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ISSUES IN SELECTING APPROPRIATE SOFTWARE FOR AUTOMATION AN D MANAGEMENT OF ACADEMIC LIBRARIES IN NIGERIA

Ngozi P. Osuchukwu (CLN)

Library, Justice Development & Peace Commission (JDPC), Onitsha, Anambra.

Abstract

The world is dynamic and information management is also dynamic. As such, one needs to change to the trend of global information management. There is an eagerness on the part of academic libraries and librarians in Nigeria to shift from traditional methods of information to modern information technologies. This has led to the influx of library software into the ICT market to drive automation needs of the academic libraries. There is need, however, for quality and reliable software that can effectively run on the operating systems of computers in academic libraries. This paper therefore, aims at creating awareness on the issues of selecting appropriate software for automation and management of academic libraries in Nigeria, and the existing software so as to enhance quality selection. The paper further portrayed the criteria in making an effective selection of software in academic libraries and provides guiding steps libraries should follow before selecting software. The paper not only discusses problems associated with software selection but also made recommendations for a way forward. It recommended for the library software developers to endeavor to always providing an upgrade that will not wipe out away old data, software that will be compatible with other library software user groups.

Introduction:

Software according to Concise English Dictionary, (1999) can be defined as the programs that are used with particular computer systems. Computer software or software is a collection of computer programs and related data that provide the instructions to a computer or tell it what to do. It also refers to one or more computer programs and data held in the storage of computer for some purpose. Program software performs the function of the program it implements, either by directly providing instructions to the computer hardware or by serving as input to another piece of software. In contrast to hardware, software is intangible (Wikipedia, 2010). Wooster (2009)

opines that software is the most valuable intangible product in the market place and outlines the qualities of good software .Almost thirty years now when academic libraries in Nigeria have embarked on automation, there are still challenges in software selection and acquisition. The world is growing in a geometric progression in the area of the application of Information and communication technology in Nigeria but there are still some challenges in the academic libraries in regards to software selection and its acquisition. It is obvious as noted and also reported by other scholars that software selection decision in the libraries is basically based on the report from others through conference on what they feel and heard that the software could offer. There has not been thorough system analysis to ascertain what is needed in library software before its selection and acquisition in some Nigeria University and Special Libraries. Tiamiyu (2000) observed that libraries in most developing countries have low or lack the knowledge and or experience in automation. He found out that the greatest obstacles to library automation are the scarcity of internal library manpower with the requisite computer knowledge and experience to plan, analyses, evaluate and implement automated library systems. As a result the libraries depend solely on vendors of computer systems for both the hardware and the software selection. Such expertise recommend, design and implement an automated system, this not advisable because without adequate understanding, input participation of library staff in the automation project, the library would end up with an inappropriate automated system. In situation where the libraries are even having competent and experienced staff in such area, politics, sentiment and self interest would not even let them allow such staff to participate thereby losing such staff to oil or the banking industries. Most libraries do not hold on to software selection process before its acquisition. Ifidon (1999) and Fatoki (2002) reported that most of the Nigerian libraries do not strictly hold on to automation guidelines such as : information gathering, funding, employing library system manager or analyst who will be involved in the automation process like the selection process or the development process, planning, assessment needs, requirement specification of the library, systems selection and data conversion. Even at the selection stage, the experienced staff are not even informed or involved in the selection process or giving pre-system analysis of what should be needed before the acquisition hence in most cases within a short time of the acquisition of the software, it becomes obsolete or have some limitation therefore being unable to meet up with what is expected. The selection and acquisition process as stated above are not strictly followed in some libraries in Nigeria. It becomes necessary that software known as in-house monitored and computerized should be adopted by libraries. In this practice, a computer firm will be contracted to develop the software but the library being involve in giving the expert some details that may be needed for expansion in the future but in most cases in Nigeria, no staff is involve even in the selection process or engaged in the developmental process. Library managers and information personnel therefore need to conduct research on the various software being paraded in the Nigerian market before making choice. Experience has shown that very many libraries in Nigeria run into one problem or the other due to the wrong choice of library software. For instance, some of the first generation universities in Nigeria started with TINLIB software but they could not continue due

to some technical difficulties, maintenance problem, poor revision policy and the prohibitive cost of processing and maintaining it. Adogbeji and Onohwapor (2007) revealed that Kenneth Dike library of University of Ibadan, Nigeria had earlier used TINLIB software and could not continue. Also, University of Ilorin started with TINLIB and later shifted to Alice software. University of Lagos was equally affected in the wrong choice of library software. This university started with TINLIB and later shifted to a modified version of TINLIB called Graphical Library Automation System (GLAS). When the latter software could not adequately sustain the library operations, the library then opted for Millennium software in 2012. The purpose of opting for Millennium software was because it is web-based. Therefore, the reports highlighted above coupled with the experiences Nigerian libraries faced in the wrong selection of library software called for this research.

