ABSTRACT

The library is a growing organism that requires consistent positive changes to address the issue of its users. The innovation and emergence of computers brought about a definite transformation in the public. Along these lines, mechanisation has turned into the need of great importance. Library computerisation not only enhances the picture of the library and staff, in addition furnishes extra administrations to the users with the current staff. Library automation in essential terms is the utilization of PCs and the utilization of PC based things and organizations for doing various library exercises and limits. This research illustrates a review of the literature on Library Automation in University and related aspects of the theme. Apart from the literature on library automation in the university libraries, the aspects of the study includes library orientation programme, comparative Study of library software, integrated library systems, libraries, image analysis, imaging systems, universities libraries, information storage & retrieval systems, information science, open source software, Information resources management, digital library system, Library and internet users, library administration, library use studies. Finally, it covers the literature published on library automation in the university libraries, staff attitude towards on library automation, staff opinion on library automation, users’ opinion on library automation and requirement of orientation program in the university libraries. The work also covers the impact of the automation on users, staff and library services, e-resources development and use of electronic resources.

Keywords: library; Library computerization; library services.

INTRODUCTION: LIBRARY AUTOMATION

Chen & Albee, (2012) opined that the large scale open source library automation systems can increase efficiencies in bibliographic production. They examined the implementation of such a system in order to ascertain whether it facilitated detection and use of library collections in Indiana public libraries. For this purpose, three hundred and forty-nine participants were recruited from nine public libraries to complete the
survey. Additionally, the library server data about Interlibrary Loan (ILL) statistics are collected from participating libraries on a monthly basis. The self-reported user survey includes questions about patron history at local public libraries, use of the previous Online Public Access Catalogue (OPACs), and use of the Evergreen OPAC for finding and accessing multiple library collections since library users could directly request interlibrary loans via the Evergreen OPAC. Indicating that the implementation of the Indiana Evergreen system received moderately positive ratings from the participants; the positive evaluation is primarily related to the use of the ILL function. The ILL service satisfied the participants’ “needs and motivated them to use the evergreen OPAC”. In this way, the reaped benefits were accessible to evergreen users.

Wu, Yeh, Chen & Chen (2011) the current practice is that the circulation record and circulation status are updated at the time when the book is borrowed or returned, with the identification component on the book or media is being sensed. However, some readers use the reference books, periodicals and audio-video media in the library; therefore before the books are registered on the counter, the status of books in the library cannot be precisely confirmed, often making the information of the book shelves presented by the library database information not precisely reflecting their actual status. The “Integrated Library Service Application Platform” in this paper employs the RFID (Radio Frequency Identification) technology to construct the smart bookshelf, and it is used as the trigger point for updating the retrieval status of the book to eliminate bottleneck at the counter that cannot render the real-time circulation status of book in the library upon borrowing or returning the book. With the help of software agent system to integrate the information architecture of the library and provide intelligent service applications, the overall structure is conducive in enhancing the circulation efficiency of the library collections and improving the satisfaction of readers.

Advanced Technology Libraries (2006) stated that the Millennium Integrated Library System of Innovative Interfaces are opted by the libraries of California State University, Fresno and California State University, Chico to replace the integrated library systems they had previously used. The Millennium core system contains applications for cataloguing, circulation, serials, acquisitions, and management reports. The Fresno campus previously used the Geac ADVANCE system, while the Chico campus library used the Dynix Horizon system. Comments are provided by California State University library automation coordinator Hye Ok Park.

Tiwari (2002) observed that automation in the nineties as an increasingly divergent issue, particularly related to resources and skills and abilities. Over the past few years, library automation has undergone a drastic change in this field. Library automation began with the in-house processing of traditional tasks and grew to include the use of computing and telecommunication tools. Nowadays, there exists a “library without walls” which uses technology to expand services, resources and relationship between libraries and resources globally. This “virtual library” is a reality whereby the world of digital information is just a click away claims IBM digital library. The future of library automation system will include information kiosks, where people computer novices can access information easily. Information scientists will create human-computer interfaces and library scientists will manage the resources.
Hossein (1999), in his article ‘Defining some criteria for the success of automated library systems.’ indicated that success and effectiveness in automated library systems are two interrelated components that all users commonly seek when buying or designing a new system. From the available resource, literature and opinions of automated library systems experts, the identified 26 factors as criteria for the success of automated library systems play a significant role. A 1993 survey examined the attitudes to these criteria of Australian university librarians and systems managers. It revealed that the 23 of these identified criteria were approved by the survey sample and the other three were rejected. These criteria would be tested with other groups of experts in library automation to gain more generalization on the findings.

