

Chapter II

Conceptual Issues in Library Automation

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CONCEPTUAL ISSUES IN LIBRARY AUTOMATION

The prospects of automation of a library are diverse in today's time of rapid development in the field of science and technology; no one can afford to remain untouched by it. In fact, the impact of information technology has been affecting the structure of the library services to a greater extent. A new information society has emerged in which electronic information along with the physical information is playing a key role. Information Society is getting all help from information technology in occupying a centre stage role. The developments in computer and telecommunication technology have promoted effective resource sharing, co-operative processing of information and on-line retrieval among the library and its professionals.

According to Vyas (1997), the scientific and technical libraries working under the research & development institutions as, CSIR, ICMR, ICAR and DRDO have taken the lead in library automation in India. Comparatively, there is a slow pace of automation in academic libraries, may be because academic libraries in India function in a relatively less autonomous environment. Another reason may be that academic libraries are not under as much pressure from its users to improve their services as are scientific and technical libraries.

Automation of library system is an indispensable part of modern library's information systems development, organization, management and services. It has been playing a vital role in improving the capabilities of libraries/information centres towards attaining satisfaction of their users.

Library automation was introduced in the 1970s. As computers have become more and more popular over the years, library automation has become commonplace. Librarians often refer to the process of implementing an Integrated Library System (ILS) into their library as library automation. An ILS is a resource planning system that libraries use to track

the items they own, monitor circulation and inventory, order new items, and ensure all bills and fines are being paid, i.e. all the housekeeping functions of the library. While many libraries currently use some type of ILS to manage their collections, there are still several libraries that are not automated.

1. LIBRARY AUTOMATION: MEANING, DEFINITION AND CONCEPT

Library Automation - the word itself signifies that, different functions and services of a library are automated with the application of Information Technology (IT). In a broader term, it can be said that use of information technology to carry out library functions and render library and information services, with emphasis on the use of computers. A computer-based information system consists of hardware, software, people, procedures and data, which act together to process data into information. Further, the automation in libraries means cutting short the distance in terms of time, space and even language between the user and the document.

Not many years ago, libraries used card catalogues, typewriters, and manually assigned due dates. Library automation, an up-to-date method to help libraries and library users to effectively use library resources, is now being streamlined because of the development of computer technology, its peripherals and inventions of various library management software. Due to this users now have rapid and more user-friendly access to the latest information. They are also able to remotely access a library's collection.

Library Automation as defined by Encyclopaedia of Library and Information Science (1975), "Library Automation is the use of automatic and semi-automatic data processing machines to perform such traditional library activities as acquisitions, cataloguing and circulation. Although these activities are not necessarily performed in traditional ways, the activities themselves are those traditionally associated with libraries."

As defined by Daniel (1980), "The application of automatic and semi-automatic data processing machines to perform library functions such as acquisition, circulation, cataloguing, reference service, and serials control."

According to Prytherch (2005), “automated systems are used in a wide variety of tasks and contexts from circulation control, acquisitions, cataloguing to the provision of web services and electronic databases.”

In simple words Library automation can be defined as the process of performing all information operations /activities in libraries with the help of computers and related information technologies.

An automated library is a computerised system which manages one or several in house functions of library, such as acquisition, circulation, cataloguing, serials control and the online public access catalogue. Further, it also deals with the emerging technologies, standards and formats, software, hardware, resource sharing, library networking, web OPAC's (Online Public Access Catalogue) etc. of the library system.

New technological developments in the form of computers, telecommunications, electronics, reprography and micrographs have been adopted in libraries bringing new concept to library systems. The Information and Communication technology (ICT) facilitates transfer of electronic data/information from one place to another, one person to another and from one library to another library.

ICT infrastructure is considered as the most dominant paradigm of development in the recent years. This paradigm changes have not only specified new exploratory and innovative thoughts of managing the functions and services of library and information centres but also create an unprecedented challenging environment for professionals and information officers to fulfil the astounding information desire of users and also to manage the unimaginable exploration of electronic information.

In a nutshell, library automation implies the application of computers and utilization of computer –based products and services in the performance of different library operations and functions.

2. NEED FOR LIBRARY AUTOMATION

The fifth law of library science as propounded by S.R.Ranganathan is, "Library is a growing organism." It means a constant change is essential for the growth of library, and in order to maintain a high degree of relevance to the environment.

We are in the age of information technology (IT), and can't even dream the existence of any field without computers. In this information era, in order to avoid obsolescence of information, library professionals are applying advanced technologies to enable its user community to get the right information at the right time. In order to achieve this objective, libraries are automating their services.

