University of Nebraska - Lincoln Digital Commons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

7-1-2018

RETROSPECTIVE CONVERSION OF BIBLIOGRAPHIC RECORDS: KOHA EXPERIENCE OF NIALS LIBRARY

Uluocha Anyaogu Mrs. Nigerian Institute of Advanced Legal Studies, University of Lagos, Campus, Akoka, Lagos

Follow this and additional works at: http://digitalcommons.unl.edu/libphilprac



Part of the <u>Library and Information Science Commons</u>

Anyaogu, Uluocha Mrs., "RETROSPECTIVE CONVERSION OF BIBLIOGRAPHIC RECORDS: KOHA EXPERIENCE OF NIALS LIBRARY" (2018). Library Philosophy and Practice (e-journal). 1901. http://digitalcommons.unl.edu/libphilprac/1901

RETROSPECTIVE CONVERSION OF BIBLIOGRAPHIC RECORDS: KOHA EXPERIENCE OF NIALS LIBRARY

ABSTRACT

One of the prerequisites in library automation is creation of database of in-house collections to enhance the usage of the information resources as well as the image of the library. It is a herculean task geared towards facilitating easy and quick access to the library's valued collections. There are several methods and tools in the process of library automation. 'Retrospective conversion' (RECON) is a promising method which enables a library to accomplish such a tedious task. This paper discusses the retrospective conversion of bibliographic records: KOHA experience of Nigerian Institute of Advanced Library Studies (NIALS) library. The descriptive survey research design was adopted. Total enumeration technique was used to select ten (10) librarians, one (1) ICT staff and two (2) para- professionals in the library under study. A self-developed questionnaire with four subscales was used: Methods of Retrospective Conversion, Evaluation of RECON project, Problems of RECON and Solution to the problems. Four research questions were answered and Data were analysed using descriptive statistics. The study finds out that NIALS library makes use of In - House RECON method and data is keyed in manually. The paper discusses the problems inhibiting the library's RECON project. In spite of the numerous inhibiting factors such as economic, cultural and social barriers, the library made tremendous progress in the migration of bibliographic records to the electronic environment. It recommends that NIALS library will fare better when adequate computer systems are made available, as well as dedicated internet bandwidth among others.

Key Words: NIALS, Bibliographic Records, KOHA ILS, Catalogue, Retrospective Catalogue Conversion

.

INTRODUCTION

The current trend in information technology and its relevance to the retrieval system compels librarians everywhere in the world to move from analogue to the digital systems. This is to enhance the efficiency of information management and dissemination. Thus, one of the prerequisites in library automation is to create database of in-house collections. This is essential not only for Online public access cataloguing (OPAC) but for circulation system also. It is now global best practices and standards to have libraries automated such that bibliographic records are digitized and accessible on institutional web-based catalogues devoid of time and space limitations.

Aina *et al*, (2008) observe that the most important of the retrieval tools for organizing a library collection is the catalogue. The library catalogue is an essential tool. It is an index or a key to the collection, containing an entry representing each item (Clark, 2000). The catalogue also tells where in the library a book is located (Apotiade, 2002). However the introduction of computers into library activities has been a turning point that suggests for change from the traditional cataloguing process and output. One of the most highly developed and most popular forms of library catalogue is the card catalogue. For developing countries like Nigeria, over 98 percent of libraries either use the card catalogue alone or side by side with the Online Public Access Catalogue (OPAC) (Ola, 2001). Since libraries have thousands of books and non-book materials which already have records in the catalogue at the inception of a computerization program, the emphasis is usually on capturing the most recent records in the computer database.

Libraries as gateways to knowledge now subscribe to electronic databases containing plethora of electronic books and journals. Modern libraries also facilitate connectivity to the global information networks through the internet. It would amount to backwardness, obsolescence and stagnation for any .institution not to be in a haste to leverage up with the current trends. Aina (2004) and Meredith (2006) underscore the fact that ICT is now a core component of any library and information science curriculum at all levels.