Automation in Library

Library automation may be defined as the application of computers to perform traditional library housekeeping activities such as acquisition, circulation, cataloguing, and reference and serials control. Automation is used to reduce the amount of staff time devoted to repetitive (and often less challenging) activities that must be done in any properly functioning library. Many authors use the term 'library automation' to mean the use of computers as an aid for library activities. Markus() on says that "library automation in its broadest sense can be taken to mean the employment of machines for library processes. In general, it means the application of computers and related data processing equipment in libraries".

According to Salmon (), "library automation is the use of automatic and semiautomatic data processing machines to perform such traditional library activities as acquisition, cataloguing and circulation. Although these activities are not necessarily performed in traditional ways, the activities themselves are those traditionally associated with libraries. Library automation may thus be distinguished from related fields such as information retrieval, automatic indexing and abstracting and automatic textual analysis".

Traditionally, library automation is referred to the computerization of the entire library housekeeping operations like acquisition, cataloguing, circulation & serials control. But today it is also referred to handle the large quantity of data and information more efficiently and quickly with the help of computers and other modern information technologies.

Automating an academic library is the process which restructures its functions and reinvents its services. By keeping a database as the basis, automation converge new technologies of information storage and retrieval with traditional housekeeping operations. An automated academic library can serve the teaching and learning community more effectively. A reduction in the time needed for routine operations can be utilized to give customized services to the users. The process of library automation has a short history in our country. It needs proper planning and active implementation. Academic libraries initiated the automation of its library to cope with the

ever changing needs of the students and staff. The modernization of the Library Media Centre helps the students to become skilled information users and lifelong learners.

According to Bhardwaj & Sukla (2000) library automation is generic term used to denote the various activities with an improving quality of products and services of library and information centers. It enhance the speed, productivity, adequacy and efficiency of the library professional staff and save the manpower to avoid some routine, repetitive and clerical tasks such as filing, sorting, typing, duplication checking etc. Library automation according to Bhardwaj (2000) is refers to the use of computers, associated peripheral media such as magnetic tapes, disks, optical media etc. and utilization of computer based products and services in the performance of all type of library functions and operations. Computers are capable of introducing a great degree of automation in operations, functions since they are electronic, programmable and are capable to control over the processes being performed. Ugah (2001),defined library automation as the use of computer to carry out library services that are routine and repetitive. Such services that involve routine and repetition include acquisition-request, selection, ordering processing of arrivals, cataloging, circulation, information storage and retrieval, current awareness services, bibliographic searches.

Therefore, the aims, objectives and need for the change of library tools and technique under the changing environment with the concepts of automation of library activities, networking for managing library and information services such as acquisition, database management, classification and cataloguing circulation, serial control, information retrieval, communication networks, and documentation services etc., in Nigeria depends mainly upon the proper planning and appropriate decision taken by the authorities from time to time.

History of Library Automation Software

The library software packages did not develop at once. The study shows that it has developed generation wise which has been divided into four generation. The first generation software was developed to run on specific hardware platform and proprietary operating systems. Low level programming language was used and the non standard database management systems were common feature of these software. Circulation module and cataloguing module were the priority issues for these systems. Although these software packages were module-based systems, there was no or very little integration between modules. The single user stand alone structural design was used in this generation opined by John, P. (1946).

The second generation library software packages, with the introduction of UNIX and DOS based systems, become moveable between various platforms. Limited number of users and shared structural designed can be seen. The special features of these packages are the ability to shift between systems for specific function. Command driven or menu driven features can be seen in this generation. The capacity of record holding has been improved according to John, P. (1955-1964).

