PROVIDING SUSTAINABLE & EQUITABLE ACCESS TO INFORMATION:

PERSPECTIVES FROM NIGERIA

Festschrift In Honour o

PROFESSOR MORAYO IBIRONKE ATINMO @ 70

'Niran Adetoro
Christopher Nkiko

PROVIDING SUSTAINABLE AND EQUITABLE ACCESS TO INFORMATION:

PERSPECTIVES FROM NIGERIA

Festschrift in Honour of Professor Morayo Ibironke Atinmo at 70

Edited By

'NIRAN ADETORO, Ph.D
CHRISTOPHER NKIKO, Ph.D

TAI SOLARIN UNIVERSITY OF EDUCATION PRESS
IJAGUN, VIA IJEBU-ODE, NIGERIA

Published by

Tai Solarin University of Education Press

Ijagun, Ogun State, Nigeria

First Published, 2016

ISBN: 978-978-956-607-5

Table of Contents

15 ADOPTION OF KOHA SOFTWARE IN UNIVERSITIES IN SOUTH-WEST, NIGERIA

By

Airen Adetimirin Ph.D

Senior Lecturer, Department of Library, Archival and Information Studies,

University of Ibadan, Oyo State, Nigeria

aeadetimirin@gmail.com; ae.adetimirin@ui.edu.ng

Abstract

This article investigated the reasons for the adoption, purpose, functional modules and challenges of KOHA software in some universities in South-west Nigeria. Six universities were selected based on ownership (federal, state and private) and librarians in charge of the software were interviewed. Results revealed that KOHA was adopted because it was free and easy to use and the purpose was to improve service delivery to users. The cataloguing module was found to be the common module in the universities and the major challenges to its use were irregular power supply and inadequate technical support. For maximum benefit of using KOHA software in these libraries, alternative power supply and training for the librarians must be strongly considered.

Keywords: KOHA, Open source software, University Libraries, Nigeria

Introduction

Libraries are adopting software to improve the efficiency of the services provided to users who are diverse in their information needs, behavior and use. Library software is adopted to enhance the efficiency in the acquisition, organization, storage, retrieval and dissemination of information to library users (Adegbule-Adesida, 2005). It enables ease and retrieval of information. This necessitates the appropriate selection of a software for each library taking into consideration the type of library; modularity, ease of use, user friendliness, integration, ûexibility, versatility, and systems compatibility (Ogbenege and Adetimirin, 2013).

Library software can be classified into two: proprietary or commercial software and open source software. The proprietary software is one that is written for libraries and which can be purchased by any library. Kandar et. al. (2011) defined open source software as a 'computer software that is released under some free/public license and it permits users to study, change and improve the software'. Open source software is those that can be downloaded from the Internet without any fee by the company. Kumar (2014) defined open source software as 'a program in which the source code is available to the general public for use and/or modification from its original design free of charge'. Open-source software can be gotten for free under a license such as the Gnu's Not Unix (GNU), General Public License (GPL), which gives "legal permission to copy, distribute and/or modify the software (Gramstad, 2012).

Library software can also be integrated or consortia. The integrated software has modules for various activities such as acquisition, circulation, cataloguing, serials, report generation and so on (Figure 1). The consortia package caters for a number of university libraries which may be open source or proprietary. Some integrated software are open source. Open source integrated software system are now commonly adopted in many libraries especially in developing countries globally (Hamby et. al, 2011).

They reduce the cost of ICT application in libraries, allows users to modify the program according to need and to develop new code that improves the application.