The following section discusses the effects of automation including staff attitudes, visitors, the information officer for library automation and the library automation teaching package. It also dealt with lectures and publications by the staff involved.

**UNIVERSITY LIBRARY AUTOMATION**

Alharbi & Middleton (2012) examined the perceptions of the University library usage to considering factors that influence the educational achievement of academic library users. The study revealed that the usage library improves only a minority of library users' educational achievement. The findings were lower than expected earlier to completing the study. The study added to the current literature of research-based in Kuwait. It is one of the first studies to consider private university libraries for quantitative study purposes. This study introduced an entirely innovative academic library evaluation tool called the factors of academic library users.

Kattau (2012) described the concept that Macquarie University Library's planning for a new library coincided with a major renewal of the university's curriculum and research activity. It provided a significant opportunity to re-think the presentation of the library collections in the new environment. It elaborates how strategic alignment with the university goals and the framework of student engagement notifies the three major aspects of our approach: the upgrade of collection storage principles, a focus on the presentation of disciplinary pathways to reflect current teaching and research and the building of collection management as well as the development of partnerships with our academic colleagues.

Davis, Adams & Hardesty (2011) sought to introduce the library readership to the U.S. for-profit colleges and universities. They summarized their institutional histories and their characteristics. They explored reasons for their success and current areas in which these schools appeared to excel. With regard to their library services and resources, they focused on issues of concerns based specifically on our experiences with the academic libraries in the proprietary schools operating in the state of Ohio. Finally, they suggested ways whereby these for-profit institutions can address the challenges faced by their libraries.

Wacha & Wisner (2011) studied the open access institutional repositories created to promote access to information, encourage scholarly communication and demonstrate institutional prestige. While these repositories have been widely adopted, the quality of their contents often fails to represent their institution’s scholarly output. Moreover,
current research uses measurements of quantity, not quality to assess their value. In response, this article opens new areas of scholarly inquiry by assessing the quality of contents. This is accomplished through a cross-sectional study of repositories at the American colleges and universities across the academic spectrum, using citation indexing to identify an institution's articles and authors of the highest impact.

In 2010, Okoroma presented a comparative study to present the adaptation of automation and electronic information resources at two academic libraries in Nigeria, the Kenneth Dike Library of the University of Ibadan and the Obafemi Awolowo University Library. He cites the advantages provided by the automation of library services. The librarians and other employees of the two selected libraries were surveyed regarding the decision-making process involved with automation, particularly the purchasing of computer hardware and software. It equally tackled the problems encountered during the automation phases. Recommendations are offered to other academic libraries based on the experiences cited in the survey.

In 2010, Okoroma concentrated on the review change involvement of two Nigerian college libraries, contrasting the encounters of University of Ibadan (UI) library card index and Obafemi Awolowo University (OAU) library, as far as procedures, approaches, money related/material, and human ramifications and in addition the issues and arrangements and assessing adequacy and productivity of the OPAC framework. The overview technique was utilized to gather information. There were two surveys utilized in the examination. The first one coordinated the administrators and cataloguers. The second coordinated the library's clients. The examination discovered that Kenneth Dike utilised a shared RECON and information input physically; while Obafemi Awolowo University library opted for sellers/experts. It embraced the two information sections physically as well as the asset database. The investigation additionally uncovered that the RECON procedure was time-consuming, included gifted labour and moderate expense. The investigation analyzed a few requirements repressing the two libraries RECON, including the absence of assets, poor upkeep culture, the absence of talented staff and infrastructural issues. At last, the investigation demonstrated that both UI and OAU libraries had gained enormous ground in RECON, with their OPAC frameworks were working adequately and effectively.

Stephen (2008) in his paper sought to examine the health risks faced when using computer-based systems by the library staff in the selected Nigerian libraries. He uses the survey research approach to carry out this investigation; it reveals that the perceived health hazards do not predict the perceived ease of use of computer-based libraries. Even though a wide range of health threats was identified in the libraries, the level of availability of ergonomic programmes to tackle them was low. In general, the librarians, university authorities, IT policy formulators and systems administrators should find this examination useful, as it educates them about the fact that perceived health risks do not significantly deter people from using the implemented information systems. This is due to the enormous benefits arising from the utility of IT when compared with the manual systems. The study offers new insights in the area of IT usage by the librarians in Nigerian universities.

Nok (2006) observed that the success of automation in the university library depends largely on the ability of staff to facilitate and implement the process. Efficient
and frequent in-house IT training is a necessity if the maximum benefit is to be gained from the automation of library services. The author further added that if the library ensures sound and quality automation of services and information resources, they need to create new approaches to user education and pay attention to the provision of continuing education for library staff. They equally necessitate extending assistance to the staff to master the new techniques required for the management of electronic and the networked information resources and services.

