



LIBRARY AUTOMATION IN INDIA - A BRIEF HISTORICAL PERSPECTIVE

Dr. Tushar M. Patil

Librarian , S.S.V.P.S. ACS College, Sindkheda.



ABSTRACT

In India, there are many libraries where library automation and use of new information technologies are in planning stage. Librarian and library managers are making effort to automate their libraries. Authors of this paper try to accommodate each and everything, which required for successful library automation. This plan describes the Basic elements of managing the automation planning process in primarily special and R & D libraries. This write-up provides a detailed overview of a planning process designed to help to make decisions about library automation. Practical suggestions are offered on how library manager can effectively organize the process of library automation. Library automation and serves as a framework of establish the need for evaluation research related to automated systems.

KEYWORDS: Library Automation, e-library, Computer, Internet, Security, new era.

INTRODUCTION :

Libraries are in the midst of radical changes. These changes are, perhaps, unavoidable and compelling. In the present day context libraries are moving beyond their traditional role as custodians of recorded knowledge and integrating new methods of information storage, retrieval and transmission into their existing services and patterns. They are, at the same time, incorporating the extensive changes that new technologies bring to organizational structures and staff responsibilities. Libraries currently are experiencing technological transition in how services are provided and in what these services are. These changes are attributed in literature to three major phenomena: the information explosion, escalating costs, and the technology revolution. In particular, in the recent past it is the computer and communication technologies which have drastically changed the working of libraries.

While the computer technology provided hitherto unavailable power for the organization and manipulation of information, communication technology provided immense scope for the speedy and accurate dissemination of information. Over the past few years, there have been many developments in computer technology. One of the revolutionary developments has been the advent of comparatively cheap microcomputer systems, with increasing sophisticated features which can be used for a variety of library applications. As a result, it is not uncommon to find a micro-computer even in a 88 small library in a developing country like India also. Computers in libraries are used to assist a variety of functions, such as, maintaining and providing access to catalogue items in the collection, managing the circulation of items, controlling the serial publications and allowing the retrieval of information from local files, searching external of information sources for references or for full text of documents and so on. Library Automation refers to the use of computers to serve the needs of library users.

The operations of a Library get a quantum jump with the introductions of computers. The computers help to provide fast and reliable access to the resources available in the library as well as elsewhere. The application of computers in the library operations avoids repetitive jobs and saves lot of lab our, time, speeds up operations, increases use of library resources. Computers are not only used as a tool for processing the data, but also for data storage and accessing. Application of computer for library activities is no longer a controversial issue. Many authors have identified and justified the reasons for the development of automated library systems (computer – based library system). Joseph Matthews has summarized them as follows:

- The tasks of a function may be eliminated or completed more accurately, more quickly, and with increased control than with other alternatives. Typically these tasks are clerical, routine and repetitive in nature, and thus desirable candidates for automation. For example, an automated circulation control system may all but eliminate the need for personal to prepare overdue notices.
- Increase demands for service and their accompanying library workloads must be counterbalanced with improved productivity, especially with either static or declining budget resources.
- Automation may facilitate the collection of data that will assist the librarian in the management of the library's collection while simultaneously providing new and more detailed data to support its budget. Automation may provide the means to offer new or improved services to patrons, provide valuable by products (often unanticipated) as a result of automation, and facilitate cooperation between libraries.
- Automation may avoid the need to hire additional staff, even with increased— demands for service

LIBRARY AUTOMATION THE CONCEPT:

The word 'Automation' has been derived from a Greek word 'Automate' which means something which has the power of spontaneous motion or self movement (Webster's Third New International Dictionary of English Language, 1966). The term 'Automation' was first introduced by D.S. Harder in 1936, who was then with the General Motor Company in United States. He used the term automation to mean automatic handling of parts between progressive production processes.

LIBRARY AUTOMATION IN INDIA:

A brief historical perspective In 1936 Ralph H. Parker, then loan librarian at the University of Texas Library, published one of the first articles on library automation (1936). This article described the implementation and detailed the practical usage of two Hollerith punched card machines. One machine perforated punched cards and the other sorted them. The process enabled the lending department to more easily handle collection and circulation clerical issues. The significance of this first step towards library automation was not lost on Parker, who summed it optimistically with regards to the future of librarianship as a "new day of no mistakes, no nervous strain, and much less manual labor for the library worker"

One key discovery is that technology alone played a tertiary or lesser role in Parker's vision of a highly automated library. As the director of the library, financial and logistical conditions affected considerably more pressure to discover efficient methods for dealing with growing collections and circulation, especially post-War. However, it was his role as a manager of librarians that the primary reason to automate surfaced. His main preference was an apparent concern for the quality of librarianship itself and for the people who filled those positions.