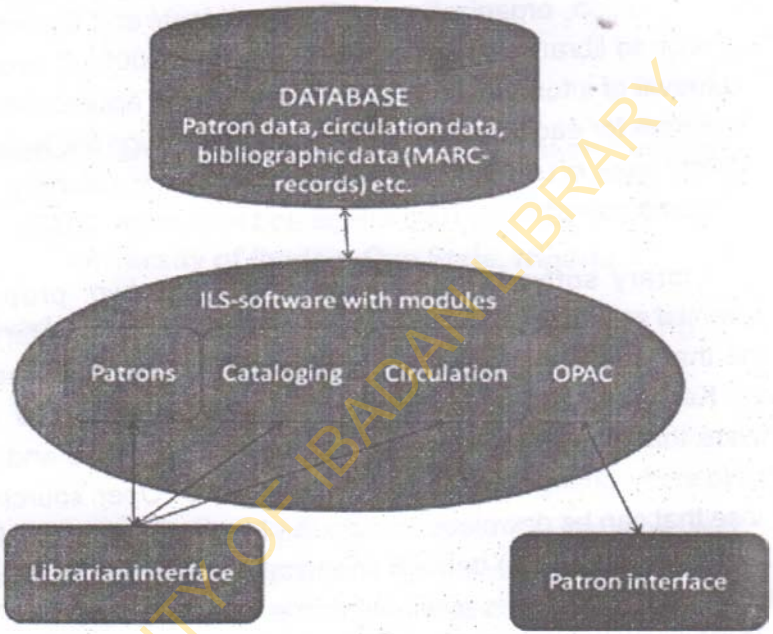

Figure 1. Simplified model of an Integrated Library Software

The attributes of open source software also include: assisting to provide better quality software's having higher reliability, flexibility with lower cost, available free for download on the Internet. Open source software may also be applied in housekeeping operations of libraries, collection and data management, reference services and digital

preservation. These open source software would also require technical support that should be provided by the library staff for the software to function effectively and consequently lead to the satisfaction of users information needs. Some examples of open source software are KOHA, Evergreen, ABCD, NewGenLib, WinISIS, Emilda, WEBLIS, PMB (PhpMyBibli) and the likes.

Academic libraries in Nigeria are adopting several proprietary software for their activities, but the adoption and use of some of these software have not met their goals as many libraries have been migrating from one software to another. Okiy (1998) reported the failure of proprietary software adoption in the first generation universities due to poor funding, inadequate manpower, poor maintenance of equipment and computer facilities. Ogunleye (1997) asserted that the attempt by the National Universities Commission (NUC) for all federal universities to adopt TINLIB for their libraries also failed. Examples of software adopted in many academic libraries in Nigeria are: KOHA, Millenium, Micro CDS/ ISIS, TINLIB, GLAS, ALICE for windows, X-LIB, Libplus, INMAGIC, Virtua, LibSys, Green Stone, SLAM, Docuware, Liberty 3 (Obajemu et.al, 2013).

The migration from one software to another in libraries in Nigeria may be due to inappropriate selection of software which could be attributed to lack of adequate planning and consideration of the library needs in terms of users, type of library, goals and objectives of the library, evaluation and searching and comparison with existing software (Ogbenege and Adetimirin, 2013). Factors that should be considered in the selection of library software as reported by Akintunde and Anjo (2012) and Oketunji (2005) are: needs assessment, cost, reputation of the manufacturer or supplier, vendor support such as maintenance, software upgrades and adequate security facilities.

In many libraries in Nigeria, automation is partial as many libraries have only automated some of their units especially the cataloguing,

circulation and Online Public Access Catalogue (OPAC). This has been attributed to the need to link to online databases (Eze, 2012) and reduce the burden of charging and discharging of library materials. However, some libraries using open source software such as KOHA and SLAM have automated most of the units in such libraries.

Most of the libraries in Nigeria cannot afford proprietary software because they are expensive and their library budget which has been dwindling over the past years cannot accommodate such cost. Consequently open source software is an alternative, because they are readily available, free and can be customized to suit a library's needs. Some open source software adopted in libraries in Nigeria are KOHA, SLAM.

KOHA library software is an open source integrated library system created in 1999 by Katipo communications for the Horrowhenua library trust in Zealand. The first installation went live in January 2000 and has been translated into many languages such as French, Chinese, Arabic and so on. KOHA is web based and accessible via Z39.50. It is built using library ILS standards and uses the OPAC (open public access catalog) interface. KOHA has no vendor-lock in, so libraries can receive technical support from any party they choose. It is currently used in university, academic, public and school libraries, private collectors, not-profit organizations, churches, schools, and corporate (Kumar, 2014).

KOHA has some advantages such as: it can be used by any type of library, free software, can be modified to meet the specific needs of a library and available in different languages viz. English, French, Arabic and Chinese. However, the disadvantages include: inadequate technical support, unanticipated work as the library may need to work extra to customise or domesticate the software to the library needs and making progress with it may be problematic.

