

Implementation and Utilization of an Open Source Library Management System: Experience with Koha 3.06 at Redeemers University Library, Nigeria

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Abstract

Open source has been the center of attention most especially in academic libraries world for the past several years. The current momentum of open source ILS adoption makes it almost inevitable that it will represent an increasing portion of the library automation landscape. Koha is considered as a highly sophisticated Integrated Library System (ILS) in the open source domain which offers full featured ILS including OPAC, circulation, cataloguing, acquisitions, serials control etc. The purpose of this paper was to describe the redeemer's university library Koha 3.06 library management system (LMS) implementation, experience and utilization by both library staff and users. The study adopted a survey design, using questionnaire as the instrument for gathering of data, to sample user's opinion on the software utilization and general perception, and also to evaluate level of satisfaction of library staffs. A total of 17 library staff and 90 undergraduate students participated in the study. The data collected were analyzed using simple percentage tables. The data analysis revealed that its excellent features have made it popular and continues to receive improvement and upgrade by the library patrons. It has also increased the use of OPAC by library patrons in searching for library resources from any comfort zone. The findings also revealed that the level of satisfaction and utilization by library staff were very high due to its friendly interface. It concludes by proffering solutions to the observed problems like staff training and retraining on software design and networking, fostering synergy with some units of the universities such as Information and Communication Technology (I.C.T.) Unit of the university for the purpose of strengthening the system.

Keywords: KOHA, OPAC, ILS, LMS

1. Introduction

Almost all libraries today have a collection of both print as well as electronic resources. Due to the wide range of information resources available, it has become necessary for libraries to automate all their operations to meet the growing demand of users. Omeluzor et al (2002) asserted that libraries in this period must prove to be the hob of academic activity, a dynamic system that will incorporate new and yet to be conceived features must be the focus. Libraries of today must be aggressive to provide access to information within and outside the library through a viable system.

Before the origin of open source solutions, library automation was dominated by commercial library automation packages. Library authorities had to choose from the abundant availability of such library solutions to suit their service needs, financial needs and users' needs in an effective and efficient manner. Libraries are facing the problems of severe budget cuts, increased demand for various library services and lack of adequate technical staff. With the emergence of the Open source revolution, libraries, today, are adopting open source solutions for the automation of their libraries. Open source solutions are providing benefit to libraries by reducing initial and ongoing costs and eliminating vendor lock-in.

Koha is considered as a highly sophisticated Integrated Library System (ILS) in the open source domain which offers full featured ILS including OPAC, circulation, cataloguing, acquisitions, serials control etc. Koha is used world-wide by universities, public, school and special libraries. It was created in 1999 by Katipo Communications for the Horowhenua Library Trust in New Zealand (Projektlink Konsult Limited, 2010).

2. Background Information on Redeemer's University (RUN) Library

Redeemer's University (RUN) is one of the approved private Universities in Nigeria, and commenced academic activities in 2005 with three (3) colleges, namely: Colleges of Management Sciences, Natural Sciences and Humanities. Considering the importance of Information and Communication Technology in this 21st Century, the university took-off with an automated library services, giving both the student and staffs of the institution the opportunity to access the Internet as an information source within the library and the campus premises.

The university opened its library to users in September, 2005 with a core collection of 6,000 volumes. The collection, a magnificent gift from the Ondo State indigenes in the US consisted largely, of recently published materials which were particularly strong in the Management Sciences. The donation was not limited to printed

books; it contained a sizeable collection of non-book materials such as CD's Diskettes, Videos and illustrated transparencies. There were also runs of back issues of journals and other serial titles. This initial collection has been added to through purchase, generous donations of unique, not easy to come by publications and reference materials.

In line with the Vision of the University to build a high technology-based institution and a paperless community, the library has sought to compliment the book resources with e-resources, particularly e-journals, full-text databases and access to remote libraries. Material collections in the Library include such resources as major dictionaries, encyclopedias, historical survey, monographs, textbooks, fiction, pamphlets, archival materials, audio and video materials, bibliographies, biographies and periodicals in various formats including print and electronic others includes, a collection of Christian books authored by renowned evangelists and great Christian leaders and a collection of books written about Nigeria and Africa (Nigeriana and Africana).