Considering the limitless scope of the Internet and World Wide Web to retrieving information for scholars who hitherto relied on the traditional library catalogue, the information seeking behaviour of an average person has been revolutionalized. The usual first point of call for information seekers in the twenty-first century is the internet (Rao and Babu, 2001; Coffman, 2012, Purdue, 2012). The seemingly threat of the internet to library

catalogues demands the integration of technology, information and learning into the emerging model for libraries to be relevant. (Rao and Babu, 2012).

Closely related to the foregoing, is the issue of meeting the expectations of twenty-first century law library users. Law libraries are currently faced with information communication technology savvy and more sophisticated users expecting services that can compete favourably with or better organised than GOOGLE, Amazon and other retrieval systems. Our present clientele would want to see the full deployment of catalogue 2.0. This presupposes interactive and collaborative catalogue that provides multifaceted access points for quick and easy retrieval and navigation of library holdings (Nkiko, 2013). Library services must be tailored to meet the needs of users for sustainability and continued patronage. For this reason Nigerian Institute of Advanced Legal Studies library has embarked on digitization starting with retrospective catalogue conversion (RECON).

The word "Retrospective" indicates that the process is only for already existing records, and the meaning of the word "conversion" refers to the form and format of the record, changing something from one form to another. Thus, retrospective conversion in library and information center means "changing already existing catalogue from traditional form to a machine-readable form (Dabas, 2004). Retrospective conversion according to ALA Glossary of Library and Information Science (1983) cited in (Dabas, 2004) has been defined as the process of converting the database of a library holding from non-machine-readable form to machine-readable form and that are not converted during day to day process. This process in the library is executed with some methods and steps. Retrospective conversion is a costly and time consuming process. It has to be taken up as a special project and requires meticulous planning as well as many policy decisions.

NIALS AND THE TRANSITION TO THE E-LIBRARY ENVIRONMENT

Nigerian Institute of Advanced Legal Studies Library has evolved through the years from 1979 to date serving as the apex law library in Nigeria. The library operations at inception were done manually. This involved functions such as acquisition of materials, cataloguing and classification including typing of card catalogue cards as well as filing of cards in cabinets. The whole operation is quite tedious for both library staff and users. This necessitates the need for library automation. Prior to the implementation of KOHA in the Library, Micro-CDISIS, TINLIB (The Information Network for Libraries) and Alice For Window Software (Proprietary Software) were used for several years (Dada, 2011).

KOHA Library software was installed in the Library in November, 2013. It has been running very smoothly since inception except for some technical challenges like Network bridging, upgrading of KOHA version, systems breakdown which are usually repaired by the system analysts. The library has a back-up of resources in case of any disaster.

The choice of KOHA Software by the library was necessitated by the wide usage of the software and the financial capability of the Institute. Though, the software is open source, maintenance is not free except there is in-house staff with requisite knowledge on LINUX. However, after the installation of KOHA, it became necessary to embark on the retrospective conversion of library resources into KOHA in order to populate the database and also to enhance access to the collections in the library. As at today, about five thousand, two hundred and sixty-eight (5,268) titles have been added by the library staff to the database. The Library OPAC has been open for access to library users on Local Area Network within the Library.

STATEMENT OF THE PROBLEM

A number of studies have been conducted on the topic "automation, and retrospective conversion". Some of these studies examined retrospective catalogue conversion in selected Federal University Libraries in Southern Nigeria (Ihejirika and Ekere, 2016), retrospective conversion in two Nigerian university libraries (Okoroma, 2010). While some others delved into problems and the procedures of retrospective conversion (Faniran and Oyemakinde, 2000). But none has been conducted on retrospective conversion of bibliographic records in law libraries in Nigeria. Hence, this study is necessitated by the fact that there is still need to examine the various processes and problems encountered by NIALS library retrospective conversion project so as to identify better alternatives for the actualization of the desired automation goals. Also, it has been observed that many academic and research libraries have completed the retrospective conversion of their bibliographic resources and as such, there cannot be any better time for law libraries in Nigeria to follow the trend because, according to Siror, J.K (2010) automation helps in solving the greatest challenge and weakness of manual based verifications.

