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An Overview of the Acceptance of Integrated Library Management Software in Academic Libraries: Reference to Nigerian Context

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Abstract

Rapid advances in technology have significantly turned libraries nature from traditional systems to automated systems. The acceptance linked with new technologies has become the most essential factor for academic libraries in Nigeria to stay active as information providers. Today many of the day-to-day activities of academic libraries are carried out through the use of integrated library management software (ILMS). Library professionals in Nigeria are now effectively using this software to provide innovative services to their valued users. This paper discusses the concept of Integrated Library Management Software, the development of ILMS as well as types and features of some integrated library management software. The paper also makes emphasis on the acceptance of integrated library management software in academic libraries particularly in Nigeria for library settings.

Keywords: Acceptance, Integrated Library Management Software, Academic Libraries. Nigeria.

Introduction

Over the years, the academic library has been viewed as a library attached to any higher institution with the sole aim of supporting the teaching, learning, and research of the parent institution. Jordan (2021) described an academic library as a type of library established to meet the information needs of the users about disciplines undertaken in the parent institution. Abbas (2014) reported that the use of computers in library services and their application has brought maximum efficiency to services of libraries through increased reductions of mistakes, increase in convenience, adequate statistical data keeping, control of literature growths, labour savings, and easy exchange of documentation.

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Ukachi, Nwachukwu, and Onuoha (2019) stressed that academic libraries are presently confronted with issues that cut across; geometrically progressive information growth and shrinking space, change in users' information behavior, means of organizing the flood of information, cost hike of printed reading materials etc. The need to overcome these issues and also make academic libraries more efficient and effective in their service delivery makes automation of library services imperative. The traditional method of managing the library is no longer efficient as the use of computers and other technologies is conventionally adopted to enhance services provided by academic libraries. Consequently, Library automation enhances the speed, productivity, adequacy, and efficiency of the library staff. Time and the manpower that could be expended in performing some technical and reader services routine and clerical tasks such as filing, sorting, duplicating, etc., are conserved when the library is automated.

The application of ICT has revolutionized the operations of libraries thereby providing for a better way of doing things, especially in academic libraries. Perhaps this was why Ukachi, Nwachukwu, and Onuoha (2021) affirmed that the application of technology to academic library routines has moved from traditional to technology-based. Momodu (2000) also noted that academic libraries all over the globe are now embracing the advancement of 21st-century ICT. Hence, the relevance of the application of information and communication technology in library activities such as acquisition, cataloging, circulation, serials management, etc. is no longer debatable as academic libraries globally have realized the need to move from their isolated past into integrated systems and networked operations. Recent developments in information handling processes have also obligated academic libraries to embrace automation which implies the use of ILMS as a means of enhancing their service delivery to their clientele (Momodu, 2015).

The Concept of Integrated Library Management Software

The term integrated library Management software (ILMS) can be used to describe the software that automates the many activities in the library. It is an enterprise resource planning system for a library, used to track items owned, orders made, bills paid, and patrons who have borrowed items in the library (Wikipedia, 2021). This common application is tied together with data residing in common databases (as much as possible) that are related to many different tasks. Muller (2017) stated that ILMS are multifunction, adaptable software applications that allow libraries to manage, catalog, and circulate their materials to patrons. According to Breeding (2012), The ILMS provides computer automation for all aspects of the operation of a library.

Sobalaje, Ajala, and Salami (2018) noted that an integrated library management software (ILMS) is an electronic program that helps librarians and users to circulate and catalog information resources, manage patron activity, track resources movement as well as interact with databases from other libraries or institutions. An integrated library Management software (ILMS) is meant to increase the output and efficiency of a library and improve access to resources for its patrons by automating the processes that would otherwise have been done manually (Reddy & Kumar, 2013).

Emeka, Oluwatofunmi, and Anthony (2023) stressed that an ILMS automates many library tasks that would otherwise be repetitive, labor-intensive, and inefficient. They further stated that

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academic libraries use integrated library Management software (ILMS) to order and acquire, receive and invoice, catalog, circulate, track, and shelve materials. This signifies that, To maximize the benefits of ILMS, there is a need, however, for quality and reliable software that can effectively run on the operating systems of computers in academic libraries.