The mission of RUN Library is to serve as a gateway to the latest information resources needed by the University Staff and students irrespective of location, to enhance learning, teaching and research in a prompt, cost effective and painless manner. RUN Library has been able to penetrate the University academic community with Selective Dissemination of Information (SDI) and Current Awareness Service (CAS) (Adetomiwa, 2015). Its KOHA library management software also runs effectively to provide access to resources. Internet facility is made available in the workstations (with close to 80 networked systems) in the reading room to provide access to the National Virtual Library Project, NUC, Abuja and libraries in other institutions. The library also gives access to the collection of students' projects online by Author, Title, Supervisor and Year of Publication.

Beyond the scope and content of the collection, other factors such as cost, relevance, usability and currency also determine acquisition priorities. Today, the Redeemer's University Library holds more than twenty five thousand volumes.

Library catalogue is perhaps the most important tool for locating material in RUN Library. The advent of computers, with their ability to process large amounts of information and output in a variety of formats has finally brought the library to the patron, wherever he or she may be located. Redeemer's University Library catalogue is accessible via an Online Public Access Catalogue (OPAC) available from a number of public access computers located throughout the library.

OPAC provides access to the catalogue through a computer terminal. OPAC allows searching the entire catalogue online, conveniently and quickly, using one or more search criteria. One can, for example, search by author, title, keywords, class number or one or more of these combined together. OPAC shows the current status of a book, whether it is loaned out, available on the shelf or lying elsewhere. Another advantage of OPAC is its ability to display catalogue records in a variety of formats such as *AACR2*, *MARC* etc, and the records can be displayed in a desired order. For example one can display records arranged (sorted) by author, title or call number. The library management package (koha) offer printing of bibliographies from OPAC either on a printer or on a file. The library management package also use OPAC for other user services like reservation, membership enquiry and registration, circulation history, to know your fines, overdues and so on. Another convenience that RUN OPAC offers is accessibility from a remote computer, using a local area network (LAN) or a wide area network (WAN).

Redeemer's University Library, now Tekena Tamuno Library, (by Senate decision of May 2015 to immortalize the erudite scholar who served as the Chancellor of the University from 2006 to 2015) As at January 2015, the collection had grown to its present states of over 25,000 volumes of books, over 500 journal titles, 22 electronic databases subscriptions that provide access to well over 25,000 electronic journal titles, in disciplines where the University mounts academic programmers.

Tekena Tamuno Library (TTL) moved into its present accommodation on January 27, 2015. Though temporary, the new building is purpose – built and compartmentalized to house the various operations and services of the Library. The building can conservatively sit over 500 patrons at a time, a figure that conveniently satisfies the National Universities Commission's (NUC) benchmark for the present student population of the University. The Library as at now is fully automated using the integrated Library System (KOHA) software, our aim in the next one year is to operate the Library using high technological device which covers security, self services, charging and discharging of materials and digitalization of Library materials

The first ten years of TTLibrary are indeed eventful. The period has laid for the Library a robust foundation upon which a great future of academic excellence can be built for the University.

3. Redeemers University Integrated Library management System (ILMS) KOHA

In August, 2011 RUN Library migrates its bibliographic records from the former Portal systems to Koha Integrated Library systems. Koha is an open source software which has capacity to support the main operations and services of the library. Koha is an ILS with comprehensive functionality including basic or advanced options. This includes modules for circulation, cataloging, acquisitions, serials, reserves, patron management, branch relationships, and more. Koha's OPAC, circulation, management interfaces are all based on standards-compliant World Wide Web

technologies making it a truly platform-independent solution. Patrons can log in to their account at the Web Online Public Access Catalog (Web OPAC) to view and print their checkouts, fines, and holds.

RUN Library was attracted to the system because of its wide adoption amongst Nigerian library community. This was considered a major plus because the library would have opportunity to compare notes with other libraries using the software. Another attraction to the system is its seamless integration of the modules. With this attribute, data would only be entered once and viewed in all other modules.