OBJECTIVES

The specific objectives of the study are to:

- 1. identify the methods adopted for RECON in NIALS library;
- 2. examine how often the project is being evaluated;
- 3. ascertain the problems militating against RECON in NIALS library; and
- 4. proffer solutions to the problems militating against the project.

RESEARCH QUESTIONS

The study answered the following research questions derived from the specific objectives:

- 1. What are the methods adopted for RECON in NIALS library?
- 2. How often does the library evaluate RECON project?
- 3. What are the problems militating against RECON in NIALS library?
- 4. What are the solutions to the problems?

SCOPE OF THE STUDY

This study covered librarians, ICT staff and the para-professionals in Lagos office of NIALS library. The study focused on the methods adopted for RECON in NIALS library, extent of evaluation of the project, and problems militating against RECON project.

SIGNIFICANCE OF THE STUDY

This study is significant for many reasons. The findings of this study would be useful in identifying various methods for RECON projects in libraries. The findings of the study would help law libraries in Nigeria to be aware of the various methods available for RECON projects. The increase in Nigerian content on the Web will enable more meaningful and fruitful researches to be conducted through access to relevant data and literature. Law libraries will also be able to communicate more professionally with colleagues in other parts of the globe. The choice and deployment of appropriate software will particularly bring contents together and provide a common platform for the exchange of knowledge in today's knowledge society. Also, the outcome of this study would add more to the body of knowledge in the field of law librarianship and enhance literature on the retrospective

conversion of bibliographic records in libraries. The findings from the study would contribute to the dissemination of knowledge for the academia with specific reference to ICT and law librarianship.

LITERATURE REVIEW

The organization of bibliographic records of library resources has evolved over the years. But due to the digital divide between the developed and developing economies, the adoption rate of retrospective conversion of card catalogue to machine-readable catalogue (RECON) has been very uneven with the developing world, especially African countries, lagging behind. Though high rates of RECON adoption do exist in some African countries like Botswana, Malawi and Nigeria (Edoka, 2000; Okoroma, 2001), the bulk of the countries in the continent are yet to introduce RECON to their library systems. Even in countries where RECON has been adopted, only a handful of their libraries have converted their services to varying degrees of automation and are still moving at very slow pace. This dismal record of RECON adoption is not surprising because automation efforts have been persistently frustrated by lack of man power, funds, computing facilities, poor maintenance culture, destructive interruption of electric power and other infrastructural factors (Idowu and Mabawonku, 1999; Faniran and Oyemakinde, 2000). Furthermore, only a few libraries have a clear automation goal that seems realistic presently (Ehikhamenor, 1990 cited in Okoroma, 2011). But in spite of these problems, RECON has been successfully adopted in a number of Nigerian libraries like Kenneth Dike Library, University of Ibadan; Nigerian Institute of Economic and Social Research (NISER) Library, Ibadan; Development Policy Centre (DPC) Library, Ibadan; University of Nigeria Nsukka, Ladoke Akintola University Library, Ogbomoso; University of Lagos Library; University of Jos, Jos; Babcock University, Ilishan; National Library of Nigeria, National Documentation Centre (NIDOC) Abuja; Nigerian Institute of International Affairs (NIIA) Library, Lagos; Federal Institute of Industrial Research Oshodi (FIIRO) Library; Institute of Chartered Accountants of Nigeria (ICAN) Library, Lagos; Centre for Management Development (CMD) Library, Lagos; NUC Library, Abuja; ECOWAS Library, Abuja; Raw Materials Research and Development Council (RMRDC) Library, Abuja; Nigerian Educational Research and Development Council Library, Abuja; British Council Library, Lagos; United States Information Service (USIS), Lagos; Nigerian Institute for Fresh Water and Marine Research (NIOMR) Library, New Bussa; Federal University of Technology, Owerri (FUTO) Library; Nnamdi Azikiwe

University Awka and Ahmadu Bello University Library, Zaria. The rate of library automation in Nigeria is still relatively low, considering that the country has over 1000 libraries. However, the success recorded by the few that have automated their services is expected to motivate others to apply IT in the near future. (Nwalo, 2009 cited in Okoroma, 2011)

Dabas (2004) identified some methods of retrospective conversion such as In-House Conversion, Outsourced In-House Conversion and Outsourced Off-Site Conversion. In-House Conversion is completed by the existing library staff in an organisation. It leads to high quality and control, as the staff understands the users' needs, quality requirements, and the objectives of the conversion. But it has some disadvantages such as disturbance of the routine work; increase in work-load; and more time is required for completion of the project.