[* File contains invalid data | In-line.JPG *]

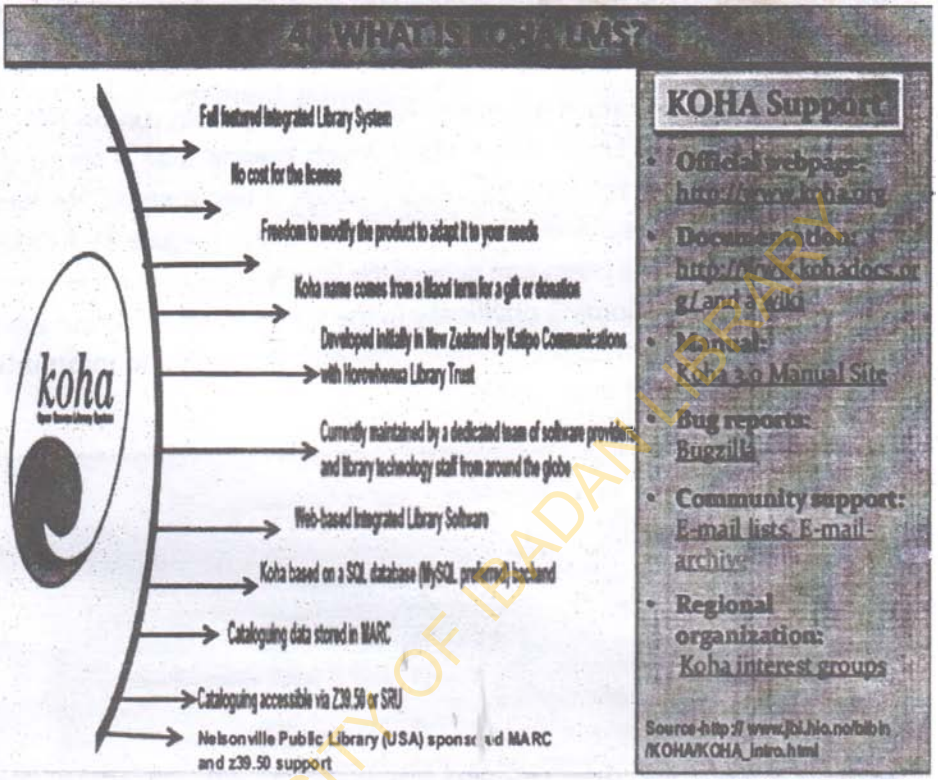

Figure 2. Description of KOHA (Source: Google images)

Features of KOHA

The features of KOHA is shown in Figure 3. KOHA is an integrated library software which means that it has different modules that relate to one another such that when the bibliographic details of information material is entered in one module, it does not need to be entered in another module. The bibliographic details of the information material is required to be entered just once in a module and other modules will have access to

such bibliographic details. This reduces the time that would have been wasted entering the data always for every module and saves time for the library personnel.

Another important feature of KOHA is that it can run on different operating systems (Linux, Unix, Mac) which means that a library that wants to adopt the software can easily adopt it because KOHA has a variety of operating systems that is compatible with (Figure 3). KOHA is also web based that is users can access the library software on the internet without necessarily coming physically to the library. This is a great assert as the global trend in librarianship is provision of access to information and not ownership of information materials.