Similarly, Koha is user friendly and users need little training to use the system. Just like any other web-based resource, it is self-instructive and highly flexible. Koha is Web 2.0 compliant, hence very interactive and supportive of social networking like *Facebook* and *Twitter* do. To cap it all, Koha requires no subscription and no special training. All library records are accessible through the library management system.

The catalog supports both basic and advanced searching, using parameters like title, author and publishers to mention but a few. Likewise, it is possible to search by format of information and storage medium. Presently, there are about 483 e-books in various disciplines uploaded to the system that can be read in full text.

OPAC users can carry out searches starting from ten fields (Keyword, Subject, Title, Class, Barcode, author, publisher, etc.) OPAC users can submit suggestions for acquisition. Koha automatically informs the OPAC user (by e-mail) of the action taken on each suggestion.

Koha Serials Module make it is possible to register subscriptions with reviews, and to track the arrival of periodicals. Koha manages late issues, skipped issues, and claims with the suppliers. Koha manages complex classifications, allowing the librarian to work with eleven different publication periods (from daily newspapers to annual publications), with delayed publications, and with publications out of sequence. A state of the collection can be defined which will synthesize the missing publications, received publications, etc. The state of the collection can be displayed differently in the OPAC and in the librarian interface.

Circulation rules can be defined very finely by the library: for each member category, item category, the duration of the loan and the maximum number of books loanable can be defined. Returning items ("checking-in") is extremely easy: Simply scan the barcodes of the items being returned or input manually.

The cataloguing module is one of the principal strong points of Koha. Several "frameworks" can be defined to do different cataloguing for monographs, electronic resources, periodicals, etc. To accelerate cataloguing, Koha provides, Management of a MARC record reservoir, in ISO2709 format, A Z39.50 client that can access several Z39.50 servers. Searches can be performed on any MARC field. Advanced functions, search on one word, the beginning of the field, greater than, less than, etc are also available.

4. KOHA implementation and utilization at Redeemer's University

- *Approval from the management*
- *Koha Demonstration by vendor, and evaluation of each Module by library staff*
- *Migration:* There was no prospect of re-cataloguing the entire collection due to the nature of the previous software (library portal). Migration was therefore the only option using excel data sheet format, the excel file was converted into Marc file and then imported into Koha. The installation, data migration and training were successfully done and usage of the software began immediately in August 2011.

Koha's features have made it popular and continue to receive acceptance among the library patrons. It has also increased the use of OPAC by library patrons in searching for library resources from any comfort zone. Koha reports assisted in the full accreditation of all available courses by Nigerian University Commission (NUC). The daily Regular calculated overdue fines by Koha have served as revenue to the University. Koha implementation and utilization at Redeemer's University Library has changed the way the library offer services to patrons and serve as a reference point to other libraries, it has also reposition the library among other best academics library in south west Nigeria, as well as improving the university ranking.

5. Factors Sustaining Koha Utilization in Redeemers University

Stable Electricity: Redeemer's University benefits from 24hours uninterrupted power supply provided by the mission (Redeemed Christian Church of God), which is powered by Turban Gas. **Active ISP and Bandwidth:** The Internet Service Provider (Main One) offers a very strong Bandwidth for Redeemer's University (RUN). Bandwidth refers to the amount of information that can be carried in a given time period (usually a second) over a wired or wireless communication link, expressed as bits per second (bps) (Plato, 2006). The higher the bandwidth, the more data can be transferred in bits per second. Whenever there are more data transferred in bits per second (high bandwidth), users spend very little time to retrieve information from the internet.

Career Development and Training: Redeemer's University (RUN) sponsors staff members to attend conference/workshop/training every year especially on ICT related programme, this affords members of staff opportunity to attend local conferences every year and once in three years for international conferences.

Remuneration and Adequate Budget: The staff remuneration is 22% higher than employees in public

universities. Besides, there is a budget allocation for ICT development

Adequate ICT Facilities: All the categories of staff except essential staff have computers connected to printers in their various offices, with UPS attached to each.

