1995, the Nigerian Universities Commission (NUC) under the World Bank project provided the University

of Lagos Library and all Federal University Libraries the enabling environment for installation of a 386 ICL Computer system and 4-User TINLIB v.270. The attempt was to network all Nigerian university libraries for the purpose of resource sharing. Unfortunately, the project was not well implemented due to several setbacks (Adediji 2001). The University of Lagos later acquired 17 Pentium II 486 Computers with Linux for e-mail server, Novel NetWare 4.0 for LAN and Database server, Windows NT for Web Server, Windows 2000 and DOS for Word Processing. The library also has 13 CD-ROM Drives, 1Scanner and 6 Printers. Thus, the University of Lagos Library has virtually automated all its operations. The Library is one of the leading automated university libraries in Nigeria with a functional web site.

Moreover, Ugah (2001) reports that the automation process at the Abubakar Tafawa Balewa University Library, Bauchi started in 1988 when the Library engaged the services of a Computer scientist Corp member who succeeded in computerizing the library's acquisition operations.

According to Ehikhamenor (1993), the first attempt to computerize the circulation system of the Kashim Ibrahim Library of the Ahmadu Bello University, Zaria, Nigeria was made in 1980 with the assistance of the institution's Computing Centre. However, the attempt did not quite succeed as it was aborted at the data entry stage owing to some technical and logistical problems. In 1999, the library acquired a full multi-media Compaq Computer and in the year 2000, the library bought a full multi-media Dell Computer. Both computers have DOS, Windows 98 and NT. The Library also has 5 CD-ROM Drives, Computer Printers and some workstations. These equipment are used in a number of operations. There are indications that more efforts are being made to acquire all the necessary equipment needed for the automation of the library operations which is still in progress.

According to Idowu and Mabawonku (1999), the University of Ilorin Library started its own automation process in 1980 with a view to developing a customised program for the library systems with the support of the computer centre of the institution. Unfortunately, it did not succeed. Moreover, the National Universities Commission (NUC) later supplied to the Library a 4 –LAN version of TINLIB (the Information Navigator for Libraries) which has also been installed. Besides, the library plans to link all its branches within the University with the central computer located in the main library in its next automation agenda.

Mosuro (1996) reports that CD-ROM technology was first introduced at the Kenneth Dike Library, University of Ibadan, Nigeria in 1991 under the

auspices of the CTA/KIT CD-ROM Project in African Caribbean and Pacific Countries (ACP). The Library was thus provided with the following:

- 1 IBM PS 2/30 PC
- 1 CD ROM drive
- 1 IBM Laser Printer
- 1 UPS

The CD-ROM was used for literature searching, bibliographic verification and compilation of bibliographies. By 1992, the library had acquired the LC CD-MARC, 2 PCs and 2 4-tower CD-ROM drives for classification and cataloguing, acquisition and reference purposes. In 1994, the library acquired 8 Gateway PCs, 6 Mitac PCs, 2 Compaq PCs 4 Leadingedge PCs and 4 Clone PCs with Windows '95, Windows '98 NT 4.0, and Linux. In August 1994, the National Universities Commission (NUC) supplied the Library with an update version of TINLIB (The Information Navigator) software and an ICL Computer capable of driving 20 workstations in a network. Two Antivirus software packages – SCAN 95 Antivirus and Tatvirus were installed sometime in 1995 to check data viral corruption (Ogunleye 1997, Ugah 2001). The Kenneth Dike Library has thus done a retrospective conversion of its catalogue records to Online Public Access Catalogue (OPAC) through optical character recognition (OCR) technology and resource databases technique with their attendant challenges. One of such was that the bibliographic record elements were not properly 'tagged' to make them identifiable mechanically. The other problem was that the process of matching of the bibliographic catalogue records with LC CD-MARC was rather slow (Ola, 2001). However, today, the Library has computerised its operations in the areas of cataloguing, circulation, serials and acquisitions. The circulation unit now uses computer readable tickets. Some of the databases that the library has include: Agris, Tronag and Rural, CAB Abstracts, Popline, Life Science Collection, Applied Science and Technology Index, Ei Page one, Compendex Plus, Social Science Index, PAIS International and LC CD-MARC (Mosuro, 1996). Kenneth Dike Library is one of the libraries in the forefront in Nigeria in terms of library automation.

