

# **Library Automation – An Introduction**

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## **ABSTRACT**

*This article focused on the overview of library automation and the changing scenario of library management. The impact of ICT has changed the library operation and its functionality in to s fast to faster mode. Clients need not to visit shelf to shelf to find out a find out a document. They just get their documents sitting in front of a desktop automation has reduced the man power. This article will discuss about the concept the concept of automation its requirement and various components helps to automate library. Some software package has given which are available for automation purposes.*

**KEYWORDS:** Automation, Cataloging, Library software, OPAC.

## **INTRODUCTION**

The library plays a critical role in our society it is an important component of any educational institution, which is hub of the teaching and learning activities where students, researchers and teachers can explore the vast resources of information. In the age of information communication technology computers are being used for day- to-day housekeeping activity of the library which saves the time of the library service smooth and effective. In the age of ICT library scenario has been drastically changed in terms of collection, organization and services. Simultaneously user's demands and attitudes have changed in its kinds. Also the information seeking behaviour of user has dynamically changed. They want relevant authentic information very quickly within a single place at their hand. This concept has posed challenges for library professionals for library professionals for quick delivery of library services and information. This development in library field has brought the ideas of library automation. Library automation is inevitable in this age of information and information technologies. Library automation is the use of automatic and semi automation data processing machines to perform such traditional activities as acquisition cataloguing and circulation. Library automation may thus be distinguished from related fields such as information retrieval automatic indexing and abstracting and automatic textual analysis.

## **DEFINITION OF AUTOMATION**

According to the encyclopaedic dictionary of library sciences automation is the technology concerned with the design and development of the process and system that minimizes the necessity of human intervention in their operation (Ishvari et.al, 1993).

According to the encyclopedia Americana automation may be defined as any continuous integrated operation of a producing system that uses electronic computer on related equipment to regulate and coordinate quantity and quality of what is produced. Automation is automatic control of an apparatus process or system by mechanical or electronic devices that take the place of human organs or observation efforts or decision (Webster Dictionary. 1966).

The word automation was first introduced by D.S. Harder in 1963. He defined in 1936. He defined automation as the automatic handling of parts between progressive production processes. Library automation may be defined in simple sense as 'a process of mechanization of library operations which are of routine and repetitive nature. Computerization of library housekeeping operation, predominance of computerization is known as library automation.

### **LIBRARY AUTOMATION: A BRIEF HISTORY**

Library automation refers to use of computers in library work including services computers were engaged in library service in USA in 1950s in a very modest way. Dr H P Luhn had organised computerized indexes in 1950s computers entered and found some place in American library during this decade. However, their use and application was very limited and restricted due to the high cost of hardware and non-availability of application software packages. During 1960s the cost of hardware came down and appreciable attempts were made towards developing library application packages. This led to increased use of computers in library and printing industries. In April 1960 the American chemical society published its chemical titles through computers.

In this decade, one of the most significant developments in this direction was seen in MARC I. In the year 1963 W K Gilbert prepared a report on computerization of Library of Congress. On the basis of this report the MARC I project was initiated in 1966, and the work of bringing out the Library of Congress catalogue in machine-readable catalogue (MARC) form was started and completed. There was a heartening welcome of the tape containing the catalogue. MEDLARS and INTREX projects are similar examples of producing machine-readable catalogues. Nowadays computers have become almost essential components of library work in developing countries.

The Indian statistical institute, Calcutta was the first in India to install a computer system in 1955, and to develop an indigenous computer in 1964. In India computers were used in library work for the first time possibly by INSDOC by bringing out the roster of Indian scientific and technical translators with the help of computers. INSDOC brought out the first union scientific and technical translators with 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 of IIT, Madras, in 1970's many libraries ventured in preparing computerized databases. Through the initiative and financial support of NISSAT many library networks were initiated and are operative. Notable of these networks are CALIBNET (Calcutta library network) DELNET (Delhi libraries network) INFLIBNET (information and library network) PUNENET (Pune library network) etc. Some other notable networks are NICNET, INDONET, SERNET, ERNET etc. Nowadays, many institutions such as DRTC, INSDOC, DESIDOC, NISSAT etc are engaged in imparting training for computer application in library work through regular sponsored and part time courses. The price of computer hardware and software has come down considerably. Owing to these factors computers have become popular with Indian libraries.