The third generation library management software packages provide fully integrated systems. They are based upon relational database structure according to John, P. (1965)

Fourth generation programming language was used in this generation. These software packages introduced a range of standards, which were a significant step towards Open System Interconnection (OSI). Colour and Graphical User Interface (GUI) features, such as windows, icons, menus and direct manipulation have become standard and norms in this phase. User support was extensively increased. Based on the improvement of the technology, the features of fourth generation library management software are based on client server architecture and facilitate access to other servers over the internet. Object oriented database management system and windows operating system have been introduced in this generation. These systems allow increasing multiple sources from one multimedia interface. Customized report generation was also available in this phase. Moreover the latest library automation software allows customized report generation and to manipulate data and investigate various scenarios and therefore they have all the potentials to be a decision support tool John, P. (1960).

Selection and Evaluation of Software

In respect to the vast explosion of information, the librarians are facing difficulties to meet the user demand and are forced to take up the task of systematic organization of the recorded knowledge. The market of library automation software package is unstable and subject to rapid expansion and software for library automation has to be decided before the selection and procurement of hardware. In fact, every librarian and information officer should keep in mind the requirement of the library automation and fitness of software for their purpose. Then he should select such software which should fulfill his requirements and also compatible with the future technology and multimedia. Joint (2006), in his article "Evaluating library software and its fitness for purpose" provides a conceptual paper based on existing software evaluation models. The main purpose is to adapt general principles used for evaluating software quality to more specific requirements characteristic of information retrieval and educational applications in library environments. It also provides a model of software quality which embraces a number of top level factors. These are functionality, reliability, usability, efficiency, maintainability and portability. Bhardwaj and Sukla (2000), in the article “A Practical approach to library automation” discusses that software selection is a very complicated issue, on the observation of experts. The discussion should be made by the selection committee and most suitable in regard of flexibility, capacity, expandability, security, economically, user’s friendly, module based and updated with the latest technology is to be procured. He further discusses the leading names of the software packages with its features which are available in the market.

Software Used in Nigeria

There are considerable numbers of library software products in use in Nigerian libraries. However, some of them have fizzled out of the market. These various library software that have penetrated the Nigerian market include:

1. Micro CDS/ISIS (free),

2. Library Plus (which replaced x-lib software),

3. Green Stone Software,

4. Graphical Library Automation System (this replaced the Information Navigator Library Software, TINLIB),

5. Alice for Windows Software

6. EBSCO Software.

7. Docuware, Strategic Library Automation Management(SLAM),

8. Liberty 3 Software,

9. Micro-CDS/ISIS.

Selection Criteria for Appropriate Library Software

Software selection is not an easy task but selection should always be reflective of the mission. The quantity of commercially available software is vast and grows every day. The success of automation depends on selection of right software and its correct implementation. A very few library software packages can meet all the requirements of a particular library. Each package has its own unique features and limitations. Hence, it is necessary to evaluate the library automation software with varying facilities according to the requirement. To determine the best package, analyze and identify the needs and match it with the features and functions of integrated library systems is important. Moreover, the library software should be selected to satisfy the present and prospective needs of the library. To assess the value of software based on certain important check points, a comparative study is essential to understand any software. Therefore, this study is carrying out using the important checklist to be used for evaluation of software. It would help to librarian to know the benefits and limitations of particular software and to decide about the selection of a software package suitable for their own requirements. Selecting the right integrated library management software package is very important. The strength of the automation is mainly depended on the quality of the system software. A number of software are available in the market and some have special academic library modules. Adogbeji and Onohwapor,(2007) states that selecting high quality software requires some processes or guidelines which a library needs to follow.

These Are Major Factors to be Considered While Selecting Software .These Include:

1) Cost

This is a very important factor to be considered before selecting library software. The cost of commercial software package varies considerably across the range of packages available except open source and free software. Most of the library automation software is costlier. Commercial software has initial purchase fees, licensing fees as well as up-grade fees. Moreover, the software designers also claim additional charges for customization, on-site training and data conversion from other DBMS / data sources, annual maintenance contract and customer support service. But the software developed locally might be cheaper price in comparison with foreign software. Some software package developed using open source and free software is available free of cost and offer only on the distribution charge. Facts to be considered under cost as one of the factors are as following:

Are the license costs justified given the functionality offering?

Is the required database affordable?

Are annual maintenance charges reasonable?

What is ratio of software costs to the implementation cost?