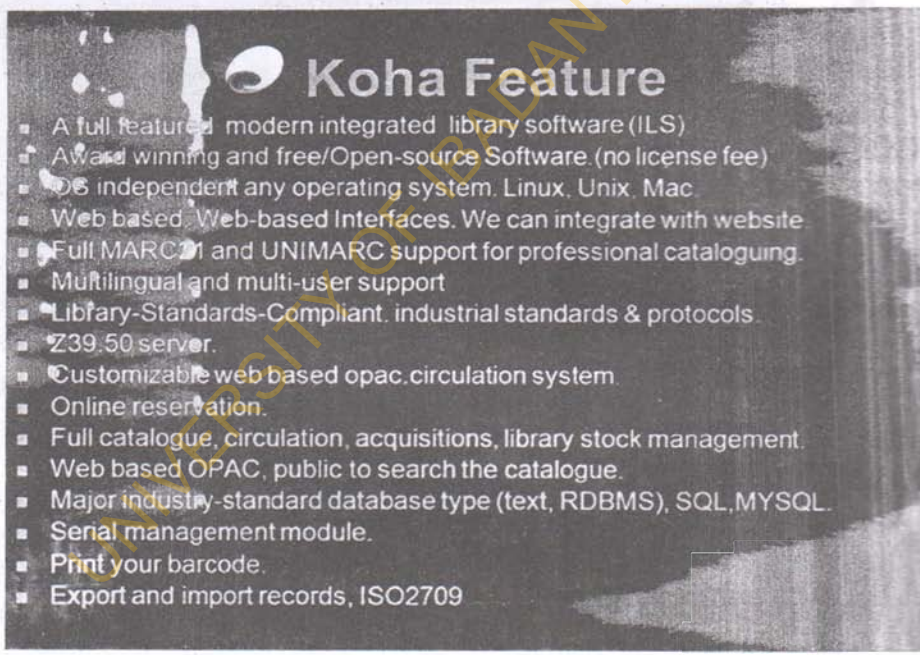

Figure 3. Features of KOHA software (Source: Google images)

KOHA version 3.8.0. has additional features such as web based OPAC which is multi-language, web based circulation interface, online renewals and reservation of items by users, full acquisitions and patrons' records management (Omeluzor et. al., 2012; Otunla & Akanmu-Adeyemo, 2010). Others include: borrower history, comments and tags, branches relationship, customizable search, overdue fines and notices, barcode printing and reader, security and reports and statistics. The user forum is active in Nigeria and the concerns or challenges of users are considered. This may be one of the reasons why it is becoming popular among university libraries in Nigeria.

Advantages and Disadvantages of KOHA

There is the creation of KOHA user groups which allows for comment on benefits, challenges and changes required and this allows for libraries to share and learn from one another. This also keeps costs down because you do not have to purchase every upgrade to a system. KOHA does not have a vendor lock-in, so a library is free from vendors to provide technical support in terms of training, maintenance and upgrades. Some disadvantages include: bugs may not be fixed, upgrades may never be made, qualified ICT expert either a staff or consultant to provide necessary and required technical support and they can be more susceptible to security problems since it may make it easier for hackers to find weaknesses. However, there are a few companies that provide technical support and some consultants are available in Nigeria for such service.

Adoption of KOHA in libraries in Nigeria

Libraries in Nigeria are adopting KOHA because it has been accepted globally in more than 300 academic, special, public and school libraries in USA, Canada, Australia, France, India, New Zealand and Africa. This means that it has a wide international audience and the libraries realise that the manufacturer will be interested in maintaining it and increasing its user base. KOHA is commonly accepted in Nigeria because it can be used in different types of library, although from consultation, academic libraries are in the majority of the libraries using the software in Nigeria.

KOHA as an integrated software is also one reason for its adoption as it has modules for the various activities that are carried out in a library. The modules in KOHA include:

circulation, cataloging, acquisitions, serials, reserves, patron management and report generation (Fig. 4). Nigeria being a developing country that has limited resources for educational institutions also encourages the adoption of KOHA which is an open source software that is free to install. All that the libraries in Nigeria require is the requisite manpower either internally by the librarian in such libraries or externally through a consultant. The homepage of KOHA is shown in Figure 5, which allows for a user or librarian to navigate the software and use it to satisfy its information needs. The librarian can use the appropriate module for carrying out the relevant library activity.

Fig 4 Modules in KOHA (Source: Google images)

Gbadamosi (2012) in a study carried out in an academic library in South-west Nigeria revealed that KOHA has the following modules: circulation, cataloguing, acquisition, OPAC, serial and report which is able to cater for all the activities in a library. KOHA has been reported to have acquisition, circulation, OPAC, membership, accounts and reports, library catalogue front end/ OPAC, library system intranet, circulation tracking system, acquisition/budgeting system and simple web based interface for patrons and library staff (Nebeolise & Osuchukwu, 2014). A typical home page of KOHA software is shown in Figure 5.