The concept of library automation and the use of digital communication at the University of Jos Library, Nigeria was conceived and initiated by the library management in the early 1980's. This dream was translated to a blueprint in 1987 and a turn-key system of automation was suggested for the library. In 1990, information technology and computer vendors were invited for consultations. Subsequently, a network system of automation evolved for the library in which the resources of the digital library can be assessed by the clients from any part of the University Campus. According

to Akintunde (2001) the University of Jos digital library offers the following services for its users: electronic mail, literature searching, printing and Web-browsing. Some of the resources available on the web site include the University of Jos Web simulator which stores important information on the University of Jos, the virtual Hospital of the University of Iowa in the USA, the lecture hall of the Interline class, the Gutenberg Library, home pages of the University of Jos Library, Faculties, Departments, Units, Sections and also personal pages. The library also has the following digital literature texts: African Proverbs, The Home Education Library, Martindale, British Pharmacopoeia, Macrolinks, Welcome to Africa, Dental Interactive, Art and Life in Africa and Humanity Development Library. The Library uses the Information Navigator for Libraries (TINLIB) software and both the manual and digital versions of the LC Classification Scheme and Subject Headings. The Library has CD-MARC and a number of CDs to cater for the increasing number of its clients. The University of Jos Library has thus made significant progress in the area of automation. More efforts are being made to acquire more relevant and effective CDs, and to improve on the opening hours of the Library's Computer Laboratory.

The need to automate the Library operations of Ladoke Akintola University of Science and Technology, Ogbomoso was expressed at the inception of the library in 1990. By 1991, computers were introduced in the library. The library automation project began with the use of TINLIB version 250 which was later upgraded to 270. The library now has some CD-ROM facilities with a growing number of databases especially in the areas of science and technology. Ugah (2001) reports that the library has acquired a 3 Dos-Based IBM Compatible Micro-Computers. One of them is AT-Mitsube model with an Inter 80286-16 CPU. Its configuration allows for multiple user and multi-tasking systems. The remaining two computers are XTs Goldstar as trademark. While the AT-Mitsube model is the server, the XTs serve as workstations. All the three computers are linked to the University's LANS mart system. This University Library is among the first third generation of universities to fully automate its operations. Besides, the library is one of the first state-owned university libraries in Nigeria to computerize its services.

The Federal University of Technology Library, Minna has also made some significant steps towards the automating its operations. In 1991, the library acquired 2 ICL Computers and in 1993, the Library acquired 2 Royal Computers and 4 Pentium Computers in 1996 with Dos – 6.2 and Windows 9.2. The Library also has 7 CD-ROM Drives, 2 Deskjet Printers and 2 Laser Jet Printers. The Library has some databases on CD-ROM for use by its clients and efforts are being made to acquire more CD-ROM

databases to meet the increasing needs of the users. The Library has fully automated its operations in the areas of cataloguing, circulation and collection development. Within the shortest time, all the remaining aspects of the Library's operations will be computerized.

The development of the Hezekiah Oluwasanmi Library, Obafemi Awolowo University Ile-Ife is one of the first generation university libraries in Nigeria. The Library which serves over 24,000 users took a bold step to automate its operations in 1992 when it acquired an Amstrad Computer System with a 30MB HDD, and Epson LX-810 line printer, one Hitachi external CD-ROM drive and a voltage stabilizer model RTL R1 600 (50HZ) (Ogunleye, 1998). Also, in 1994 the National Universities Commission (NUC) supplied TINLIB software and an ICL computer to the library. In 1997, the Library acquired 5 Compaq Computer Systems with a 2-32 MB and 3-16 MB RAM and six 97 Diskless Clone Computer System. In 1998, the Library purchased a Clone Computer System with a 32MB and in 1999, the Library acquired 2 Unif-3 Computer Systems with 32MB RAM. By the year 2002, the Library had acquired a Compaq Computer System with 16MB RAM. The computer systems have the following operating systems: Windows 95, Windows 98, Windows 2000, Professional and NetWare 3.12 for server, Red Hat Linux 7.1 for server. The computers are capable of driving 24 workstations. The Library also has a CD-ROM Tower with 7 drives and 10 Printers of Desk Jet, Laser Jet and Epson types. The library currently provides a number of digital services to its users including CD-ROM searching, Web-browsing and electronic mail. The library is still being making frantic efforts to automate its operations fully.

Some efforts have been made to computerize the operations of Nimbe Adedipe Library, University of Agriculture, Abeokuta, Nigeria. For a start, the Library between 1993 and 1998 has acquired fourteen 386 Compu Pentium Computer Systems. In 1997, the library purchased 3 Eko Pentium Computer Systems with Windows 95, Windows 98, Dos 5 and Dos 7.0. The library also has 5 CD-ROM drives and 4 Printers. A number of CD-ROM databases have also been acquired but mostly in the areas of Agriculture. The cataloguing system of the Library has been fully computerized and efforts are being made to automate all its operations.

The Usmanu Dan Fodiyo Library, Sokoto, Nigeria started its automation project by first acquiring a 486 INFGOLD Computer System and a 386 ICL Computer System with Hard drive Keyboard Monitor in 1994. These have Windows 98 and Dos. The Library also has 1 CD-ROM drive, 2 Printers and E-mail services. The Library has since purchased new models of computer systems. However, no significant development appear to have

taken place in terms of library automation owing to some technical problems but hopes are high that very soon, library operations will be fully automated.