The need for excellence in the management of current information service had never been more urgent than in the recent time. With the exponential growth of information a vast change has come in the role and responsibility of the librarians to manage information dissemination. The need of automation in libraries was also felt because of the workload in all spheres of library activities. With the use of information technology the administrative tasks of library professionals have become easy and speedy. Moreover, it has relieved the professionals in getting rid of the tedious routine and repetitive tasks and have saved the enormous precious time. It has definitely saved the time which is being used in the libraries for diverse purposes to serve the needs of their customers.

Explosion of knowledge and flow of non-stop information generation has also created tremendous pressure on libraries. As indicated by Suku (2005), the growth in literature is enormous and libraries are facing a lot of problems in providing the required information to their clientele. The users were not able to explore unlimited information. Even the largest of the libraries cannot acquire and make available the entire published materials.

To solve these problems, it became essential to adopt more and more scientific and modern methods to improve libraries and make them more powerful than before. To cope with this, libraries had to be equipped as potential information centres to cater with this growing technology and meet the demand of the potential users. Automation of library

system was the only way to facilitate easy, fast, and reliable sharing of resources between libraries, cutting across space and time.

Incidentally, the user is becoming more demanding in terms of availability of specific, measurable, accurate and timely information. The libraries have found it very difficult to acquire, arrange, process and disseminate information in traditional ways. So, librarians are compelled to plan, organize and communicate the huge information communication technologies. The ICT is the convergence of computers, communication and micro-electronic base technologies. It has expanded so rapidly to include a wide array of devices, information products and services that has transformed the role of a library into a gateway of accessing global information resources.

Moreover, cost –effectiveness can be one of the aspects but as library is not an economic entity; other major deliberations are the benefits that have been derived by the library users. Library automation helps in managing diverse library resources and provides better and wider access to resources. Computerisation will not only provide fast and efficient service to the users leading to increase in user satisfaction but also help in increasing the use of library collection.

As a result of the information technological developments the users have entered cyberspace and expects its information provider, the library, to provide the launching pad. Accordingly, the automated library system does not only provide the modules of traditional library functions but also it should be made capable of the networking system through which the users can access the electronic databases located at remote places.

Electronic systems also offer new opportunities to find solutions to space and preservation problems of the library. Internet brings the world to a Global Information Village. It is our utmost duty to equip our libraries/ information and documentation centres with the available latest information technologies. This way we can provide services to users according to their need with dignity and honour. Automation of library is a step to keep pace with the latest information technology environment. As per Dabas (2003), library automation not only improves the image of the library and staff but also provides additional services to the users with the existing staff.

Over the past few years, library automation has undergone a dramatic shift in direction. Now, there is a library without walls which uses technology to expand services, resources, and relationships between libraries and resources across the globe. In the developed countries many of the libraries are either fully computerized or partially computerized. In fact by keeping in view the global developments in Information technology, at present in the western world the library automation is in the phase of digitization of information. Present phase is dominated by electronic and digitization of the learning resources for sharing. Even Google (search engine) had launched a program along with a number of research libraries in the U.S. and the U.K. aimed at ultimately scanning all the books in their collections. The purpose of this project was to develop an online digital library by organising the world's information and make it universally accessible and useful.

3. IMPACT OF LIBRARY AUTOMATION

The impact of automation on the library is quite obvious as it has created new types of work, prompted redefinition of certain functions, influenced interpersonal relationships and transformed organizational structures into new institutional entities. Today complete library automation and modernization means digitization of the every bit of information contents.

Library automation has impacted library services on every level. The searches for users and staff become easier with the automation. This has wide-reaching effects on user services, staffing and the overall management of library work.

- **On Users:**

The users can perform the search independently. Complex searches can be completed by users using computers instead of the tedious and inefficient card catalog.

- On staff

Library automation has changed staffing needs at libraries. As users are able to do many of their searches without staff assistance and as a result, fewer reference staff are required in the reference section of the library.

- Nature of library work

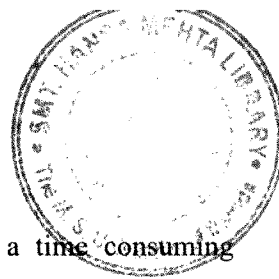
The nature of library work has also been affected by the use of library automation. Automation has allowed for an increase in user-centered services like self-checkout and remote library catalog access. Ultimately this has allowed library staff to devote more time to other areas of services, such as programming and collection development. Moreover, automation allows libraries to do more work at a reduced cost by encouraging users to serve themselves.

As per Murthy (2003), the impact of information technology in library is quite significant on information processing, sources and services. These technological developments have enabled the libraries not only to improve the quality of existing services but also to offer a wide range of new services to users.

4. PRE AUTOMATION PROBLEMS

Introducing an Integrated Library System (ILS) or automating a library, as librarians often call the procedure, is the process by which an integrated resource planning system takes the place of a card or other type of non-computerized catalogue, in order to track and inventory a library's collection. Planning an automation project carefully is one of the most important steps in ensuring that library automation occurs effectively and efficiently.