Internal Revenue: RUN is generating substantial amount of money from ICT facilities, the virtual library generates substantial amount of money from external users from the use of internet and printing during the monthly Holy Ghost programmes. Other factors are:

Choice of library software

Skill level of Academic Librarians

Dedicated ICT Unit and Qualified Staff

Updated ICT Strategy

Commitment by the Management and Founder Support

6. UPGRADING OF KOHA FROM 3.06 TO 3.20

In December 2015, the library upgraded from 3.06 to 3.20 version, Figure 1 shows the OPAC interface of the koha version 3.20 to fulfill the increasing user needs. The data in 3.06 was modified to match with version 3.20. The backend data was cooked to match version 3.20.

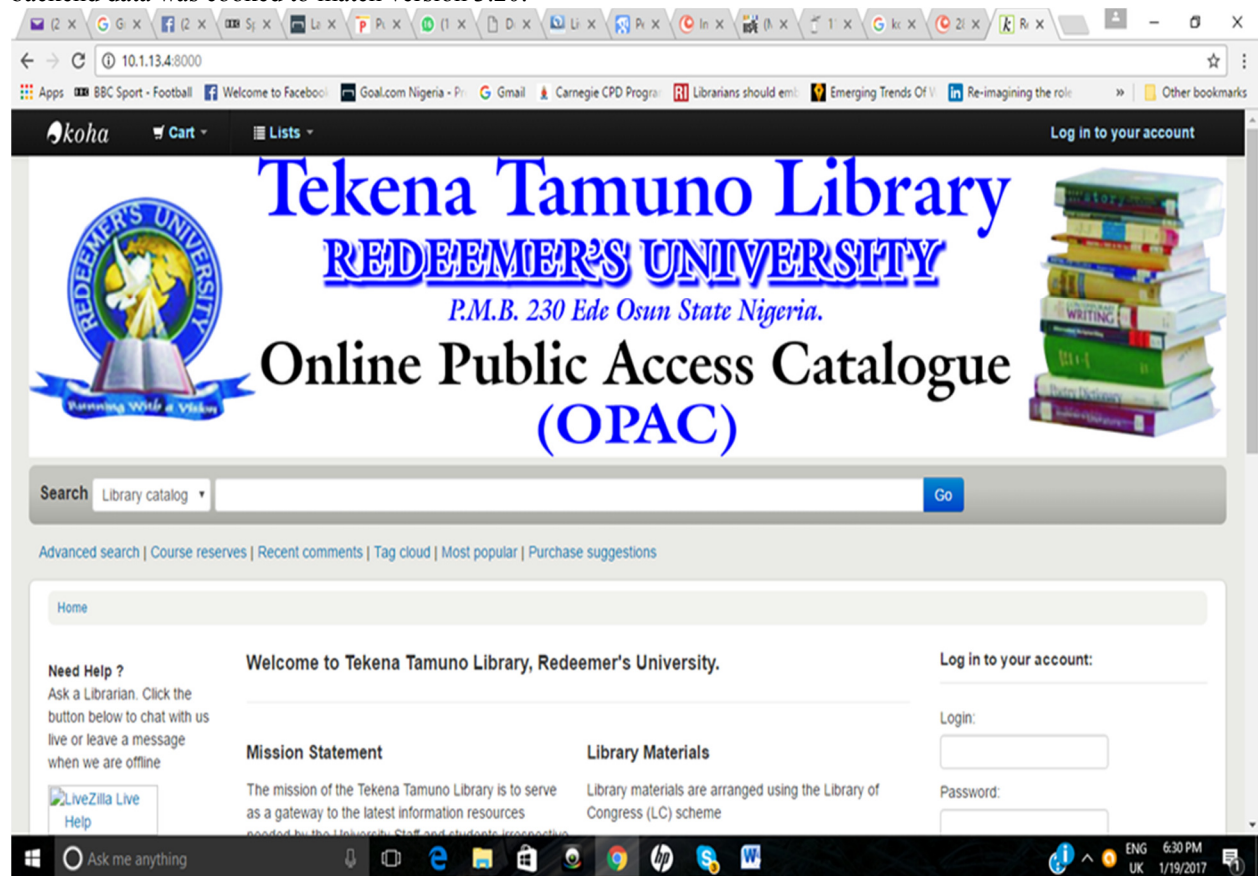


Figure 1 showing the OPAC interface of the koha version 3.20.