Outsourced In-House Conversion is completed by outside contracted persons within the library premises while Outsourced Off-Site Conversion is the process of conversion that is completed by an agency away from the library or information center. Similarly, Oni (2009) also identified three main methods for retrospective catalogue conversion such as RECON by an Outside Agency which simply means letting an outside bureau take care of such a comprehensive task; Deriving record from External Databases which uses existing databases from outside the library and In-house Conversion which is perhaps the best one available to libraries in this part of the world.

More so, the steps adopted for retrospective conversion according to Ola (2000) includes Keying manually which is the most accurate way of getting libraries database into machine - readable form, Optical character recognition which is synonymous to scanning. It requires expensive equipment and properly formatted cards. The danger involve with the use of this equipment is that just like any machine, they cannot make sensible decisions. Therefore, records created by a scanner may not be properly indexed. Thirdly, resource database which involves a library approaching resource databases when engaging in Retrospective catalogue conversion (RCON). This system of RCON process is time consuming and needs both properly trained people as well as experts supervision; involves the matching of records through the use of International Standard Book Number (ISBN) or Library of Congress Classification Number (LCCN) or uses other bibliographic particulars as authors, titles, publication data and other data elements. Finally, editing which has to do with ensuring that converted records are properly edited and are consistent with local practice. In the same vein, Dabas (2004) observed that the three basic steps in retrospective conversion

are filling of data input sheets/worksheets, entering data into software and editing the database.

There are certain tools required to carry out this steps and methods in retrospective conversion. For retrospective catalogue conversion to be possible, infrastructure needs to be in place. Very efficient electrical wiring that will support all the required equipment has to be in place. Power supply should always be available and reliable. A high number of computers and accessories need to be procured. Information and telecommunication gadgets, Local Area Networks (LAN), software and bandwidth are other requirements for an effective online cataloguing to be in place (Arkoful, 2007). The service of library staff is also required as a resource for RCON. These resources are expected to be handled with some level of competency.

The competencies possessed by library staff for RCON borders on ICT skills and knowledge of traditional cataloguing skills. According to Nwachukwu (2005), in the modern age of information explosion, no library can satisfy users demand with the manual library process. Thus, computer skill among librarians should be seen as a valuable prerequisite that would help facilitate library computerization efforts and functions in order to meet the demand of ever-growing clients.

The process of RCON has some problems that pose a challenge to its success. Oketunji (cited in Okoroma, 2010) opines that the major problems that can face libraries as they become progressively involved with the use of technologies may be summarized as follows: General inadequacy in the level of relevant infrastructure, inadequate pool of relevant technical staff and problems of recruitment and retention; and database conversion problems and frequent changes in technology. These challenges can be addressed with proper measures such as forming new partnerships between cataloguing departments and other units, both internal and external to the libraries; review of internal cataloguing operations with the goal of realizing improved efficiency, provision of adequate fund for the RCON project, proper planning, and provision of alternative power supply and outsourcing of the project in cases where adequate expertise is not available in the library.

The literature reviewed the methods, processes or approaches, guide to RECON projects, and problems associated with the projects in libraries. It has also shown that digitization holds great promise for preservation of materials, sharability of resources, and visibility of law libraries

However, it is clear from literature that much research has been done on retrospective conversion of library resources in academic libraries but none on law libraries in Nigeria. Therefore, this study was designed to fill the gap and to provide a reference point for future studies.

RESEARCH METHODOLOGY

The population of the study comprises of librarians, ICT staff and para-professionals involved in RECON project in the library under study. A self developed questionnaire was used to collect data for this study. Copies of the questionnaire were personally administered and collected by the researcher. The data gathered were analysed using descriptive statistics.

