

LIBRARY AUTOMATION IN 21st CENTURY: CHALLENGES AND PROSPECTS

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ABSTRACT

This paper focused on Library automation; which refers to the application and utilization of computers and other associated peripherals in the performance of one, some or all library operations and services. It highlights some of the common elements of a good automation project as well as its benefits in the library. It described in details the various challenges which are directly or indirectly affecting library automation project in modern libraries, including, lack of proper planning, Inadequate funding/economical resources, lack of resources and technology, lack of skilled or trained professionals and other related issues discussed. For proper implementation of library automation project, paper points out some remedies to include amongst others: proper planning for library automation project, capacity building and provision of 17-based LIS education, good feasibility study on both software and hardware resources, and good management support and participation. When all these are properly considered, only then will libraries provide effective and efficient information and also maintain their edge as leading libraries in the 21st Century.

KEYWORDS: Library, Automation, Challenges, Prospects.

INTRODUCTION

Modern era is characterized by an increasing need of specialized Institutions in various fields of activity for the best way of performing their day-to-day functions as well as research and consultancy work. These institutions require speedy access to qualitative published and electronic information that will enhance their services and also improve their organizational outlook. On exposure, it is very clear that the methods of storage and dissemination of information are changing very fast in various modern organizations, and no organization, institution including libraries and information centres can store all published information and provide efficient services with its old manual operations (Rajput & Gautam, 2010).

Automation is important and necessary to handle the vast amount of information and provide faster, accurate, precise, efficient, and effective information and services as well. The 21st century is the era of computerization but still, traditional manual working system exists among libraries, especially in underdeveloped countries. The series of development of library world is acclimatized to computer environment in daily routine as well as information storage and retrieval. Automation to a greater extent can reduce pressure of library workload. It also shelters from work stress and fatigue. It not only offers efficient services and opens a new era in bibliographical control but provides access to required database in the country and abroad as well (Rajput, & Gautam, 2010).

According to Abbas, (2014), automation is the reality of the 21st century and any library that ignores its capability to transform the information environment is at risk of losing ground. Libraries as the repositories of human knowledge have been striving to improve their productivity through the use of computers. The library is the heart of the educational enterprise and also the reservoir of knowledge communicated through information resources. Information is fast becoming a vital national resource that determines the direction of any nation. Therefore, librarians must be conversant with development of information and its communication technologies for the organization and dissemination of information to increase knowledge and improve scholarship (Abbas, 2014).

Significant improvement in library automation was realized with the advent of online batch processing systems. Automation of library activities began to take place in the 1940s as libraries installed offline batch processing systems, but very few of these systems were installed prior the 1970. The few that were installed during these three decades used either keypunch machines to produce machine-readable cards or key-to-tape technology to produce machine-readable tapes.

The mid-1970s ushered in a major boom in automation, as a result of development in computer hardware and software that could support time-shared interactive online activities. As a result of this technological innovation, online real-time systems (the earlier prototype developed by libraries) began to replace batch processing systems. Over the past decade or two, online systems have evolved from simplistic single-function systems that provided information from only one set of library functions (e.g. circulation, acquisition, etc) to complex integrated systems that deliver a well-routed view within one system of the inter-relatedness of all functions (Adesida & Fatuyi. 2001).

Ossai-Ugbah (2010) opines that ignoring the potential of this new technology for learning will even lead to institutions being less competitive and attractive to prospective users. Some of the cultural functions of libraries are changing and also providing some promising opportunities and challenges for all library operations and services, therefore this paper aims at reviewing some of the challenges and remedies to enhance automation projects and library services in the 21st century.