Salma (2006) suggested that the two studied libraries can improve their service delivery if they vigorously promote fundraising activities, improve salaries and allowances of the library staff and speed up to complete the highly advanced computerization of delivered services.

Dilroshan (1998) stated that automating a library is only the first step. Keeping up with new trends in information and communication technology is also of paramount importance. If the libraries fail to meet these challenges successfully, the tremendous investments that universities have borne in their library collections and facilities will be seriously undermined.

**LIBRARY ORIENTATION PROGRAMME**

The focal point of Aderibigbe & Ajiboye’s examination in 2013 is the enhancement of viable users instruction programs that will upgrade the utilization of electronic data assets (EIR) in a time of electronic data for the understudies of the University of Agriculture, Abeokuta, Nigeria. The latter subsequently could be adjusted for understudies in other higher organizations of learning. The users’ training system of Nimbe Adedipe Library is apparently not sufficient; the library provides a higher degree of the library introduction than the bibliographic guidance and data proficiency abilities. It was likewise discovered that few of the understudies were prepared on EIR while an examination of the open-finished inquiries revealed that the understudies became more acquainted with how to utilize electronic assets through their very own endeavours, occasional preparing in the library and through the endeavours of some library staff and companions.

Klaib (2011) assessed the effectiveness of the second library orientation program introduced at Zarqa Private University in Jordan during the 2008–2009 academic periods. The second program introduced after the first one was deemed to have focused more on the theoretical, rather than practical aspects. The improved program centralised on practical library skills, writing research requirements and formulating research methodology. The second program proved to be more effective than the first.

**COMPARATIVE STUDY OF LIBRARY SOFTWARE**

Singh & Sanaman (2012) planned to contemplate the open source coordinated library executives’ frameworks, that is, Koha and New GenLib, to educate the librarians about what deliberations to make while choosing an open source incorporated Library the Executives' Framework (ILMS) for their library. The paper gives an itemized similar examination of the two sorts of programming, that is, Koha (3.2.4) and New GenLib
(3.0), which are taken up for the examination. The approach utilized for the inspection is “Evaluation Method”. It is pursued with the assistance of the organized assessment agenda arranged after the careful investigation of reference devices, reference factual information accessible and related writing. The two kinds of programming are assessed and looked at subjectively and quantitatively. Both sorts of programming are web-empowered and bolster library computerization. Koha has more explicit attributes of open source ILMS. Koha needs to redesign, alter and enhance its highlights. Koha requires almost no equipment but it bears some difficult to introduce. Koha has propelled database highlights. New GenLib has preferred usefulness of modules over Koha. Koha upheld more configurations and measures. The computerized library usefulness of New GenLib is more explicit as far as innovation, information structure and programming. Additionally, New GenLib gives more client help and support through Koha provides easier access to utilise downloads and a documentation office. New GenLib has more upgraded highlights which are critical for ILMS while choosing to programme for mechanization. The near examination of the open source ILMS done in the investigation will help custodians in making fundamental contemplations while picking an open source programming for the library.

**INTEGRATED LIBRARY SYSTEMS**

Breeding (2012) discussed the developments of the library automation systems. He cited options which include the proprietary and open source library systems as well as the new-generation library services platforms. He acknowledged the establishment of web-based application software as a dominant computing choice for library users. The redeployment of integrated library systems inclusive of cataloguing modules, acquisitions, and serials management through graphical interfaces is also described.

Bryant & Ye (2012) enumerated the reasons which influenced Pepperdine University Libraries to opt for the next-generation technology of Web-scale Management Services as their library system. Web-scale Management Services is an integrated library system hosted by OCLC that is “in the Cloud”. Pepperdine was one of the first libraries to go live with WMS, and in the article, the authors focus on the implementation process, circulation, course reserves, and holds. Although WMS is “not a perfect system”, believe that libraries are confident to benefit from the next generation of library systems such as WMS.

In their 2012 study, Graves & Dresselhaus analysed the electronic resources librarian at Old Dominion University. They elaborated on the library's discovery environment using Marshall Breeding's. They discussed the library website redesign, the creation of a mobile website, the audit and reconsideration of the role of Integrated Library System (ILS), and the implementation of WorldCat Local. The objective of the presentation highlighted the challenges of revamped art of discovery in the library and the application of usage data to evaluate the success of the program.