DATA ANALYSIS

Data were analysed based on the research questions

Background Knowledge of the Library

This section deals with the background knowledge of the library under study in respect of the total collection size, time the library started RECON, Software in use and reason behind choice of software amongst others.

The findings reveal that NIALS RECON project started in 2013 and was still on as at the time of study. This means RECON takes some time. The findings reveal that NIALS Library started with three computers and now have eight computers. This shows that no number of computer is too small for any library to start RECON but the library must plan to improve as suggested by Ola (2000) that proper planning is imperative in RECON to spell out quite clearly the focus of the exercise and how to make funds available for the project. NIALS library uses KOHA Integrated Library Software because of its wide usage, financial capability of the library and ability of the software to be customised to suit the library.

Table 1: Background Knowledge of the Library

S/N	STATEMENTS	RESPONSES
1	Total collection size	50,962
2	Time started	2013
3	Time ended	In progress
4	Number of computers started with	3
5	Number of computers in use	8
6	Software in use	KOHA ILS
7	Reason behind software in use	Wide usage, Financial capability of the Institute, Open access, Comprehensive and can be customised to suit the library

^{*}ILS – Integrated Library Software

Research Question 1: What are the methods adopted for RECON in NIALS library?

Table 2 reveals that RECON approach used by the library under study was in-house retrospective conversion. The reason behind this approach was to eliminate errors, save cost, avoid loss of record in transit and afford library staff opportunity to acquire experience respectively. Data was keyed in manually on a daily basis because that was the only available option as at the time of installation of the Software. This supports Ola's (2000) view that keying manually is the most accurate way of getting libraries database into machine – readable form, but the process is time consuming and needs both properly trained people as well as expert's supervision.

Table 2: Processes/approaches in RECON Project

S/N	STATEMENTS	RESPONSES
1	RECON approach	In- house retrospective conversion
2	Reasons for the approach	To eliminate errors, save cost, avoid loss of record in transit and afford library staff opportunity to acquire experience
3	Method of RECON	Keying manually on a daily basis
4	Reason for choice of method	The only available option

Table 3 shows that NIALS library evaluates RECON project on a monthly basis to ascertain the pace of work and ensures that problems not initially envisaged are taken care of for the success of the retrospective conversion project. Reports are being generated for documentation purposes. This is in agreement with the opinion of Lancaster (1993) cited in Esievo (2015) on evaluation as the control function in management. Without a periodic project evaluation of the retrospective conversion project, it will be difficult to know whether progress is being made in realizing project objectives. Evaluation and reports assures the library management and external funding agencies that the huge financial commitment made so far is worthwhile, thereby encouraging further funding.

Table 3: EVALUATION OF RECON PROJECT

S/N	EVALUATION OF RECON	RESPONSES
1	Do you evaluate RECON Project?	Yes
2	How often do you evaluate?	Monthly

Research Question 3: What are the problems militating against RECON in NIALS library?

From table 4, it was obvious that NIALS Library experienced similar crises situations in the process of RECON such as inadequate funding of the project, erratic power supply, and frequent change in technology as established in literature. This was in agreement with the reasons behind frustrated automation efforts as cited in Feniran and Oyemakinde, 2000.

Concerning the resolution of the problems, the study reveals that NIALS library was still battling with the problems though a separate generating set has been installed for the library and training and re-training of staff is in progress.

Table 4: Problems of RECON

STATEMENT	RESPONSES
	 Inadequate funding of the project
	 Poor maintenance culture
	 Frequent change in Technology
	 Erratic power supply
	 Inadequate computer systems and its accessories
PROBLEMS	 Low internet bandwidth
	 Lack of cataloguing materials for editing of cards prior to RECON

Research Question 4: What are the solutions to the problems?

Concerning the resolution of the problems, the study reveals that NIALS library was still battling with the problems though a separate generating set has been installed for the library and training and re-training of staff is in progress.