Figure 2 showing the OPAC interface of the koha version 3.06 before the upgrade.

Methodology

The study adopted a descriptive survey research design. The study population was made up of 2,100 undergraduate students from all the three (3) colleges in redeemer's university from 200 level to 400 level registered for 2014/2015 academic session and 34 library staff (Library attendants, assistants, officers and Professional Librarians). This study was conducted at redeemer's university. Stratified random technique was used to select 5% from the total population of 2,100 undergraduate students thereby giving a total sample size of 105 while a total of 17 (50%) library staff also participated in the study.

A structured questionnaire was the instrument used to elicit information on user's opinion on the software utilization and general perception, and also to evaluate level of satisfaction of library staffs. Before the administration of the questionnaire on the respondents, face validity was carried out to test the validity of the questions. Ninety 90 (85.7%) questionnaire were retrieved from undergraduate students and found useful. The data collected were analyzed using percentages and frequencies.

7. Presentation and discussion of findings

Table 1. KOHA IMPLEMENTATION IN REDEEMER'S UNIVERSITY BY LIBRARY STAFF

S/N	ITEMS	A		DA		NS	
		N	%	N	%	N	%
1	Koha Demo	14	82.4	2	11.8	1	5.9
2	Vendor Approaches	15	88.2	1	5.9	1	5.9
3	Evaluation of each Module	14	82.4	2	11.8	1	5.9
4	Koha Original Base	13	76.5	3	17.7	1	5.9
5	Cost Effectiveness	15	88.2	1	5.9	1	5.9
6	Management Support	14	82.4	2	11.8	1	5.9

Key: - A= Agreed, DA=Disagreed, NS= Not Sure

Table 1. Above indicate Library staff response on Koha Implementation at Redeemer's University, it shows that 82.4%, 88.2%, 82.4%, 76.5%, 88.2% and 82.4% of the respondents (library staffs) agreed that koha Demo, Vendor approaches, Evaluation of each Module, Koha Original Base, Cost Effectiveness and Management Support were the major factors that lead to implementation of koha at the Redeemer's University while 11.8%, 5.9%,

11.8%, 17.7%, 5.9% and 11.8% disagreed.

The result of the analysis above confirmed Omeluzor et al (2002) that the koha implementation process began when the Librarians at Babcock University Library supported the bid to have ILS that will not serve only as OPAC to the users, but holistic, combining different features capable of enhancing learning, teaching and research as well as access to library information resources within and outside the university environs. The result is also in agreement with Osaniyi (2010) who opine that, evaluation of library software becomes more and more important, on the one hand because of the growing offer of software from which good products have to be chosen, on the other hand in order to promote software quality and set quality standards. Also, Vimal Kumar (2012) posited that implementation of Koha in reputed libraries in India has given enough publicity among library professionals. News regarding Koha implementation in Delhi Public Library, Mysore University, British Libraries and Connemara Public Library etc. have appeared in popular online discussion forums like LIS Forum and has come to the attention of library professionals. A few library science departments and institutions in India have already started teaching Koha.

Table 2. KOHA UTILIZATION AND USERS EXPERIENCE

S/N	ITEMS	LIBRARY STAFF						LIBRARY USERS					
		A		DA		NS		A		DA		NS	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Koha has improved my productivity	13	76.5	3	17.7	1	5.9	76	84.5	10	11.1	4	4.4
2	Using Koha has drastically reduce my time searching for books in OPAC	15	88.2	1	5.9	1	5.9	78	86.7	8	8.9	4	4.4
3	I prefer Koha to the previous ILS used	16	94.1	1	5.9	0	0.0	79	87.8	8	8.9	3	3.3
4	Koha has increased my use of library resources	14	82.4	2		1	5.9	80	88.9	7	7.7	3	3.3
5	Koha is user's friendly	13	76.5	3	17.7	1	5.9	77	85.6	10	11.1	3	3.3
6	Koha enhance easy access to library information resources	15	88.2	1	5.9	1	5.9	84	93.3	4	4.4	2	2.2
7	Koha reduces time wastage in the delivery of services	14	82.4	2	11.8	1	5.9	89	98.9	1	1.1	0	0.0
8	Koha has enriched content and facet navigation	12	70.5	3	17.7	2	11.8	74	82.2	13	14.4	3	3.3
9	Koha has full content of ILS	16	94.1	1	5.9	0	0.0	83	92.2	5	5.6	2	2.2
10	Koha OPAC is easy to search and flexible	15	88.2	1	5.9	1	5.9	87	98.7	2	2.2	1	1.1