At the Ramat Library of the University of Maiduguri, four 186 IBM Computer systems were purchased in 1992. In 1993, a 486 ICL Computer System was acquired while 3 Pentium Computer Systems were acquired in 1996. All of them have Windows 98 and Dos 3.0. The computer software in use is the Information Navigator for Libraries (TINLIB). The Library has also acquired more new computers, CD-ROM Drives and different types of Printers. Owing to the insufficient supply of technical equipment, the automation of the library operations is slow.

The computerization of Michael Okpara University of Agriculture Library, Umuahia, Nigeria began in 1996 when the Library purchased one IBM Compaq Computer System Pentium 150MHZ. In 1999, the library also acquired another IBM Compaq Computer System with 200 MHZ MMX, two CD-ROM drives and two Printers. The computers operating systems are Windows 95 and Windows 98. More computer systems with current operating systems are being acquired to shoot the Library's automation into limelight. At the University of Uyo Library, 10 Smile Computer Systems with a 32 MB RAM using Windows 98 and Dos version 4 were acquired in 1998. The Library also has 7 CD-ROM drives and 3 Printers. Evidence shows that not all the library's operations have been automated, but efforts are being made in this direction.

The automation project at the University of Ado-Ekiti Library, Nigeria is still in its infancy stage. The Library has already acquired 2 Computer Systems, 2 Printers and 1 Word processor. Efforts are being made to acquire more computer sets and other technical equipment needed for the automation of the library operations. Similarly, the automation process at the Lagos State University Library is in progress. For a start, the Library in 1999, acquired 3 P-111 450 unbranded computer systems with 64 MB RAM, 6.4GB HDD, and 14" Monitor. The computers operate Windows 98. The library has 3 CD-ROM drives and CD-ROM databases for literature searching. More computer systems are also being purchased for the full automation of the library operations.

The University of Port Harcourt Library, Nigeria has made some progress in the area of automation. The Library has acquired 6 Compaq Computer Systems, 1 Ergolite Computer System and 1 Pentium Computer System with Windows 95, Windows 98 and Dos version 3.1. The Library also has 2 CD-ROM drives and some databases for bibliographic services. The Library started with the computerization of its acquisition operations.

Other library operations will be computerized as soon as funding is made available. The Library at the Adekunle Ajasin University Akungba-Akoko, Nigeria is at present being housed in temporary premises. The library, at Akungba-Akoko in 1999 acquired over 15,000 volumes of books. The Adekunle Ajasin University has three centres to be used as Cyber Cafes. One of the centres will be at the Vice-Chancellor's office, the second at the Computer Centre and the third in the University Library. Of the three-cyber cafes, only the one in the Vice-Chancellor's office is functional. The other two will become operational soon. In preparation for the automation of library's operations, 2 computer systems, and 2 printers were acquired in 2001. One computer was donated through the auspices of the Educational Tax Fund (ETF). The proposed Cyber cafe in the library operational will be used for research purposes and e-mail services. In addition, 17 split air conditioners have been installed in the library and staff offices to create a conducive and an enabling environment for the library automated systems. The University Library is planning to purchase more computers to ensure staff have access to at least one computer. At present, most computers in the library are used for secretariat duties, and to prepare order lists and accession lists. When more computers are acquired, the use to which the computers will be put will surely change.

### **The Challenges of Library Automation**

One of the common challenges facing University libraries in Nigeria is lack of sufficient funding to acquire the needed IT hardware and software applications. In some universities where libraries have separate votes for library development and purchase of computer equipment, evidence shows that some Vice-Chancellors in these universities, in collaboration with University Librarians, borrow money from the library accounts to pay salaries of workers. Some university librarians also divert funds into some other ventures. However, there are also genuine cases, where the university libraries are starved of funds especially, in this present period when government allocations to universities are decreasing.

Another major challenge is the choice of appropriate software packages, that will be most suitable for library automation in Nigeria. At present, there is no uniformity in this regard among Nigerian university libraries. The following software packages for library automation are available in the market and are capable of "acquiring, storing, sorting, retrieving, and disseminating information to library patrons on a stand-alone computer, local area network and via internet: for example, TINMAN/TINLIB, GLAS, CDS/ISIS, IDAMS, Micro CDS/ISIS, X-LIB, NLAS, etc." (Adegbule-Adesida, 2001). These softwares have their strengths and weaknesses. University libraries in Nigeria are still battling with what to



use. The Information Navigator for Libraries (TINLIB) used to be a popular software among most academic university libraries in Nigeria because of its modular software package nature. Today, the Graphic Library Automation System – GLAS which is a Window-based software an improvement over TINLIB seems to be gaining wide acceptance among university's libraries. Other libraries are still debating what softwares to adopt.