2) Supplier Longevity

Supplier longevity is also very important factor to be considered before selecting the software that the numbers of years has the company been actively engaged in this software industry, when was the product's first released and what is the current release version being quoted. The reliability, customization and durability depend on the stability of the software designer and supplier. If the company has been consistency profitable year over year and the recent turnover has been on the management staff, there is no doubt on the company's longevity. Similarly, the costumer's reference is also supportive factor to take a decision.

3) Services

The most important factor is the service part of any software package for the library, because the library. The librarian can serve the people effectively, efficiently as well as rapidly with the help of automation using good library software package which is integrated by all required services.

4) System support and maintenance

Especially the training, maintenance and documentation are included in the customer support services. It also includes publications (e.g. manual and newsletter) which contain information about latest development of the software. It helps to keep the users up to date in the latest development of the library software.

5) Copyright & Licensing Considerations

All commercial software is copyright protected. The purchased package will contain a licensing statement to which the purchaser agrees by the action of opening the package. An advantage of the licensing agreement is that a registered owner (registration cards are also included in the software package) can usually obtain upgrades at far less than the full market price. Free software is not copyright protected. Usually referred to as "Public Domain Software," such packages are freely copy-able and/or transferable.

6) A good library software package should be the integrated for the entire range of

Libraryactivities such as Acquisitions, Cataloguing, Circulation, Online-Public Access catalogue, Serial Management, Providing Reference Service

Others factors include -:

- Does this package meet the overall requirements listing?
- Is the menu structure easy to follow and understand?
- Are the help files easily assessable and easy for users to understand?
- Can the user customize help to meet the individual needs of the organization?
- Is the product overly complex or to sophisticated for the average user?
- Are there standard reports available and are they useful?

Selection must always be based on merit and not on financial inducements and Idowu (2000) outline library software selection procedures or guidelines which can be followed by library managers and other information experts in Nigeria in particular and Africa in general. These are:

- Do a need analysis;
- Consider the various alternatives available;
- Request for proposals from software vendors;
- Follow due process in arriving at final decision;
- Seek knowledge from experts and libraries already
- using the same software;
- Read relevant literature;
- Demonstrate the software;

- Recommend the preferred option to management;
- Keep all records relating to automation

Steps to software selection

There are seven processes for responsible software selection and are-:

1. Analysing needs, including the differentiation between needs and objectives: In this case, there is need to analyze what is expected in software which must be in line with the library objectives. This is an area that many libraries in Nigeria do not take time to delve into.
2. Specification of requirement: This implies that the specification of the requirements for the software must be specified by the library concern especially before or at the time of software development.
3. Identifying promising software: The library must be able to identify the promising library software, which must be able to address the various library operations especially the catalogue, acquisition, circulation and report generating etc.
4. Reading relevant review: The intending library that wants to buy the software must read other relevant literatures and act on the usage by knowing more from the libraries that have used them, especially the area of prospect and difficulties.
5. Previewing the software with intended user group: Any library that want to select a software must involve the intending user group, as the users will be acquainted with the difficulties and how flexible the software is, thereby making useful suggestions for the improvement of the software.
6. Making recommendations on software for purchasing: After the previewing of the software, recommendations can be made for its purchase when the software has been test run and thoroughly evaluate to meet with the library needs and objectives.
7. Getting post – use feedback: This is the stage whereby one needs to determine the compliance or discrepancy between the library objectives and the actual user performance. The post –user feedback can be of significant to a library's systematic process of software selection, purchase and use.

Features of Some Library Software Used in Nigerian Universities

a) CDS/ISIS

The acronym for CDS/ISIS is Computerized Documentation System/Integrated set of Information System or simply ISIS. It has been designed and developed by UNESCO's Division of Software Development and Applications office of Information programme and service. The

windows version is called WINISIS. It is a menu-driven generalized information storage and retrieval system, designed specifically for computerized management of structured non-numerical data bases. (UNESCO, 1989). The first version of CDS/ISIS was released in 1985, similarly, its 2nd version 2.3 in 1989, 3rd 3.07version in 1992 and latest version 3.08 is available now. The range of ISIS users includes all types of libraries, as it is distributed free of charge. More than 5,000 libraries are licensed users worldwide. It is a non-numeric database specially designed for bibliographic records, and is multilingual. A database can hold 16 million records. It provides variable length fields, repeatable fields, and sub-fields. It has powerful indexing and searching techniques. It provides a stop word file. Advanced programming can be done using PASCAL language. Data can be exchanged according to international standard ISO 2709.