Many universities (federal, state and private) in South-west, Nigeria have adopted KOHA. Some of the libraries include: Adeleke University, Ede, Osun State; Babcock University, Ilishan, Ogun State, Bowen

University, Iwo, Osun State, Elizade University, Ilaramokin, Ondo State Joseph Ayo Babalola University, Ikeji Arakeji, Osun State. Others are: Federal University of Agriculture, Abeokuta, Ogun State; Ladoke University of Technology, Ogbomoso, Oyo State; Olabisi Onabanjo University, Ogun State; Redeemers University, Ede, Osun State, Osun State University, Osogbo, Osun State, Kogi State University, Lokoja .

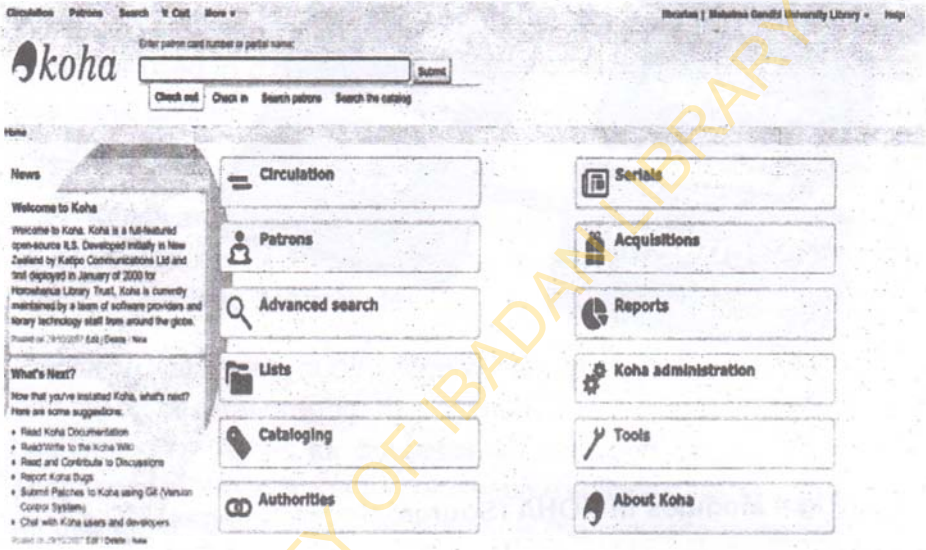

Fig 5 KOHA home page

University libraries in Nigeria are adopting KOHA for its management of operations because it is an open source software which is free, integrated and easy to use. However, it has been revealed from preliminary observation in some university libraries, that not all the modules are being used to manage the library activities. This study investigated the reasons for adoption, purpose, functional modules and challenges to the effective use of KOHA in some university libraries in South-west, Nigeria.

Objectives of the study

The main objective of the study is to investigate the adoption of KOHA in some university libraries in Nigeria. The specific objectives are to:

1. ascertain the reasons for adopting KOHA in the selected universities;
2. determine the purpose of use of KOHA;
3. identify the modules of KOHA that are functional in the university libraries; and
4. examine the challenges to use of KOHA in the libraries.

Methodology

The study comprised six universities in South-West that have adopted KOHA software in: two federal (Federal University of Oye, Oye Ekiti, Ekiti State and Federal University of Agriculture, Abeokuta, Ogun State); two state (Ladoke Akintola University, Ogbomoso, Oyo State and Olabisi Onabanjo University, Ago-Iwoye, Ogun State) and two private (Adeleke University, Ede, Osun State and Redeemers University, Ede, Osun State). The librarian in charge of the software in each of the university was interviewed to collect the data for the study.

Results and Discussion

The result of the interview with the librarians in the six universities were transcribed and presented based on the specific objectives.

Adoption of KOHA in university libraries in Nigeria

All the librarians reported that KOHA was adopted mainly because it is free, open access, integrated and widely used in Nigeria and globally. This was why many of the libraries adopted it as they felt it has been tested not only in developed countries but also in developing countries and Nigeria being a developing country will be able to use it in its library. The reasons for its adoption by the librarians are:

Librarian at Federal University Oye:

"KOHA is free open access software which can be modified to suit one's purpose and can neither easily crash nor be affected by virus".

Librarian at Federal University of Agriculture Abeokuta:

"KOHA is free open source software which can be customized, used and managed with little or no external need of a technician". Some universities in Nigeria have used it successfully and it served their purpose. The software that was formerly used crashed and it became imperative to automate the library to improve service delivery.