LIBRARY AND AUTOMATION

The marriage of the Computer and the Library has been described as a natural alliance because according to their definitions" a library is a place for storing knowledge under a system that facilitates identification, retrieval and use as needed. It is also an organized collection of human records in diverse formats, stored, preserved, retrieved and disseminated for cultural continuation. This is similar to the definition of computer as "an electronic machine which can accept data, store it, manipulate it as instructed in a programme, retrieve it and convey the result to a user (Enyia, Amadi & Enyia, 2013). Computers are capable of bringing a great degree of automation in operations and functions since they are electronic programmable and are controlled over the processes being performed. Therefore, automation simply refers to the application and utilization of computers and associated peripheral media such as magnetic tapes, disks, optical media, etc. in the performance of one, some or all functions and operations in an organization.

Library automation is the general term for Information Communication Technologies that are used to replace manual systems in the library (Mishra, Thakur, & Singh, 2015), Library automation is the utilization of computer-based products and services in the performance of different library operations and functions and providing various services and producing outputs. It implies a high degree of mechanization/computerization of various routine and repetitive tasks to be performed by human beings, thereby reducing human intervention to a greater extent (Kemdarne, 2012). Library automation is also the application of ICTs to library operations and services (unescoibkk.org, 2015).

The automated library is internet-technology-based. The rapid development of technology has seen improvements in communication links and a lowering of costs in accessing the World Wide Web. The implication of this is that the Internet is now more widely available to more people. As a result, many establishments have capitalized on their potential to reach a wider audience with their services (Ossai-Ugbah, 2010, Idiegbeyan-ose and Ilo, 2013). Automated libraries can also be used to reach all potential library users without actually traveling out of the library. Suffice it to note here that the rate at which the automation process is been done however, varies between developed and developing countries and, from one institution to another (Ezechukwu, & Adewole-Odesi, 2018).

ELEMENTS OF A GOOD AUTOMATION PROJECT IN THE LIBRARY

A library is said to be automated when computers and other associated peripherals perform one, some or all of the following basic processing operations; acquisition, cataloguing, circulation, collections' security and online information access. The basic elements according to Enyia, et al., (2013) are:

- i. aim or purpose of performing various library operations and services;
- ii. Processing the logical operations of data or information materials required to add value to them such that the needs of users will be appropriately satisfied;
- iii. The hardware resource which is in a microcomputer, minicomputer, or mainframe;

- iv. The software resource shows the step-by-step instructions that command the system to process data as required;
- v. The data flow depicts the communication of instructions and information from the system to the packaging and delivery/dissemination points;
- vi. System documentation that shows a detailed written description of the respective parts the automated process;
- vii. The human resource that relates to the appropriate personnel to operate and supervise various aspects of the automated system;
- viii. Non-personnel resources such as equipment and furniture, consumable supplies, conceptual and monetary resources;
- ix. The environmental requirements relating to physical space with appropriate lighting, humidity, decency, noise control and temperature, and
- x. Retrospective conversion of records, i.e. from the manual catalogue records into a computerized database.

BENEFITS OF AUTOMATION IN THE LIBRARY

The reasons for library automation according to Sharma (2007) are to facilitate bibliographic control, efficiency, expediency, accuracy, reduced workload and increased self-esteem in the library. Therefore, the benefits of automation which apply to users, the staff and libraries in general according to unescobkk.org (2015) include:

- i. enhanced productivity/efficiency,
- ii. Better use of information resources through improved access.
- iii. improved resource sharing through the virtual catalogue or network,
- iv. reduced duplication of cataloguing effort,
- v. Improved use of resources
- vi. improved customer services,
- vii. Improved image of the library.
- viii. accurate production and evaluation of management information,
- ix. optimized use of human and other resources and
- x. Facilitation of the acquisition of new skills and knowledge due to the adaption of modern technologies.

CHALLENGES OF AUTOMATION IN THE LIBRARY

Libraries are notorious for collecting storing information in society. An endless supply of information is continuously generated in these institutions and any can readily access it regardless of time and space through the rapid advancement of computer technology in contemporary society despite its benefits, the successful processes of library automation are accompanied by many issues and challenges that may delay or even cause total failure. According to Mishra, Thakur, & Singh (2015), the challenges are:

Problem of Planning: Planning of library automation will involve proper feasibility study of the project to avoid waste of time, money, energy and to ensure the success of the project. Despite its inherent benefits, library automation is a capital-intensive venture. This is because of the high cost of computer hardware and software. No project can succeed without a prior feasibility study. The adoption of any automation system in the library should be based on a wide range of feasibility studies, which will determine the adequacy of the programme.