Other challenges include lack of trained and qualified personnel, erratic electricity supply, lack of repair and maintenance culture, lack of systems analysis or feasibility study before computer systems are acquired and installed and last, lack of training opportunities to equip library staff on ground with the IT expertise in library automation and application.

## Conclusion

Between the early 1970's and the year 2003, University libraries in Nigeria have made significant progress in library automation. Despite the inauspicious start, virtually all university libraries are in the process of automating their libraries. The new emerging private universities, have a lot to learn from the experience of the older universities which have already embarked on library automation. Great efforts must be made to address the various challenges related to library automation which include determination, advance funding, conducting feasibility studies, analysis, design and implementation, and staff training. For this is the best time to automate university libraries in Nigeria.

## References

- Adediji, O.O. (2001): "Automation in the 21<sup>st</sup> Century: the Role of Cataloguers; A Lead Paper **"Automation of Cataloguing Practices in Nigerian Libraries: Proceedings of Selected Seminar Papers of the Cataloguing, Classification and Indexing Section of the Nigerian Library Association 1995 – 2000** Eds. J.Lasisi and Others 6-9.
- Adegbule-Adesida, K. (2001): "Software Choice Parameters for Cataloguing in Nigeria Libraries: Keynote Address" Delivered at 21st Annual Cataloguing, Classification and Indexing Seminar/Workshop Held at the National Library of Nigeria, Ondo State Branch, Akure, Oct. 21-27, 2001. 2-15.
- Adeyemi, Nat. M. (2001): "Cataloguing and Classification and the Challenge of New Information Technologies in Nigerian Libraries

in the Next Millennium”. **Automation of Cataloguing Practices in Nigerian Libraries: Proceedings of Selected Seminar Papers of the Cataloguing, Classification and Indexing Section of the Nigerian Library Association 1995-2000**. Eds. J. Lasisi and Others. 1-5.

Akintunde, S.A. (2001): “The Changing Face of the Catalogue at the University of Jos Library.” **Automation of Cataloguing Seminar Papers of the Cataloguing, Classification and Indexing Section of the Nigerian Library Association 1995-2000**. Eds. J. Lasisi and Others. 80-86.

Arikenbi, J.A: (1981): “Automating the Acquisition Process of the University of Lagos Library”. **Lagos Librarian**. 8:20-23.

Ehikahmenor, F.A. (1993): “Information Technology and Scientific and Technological Information in Nigeria: Revolution or Evolution”. **African Journal of Library, Archives and Information Science**. 3.2:113-123..

Idowu A.O. and Mabawonku, Iyabo (1999): “Information Technology Facilities and Applications in Some Nigerian Research and University Libraries.” **African Journal of Library, Archives and Information Science**. 9.1:27-35.

Mosuro, Tolani (1996): “CD-ROM Technology and its Application at the Kenneth Dike Library, University of Ibadan, Nigeria”. **Nigerian Library and Information Science Review**. 14.1&2:46-50.

Mutula, S.M. (1998): “Library Automation Practices in Kenya: Experiences of United International University with Erudite System.” **Proceedings of SCECSAL XIII Conference Nairobi, July 27-31, 272-287**.

Ogunleye, G.O. (1997): “Automating the Federal University Libraries in Nigeria: A *State of the Art*.” *African Journal of Library, Archives and Information Science*. 7.1:71-79.

Ogunleye, G.O. (1998): “Data Information and Computer Security in Nigerian Libraries”. **African Journal of Library, Archives and Information Science**. 8.1:47-51.

- Ola, C.O. (2001): "Retrospective Conversion of Catalogue Records to Machine-Readable Form: Pragmatic Alternatives". **Automation of Cataloguing Practices in Nigerian Libraries: Proceedings of Selected Seminar Papers of the Cataloguing, Classification and Indexing Section of the Nigerian Library Association 1995-2000**. Eds. J. Lasisi and Others. 41-48.
- Sonaiké, S.E.A. (2001): "Efforts of the National Library of Nigeria in the Computerisation of its Cataloguing Functions." **Automation of Cataloguing Practices in Nigerian Libraries: Proceedings of Selected Seminar Papers of the Cataloguing, Classification and Indexing Section of the Nigerian Library Association 1995-2000**. Eds. J. Lasisi and Others. 49-58.
- The Standing Conference of African University Libraries, Western Area (SCAULWA), (2002). **The State of Information and Communication Technology (ICT) in University Libraries in the West African Sub-Region**. Compiled by Helena R. Asamoah-Hassan.
- Ugah, A.D. (2001): "Library Automation: A Practical Approach". **Automation of Cataloguing Practices in Nigerian Libraries: Proceedings of Selected Seminar Papers of the Cataloguing, Classification and Indexing Section of the Nigerian Library Association 1995-2000**. Eds. J. Lasisi and Others. 87-92.