As early as 1955, computerization work started with the installation of HEC – 2m computer system imported from UK, at the Indian Statistical Institute (ISI), Calcutta. ISI also acquired a Soviet built computer URAL – I as gift in 1958. The first indigenous computer was designed in 1964 by ISI, Calcutta in collaboration with Jadhavpur University, Calcutta. During the introductory phase period (1955 – 64) as many as sixteen computers were installed in different parts of India. During the period 1966 – 72 the process of computerization speeded up with the installation of one hundred and seventy more computer systems, although most of them were imported from the Western countries. Later particularly during 1980s, many

institutions/organizations started using computers. The advent of affordable and powerful micro – computer is responsible for the upsurge in the usage of computers in India.

As far as use of computers for library work is concerned, INSDOC was the leader in experimenting with computers for their application in documentation and information work in 1964. The first application was to computerize the author and subject indexes of „Indian science Abstracts“ published by INSDOC. In 1967, INSDOC brought out the „Roster of Indian Scientific and Technical Translators“ with the help of computers. Again, it is INSDOC which brought out the first Union Catalogue with the help of computers under the title „Regional Union Catalogue of Scientific Serials, Bombay – Poona“ in 1973. In 1978 INSDOC initiated SDI service as a NISSAT project with Chemical Abstracts and INSPEC databases, with the use of CAN/SDI software at IIT, Madras. In the meanwhile DRTC, Bangalore conducted a number of experiments in the field of automated document classification, design of document finding system and subject indexing. In early 1970s, Tata Institute of Fundamental Research (TIFR) library developed a program for generating a monthly list of recent additions to the library with a keyword index. Further it also developed programs for stock checking and serials control.

The Bhabha Atomic Research Centre (BARC) developed a system called „Automation for Storage and Retrieval of Information“ (AFSARI) and also a set of programs in COBOL for current awareness services and preparing indexes such as author, corporate bodies, personal, subject and KWOC. The Physical Research Laboratory (PRL), Ahmadabad produced ‘Library additions list’ with a KWOC index. Later, a periodical management system and book procurement system were developed. IIT, Delhi developed a computerized acquisition routine of serials in 1969. At a later date a list of textbooks available in library was generated using ICL 1960 computer available on its premises. IIT, Madras has conducted a number of experiments and operations pertaining to library automation and bibliographic data services. It has also developed a book acquisition system in PL/I language. However, in, mid – 80s a separate and more comprehensive system was developed in dBase.1 BHEL (R&D), Hyderabad imported Clark Library Acquisition System from USA in 1982. Even this system was replaced by a system developed within the library.

Similar efforts of application of computers for their library activities have been reported in literature. It is not the intention of this study to list them all. However, it may be suffice to say that efforts are being made in all major libraries in India to automate their activities.

SYSTEMS APPROACH TO LIBRARY AUTOMATION:

The question before the libraries now is not ‘to automate’ or ‘not to automate’ rather ‘how’ to automate. It is a well known fact that considerable human and financial resources are utilized in launching upon automation project. In this connection has rightly observed that “no body can deny the advantages of automation, but in developing countries like India, its adoption has to be done with caution, as some of the 93 huge installations may prove to be white elephants, surplus manpower, over –population and unemployment.” Hence, enough care has to be taken at each every stage of the project. Ignoring or overtaking even a minute aspect may later prove to be serious. Broadly speaking the various aspects involved in automation project, viewed from the angle of System Development Cycle, may be grouped under the following three stages:

- Planning
- Designing
- Operational

PLANNING STAGE:

The first and foremost step in any automation project is the idea to initiate a project. Valid reasons should support such initiations, particularly so in libraries because they are non–profit organizations working under some parental institution. To emphasize this fact Salmon 1975 has rightly opined that “projects should

not be started for the reasons that the library should be “modernized” so that it can keep up with the Joneses of the Library world or just to promote the reputation of the library.”

The next step in the planning stage is to conduct a feasibility study about the proposed projects. The outcome of such a study should help the management in determining whether or not proposed project is feasible. The project is to be considered feasible only if the proposed projects can be useful to the organization. Thus, the purpose of a feasibility study is “to gather, analyze and document the data needed to make an informal, intelligent decision regarding a system’s practicability”.

The following types of feasibility studies may have to be conducted before proceeding further:

- Technical feasibility
- Operational feasibility
- Economic feasibility

If the overall outcome of feasibility study indicates that the proposed project is feasible, then the activities in the designing stage will be initiated.

DESIGNING STAGE:

Before designing a new automated system, one should carry out a study of the existing system. This study is an evaluation of how current methods are working and the problems involved there in. The result may be taken to determine the features that must be included in a proposed system.

One has to structure the existing system’s study by seeking answers to following questions:

- What is being done
- What is the purpose of the activity
- How is it being done
- What steps are performed
- How frequently does it occur
- How long does it take
- How great is the volume of transaction
- What needs to be changed

The outcome of such a study should help to identify features of the new system including both the information the system should produce and also the operational features such as processing controls, response time, and input and output methods.

An automated system may be designed in many ways. However, it has to be noted here that this is a one-time project which decides the future of the library. So, with enough care and caution, the best solution has to be arrived after considering the advantages and disadvantages of all other possible alternatives.