Library automation definitely helps in managing the library. It is a great enhancement for the library, but it comes with plenty of headaches. Few of them are discussed below.



- **TIME:** The automation process requires time. It is certainly a time consuming process. Prior to the automation, libraries need time to assess certain elements like budget, user strength, library environment, collection of resources and available hardware and infrastructure. This analysis helps the library to make the right choices during the process of selecting automation software and hardware for the automation system. The realistic and time-bound programme should be planned.

Migration of data also consumes time. All the existing records have to be transferred into the new system. If upgrading from a manual system to an automated system, the circulation information must be entered into the computer. Finally, there might be changes required in some collection and user bar codes during the automation process. This can involve some tedious hours of handwork to make everything work with the new automated system.

- **TRAINING:** Training is time consuming, expensive, and never enough. Training of the library staff and users to use a newly automated system has been challenging. If the library staff is unfamiliar with computerized library management software, they need many hours of training to feel comfortable operating the new system. A select number of staff will also need training to manage specialized operations, such as cataloguing or user record management. Further, users will need assistance using the system to search for library materials. Some users are reluctant to change to a new system. Proper training and plenty of support is required to encourage users to use the new system.
- **TECHNOLOGY:** Technology is another hurdle to cross while automating the library. The librarians find it very difficult to select the library automation software which will be appropriate for their existing system in the library. Moreover, financial crunch has also been felt to purchase the upgraded technology. The technological requirements of each library also differs as per availability of workstations, user access points, network server, Internet access and an electrical system at the individual library. Some libraries may require minor technological upgrades, while others will require an expensive technological overhaul. Lack of effective

networking and communication technology, inadequate computers, low configured computers, frequent breakdown of computers and Internet ink and lack of maintenance are the other major issues of automation.

The technology team, or lack of one, can be another challenge of library automation. A library needs a strong technology support system in place, prior to automation. Someone needs to oversee the automation process and troubleshoot any software or hardware problems. Once the system is in place, the technology team will need to continue to monitor and upgrade the system.

In addition to the above mentioned issues there are many more pre automation problems being faced by the library professionals. They are enlisted below.

- ✓ Lukewarm attitude and initiative of the management
- ✓ Fear of adverse impact on employment
- ✓ Lack of enthusiasm in librarians
- ✓ Non-availability of resource with the libraries (financial as well as personnel)
- ✓ Geographical location
- ✓ Constraints of networking, poor networking (LAN)
- ✓ Retrospective conversion of data
- ✓ Non-availability of suitable software
- ✓ Lack of up to date information infrastructure
- ✓ Uninterrupted power supply
- ✓ Software is not user friendly (identification of appropriate software is very important)
- ✓ Absence of planning
- ✓ Non-availability of vendor developed software at affordable prices
- ✓ Restrictions on the import of hardware
- ✓ Non existence of standards
- ✓ Lack of space
- ✓ Lack of clear objectives
- ✓ Lack of flexibility and adaptability attitude

- ✓ Lack of basic understanding of an automated library system
- ✓ Incompatible data format for electronic communication
- ✓ Lack of prior studies before embarking upon automation
- ✓ User incompetence
- ✓ Lack of willingness and ability to bring about the changes that would be desirable
- ✓ Making wrong choices in selecting the system

5. POST AUTOMATION PROBLEMS

The exhaustive literature search carried out by the researcher for the present study reveals that many conferences, seminars, and workshops had been organized to understand the library automation system. Professionals have talked and discussed about the whole process of library automation system beginning from the selection of software and hardware till its implementation. They did discuss about the problems that occurred during this whole process such as training of library professionals, the financial aspect i.e. dealing with the authorities to avail the fund for the automation purpose etc. The research reports also guided them in rectifying these problems.

From the above discussion it is clear that library professionals did face the problems at the time of implementation of library automation system and prior to it. Similarly, there are many problems being faced by the professionals after working for the substantial time with the automated library. However, there is hardly any research work being carried out in this area. Very few published material is available regarding the post automation problems. The professionals are finding it difficult to rectify their problems due to the unawareness about the solutions. Again it is becoming a time consuming and costly affair to maintain this automated system in library.

The administration and management of integrated automated library system is not a small task. It involves a multitude of individuals and oversight and functional committees working together to make it successful. Any operation to run successfully depends largely on the personnel operating it. The training process of these personnel should be ongoing

because every day there is changes in the technology. To get updated with the latest innovations this training is very important. Again there is lack of latest hardware and infrastructure facilities for a smooth running of an automated system. Further there are many problems related with the technical and technological aspects of automation.

After reviewing different facets of library automation, researcher felt the need to carry out the study of different aspects of post automation problems being faced by the library professionals such as financial, personnel administration, technical, technological and managerial.

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