Librarian at Ladoke Akintola University of Technology Ogbomosho:

to improve and expand its services, overcome the problems associated with manual handling of their services".

Librarian at Olabisi Onabanjo University, Ago-Iwoye:

> "free open software and there is the available expertise required to configure it to meet the needs of the library. The library just adopted it and completed a training on how to use the software".

Librarian at Adeleke University, Ede:

> "because it's open source and of the experience of others that have adopted it. KOHA was adopted to deliver prompt, efficient and excellent services to users".

Librarian at Redeemers' University, Ede:

> "its wide adoption amongst Nigerian library community because the library would have opportunity to compare notes with other libraries using the software. Its seamless integration of the modules meaning that data would only be entered once and viewed in all other modules".

The findings for various reasons for the adoption of KOHA in these university libraries which were its being open access and free is supported by Baiju (2014) who reported that KOHA is the first choice of many librarians globally because it is free and open source. She also reported that it is widely accepted in India due to its various modules that cater for the library activities. KOHA and Greenstone Digital Library Software were reported to be the two favorite library software in Pakistan because it is

open source and users can customize it to fit their needs (Rehman, 2012). The result of this study is further confirmed by Gbadamosi, (2012) in a study carried out in South-west, Nigeria that reported that KOHA was adopted by many tertiary institutions in Nigeria because it is free and easy to use. KOHA has been adopted in university libraries since 2007 in Bowen University which was the first university library to adopt it (Otunla & Akanmu-Adeyemo, 2010).

Purpose of use of KOHA in the university libraries

KOHA is used in the selected university libraries to manage the different activities and collection in the library for improved service delivery. The responses of the librarians are as follows:

Librarian at Federal University Oye:

"guarantees faster service delivery".

Librarian at Federal University of Agriculture Abeokuta:

"Purpose is to manage the library's bibliographic catalogue. It is used to input bibliographic details which can be used by the entire library's department".

Librarian at Ladoke Akintola University of Technology Ogbomosho:

"to manage the library resources and provide better services".

Librarian at Olabisi Onabanjo University, Ago-Iwoye::

> "to improve and expand its services, to manage the library collections and make accessible to registered library users".

Librarian at Adeleke University, Ede:

> "to organize and manage library resources; to make the library visible to the user community and the world".

Librarian at Redeemers' University, Ede:

> "to carry out the various housekeeping functions effectively and freely to meet users' information needs".

For successful adoption of a library software, librarians must be involved from the inception till the final adoption to ensure its success. In a survey of librarians' attitude to open source software in Nigerian libraries, the result indicated that majority of the librarians were in support of open source software (Akintomide, 2016). This will subsequently lead to the successful implementation and use of such software for all the library operations by the librarians. Omeluzor et. al. (2012) explained that the reason for implementing KOHA in Babcock University library, Nigeria was to have a regular access to information, accurate records of collection and provide efficient management and adequate library services to all users. The findings support those of Nebeolise and Osuchukwu (2014) and Otunla & Akanmu-Adeyemo (2010) who reported in their studies on academic libraries in Nigeria that the main purpose of adopting KOHA

was to manage all the library operations and enhance service delivery to users.

Functional Modules of KOHA in the selected university libraries

The result of the interview with the librarians revealed that all the modules were functional in Redeemer's University, Ede, while three modules were functional in Ladoke Akintola University of Technology, Ogbomosho. Federal University of Oye and Adeleke University, Ede, had two modules operational while only Federal University of Agriculture, Abeokuta had only the cataloguing module functional (Table 1). KOHA has the following modules: acquisition, circulation, OPAC, membership, accounts and reports, library catalogue front end/ OPAC, library system intranet, circulation tracking system, acquisition/budgeting system, simple web based interface for patrons and library staff (Nebeolise and Osuchukwu, 2014). The result revealed that the cataloguing was the functional module in all the five libraries that are currently using KOHA (Table 1) and this collaborates the result of Awoyemi and Olaniyi (2012) in a survey of ten academic libraries in Nigeria that cataloguing and serial modules were those modules operational in those academic libraries.