It is advisable here to share a benefit of the experience of other libraries/information centers that have already launched similar projects. Emphasizing this aspect Salmon (1975) gives a caution that “in early enthusiasm and eagerness to get started, it should not be forgotten to search the literature, to learn (through various means, including contacts with professional association) of similar projects which have been attempted or implemented, and then to take experience of these projects into account.”

The next step in designing the system is normally referred to as „logical design” in contrast to the process of developing actual source code (program/software), which is referred to as „physical design.” this is the state where system specifications are made. Because of the technicalities involved in this phase, it is relatively unfamiliar to librarians. These specifications include the details of output, input, files, database interaction, controls and procedures.

The specification should also include the hardware aspect of the system. These specifications are to be well documented so that it is free from ambiguity. In fact, many design tools such as charts, tables, data diagrams, data dictionaries, etc., are used to portray the design accurately.

Physical design follows the logical design. Physical design refers to the development of „software“ for automated systems. The life blood of any automated (computerized) system is its software. The software decides the success or failure of a system. Software design should accomplish the following objectives:

- The actual programs perform all required tasks and do so in the manner intended
- The structure of the software permits suitable testing and validation
- Future modifications can be made in an efficient manner and with minimum disruption to the design of the system.

Literature of the field identifies six principles which may be deemed as the characteristics of good software design. They are top – down partitioning, loose coupling, functional grouping for cohesion, limited span control, manageable module size, and shared modules. If one follows these principles there is likelihood of achieving acceptable levels of reliability and maintainability of the software.

There are two approaches for software development. One may install purchased software as in turn – key systems or may develop a new custom designed programme. The choice depends on the cost of each option, the time available to write software’s, and the availability of programmers. In any case, the software should be aimed at fulfilling the above objectives and principles.

Further, the software should be well documented so that it ensures easy use of the system and helps in the future development.

OPERATIONAL STAGE:

If the above mentioned two stages are passed through satisfactorily, a good result the operational stage may be expected. In this stage, for the first time the physical components of the system are placed in their operational environment. The stage in fact consists of two steps: implementation, and evaluation.

IMPLEMENTATIONS:

Implementation is the process of putting the new equipment to use, train the users, install the new application, and construct the data files required.

The most important work in implementation is the system conversion. Conversion is the process of changing form the old system to the new one. Depending on the resources and personnel available any one of the following methods of system conversion may be adopted. Each method has its own advantages as well as limitations.

(a) Direct conversion: Here, the old system is completely replaced by the new one within a short period of time. The major problem in this conversion method is that there is no other system to fall back on if serious problems arise with the new system.

(b) Parallel conversion: Here the old system is operated along with the new system. Under this approach, both old as well as new systems will be operated simultaneously. This method is the safest conversion approach, since it guarantees that, should problems arise in using the new system, the library can still fall back on the old system without loss of time, or service.

The disadvantages of this method are significant. First of all, the system costs, since there are two sets of systems under operation. In some instances it is necessary to hire temporary personnel to assist in operating both systems simultaneously. 96 Second, the fact that the users know they can fall back to the old ways may be a disadvantage. As a consequence, the new system may not get a fair trial.

(c) Phased conversion: This method is used when it is not possible to install a new system by the organization all at once. Here the conversion takes place phase by phase. The disadvantages of this method may be that it is not suitable for all situations and it is difficult to identify which phase has to be automated first.

(d) Pilot conversion: When a new system involves new techniques or drastic changes in existing routine of the library, the pilot approach may be preferred. The new system is used only in one part of the organization for pilot study. When the system is deemed functional, it is installed.

REFERENCE:

- Brophy, Peter et al (1999). DOBIS/ LIBIS; A guide for Librarians and systems managers. Aldershot: Gower.
- Chopra, Hans Raj (2002). Automation of University libraries In India. International Library Movement, 2(3 & 4), 62-7.
- Chowdhary, ~ and Chowdhary. CG (2010). "Development of Library management systems using micro CDS\ISIS. Annals of Lib.Sc, V39 (3).
- De Gennaro, Richard (2012). Information Technology: Threat or opportunity for academic libraries. Paper presented at Seminar on the Impact of information Technology on Academic libraries and library networks, Edinburgh, 2012. 1-12.,
- Deogan, M S (2012)). Why and how of university Library Automation. In: Modernization in libraries. 33rd All India Library Conference, Tiruchirapalli, 2012. 63-72.
- Dilloway, C (2008) .Purchasing computer software products: A guide for users of computer software. Aldershot: Gower.
- Frates, J and Moldup, W (2009). An introduction to the computer : An integrated approach. 2nd ed. Eaglewood Cliffs, N. J.: Prentice -Hall.
- Evans, Barbara and et al (2010). Guide-lines for library Automation: A handbook for Federal and other libraries. California: Systems Development Corporation.
- Eytayo Adekunle O (2010). Status report on the attitude of Automated library system vendors to investing in Nigeria. Program, 23 (3), 2010, 247-56.
- Foster, William (2014). Library automation : an overview. Birmingham : BLCMP.