Birje, Khamkar & Gurav (2011) presented the various dimensions of the implementation of the library automation project in any university library in general and
conventional university libraries in particular. A case study of the automation of the Barrister Balasaheb Kharderkar Library of Shivaji University is detailed in the available in the research paper to showcase some of the challenges and strategies required to overcome them in a rural cum semi-urban environment. They discussed the phase-wise development of the automation process that comprises of retro-conversion, barcode code ID generation, member ID generation and housekeeping operations. The authors intend to share their experiences as they deem them to be useful to other professionals.

Dougherty (2009) discussed the outcome of Integrated Library Systems (ILS). According to the author, Integrated Library Systems are experiencing an increase in demand and expectations from its users. The elaborated discussions include a brief historical overview of the author’s experience with library automation at the Virginia Tech (VT) University, the circumstances that led to the changes in the university’s library system, include an increasingly sophisticated user community and the merits of the ILS. The reasons, for which the ILS must evolve, include meeting business needs and an in-depth discussion of the architectural philosophy concerning ILS by Yale University’s System Librarian Ping Fu is debated.

Pace (2009) explained that less than a decade into the 21st century, perhaps it is more fitting to describe library automation as approaching its 80th birthday. It is time to look back and carefully consider the growth. Since the introduction of a punchcard circulation system at the University of Texas in 1936, through the advent and perseverance of the MARC record and following the ebb and flow of nearly 75 different library automation vendors, library automation has come a long way. For some, however, it has not come nearly far enough. The 1990s Library Automation Summit is now a plateau from which many library technologists and futurists can see no launch pad to a next-generation of library software and services.

Zhonghong (2009) adopted a systematic approach to providing a snapshot of the academic ILS market and illustrated the key factors affecting the outcome of an ILS migration project. It reveals the challenges and opportunities facing academic libraries and ILS vendors in a milieu with speedily shifting technology and increasingly sophisticated academic users.

Information Today (1993) reported that data research associates Inc. signed a contract with the Private Academic Library Network of Indiana Inc. (PALM) to install a turnkey system with a central patron and bibliographic database accessible by all 24 member library systems. Two PALM sites will be converted from a Geac cluster, 17 sites will be automated for the first time and five sites will continue using their own automated systems while contributing to the Data Research Union Catalogue. In addition to establishing its own collection of more than 16 million member holdings, PALM will equally be playing a key role in developing an Internet link to the State University Library Automation Network and its public university counterpart to access an additional 12 million volumes in the state-supported university libraries. Special collections housed at PALM member libraries consist of a varied assortment of religious materials and topics such as physical therapy, music, business, African Studies, non-Western cultures, nursing, data processing, engineering, and Early British and American history.
LIBRARY AND INFORMATION RESOURCES MANAGEMENT

Feeney & Sult (2011) described how the University of Arizona (UA) libraries implemented a project management process to address the escalating need to be more competent and resourceful in initiating, completing projects and to supervise the altering and complex nature of the libraries’ work. The libraries identified the Brigham Young University (BYU) project planning and management practice as a mode that would facilitate the organization define, plan, execute and complete its projects effectively and professionally. An overview of the BYU project management method, as adapted and implemented by the UA Libraries and a description of the portfolio management, project management, product management, and roadmaps are provided.

Matsuoka-Motley (2011) presented outsourcing academic librarians in Japanese university libraries. According to the author, librarianship is not considered a profession in Japan, requiring only specific certification from the Japanese government. The study stated that colleges and universities often assign lower-level university administrators to staff the academic libraries on campus. It affects contracting outside library staff which became common in the early 2000s because of the library’s low status due to its lack of generated income. Outsourcing trends of the library staff at various Japanese institutions such as Nihon Fukushi University and Ritsumeikan University in Tokyo was examined. The analysis considered the Japanese book vendors Maruzen and Kinokuniya, which employ contract librarians.

Nwezeh (2010) studied the information and correspondence advances which introduced new techniques to instruct and lead examination brought into training offices for internet picking up, educating and inquiring about the coordinated effort. While some college networks in a few nations appreciate free or reasonable Internet access, understudies and workforce/staff in Nigeria must pay for time spent getting to the Internet, regardless of whether they are at a digital bistro or in the library (in spite of the fact that the library offers a rebate). To enhance ICT benefits in the library, in this way, specialists need to indicate how understudies and the personnel/staff are utilizing the Internet in the scholastic milieu. College organization at numerous Nigerian colleges see data and correspondence advances as imperative during the timespent in learning and educating. Data and correspondence advancements have offered an ascend to innovative methods of sorting out the instructive circumstance in schools and in offering new ideas to encourage procedures. In addition, they equally help in rejuvenating the roles played by the members in the instructive procedure.