## **INDIAN SCENARIO OF LIBRARY AUTOMATION**

In view of enormous capacity of data storage, quick processing access retrieval, dissemination of information, library and information centre of our country have started using computers for these activities. In the beginning computers were used by big academic institutions like DTs, IIMs, and other national institutions like CSIR, INSDOC, NASSDOC, DRTC, DRDO, BARC and other institutions of higher learning of national importance. The condition of academic libraries, and information center was very poor. Except a few central University like JNU, Hyderabad University, Pondicherry University IGNOU, and some state universities like Punjab University of Mumbai, cochin University of science and technology Osmania University few deemed universities like tata institute of social sciences etc. The use of information technology was not evident before the 1990's the new education policy, 1986 recommended the improvement of library and information centres of universities/institutions of higher learning. It categorically emphasized that information technology should be used in the libraries for providing effective library and information services to the academic communities.

Government of India directed the UGC to constitute a committee to give recommendations for modernization of university libraries and information centers. UGC recommended in 1992 accommodation of a special paper in "Application of computer in Library Activities" in Library and information science courses in India. The introduction of computers for library operations has brought revolutionary changes and new dimension in the whole library and information management in India. The government of India has taken prime steps for computerization automation and networking of library and information centres. A number of national regional and city library and information networks such as NICNET, INDONET, ADINET, CALIBNET, DELNET, MALIBNET, ERNET etc. Have emerged and found their way. In order join and effectively participate in these library networks, library and information centres will have to be modernized and automated (Vashishith 1994). After recommendation of a high powered committee, UGC established INFLIBNET centre which is an inter-university centre with its headquarter at Ahmadabad for computerization automation and networking of university libraries, HTs, RECs, libraries of institutions of national importance for resource sharing among the libraries (Sinha and Satpathy, 1998) till data 142 universities been funded by INFLIBNET, to create IT conscious environment in the libraries. Almost all university libraries have taken steps to change over to automation. Some of them have fully automated their activities and some other have started automating their library activities. The prime minister of India has recently announced special grants for the College libraries of North East India and Jammu and Kashmir for purchasing SOUL software for automating their libraries to cope with the changing environment library schools in India have introduced paper on computer application in libraries in their academic programs. Besides this, different organizations are organizing in-service training courses on computer application to the working library professionals. As manpower development is one of the important factors in this changing over to automated library system, training of personnel is a must.

## **NEED AND OBJECTIVES OF LIBRARY AUTOMATION**

Information explosion has resulted in the production of a large amount of literatures in every field of knowledge. Accordingly the print documents are coming to the library in huge numbers which is not possible for a library to manage the collection manually.

Now a day's no user has time to search the required and relevant information from dense heap of information collection. They have no time to go shelf by shelf to pick up a book. So it necessitated for library automation. In most of libraries are yet to be automated. The various factors that necessitated changing a manually operated library system an automated library system are as follows.

## ***Library Automation – An Introduction***

The need for automation is emphasized because of the following factors:

1. Traditional methods for handling the information are inadequate. Out is bulk and growth rate of information.
2. Difficult to update the information due to voluminous increase and rise in the degree of specialization involved.
3. Techniques are suggested for applying computers with its advantages of speed, vast storage capacity and accuracy to library works.
4. The need for cooperation and resource sharing and hope achieving some saving through automation made to switch over to automation.
5. Operational advantages
6. Offers flexibility
7. Speeds up processing
8. Greater accuracy, efficiency, consistency and improved work control.
9. Reduces repetitive clerical work.
10. Permits easy of bibliographic control checking and updating
11. Permits improved budget control (Jagadesha and Mahesh 1998)

## **ESSENTIALS FOR LIBRARY AUTOMATION**

The essential things for the automation of a library are

1. A good collection
2. Finances
3. Suitable computer hardware
4. User friendly computer software
5. Staff training
6. User training

## **AUTOMATED LIBRARY SERVICES**

There are various types of automated services provided by the automated library. The automated services are:

- Current awareness service (CAS)
- Online search service
- Printed Indexes
- Selective Dissemination of Information (SDI)
- Inter library loan
- Stock verification
- Reference service

## **FACTORS BEHIND LIBRARY AUTOMATION**

Some factors which prompted automation of library services are given below-

- Computer is extremely fast in processing information and magnetic tape as storage making reduce storage space.
- Many a time we require searching a database with a number of keywords with different combinations. This requirement makes a manual search very complex and tedious. Such searches can easily be made on computerized system by random accessing of information and rapid retrieval of information by creating proper information database.
- Computerized database can be accessed in interactive mode as per user requirements.