Table 5: Solutions to RECON problems

STATEMENT	RESPONSES
SOLUTIONS	Training and re-training of staff
	 Provision of a separate generating set for the library.

DISCUSSION OF FINDINGS

This study discusses the retrospective conversion of bibliographic records with KOHA Integrated Library Software at NIALS library. It delved into the methods, processes and approaches, extent of evaluation, and problems militating against RECON project.

NIALS Library adopts In - House RECON method to eliminate errors, save cost, avoid loss of record in transit and affords library staff opportunity to acquire experience in the use of KOHA Integrated Library Software.

NIALS library evaluates RECON project on a monthly basis to ascertain the pace of work and ensures that problems not initially envisaged are taken care of for the success of the retrospective conversion project. Reports are being generated for documentation purposes. This is in line with the guideline for RECON as stated by Dabas (2004) that a well-written documentation unveils the strengths, to the contrary, a poorly written documentation unravels the weakness of the project. Thus documentation is crucial for the successful retrospective conversion and automation.

The problems of RECON as revealed in this study include lack of fund, poor maintenance culture, frequent change in technology, erratic power supply, inadequate computer systems and its accessories as well as low internet bandwidth. This finding agrees with the views of Faniran and Oyemakinde, 2000; Okoroma, 2011, that automation efforts have been persistently frustrated by lack of manpower, funds, computing facilities, poor maintenance cultures, destructive interruption of electric power and other infrastructural factors. This is also in line with Bansode, S.Y. and Periera, S. (2008) views that traditional

barriers like insufficient funds, lack of space, and lack of training are the problems faced by many libraries. The findings revealed that though adequate solution to these problems has not been put in place, the library has made remarkable progress even in spite of these glaring hindrances.

CONCLUSION

From the findings of this study, it could be concluded that retrospective conversion of bibliographic records in libraries plays a crucial role in enhancing the migration of library resources to an online environment and improving visibility of the library. Thus, law libraries in Nigeria must brace up to the challenges and integrate both old and new records in the online database for maximum access. It could be concluded that NIALS library has made a remarkable effort as far as RECON is concerned despite the numerous inhibiting factors.

It is imperative therefore that if law libraries must overcome the perennial budget costs, then, digitization through retrospective conversion of resources must be seen as a smart solution that brings about the possibilities of sharing resources with other institutions that are richer across the globe. This is the paradigm shift. It is a challenge of openness and visibility. It is a possibility. NIALS library has started and cannot afford to look back. It must cross the Rubicon, and cannot turn back. All hands must be on deck to host the Online Public Access Catalogue (OPAC) generated through retrospective conversion process in an electronic environment for visibility of the library in particular and Institute in general.

It is worthy to note that the Institute library is central to all research activities. Its transition to the desired objective of a full virtual or digitised legal collection is long overdue. With the advent of the much heralded digital age, it is trite to assume that nothing short of an electronically propelled library shall be suitable for such a collection as NIALS that was established to spear-head legal research.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are suggested to improve retrospective conversion of bibliographic records at NIALS library:

 More funds should be provided for the successful completion and hosting of the project for maximum access and visibility;

- Training and re-training of staff should be embarked upon for acquisition of skills by staff;
- Adequate cataloguing materials should be provided for easy editing and cataloguing of materials for RECON project;
- The generating set approved for the library should be put to use effectively to enhance the pace of work;
- A RECON project team should be constituted to focus on the project and finish within a target date;
- All librarians especially those with cataloguing experience should edit the data keyed
 into the system to ensure that they are in conformity with the materials in the library.
 This is very important because NIALS library is an apex law library and its OPAC
 will be useful to lawyers, law librarians and researchers;
- The most recent records should be captured in the database;
- Evaluation and documentation of the RECON project should be of utmost importance to the librarian;
- Set a realistic timetable. Some factors will be out of the library's control, even if recon is done entirely in-house;
- Create "clean" records to start, rather than creating records which need editing or updating and
- The clean-up phase is crucial to finishing recon, and therefore it should be systematic

REFERENCES

- Aina *et al* (2008), Information and Knowledge Management in the Digital Age, Ibadan, Printmarks Ventures, 130-132
- Aina, L.O. (2004), Library and Information Science, Text for Africa, Ibadan, Third World Information Services Limited, 88-94
- Arkorful, A. M. (2007) Implementing online catalogues in African academic libraries: the collaborative role of international partners in improving access to valuable research materials. Available at: http://www.fla.org/iv/ifla73/index.htm. Accessed on February 8, 2018
- Apotiade, J. K. (2002) LSE 302- Cataloguing and Classification. Ibadan Distance Learning Series. Distance Learning Center: University of Ibadan. 5p.