Key: - A= Agreed, DA=Disagreed, NS= Not Sure

Table 2 above shows koha utilization and users experience by library staff and users, the result of the analysis shows that, use of koha has improved library staff and users productivity, also using Koha has drastically reduce time used in searching for books in OPAC. Majority of library staff and patrons preferred Koha to the previous ILS used in the library, the analysis also indicates that, Koha has increased their use of library resources and enhance easy access to library information resources.

This result corroborates the findings of Vimal Kumar (2012) that Koha's web interface is easy to use by both library professionals and end users. Web 2.0 features are also added for the enhancement of user experience. Users can change the display and layouts for matching with the theme and aims of the library. Layouts are suitable for adding external elements like social network widgets, bookmarking tools and dynamic contents. Koha users have expressed that display and layouts are excellent.

The result is also in consonance with the findings of Kannapanavar and Manjunatha (2010). They examined library use pattern by the faculty members of the engineering colleges in Karnataka. The study revealed that 53.2% of users were using online public access catalogue (OPAC) to locate their reading materials, 48.8% of the users consulted the librarian and library staff to locate documents.

Table 3. PROBLEMS ASSOCIATED WITH KOHA UTILIZATION AT REDEEMER'S UNIVERSITY

S/N	ITEMS	LIBRARY STAFF					
		AGREED		DIS AGREED		NOTSURE	
		N	%	N	%	N	%
1	Staff and patrons training and retraining on koha design is necessary	15	88.2	1	5.9	1	5.9
2	There is need to foster synergy (I. T.) Unit of the university for the purpose of strengthening the systems.	12	70.5	3	17.7	2	11.8
3	Koha OPAC search don't spell check	16	94.1	1	5.9	0	0.0
4	Koha can't really enforce all staff policies	14	82.4	2		1	5.9
5	Bugs discovered in the update are not easy to be addressed quickly.	13	76.5	3	17.7	1	5.9
6	Koha installation like set up and customization is technical	15	88.2	1	5.9	1	5.9
7	With no vendor you have to update Koha on your own which is a bit technical	14	82.4	2	11.8	1	5.9
8	Technical support is limited	12	70.5	3	17.7	2	11.8

In Table 3 above, shows problems associated with Koha utilization at Redeemer's University library by library staff, the result of the analysis showed that Staff and patrons training and retraining on koha design is necessary with 88.2%. Also, the majority of staff agreed that Koha OPAC search don't spell check 94.1 %, while 88.2 % agreed that Koha installation like set up and customization is technical. This result is in consonance with the findings of Omeluzor et al (2002) that training, seminar and workshop are inevitable to improve staff and users skills in the management and use of ILS in Babcock University.

8. Conclusion

No doubt, KOHA implementation and utilization at Redeemer's University Library has changed the ways and manner the library offer services to patrons and serve as a reference point to other libraries, it has also reposition the library among other best academics library in south west Nigeria, as well as improving the university ranking in Africa. The chosen software (koha) has excellent features which have made it popular and continues to receive improvement and upgrade by the library patrons. It has also increased the use of OPAC by library patrons in searching for library resources from any comfort zone.

The findings also revealed that the level of satisfaction and utilization by both library staff and students were very high due to its friendly interface. The library management needs to take urgent steps on the observed problems like staff training and retraining on software design and networking, fostering synergy with some units of the universities such as Information Technology (I. T.) unit of the university for the purpose of strengthening the systems.

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