Jange & Pasha (2009) explored the developments of Research Universities in Dubai. They used the structured questionnaire with an objective to study how information is effectively managed. They also aimed to grasp the extent to which information services are extended to the users in the libraries of Dubai with respect to their technological infrastructure, the status of automation, networking and information services. Ultimately, the study reveals that the universities are of recent origin with a strong ICT infrastructure and most of the libraries are automated. ESRM - Library software is quite popularly used by one-fourth of the libraries in Dubai.
Haider (2007) explained that barriers to the effectual implementation in the libraries of Pakistan were systematic planning for automation, software and hardware collection, the nonexistence of standards, financial limitations, uncertainty and most importantly, the lack of willing and competent human resources. In order to resolve the situation, the author stresses that special attention needs to be paid for the formulation of information policy; creation of popular awareness with regard to technology in the library operation; training and development of staff; organization of users educational program for students and teachers; and emphasis on comprehensive planning by individual library to automate the library operations.

Kuruppu Arachchi & Theja (2007) examined the automation processes at the university libraries and the recent managerial issues coming on in this technological era. They used a survey to ascertain the library automation practices in the university libraries and to determine significant managerial functions to work with the library staff from all the university libraries including the faculty libraries deemed as the study population. Acquisition, circulation, serials control, these Journals of the university libraries and dissertations processing, selective dissemination of information and interlibrary loans were identified as the processes that necessitate improvements with the new technology. Further, it indicated the shared motivating vision, open communication and participative management. Appropriate staffing and training were essential strategies working with the library staff to motivate them to provide euro cent and effective service in the new technological environment.

Nikam & Mamatha (2004) have explored the image the users hold about the library. The application of strategic marketing methods to libraries and information centres is however of recent origin. The outcome of such studies put forth positive signs in attracting commendable funding. It also leads to the most effective way in managing a library besides enhancing its efficiency. The results demonstrate that the image and familiarity of this library among the users is somewhat favourable and most of them possess a fair knowledge about it. A great majority of users seek the help of the library professionals to look for documents.

Ondari-Okemwa (1999) examined the principal problems associated with managing a library automation project in a developing country. The Moi University, Kenya, experience is representative of the type of such discrepancies. A library project manager in a developing country is likely to face the serious problems of poor infrastructure, a shortage of local technical expertise, lack of information technology and a shortage of qualified managers. These are some of the enumerated managerial hurdles that they should be able to cope with. Training local personnel and equipping the training institutions may partly solve some of the problems. Management and information technology skills should be emphasized in whatever training programs may be initiated in a bid to overcome the shortages.

Dilroshan (1998) stated that automating a library is only the first step. Keeping up with the evolving trends in information and communication technology is of paramount importance. If the libraries fail to meet these challenges successfully, the tremendous investment that universities have made in their library collections and facilities will be seriously undermined.
LIBRARY AND INFORMATION SCIENCE

Breeding Marshall (2012) discussed the developments concerning library automation systems. He cited options which included proprietary, open source library systems and new-generation library service platforms. He acknowledges the establishment of web-based application software as a dominant computing choice for library users. The redeployment of integrated library systems which included cataloguing modules, acquisitions and serials management through graphical interfaces is also detailed out.

Chandrashekara, Mulla & Selvaraja (2012) explained that in Mysore city, there are more than 30 academic and research libraries. The investigators have nevertheless opted for only 23 libraries for the purpose of their study. Out of 23 libraries, 17 libraries possess computers. In these 17 libraries, only 14 libraries have automated their library operations. The investigators touched a range of aspects related to library automation. The libraries that were not automated provided plausible reasons for the delay to start automation task. Many libraries had network connections for sharing the information. The libraries operate with MYLIBNET, DELNET and INFLIBNET networking programmers. In many libraries, the professional and semi-professional staffs were involved in data entry work.

Kasalu & Ojiambo (2012) conducted a study to find out ways in which collection development practices in private university libraries in Kenya could be enhanced by the use of information and communication technologies (ICTs). His research indicated that ICTs were available in all the three selected universities. But their application in the collection development was not adequate to ensure efficiency and to note whether the library collections are effective in meeting the needs of the users. With the altering information setting and users' information needs, libraries are being compelled to adopt ICTs in order to remain relevant and amplify their value to meet the varying needs of the users. The paper recommended different ways of applying ICTs in all the processes of the collection development to make the process more effectual in meeting the needs of the users.