- Dabas, K. B. (2004) Retrospective conversion: guidance for librarians and information center. Available at: http://www.iiflibnet.ac.in/bitstream/handle/1944/327/04cali_19.pdf?sequence=1 Accessed on February 10, 2018
- Dada, T. O. (2011) Law librarianship and legal research in the digital age. Being the maiden valedictory lecture presented at Nigeria Institute of Advanced Legal Studies,

 Lagos.59p
- Edoka, B.E. (2000) Introduction to library science. Onitsha: Palma Publishing and Links Company. 40p.
- Esievo I. O (2015) Retrospective conversion of bibliographic records in academic libraries in Nigeria. *Journal of Animal Production Research* 27:219-225 Available at journals.napri.gov.ng/index.php/japr/article/download/30/74 Accessed on March 2, 2018
- Faniran, A., and Oyemakinde, A. (2000) Retrospective conversion of card catalogue to machine readable form. *Journal of the Nigeria Library and Information Science Review, Oyo State Chapter of the Nigerian Library Association* 16 (1-2): 102-112
- Ihejirika, K. T. and Ekere, F. C. (2016) Retrospective Catalogue Conversion in Selected Federal University Libraries in Southern Nigeria. *Library Philosophy and Practice (e-journal) Available*athttps://digitalcommons.unl.edu/?utm_source=digitalcommons.unl.edu%2Flibphilprac%2F_1441&utm_medium=PDF&utm_campaign=PDFCoverPages Accessed on February 4, 2018
- Nicholas, J. (1998). Computer overview. Available at: http://www.vastro.temple.edu/rich015/55cl Accessed on February 13, 2018
- Nkiko, C. (2014) "Managing lCT-Driven Libraries in Nigeria: Critical Leadership Issues" In Library Automation Edited by P.B. Ghante [and] Ashok Yakkaldevi. India: Laxmi Book Publication.113-120
- Nwachukwu, V. N. (2005). Computer competencies among academic libraries: an imperative for computerization of university libraries. Nigerian Library Link, 47-58.
- Okoroma, F. (2011) The retrospective conversion of card catalogue: a case study of Kenneth Dike library, University of Ibadan, Nigeria. *International Research Journal of Library, Information and Archival Studies* 1(4):105-113. Available at http://www.interesjournals.org/IRJLIAS Accessed on February 5, 2018
- Okoroma F. (2010) Retrospective conversion in two Nigerian University libraries: a comparative study of Kenneth Dike Library and Obafemi Awolowo University Library. *Library Philosophy and Practice*. Available at http://www.webpages.uidaho.edu/~mbolin/okoroma.htm. Accessed on February 4, 2018

- Ola, C.O. (2001), Retrospective Conversion of Catalogue Records to Machine-readable Form: Pragmatic Alternatives in Automation of Cataloguing Practices in Nigeria Libraries. Proceedings of Selected Papers Presented at Various Workshops of Nigeria Library Association, Cataloguing, Classification and Indexing Section, 41-48.
- Rao K.N and Babu K.H (2001). Role of librarian in internet and World Wide Web environment. *Information Science* 4(1): 25-34. Available at: inform.nu/Articles/vol4/ v4n/po25-034-pdf. Accessed on March 4, 2018
- Retrospective conversion: guidelines for libraries. Available at:

 http://www.oclc.org/oclc/promo/6075retr/6075ret1.htm. Accessed on February 18, 2018.
- Siror J.K. (2010). Automating customs verification process using RFID technology