Omeluzor, et al (2023) opined that ILMS is designed to enhance all library routine activities as expected by the library users. They further mentioned that a good and reliable ILMS enhances management, control, and easy access to information resources that are physical in a library and outside, for example, books, CD ROMs, e-journals, e-books, e-databases, and repositories, among others. It also helps to reduce time wastage in the delivery of services to the library users. This implies that university libraries should enhance the services for effective access to information resources by the clientele.

Development of Integrated Library Management Software Package

In the year 1994, libraries began to show their presence on the internet by setting up their websites, and later on, the web became part of the ILMS package but this growth was very slow and steady in developing countries. Earlier ILMS packages were "module-based" and showed no integration between modules. Libraries could install different modules as per their requirements and their modules run on specific hardware and proprietary platform. Thereafter, the ILMS package became portable between various platforms with the introduction of UNIX and DOS-based systems and then integration among modules was established and was command-driven or menu-driven systems. After that ILMS package came as fully integrated library systems based on relational database architectures, they embodied a range of standards (including Graphical User Interfaces (GUI), and this was a significant step towards an Open System Interconnection (OSI). Today, ILMS packages are based on fully web-centric architecture and facilitate access to other servers over the Internet as well as allowing multiple sources from one multimedia interface (Namrata R, & Shailendra K., 2019).

Types and Features of Some Library Software Used in Academic Libraries

There are two types of integrated library Management software i.e. proprietor and open source. While the proprietor is commercially based, open source is regarded as generally free.

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 Program and Service. The Windows version is called WINISIS. It is a menu-driven generalized information storage and retrieval system, designed specifically for the computerized management of structured non-numerical databases. (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

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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 the PASCAL language. Data can be exchanged according to international standard ISO 2709. (Hoskins & Abboy, 2023)

b) Alice for Windows (AFW)

According to (Alice for Window. 2021) Alice was developed by Softlink International Australia in 1983. It is known as Alice for Windows all over the world. It is marketed through several 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, hospitals, prisons, law practices, police forces, industrial companies, consultancies, and palaces. (Softlink, 2000). The software is included in the demonstration package also. According to the Brochure, the annual support/maintenance fee provides libraries with an unlimited number of support hours. This automation package is available in four distinct versions which include 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 catalog, Quick Pics. Modules the software provides data protections, a retrospective conversion facility, and an online tutorial and help system. It allows a library to purchase only the modules that suit its needs. The software provides several support services which include a training program, a 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, Interlibrary Loans, and Patron self-checking (Alice for Window, 2021)

c) KOHA

Niranjana, Tolessa, and Paul (2020) reported that KOHA is a web-based ILS with a SQL database (MySQL) backend, cataloging data stored in MARC and accessible via Z39.50. KOHA user interface is very configurable and adaptable which has been translated into many languages. KOHA was initially developed in New Zealand by Katipo Communication Limited and first deployed in January 2000 for Horowhenua Library Trust. After the original implementation of KOHA, it has been adopted by thousands of libraries worldwide each adding features and functions, deepening the capability of the software. Consequently, KOHA has state of a state-of-the-art web interface for clients and librarians, enriched content, faceted navigation, keyword searching, user contribution and Rich Site Summary (RSS) feeds. This was supported by Hassan, (2020) who argued that commercial vendors were not very supportive of library schools in offering

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their software at nominal cost/free of cost. Koha is the first free software library automation package used in university libraries worldwide, its development is steered by a growing community of users collaborating to achieve their technology goals (Aliyar, Nimal & Meera, 2000).

Niranjana, Tolessa, and Paul (2020) listed some sets of features that have continued, evolved, and expanded to meet the needs of their users:

1. Online public access catalog (OPAC): The OPAC is web-based and there is no need to install any software on a user's machine.
2. Web-based circulation interface: Can handle issues, returns, transfers, etc. There is no need to install any special software on staff computers once there is an intranet in place.
3. Branches: Since the software is web-based it is easy to borrow a book in one branch and return it in another branch.
4. Borrower history, comments, and tags: Users can comment and review books, tag them, and view their reading history. They can also view their records and make purchase suggestions.
5. Customizable search: A library can choose the fields they want on their search form. For example, a search by author, title, subject, and keywords. There is also an advanced search option.
6. Acquisitions: This includes orders from vendors, budgets, and pricing information.
7. Serials: It allows easy cataloging of journals and users can view holdings information through the OPAC.
8. Multi-lingual OPAC support: KOHA allows patrons to view the OPAC in different languages depending on the language chosen by the library.
9. Overdue fines and notices: KOHA manages overdue fines and notices that can be sent to users by email.
10. Barcode printing and reader: KOHA fully supports the use of barcodes thereby removing the chances of human error.
11. Reports and statistics. KOHA can generate management reports and statistics in cataloging, acquisitions, serials, and circulation.
12. Koha is built using library standards and protocols such as MARC 21, UNIMARC, z39.50, SRU/SW, SIP2, and SIP/NCIP, ensuring interoperability between Koha and other systems and technologies, while supporting existing workflows and tools.

d) Evergreen Software-

According to (Evergreen, 2021) this is an open-source Integrated Library management software (ILMS) that has circulation, cataloguing, OPAC, and SIP2.0 support for interaction with software administrator and search/retrieval through Z39.50. It also has the features of Open Scalable

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Request Framework (OpenSR, pronounced 'open surf') that allows developers to create applications for Evergreen with a minimum of knowledge of its structure. It operates on Debian or Ubuntu Linux servers. It is operable in English and issued under a GNU General Public License (GPL). Some features of Evergreen software (Evergreen, 2021) include:

1. Circulation: for staff to check items in and out to patrons
2. Cataloging: to add items to the library's collection and input information, classifying and indexing those items.
3. Online public access catalog (OPAC): a public catalog, or discovery interface, for patrons to find and request books, view their account information, and save book information in Evergreen "book bags."
4. Acquisitions: for staff to keep track of those materials purchased; invoices, purchase orders, selection lists, etc.
5. Statistical Reporting: flexible, powerful reporting for retrieval of any statistical information stored in the database.
6. SIP 2.0 support: for interaction with computer management software, self-check machines, and other applications.
7. Z39.50 compliant
8. Available for Windows & Linux
9. Easy to install and maintain

e) GLAS

Zaid Y (2021) reported that GLAS is a window-based system and its compatibility allows users to open multiple records, perform multiple tasks, or open GLAS modules concurrently all on the same workstation. Its modules may be moved to a different program or set to run minimized when selected. GLAS is a modular system that is made up of folders containing records. It moves effortlessly between cataloging module tasks. One can cut, copy, or paste information from one record to another and change the size of the module or window, reduce it to an icon, or exit using dropdown menus, standard shortcut keys, or by clicking on convenient toolbar buttons. Browsers are offered throughout the module to allow users to add information to the selected cataloguing file or to select information from the file. GLAS has five modules viz: cataloging, Acquisition, Circulation, Serials, and Databridge. Zaid Y (2021) further listed some features of GLAS as:

1. Help to increase staff productivity by enabling them to several windows at once to perform a variety of library functions.
2. It provides a powerful "Easy Search browsing utility thereby giving workers quick and easy access to knowledge assets contained in the online catalogue complete with cross reference display.
3. Users can specify their search strategies using the Boolean searching techniques or browse on a specific index, by title, author, subject, call number, series, and added entries. Boolean searching techniques allow specific search strategies to be built and executed.

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4. As it is window-based, patrons with no library training and little experience using the library system can use it effectively. Experienced users can also select advanced searching features for more sophisticated search retrieval.

f) WinISIS (formerly CD/ISIS)-

WinISIS is a Windows version of the CDS/ISIS system (Computerized Information Service /Integrated Scientific Information System) which was developed because CDS/ISIS was not compatible with the WINDOWS operating system. It originated at ILO and was developed by UNESCO. The first Window version of CDS/ISIS was distributed for testing in May 1995 and the first WinISIS version officially realized was version 1.31 launched in November 1998. It can run on a single computer or in a local area network (Lavji & Niraj 2020).

g) ABCD Software-

Dhamdhere, S. N. (2011) reported that ABCD is an ILMS package that was built with such technologies as the ISIS database, ISIS formatting language, CISIS, ISIS Script, ISIS NBP, JavaScript, Groovy and Jetty, PHP, MySQL, Apache, and YAZ. The researcher further listed major technical features of ABCD as:

1. The software is fully web-based, so it can be used and managed from any current web browser.
2. All main functions of the library management are integrated using the same interface and databases.
3. Bibliographic records can be imported from external library catalogs / servers through Z39.50 facilities.
4. Full MARC 21 compatibility with fields, indicators, and subfields defined by the Library of Congress.
5. OPAC with simple Google-like search as well as advanced search with Boolean operators, truncation, and field-limitation for all kinds of databases, locally created or external.
6. Access to both physical and electronic documents (local or on the internet) with the same interface.
7. Library staff can define, copy, or edit any new database structure with existing ISIS applications such as MARC, CEPAL, UNIMARC, and Dublin Core.
8. Available in many languages like English, French, Spanish, and Portuguese while more language versions are on the way.
9. Import and export data in ISO-2709 format or text format.
10. Contents and bibliographic resources, both local and external, can be added easily without HTML programming.

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11. The basic loan module offers detailed definitions of objects and user categories and policies for each combination, fine calculation, calendar definitions, etc., while the advanced module adds reserve, "my library" page, multiple loan policy definitions, and access to external SQL-based user data.

12. Excellent serials management with a full implementation of the ISSN standard and union catalog function.

13. Statistical report generation with a graphical presentation of any defined set of variables in the databases.

14. Freedom of database structure. ISIS records carry their structural description as a "header" within themselves, unlike in relational table-based databases where all records in the same table share the same structure by necessity. Therefore, each record can have its different structure. In fact, for most record-related operations in ISIS, there is no need to formally describe the structure. So, one could consider ISIS as using "scheme-less" records. As a consequence of this, ISIS accepts any structure and includes structure-definition tools, and so does ABCD.

Adoption of Integrated Library Management Software in Academic Libraries

The advent and development of ILMS packages across the globe have made the transition from "traditional" to "technology-based" library services which gives room for more efficient service provision very easy and cost-effective hence, libraries are now adopting them in their technical services, digitization processes, and general library content management

The automation process involves many components of ICTs as elucidated by Abbas (2020) as computer technology, Telecommunication technology, Broadcasting technology, Microelectronic/micrographic technology, and Reprographic technology. Operations of library services information delivery in academic libraries around the world are changing with the application of new technologies (Pucciarelli & Kaplan, 2022).

Muller (2017) observed that in the United Kingdom, ILMS packages have been developed and run successfully regarding flexibility, capacity, expandability, security, economic, and user-friendly modules based and updated with the latest technology, and there are many directories and other tools available that help academic libraries select suitable software for library operations. Similarly, in the USA, the introduction of ILMS packages enables academic libraries not only to offer their clientele the appropriate information available within the library but also to gain access to catalogs of other libraries, both local and outstation (Singh, 2003)

Omeluzor, Bamidele, Ukangwa, and Amadi (2012) asserted that if a library staff is to deliver prompt and adequate services to the clients in academic libraries, he/she must adapt to the changing environment and the use of current software to manage library routines. Hence, academic libraries all over the globe need to modify their service delivery from traditional operation to the easiest and smoothest handling of their services. Meanwhile, Library staff in academic libraries need to change and harness the benefits brought about by advancements in technology. Consequently,

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Ayodele (2015) submitted that Integrated Library Management Software (ILMS) is the current wave in the field of library operations that must be prioritized in academic libraries.

Uzomba, Akindele & Ubogu (2021) reported that the developed world has taken a clear-cut lead in the field of ILMS, but the scenario in developing nations is not encouraging. For example, Husain and Ansari (2012) stated that although the use of ILMS in developed countries started in the 1940s, the situation in India is not commendable. According to them, the use of library software in India gathered momentum in the 1990s as a result of increasing enthusiasm on the part of library professionals to embrace information technology along with other factors. Some of the well-known library software of foreign origin are Alice for Windows, Virtua, Techlib Plus etc. Among the indigenous (Indian) ILMS packages, Libsys is the widely used software. Other library software packages developed in India are Granthalaya, Maitreyi, Sanjay, DELMS (Defence Library Management System), Librarian, WYL YSYS (Wipro Library System), DELDOS, TLMS, Libsuite ASP+, etc. (Uzomba, Akindele & Ubogu, 2021).