In light of the fact that there are now new hardware and software used for library automation, it becomes imperative for institutions to determine whether they have sources of resources to operate library automation. Unless this is done, there are bound to be problems here and there.

Inadequate funding and economic resources: The most crucial hurdle for a library in pursuit of automation is to obtain the necessary funds. The major obstacle to any innovations in developing countries is the lack of resources the initial cost of establishing a computer system is beyond the reach of most organizations and institutions. Generally, any successful and running operation is a sound financial aid for purchasing hardware, software other associate peripherals of ICT. The library automation committee must keep in mind expenditures for library automation and also for further maintenance and development costs for a successful automation process.

Knowledge of technological facilities: Most libraries are greatly involved in this because automation work in libraries is affected due to problem of insufficient awareness of current technology like hardware, software issues. The library defined clearly the goal and objective of library automation and computerization which is to provide wide access to digitized library collections, using computer-based skills to dispense library services to the end users. Library management decides on application software that could support an integrated library management system.

Problem of willing and competent manpower: Emphasis in library education had previously been on traditional librarianship. The building up of collection and its organization and administration dominated the curricula. Information science and information technology failed to find appropriate representation in the courses. This resulted in a scarcity of librarians who could plan, design programs and implement various information projects. It is also true that vast majority of the present generation of librarians have inadequate knowledge about computers and their potential in library and information work. The efforts made to redress the situation have not helped very much.

Problem of Skilled and Trained Professionals: Another problem is associated with of professionally trained and unskilled staff. The level of short staffing is apparent while the little on-ground is so little or no computer knowledge. This a lot of technical problems to the automation exercise. In some cases it was found that one or two professionals are saddled with the responsibility of managing the system unit thereby limiting the outcome of service delivery to clients.

The problem of Willingness for Automation project: Willingness for library automation and digitization is a serious problem of library computerization. Library staff including librarians wait for technical, financial and manpower resources from the government. Even if the government and library administration provide all necessary infrastructure and support, the unwillingness of library staff still creates a great hurdle to complete the automation work. Many times librarians do not intend to take a serious part in the automation training.

Lack of Support from Administration: Looking at the various issues of library. Its administrations have their priorities in which library automation work and services are being treated with comparatively low importance. When any proposal is sent to the administration, it is treated that librarian should work without any expectation of help from the administration. Library automation needs financial, human and technical support which is provided by the administration. When the administration lacks any sincere support the whole process gets delayed or fails.

Lack of Awareness among Users for Automation: The libraries established in remote areas such as small towns, villages, low literate and **tribal areas have the** problems of lack of awareness about automated library procedures among the users. Users need continuous orientation training to use automated procedures such as OPAC, bar-coded library cards and searching for information on the Internet. In many cases library users who are aged exhibit lack of interest in learning and handling the automated procedures.

Other Problems: Other problems encountered include the absence of committee consultants and computer experts in library automation, lack of infrastructural facilities, poor communication facilities and irregular power supply, the poor library environment, small amount of information contained in libraries, organizational changes, vendor viability, loss of commitment by the stakeholders and managers.