b) Alice for Windows (AFW)

Alice was developed by Softlink International Australia in 1983. It is known as Alice

for Windows all over the world. It is marketed through a number of agencies.This software is suitable for all types of libraries, such as primary and secondary schools in the public and private sectors, colleges, public libraries, booksellers, educational resource centers, charities, hospital, prisons, law practices, police forces, industrial companies, consultancies and palaces. (Softlink, 1999). The software is included the demonstration package also. According to the Brochure, annual support/maintenance fee provides libraries with an unlimited number of support hours. This automation package is available in four distinct versions such as Public Library Version, Special Library Version, Academic Library Version and School Library Version. The software has many modules which are categorized as follows:

Standard Modules

Management, Circulation, Inquiry (OPAC) modules Advanced Modules Acquisitions, Serial control, Journal Indexing, Multimedia, Web Inquiry module Special Modules Multilingual features, Self circulation, Union catalogue, Quick Pics. Modules The software provides data protections, retrospective conversion facility and online tutorial and help system. It allows a library to purchase only the modules that suit its needs. The software provides number of support services which include training programme, feedback system through user groups, free newsletters (Softlink, 2000) etc. It provides three types of training programs according to the requirement of the user, i.e. initial training, advanced training and office based training. Modules of AFW for an academic library include: Acquisition, Management, Circulation, Inquiry, Periodicals, Journal Indexing Web Inquiry, Rapid retrospective, Inter library Loans, Patron self checking

C) KOHA

The software, KOHA is the world's first open source integrated library system.The name Koha comes from a Maori term for a "gift" or "donation". The development of Koha began in 1999,

funded by a group of libraries in rural New Zealand that found proprietary software expensive and lacking some needed features. The full featured Koha was developed initially in New Zealand by Katipo Communications Ltd and first deployed in January, 2000 for Horowhenua Library Trust. Koha is designed to work with a minimum of hardware resources. The Koha ILS can also be installed on Windows operating system but with a series of additional modules. Migration of data from one ILS to Koha can be done easily. Koha is an open source software, any library can make use of after developing according to their requirement. KOHA is basically designed to run on Linux operating system, but it can be installed on systems with windows 2000 and Windows NT. This software is dependent on other freeware software like Apache Web Server, MysQl or any other SQL based Relational Database Management System, Per Interpreter, Following Per modules. Regarding the size of the database, a big server with lots of RAM will increase the capacity of data. The latest version 2.2 includes support for importing and exporting of MARC records and supports Z39.50 standard also. Installation support and manuals are available. Koha supports all major library housekeeping operations except serial control.

Modules supported by Koha are listed below:

Acquisition, Circulation, OPAC, Membership, Accounts and reports, A library catalogue front end/ OPAC,A library system intranet, A circulation tracking system , An acquisition/budgeting system, A simple web based interface for patrons and library staff The search interface is easily customizable, Simple acquisition system for smaller libraries, Able to catalogue websites as normal items, Web based OPAC and circulation system, Auto- remind notice and fines, Barcode support, Full MARC support.The software is available at http://www.koha.org while the Mailing list URL is: http://koha.org/mailing/.

Conclusion:

Library automation in respect to software selection is the process which needs proper planning, timely implementation and periodical evaluation. The librarian with the administrators has to set the priorities after analyzing the current status and future requirements. Selection of the suitable integrated library management package according to the needs of the users and the library is important. The study revealed and explained in details the features of library software used in Nigerian libraries. This paper has equally spelt out the salient issues that should be considered in library software selection and also discusses the characteristics, criteria, benefits, among others that qualify them to be effective library automation software. The literature review shows the background, history, features, strengths and weaknesses of the various types of software. In addition to these, there is the need for a joint responsibility of every librarian, network administrator and information scientist in addition to the traditional librarian in order to move forward in library automation or information manager to be careful when making choices. Therefore, if selection procedures are strictly adhered to, there is the tendency that better software that can drive library programs to be purchased for libraries. Owning to this, it is pertinent that the academic libraries engage the services of systems analyst. This becomes

necessary as many libraries have lost much fund to automation but no fruitful report in addition to the fact that the world is dynamic and Information management is also dynamic as such one need to change to the new trend of global information management. It is therefore advisable that the libraries should keep to Software selection steps or process. The following recommendations are therefore made to the libraries in Nigeria and the rest of the developing world.

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