University Modules

Table 1 Functional Module in the University Libraries

		Acquisition	Cataloguing	Circulation	OPAC	Serial	Patron Management
1	Federal University of Oye		✓		✓		
2	Federal University of Agriculture, Abeokuta		✓				
3	Ladoke Akintola University of Technology, Ogbomosho		✓	✓		✓	
4	Olabisi Onabanjo University, Ago-Iwoye						
5	Adeleke University, Ede		✓		✓		
6	Redeemers' University, Ede	✓	✓	✓	✓	✓	✓

Challenges to use of KOHA in the university libraries

The major challenge to all the university libraries was erratic or irregular power supply as reported by all the librarians. Some other challenges included low bandwidth and technical support. This supports

the findings of Iroaganachi (2015) and Gbadamosi (2012) who listed erratic power supply and poor funding as challenges to automation of libraries in South-west, Nigeria. Nigeria as a country is battling with electricity production and this is a major problem faced in every part of the country. This situation inhibits the use of the software at all times as when there is electricity cut, libraries will have to use alternative power such as generators, inverter or solar system. These alternative power sources are expensive to install and maintain and their use will also deplete the available library funds which are inadequate. The responses from the librarians are as follows:

Librarian at Federal University Oye:

> "erratic power supply and poor Internet connectivity".

Librarian at Federal University of Agriculture Abeokuta:

> "Major challenge is that of power outage and ICT facilities".

Librarian at Ladoke Akintola University of Technology Ogbomosho:

> "the problem of upgrade because koha was installed at OOL by an agent called D-links, who used password to restrict our full access into it. He has requested a huge sum for its upgrade but unfortunately, the university is financially constrained".

Librarian at Olabisi Onabanjo University, Ago-Iwoye:

> "Inconsistent electricity supply and power surges; Inconsistent Internet service ; Very

low internet bandwidth supply; Unavailability of dedicated bandwidth to the University library and low computer skill among staff expected to use KOHA"

Librarian at Adeleke University, Ede:

"Electricity, low bandwidth and technical issues".

Librarian at Redeemers' University, Ede:

"Staff training and retraining on software design and network engineering and management, inadequate synergy with the Information Technology unit for strengthening the systems, irregular power supply or UPS to power the KOHA server ".

Major challenges that have been revealed in universities using KOHA in Nigeria have been irregular power supply and lack of technical support (Omeluzor et. al., 2012; Otunla & Akanu-Adeyemo, 2010). This supports the findings based on the responses of the librarians in all the libraries. However, this problem can be minimized through the use of alternate power supply such as inverter and generating sets. The library should provide regular training for its staff to ensure the maximum use of the software. Egunjobi et. al. (2012) averred that poor funding was the major challenge to use of KOHA in an academic library in Ondo State, Nigeria. Funding is a major determinant to ensuring regular power supply to the libraries through either the purchase of generators, inverter, solar energy and maintaining them and also the provision of relevant training programmes for the library staff. Therefore, for maximum use of KOHA to both the library staff and users, libraries should have adequate funding

through the library budget and soliciting of funds from external sources such as private organizations and alumni associations.

Conclusion and Recommendations

KOHA as software has been adopted in different types of universities (federal, state and private) in South,-west, Nigeria to improve service delivery to users. However, some challenges such as erratic power supply, inadequate technical support and low bandwidth were found to affect its maximum use. KOHA will fulfill the objective for its adoption when all the modules become functional and challenges to its use such as irregular power supply and inadequate technical support are taken care of through the use of alternative power supply such as inverter, solar and generators. The librarians should be trained through hands on workshop and in-house training programmes to facilitate the management of KOHA and reduce or totally eradicate the challenge of inadequate technical support.

References

Akintomide, O. A. (2016). A Study of Nigerian Librarians' Attitude to Open Source Software. Library Philosophy and Practice (e-journal). Paper 1356. Retrieved July 30, 2016 from: http://digitalcommons.unl.edu/libphilprac/1356.

Akintunde, S.A. and Anjo, R. (2012). Digitizing resources in libraries: An overview. Retrieved July 26, 2016 from: http://www.netlibrarynigeria.net/downloads/Akintunde.docl.pdf.

Awoyemi, A.R. and Olaniyi, S.T. (2012). A survey of the availability and use of

KOHA open source software by academic libraries in Nigeria. *COCLIN Journal*

of Library and Information Science, *5*(1/2): 9-29.