REMEDIES

We can say that things are changing for good. Library authorities are now realizing that there is no way they can escape from automation. They are finding various ways to finance their library automation projects. Librarians are also realizing that they cannot remain indifferent to the change, otherwise, they will be labeled outdated, Nutesh, (2016) also confirmed that the existing staff are getting rid of the fear of computerization. They are coming forward to make themselves suitable to face the challenges of the millennium, and better software packages are available. In addition, Nutesh, (2016) established the following remedies:

- 1) There should be proper planning for library automation projects, at least one year-wise development plan for library automation and service must be added to the library plan. The plan must include following points:
 - i. Objective of library
 - ii. Library finance and budget
 - iii. System analysis
 - iv. Identification of main area of library automation
 - v. Sources of data/Standard format
 - vi. Hardware requirement
 - vii. Software for library automation commercial or open-source software
 - viii. Skilled Professionals
 - ix. Maintenance and development Services via automation
- 2) The head librarian should encourage the library staff and other authorities to assign target and make motivational declarations for an automated system. The need to computerize all the remaining libraries in future to provide better and more efficient services to readers should be the main focus for all library managers.
- 3) The librarian should always organize a computerized library orientation programme every year and computer working knowledge should be mandatory to library staff
- 4) The Librarian should conduct a survey of different automated libraries to before selecting software for their library. The choice of the library software packages must be carefully considered with emphasis on the ability to meet particular library needs. Computerized systems are dynamic rather than static. It is important that when planning for computerization, the hardware and software selected should be sufficiently flexible to meet both the present and future needs. Librarians should also evaluate each module before the selection of library software, by receiving a demo of the software. Vendors should be scrutinized before selection and should be made to sign an agreement on servicing and maintenance of the software purchased from them. The application software to select must be assessed to determine its scope and capacity that will be suitable to achieve library goal. There are long lists of application software packages in the market. Few of these software are UNESCO micro CDS/ISIS, TINLIB, Konlib pro-library manager, and X-lib. Alice for Windows, Integrated Library Software Koha, Greenstone, Glass, Readable etc. Using well-drawn parameters as given by Adekanye (2011) the suitability of hardware and software packages could be assessed based on the following:
 - i. Producer/vendor reputation and reliability base on the performance of previous installations.

- ii. Software functional flexibility and expandability
 - iii. Indexing and searching capabilities
 - iv. Interactivity of input and output interfaces
 - v. System security provisions
 - vi. Good system documentation and manuals
 - vii. Cost
 - viii. Scope of customer training
 - ix. Possibility of system upgrading
 - x. Compliance with the Internet
- 5) IT-based LIS education at B.1.1.5 & M.1.1.S should be very imperative.
- 6) Information literacy should also be very essential for all librarians living and working in the 21st century.
- 7) Computer training and retraining should be provided and made mandatory for all the library stalls. This mode of training programme will help the staff to practice and assimilate more. At the same time, it will also enable them to do their daily work. User education should be provided to make the user aware of the library collection as well as the services in the digital environment, and the users should also be given training so that they can handle the computerized system.

CONCLUSION

Library is a fast-growing organization. The ancient methods of maintaining it are no longer dynamic and efficient. Several seminars were organized on library automation. We graduated from simple library operations to specialized functions including networking and connectivity. Now the talk about digital libraries, e-Learning and e-journals. The state of library automation in our libraries is more or less the same. There are big libraries that are highly automated but the manual process remains due to some inadequacies in the implementation of automation projects which are restricting the speed of services, academics and research in the country. A properly computerized library will help its users with quick and prompt services. Library automation has helped in the computerization of library housekeeping operations and functions. The most commonly known housekeeping operations are acquisition control, serials control, cataloguing and classification, and circulation control. This computerization has now affected greatly the manner of library service and has also presented several challenges.

However, the remedies discussed above should be kept in mind by programme implementers if they are to succeed. Automation of libraries should be collectively done with all concerns and must consider all factors that are relevant to the exercise. This involves a feasibility study which is the careful, painstaking analysis of all variables that are pertinent to

the successful completion of a planned project. Since automation will bring about a tremendous impact on these libraries and their user community, the authorities must scout around for adequate funds to expedite the programme. To cope with the anticipated changes, there is a need for capacity building, a change in the overall attitude and outlook of the staff would affect every aspect of the way they work in their respective libraries. Only through these will libraries be able to provide effective and functional services and also maintain their edge as leading libraries in the 21st Century.

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