Khan (2012) examined the user perceptions regarding the level of satisfaction with library collections, organization and facilities as well as traditional and IT-enabled services. A questionnaire was administered to the faculty members, research scholars and students of the Aligarh Muslim University (AMU), Banaras Hindu University (BHU), Allahabad University (ALU) and Baba Bhim Rao Ambedkar University (BBRAU). Overall, the respondents indicated that library collections are adequate. In the case of newly centralized university libraries, users were dissatisfied with the library collections, particularly at BBRAU, though they were satisfied with the existing infrastructure. In general, the satisfaction levels of users at old centralized universities were positive.

Staiger (2012) presents a research literature review on the topic of electronic book usage, with particular focus on academic library patrons. The findings showed that academic users are likely to draw on electronic books to refer to discrete pieces of information rather than reading them in their entirety is discussed. It also deals with the advantages of e-books to academic users including the search ability and constant
availability along with the disadvantages comprising of the difficulty of employability and loss of the physical experience of browsing.

Anuradha & Baradol (2011) discussed that the advent of computers and developments in information communication technologies has transformed the face of libraries. A significant amend is witnessed in the way information is generated, accessed, stored and used. However, the theological libraries still have a long way to go. Automation in theological libraries is still at a formative stage. The status of automation in theological libraries and the constraints for automating them have been detailed out. The theological libraries are forming in Goa and coastal Karnataka.

Giesecke (2011) advised a transformation from collection-centric to user-centred research libraries. He suggested ways to survive in tough economic times, libraries face 2 major challenges. These are listed as follows: first, libraries need to change how they are viewed by their constituencies so that they are seen as indispensable; secondly, libraries need to help the librarians and staff review and change their own mental models of their roles to remain relevant in these changing times. Metaphors are one way to help people connect terms in new ways so they develop innovative images of those terms. For more than 100 years, libraries have used metaphors to seek connections that will help the users see libraries as a space other than warehouses for books. This study explored various metaphors being used in the library field and how these metaphors can assist libraries introduce new trends to improve their chances of receiving the support needed to survive.

Hamerska (2011) described the case of Gdansk University Library, (Poland) which used to present the influence of library automation on the library processes and services in an academic library. Focused attention rests on achievements in cataloguing and increasing quality of library services. The following factors are analyzed: milestones in the implementation of the integrated library system and statistical data from the annual reports of the library and its department of descriptive cataloguing. Information collected through this analysis is employed to highlight the impact of library automation on the selected library processes and services. Data analyzed by the author proved that the library automation introduced at Gdansk University Library has had a long-term impact on the efficiency of cataloguing. Moreover, numerous simplifications resulting from the automation of library processes amplified the quality of services offered by the library.

LaGuardia (2011) emphasized the need to get a productive sense of what one's users' priorities are, concentrating efforts on successful tools researchers actually use; responding to changes that have taken place in research and scholarship; devising instructions for use in actual environments, spaces and timeframes; focusing on local user needs; and working to influence user-centred design of library online systems.

Little (2011) presented an article on Smartphone and mobile technologies in academic libraries. The author discusses the proliferation of mobile technology among undergraduates and the changes in how information is created, distributed and consumed. Accordingly, academic libraries have been slow to respond to this transformation but are now in the process of providing mobile access to their services and resources. He argues that those libraries that implement such services will witness a rise in demand.
Sabzwari, Majeed & Ayub (2011) in their case study revealed that an entire structure, that is, the Service Structure of Librarians, services, facilities and opportunities provided to readers. In this paper, the staff, services rendered, automation situation, annual budget, etc., had been thoroughly discussed.

Swanson & Green (2011) in the fall of 2009, at the Moraine Valley Community College Library, adopted the guidelines developed by Jakob Nielsen, who conducted a usability study to determine how students were using the library web site to inform the redesign of the Web site. The authors discovered that Moraine Valley's current gateway design offered a more effective access point to library resources than a mock-up site which incorporated a central-search box on the site homepage. This finding stands in contrast to the observed trends of the library Web site design that emphasizes a “Googlized” search.

Talvé (2011) initiated and led this process in 1995. He revisited these scenarios in 2010 with a view to compare the current practices in library design with the attributes described in this lone scenario. The aim of this paper was to focus on this scenario. He found out that fifteen years on the dualism between virtual and physical is less stark. He observed that a convergence has occurred that would have been unthinkable then. A hybrid has emerged with digital and place-based notions of a library holding equal currency. Interviewees confirmed that “library as place” has never been so popular. This international trend emerges from the interweaving of the digital, social and aesthetic that has generated new loci for solitary and collective learning and interaction.

Adegbore (2010) discussed the implementation of automation in two university libraries in Nigeria. The central focus lies on the usage of computers at the 'Nimbe Adedipe library at the University of Agriculture, Abeokuta, Nigeria and the main library, Olabisi Onabanjo University, Nigeria. A number of topics were addressed including the impact of an unreliable power supply for the computers, the types of information databases available in the libraries, computers and the improvement in library services.