In South Africa, Tsebe, Ladwaba, and Shokani (2001) reported that academic libraries use ILMS packages for consortia in their institution. Such ILMS packages adopted include INNOPAC, URICA, and ALEPH systems, while Msuya (2021) reported the changes in the work environment since automation at the University of Dar es Salaam Library, Tanzania, the ADLIB software is used.

In Nigeria, major developments in the use of ILMS packages have been mainly in the academic and research libraries. Agboola (2000) stated that "the greatest impetus to the use of ILMS in Nigerian academic libraries so far has come from a World Bank project". The World Bank gave automation in the university libraries as one of its conditions for support. As a result, the National University Commission (NUC) presented one microcomputer and a four-user local area network version of the TINLIB (The Information Navigator) software to each of the 20 participating libraries in 1992. With this, some of the first-generation universities in Nigeria started with TINLIB software. However, they could not continue with this particular software due to some technical problems (Uzomba, Akindele & Ubogu, 2021).

Edem, M. B. (2016) reported that researchers have conducted studies on the use of ILMS packages in some universities in Nigeria. Some of the ILMS packages used in academic libraries in Nigeria include TINLIB, ALICE, X-LIB, GLAS, CDS/ISIS, KOHA, SLAM, Liberty 3, Docuware etc (Adogbeji, Onohwakpor and Sylvester, Okewale & Adetimirin, 2011; Udoh-Ilomechine & Idiegbeyan-ose, 2011; Obajemu, Osagie, Akinade & Ekere, 2013).

Adogbeji (2005) stated that Kenneth Dike Library of the University of Ibadan, Nigeria had earlier used TINLIB software and could not continue. This was after CDS/ISIS had failed in the library. Also, the University of Ilorin started with TINLIB and later shifted to Alice for Windows software. The University of Lagos was equally affected by 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). The Ladoke Akintola University of Technology (LAUTECH) Ogbomosho, had also used this software. Many other libraries like Obafemi

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Awolowo University, the University of Agriculture Abeokuta, Tafawa Balewa University, Bauchi, Bayero University, Kano, etc. have also adopted TINLIB software. The Nnamdi Azikiwe Library of the University of Nigeria, Nsukka had used TINLIB and migrated to X-lib which came to limelight in 1996.

Kari and Baro (2014) found that 24 university libraries including the University of Ilorin Library in Nigeria use Koha for their library operations. The finding was corroborated by Adekunle, Olla, and Oshiname (2016) that Koha has been in existence in Nigeria University Libraries for the past ten years.

Ayodele (2023) revealed that Koha is being used in the Adeyemi College of Education Library, Ogun State. The study further implies that Koha as an open-source software is also being used in some academic libraries other than Universities like libraries in the polytechnics, and colleges of education. Comparatively, the rate at which one library makes use of Koha may be different from the other library. The modules in Koha include OPAC, Circulation, Serial, Acquisition, Cataloguing Module, Patron Management Module and Custom Reporting Modules. Any library that makes use of all the modules in Koha is said to have utilized it fully while libraries that do not use all the modules are said to have utilized it partially. A particular library may utilize Koha fully for its operations while the other library may only utilize it partially depending on the size.

Udoh-Ilomechine and Idiegbeyanose (2021), emphasized issues such as hardware connections, your right in respect of the software, history of the supplier, possibility of preview or demonstration, pricing structure, level of sophistication, support issues, references sites, parameterization, teaching aids, system administration, and needs for documentation should be critically examined when selecting software.

Conclusion and Recommendations

This paper examined important issues regarding the concept of integrated library management software, features as well as types of library software used in academic libraries. Issues to be considered in the selection and also some areas of application of integrated library management software used for library operations. Lastly, to enhance the use of library management software in academic libraries. The following recommendations were made:

- Provision of adequate funds for the acquisition of library software,
- Provision of uninterrupted power supply for the libraries,
- Software should be fortified against virus attacks,
- Provision of grants for training and re-training of library staff by funding bodies,
- Adequate managerial support, and selection of the right software by libraries, among others.

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