Baiju, J. (2014). KOHA and LIBSYS: A Comparative Study. *Journal of Advances in Library and Information* Science, 3(4): 350-354

Egunjobi, R. A. (2012). Library Automation with KOHA. Library Hi Tech News, 29(3), 12-

15.

Etim, F. E. (2006). Resource Sharing in the Digital Age: Problems and Prospects in African Universities. *Library Philosophy and Practice*, 9(1). Retrieved July 30, 2016 from: unllib.unl.edu/LPP/lppv9n1.htm

Fabunmi, B. A. (2009). Challenges and Prospects of Virtual Libraries in Universities in Nigeria. *European Journal of Scientific Research*, 33 (1). Retrieved July 30, 2016 from: http://www.eurojournals.com/ejsr.htm

Gbadamosi, B.O. (2012). Emerging Challenges to Effective Library Automation and An E-Library: The Case of Emmanuel Alayande College of Education, Oyo, Nigeria. *Library Philosophy and Practice* (e-journal). Paper 807. Retrieved July 30, 2016 from: http://digitalcommons.unl.edu/libphilprac/807

Gramstad, A. R. (2012). Proprietary Software, Free and Open-Source Software, and Piracy: An Economic Analysis. Thesis for the degree Master of Economic Theory and Econometrics. Department of Economics, University of Oslo.

Hamby, R.; McBride, R. and Lundberg, M. (2011). South Carolina's SC LENDS optimizing

libraries, transforming libraries. Computers in Libraries, 31(8): 6-10.

Iroaganachi, M. A., Iwu James J. and Esse U. C. (2015). Software Selection and Deployment for Library Cooperation and Resource Sharing Among Academic Libraries in South-West Nigeria. *DESIDOC Journal of Library & Information Technology*, 35(1): 3-8.

Jasimudeen S., Vimal, K. V. and Biju, V. V. (2014). Open source software use in Indian libraries: A survey. *International Journal of Advanced Research in Management and Social Sciences*, 3(9) Retrieved July 30, 2016 from: http://eprints.rclis.org/23922/1/13.pdf

Kandar, S., Mondal, S., & Ray, P. (2011). A review of Open Source Software and Open Source Movement in developing countries. *International Journal of Computer Science & Informatics*, 1(1), 89-93.

Nebeolise, L. N. and Osuchukwu, N. P. (2014). Issues in selecting appropriate software for automation and management of academic libraries in Nigeria. *International Journal for Innovation Education and Research*, 2(10): 32-47.

Obajemu, A. S., Osagie, J. N., Akinade, H. O. J and Eker, F. C. 2013. Library software

products in Nigeria: a survey of uses and assessment. *International Journal of Library and Information Science 5*(5), 113-125.

Ogbenege, J. and Adetimirin, A. (2013). Selection and Use of KOHA Software in two

Private Nigerian Universities. *Library Hi Tech News*, 30(6): 12-16.

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.

Oketunji, I. (2005). Computerization of Library Operations: Necessary Considerations. In

J. Lasisi, O. K. Odusanya, S. E. A. Sonaike et al. (Eds.), Proceedings of Selected Papers on the Cataloguing, Classification and Indexing 2003 – 2004 (pp. 147-157). Nigerian Library Association.

Okiy, R.B. (1998). Nigerian university libraries and the challenge of information provision

in the 21st century. Library Bulletin: Nigerian University Library System, 3(1 & 2): 17-28.

Omeluzor, S.U.; Adara, O.; Ezinwayi, M.; Bamidele, A.I.; and Umahi, F.O. (2012). Implementation of Koha Integrated Library Management Software (ILMS): The Babcock University Experience. *Canadian Social Science*, 8(4): 211-221.

Otunla, A.O. and Akanmu-Adeyemo, E.A. (2010). Library automation in Nigeria: The Bowen University experience. African Journal of Library, Archives and Information Science, 20(2): 93-102.

Rehman, A.; Mahmood, K. and Bhatti, R. (2012). Free and Open Source Software Movement in LIS Profession in Pakistan. *Library Philosophy and Practice (e-journal).*Paper 852. Retrieved July 30, 2016 from: http://digitalcommons.unl.edu/libphilprac/852