Oladokun (2010) focused on the information-seeking behaviour of the off-campus students in 2 of the 7 satellite centres of the Centre for Continuing Education, the outreach arm of the University of Botswana. Although the university deeply committed itself to the project, the university library could not afford to establish branch libraries in all the off-campus centres. With the nearest university branch libraries located at approximately 160 km and 200 km away from the centres of study and only branch offices of the public library available, the findings revealed that the library and information needs of the students were not significantly met. The printed sources were revealed as their preferred choice of information format, e-mail and the internet sources were not given much priority, even though there was evidence that the students were adequately equipped through the teaching of information skills.

Stephen (2007) in his sought to examine the age and exposure to computers as determinants of librarians' attitudes towards library automation in Nigerian universities. The study adopted a survey approach to determine the attitudes of academic librarians in Nigeria. The investigation highlighted that an overwhelming majority of the librarians registered a high and positive attitude towards library automation. Conversely, the two variables of interest to this study were found not to influence the librarians' attitudes towards library automation. Also, several university libraries in
Nigeria are yet to be automated due to some identified impediments like financial constraints, shortage of IT personnel, irregular electric power supply, poor communication facilities and absence of a national policy on information technology. Generally, librarians, system administrators, university authorities, IT researchers and the National Universities Commission of Nigeria will find this investigation useful. It enlightens them about the librarians' positive attitudes towards library automation, the poor state of automation in the libraries as well as the lack of relationship between the attitude of the librarians and the two variables of interest in this study.

Bavakutty et.al., (2006) pinpointed the fact that the information explosion, shrinking budgets, rising costs, a shift in the medium of publication and lack of adequate staff are the major reasons that necessitate dependence on latest technologies in university libraries.

Salma, in 2006 conducted a comparative research study on the management of University of the Western Cape library, South Africa and Dhaka University library, Bangladesh. This research was to identify and document how the functions of management are applied in both libraries. A sample of the two university libraries, users, librarians, and library staff were taken. The study revealed that the problem of inadequate financial support is true for both University libraries, and is the major cause amongst other weaknesses. Both libraries still use a large percentage of non-professional staff and the library service is in desperate need of personnel. However, the observed difference between DUL and UWCL in this comparative study was significant. Services offered in both libraries differ in some cases such as: Consortia, Inter library loans, OPAC, CD-search, e-journals and multimedia. These areas still need to be developed at DUL. UWC have the most of these facilities. Although it needs to improve on aspects such as e-journals, access to data-bases and open access on the Internet.

Suku & Piliai (2005) stated the present scenario of automation activities of university libraries in Kerala. The survey findings mainly covered various features of library automation such as information technology infrastructure, in-house activities, information services and their usage, manpower development and budget. The paper briefly described the role of the INFLIBNET centre in accelerating the automation activities of the university libraries, especially in the context of the recently introduced UGC-INFONET program. The hurdles encountered in this process were identified and possible suggestions stated.

Malhan, Shivarama & Urmil (2005) probed into the automation of library operations and services to nominate the efficient functioning of the library and saving the library users' time. The Dhanvantri Central Library of the University of Jammu, Jammu and the Iqbal Library of the University of Kashmir, Srinagar has set up their information technology infrastructure and initiated the process of automation of their libraries. This study reviews the status of library automation at both these university libraries and indicates the problems involved in the speedy automation of the mentioned libraries.
INFORMATION STORAGE AND RETRIEVAL SYSTEMS

Buchanan, Gibb & Simmons (2012) adopted a service-oriented perspective through which they considered the environmental drivers for digital library collaboration. They discussed the emergent collaborative partnerships across UK educational institutions, social services, health services, private industry and cultural sectors. The investigation considered the associated challenges and identified the best practices. Existing and potential synergistic relationships are explored across the broader cultural sector; in particular, with the respective processes of libraries, museums, archives, arts, broadcasting organizations comprehensively identified and mapped (commonality) and the relationship to service-oriented architecture has been highlighted. The degree of digital service collaboration is also explored through an indicative review of the Scottish public library websites, encompassing thirty-two regional library networks and including the national library. Collaboration is evident but limited in the digital domain, with strategic and architectural recommendations made.