**METHODOLOGY TO BE FOLLOWED DURING AUTOMATION:**

- ✓ Decide various functions of each activity
- ✓ Identify the input requirements (data elements) for each of the function.
- ✓ Identify the input in terms of records, files and the media, also determine the size of the files.
- ✓ Identify the output required for each of the functions.
- ✓ Identify the output in terms of records, files and the media, also determine the size of the files.
- ✓ Development of programs (to get the desired output from the given input using the available hardware) or buying the commercial software to computerize some or all functions of the activities to be computerized.
- ✓ Implementation and evaluation.

**PROBLEMS OF LIBRARY AUTOMATION**

1. Lack of motivation towards latest information technology
2. Lack of organization effort towards library.
3. Lack of fund.
4. Lack of trained personnel
5. Lack of proper/standard technology
6. Ignorance of senior library staff about the technology
7. Lack of suitable library management software packages.
8. Selection of appropriate software packages.

**COMPONENTS OF LIBRARY AUTOMATION**

Careful planning is a critical step in automating library services. Several points are to be taken into consideration before a library gets into automated activities.

**(A) AIM:** first Component of automation is its aim the purpose the reason why the set of library activities are to be computerized. This aim will be the focal point for integrating automation into the activities and for operating and managing the activities after automation.

**(B) PROCESSING :** Second component is processing consisting of step by step operations performed in an orderly and predetermined sequence on information materials or other items to achieve desired result or service.

**(C) COMPUTER SYSTEM:** The third component is the computer system supporting the activities. The supporting computer can be a mainframe. The size depends upon the nature of functions to be automated, the number of functions to be supported by the computer, the anticipated volume of processing activity, the size of the information files to be written in the machine storage and funds available to the library. The computer must have the following capabilities:

- sufficient memory to store
- a) The operating system
  - b) Application software
  - c) Process the volume of work
  - d) Enable sufficient users to be online to it

### **e) Capacity in future growth**

- The computer system should have sufficient auxiliary storage for all the files essentials to the activities with capacity for future growth.
- Sufficient terminals and other devices such as scanners and printers.
- The location of the computer can be in the library or outside the library.

### **(D) COMPUTER SOFTWARE:**

The fourth components are the software supporting the activities of the library. Computer software is nothing but step by step instructions that command the machine to perform its share in the processing software may be developed by a commercial vendor or another library or it may be developed locally. The software supporting the library activities can be either stand alone or integrated. The stand alone software only one automated activity such as acquisition circulation etc. An integrated system covers all the library activities such as acquisition circulation cataloguing serial control etc. And share common information and files.

### **(E) DATA COMMUNICATION:**

The fifth component is data communication through data communication command and information can flow from the computer system supporting the automated activities to the points in the library where processing is required even though the main server is located in another part of the building or away from the library.

### **(F) SYSTEM DOCUMENTATION**

The sixth component is documentation in the form of memoranda, reports and manuals. These are written descriptions of various aspects of the automated activities to be used by the library staff and others for training references and quality control purposes while operating managing and maintaining the activities

### **(G) HUMAN RESOURCES**

The seventh component is the human resources needed to share processing with computer supporting the activities, provide, management and leadership for the activities and operate, manage and maintain the computer system supporting the activities. Staff is needed to initiate processes provide the computer with information to be processed and make decision during process steps and regarding services to be provided etc. Apart from attending to activities not supported by the computer system. Training is required for the staff who handles the automated system.

### **(H) ENVIRONMENT**

Eights and last component is environment. Automated activity must have sufficient physical space to be performed efficiently and be provided with proper levels of lighting, temperature, humidity noise control and cleanliness etc. Any delay at this stage will delay the very installation of the automation itself.

## **AREAS OF AUTOMATION**

Ranganathan's five laws of the library science stipulate that the documents of the library should have maximum number of users. With the application of information Technology in the areas of library and information centres has been a tremendous improvement in the library services offered by the library to the users. Library automation usually covers all library housekeeping functions such as acquisition cataloguing circulation and serial control . in

some libraries it has expanded to the library management system to incorporate OP AC's SD-ROM networks, DTP, office automation etc.

1. Acquisition
2. Cataloguing
3. Circulation
4. Serial control
5. Article indexing system
6. Information Retrieval system
7. OPAC system (online public access catalogue)
8. Web OPAC system
9. Information services

## CONCLUSION

Now a day library automation has become the buzz word in library profession and has become a bare necessity for any libraries. An automated library can provide better services to their users and can maintain the library more properly which a manual library can't do. The record keeping activities and various report generation becomes very easy in an automated library system. But the success of any library automation programme depends upon its proper planning and execution. Hence library professionals need to take right initiatives in right direction.

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