Williams (2012) examined the informatics moment in people's everyday lives as they sought help at a branch public library. Four types of literacy were involved: basic literacy (reading and writing), computer literacy (use of a mouse, buying a computer), library literacy (navigating online catalogues and databases) and domain literacy (most commonly and urgently, looking for work in a world where practically all job postings and applications are online). Social capital is equally associated with many of these informatics moments. People seek help from those with enough skills who are close at hand, approachable and familiar, and they collaborate with others in their networks to do so. Understanding the informatics moment could accelerate people (and society's) anxious transition to an inclusive digital age.

Eden (2010) discussed the changing role of technical services departments in libraries during the information age. Differences between catalogue librarians and metadata librarians or specialists were examined and the expectations of library users, the usefulness of library catalogues and integrated library systems (ILS) and the impact of the WorldCat Local search engine are explored. Challenges faced by technical services departments, staff members have been discussed and a limitation created by traditional library workflows has been examined.

Miconi (2007) described the experience of the library of the faculty of Veterinary Medicine of the University of Teramo in using the NILDE (Network of Inter-Library Document Exchange) system. NILDE is a software developer (with open source technology) by the area of Bologna of the National Council of Research, within the sphere of the Biblio MIME project, aimed at managing, through Web, document delivery transactions between libraries and rendering the exchange of scientific documents more efficient. After briefly clarifying the reference context and the reasons for entering the NILDE network, the results of the experiment carried out during the solar year of 2006 are analyzed. The data relative to the Trial of the “Nude Utenti” (Nude Users) module made available with the latest release of the software are illustrated.
The adoption of this tool has made it possible to rationalize the document delivery service through the standardization and automation of its operational phases as well as the permanent electronic filing of all the transactions carried out with the possibility of preparing statistics on its use. Therefore, the constant monitoring of the document delivery activity of the library and measuring the efficiency and effectiveness of the service are offered.

LIBRARY AUTOMATION SOFTWARE

Al-Ansari & Husain (2011) provided baseline data on the current status of the application of Information and Communication Technology (ICT). Majority of the libraries are partially automated. The library catalogue was found to be the most popular area for automation. More than one-fourth of the libraries are still using manual systems in their library operations and services. The lack of adequate personnel, ICT training programs and low priority of libraries within their organization are key obstacles for ICT application in special libraries. Their paper underlines implications for the development of special libraries in Kuwait. It also indicates the existing obstacles, difficulties, suggestions and recommendations for further development. It is the first study on the status of ICT applications in special libraries in Kuwait. Its findings should help researchers and decision makers to improve the current information infrastructure.

Cho (2011) presented a next-generation SaaS-based library management system and its operational model. In addition to that, the thesis seeks to discuss the availability of the knowledge-based services for the system. The author analyzed trends in open library environments as well as issues in the operation of library management systems. It examines the existing differences between reference models of SaaS and those of ASP solutions. Case studies on recent applications of the approaches are also performed. The study forecasts the effects expected when the SaaS model will be fully applied to the library network. Finally, the study presented the functional requirements and an operation model of SaaS-based library management systems. In this study, the author presented a model of a SaaS-based system which can be applied by the library network. The SaaS-based system will enhance the economic efficiency of local library operations and make available new functionalities on an on-demand basis. Furthermore, its feature, such as sharing a single platform among several libraries, facilitates resource sharing and knowledge-based services are debated.

Dhamdhere (2011) said that librarians are using various kinds of open source software for different purposes such as library automation, digitization, institutional repository, content management. ABCD, an acronym for Automation de Bibliotheca Centres de Documentation, is one of such software. It caters for almost all the present needs of the modern libraries of any size. It offers a solution to library automation with ISBD as well as local formats. It has excellent indexing and retrieval features based on UNESCO’s ISIS technology, a web OPAC, and a library portal with integrated metasearch and content management system to manage the online as well as offline digital resources and physical documents and media.
Back, Godmar & Annette Bailey (2010) opined that more libraries integrate information from web services to enhance their online public displays; techniques that facilitate this integration are needed. Their study presents a technique for such integration that is based on HTML widgets. They discussed three example systems (Google Book Classes, Tictoc Lookup and MAJAX) that implement this technique. These systems can be easily adapted without requiring the programming experience or expensive hosting.

CONCLUSION

An overview of the literature reveals that there are considerable existing works on Library automation and its implementations across the world including India. The recent study shows that the automation of libraries is improving in developing countries since last two decades. The Indian scenario reveals that the studies concentrate on problems faced by the administration, implementation, hardware, technical human resources and budget to implement the automation in the libraries. Overall, this compilation of the review of literature gives a glimpse of the recent development in library automation and its implementation in all types of libraries in Nigeria and abroad.

REFERENCES

Bryant, S., & Ye, G. (2012). Implementing OCLC’s WMS (Web-Scale Management Services) *Circulation at Pepperdine University*.


