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Abstract

This paper examined the library automation issues and difficulties in some unique mark of perspectives as like mechanical, conservative and attitudinal issues. Innovative issues incorporate both the equipment and the product issues of library robotization. Conservative issues confronted every single library from one side of the planet to the other. Follows momentarily the historical backdrop of library automation in India. Attempts to investigations the different issues that straightforwardly or in a roundabout way influence the advancement of library mechanization, for example, the board issues, assets accessible with the libraries, level of ability of staff, accessibility of appropriate programming, geographic area region. The underlying expense of laying out a PC framework is past the range of most associations and foundations. The last issue here examined is an attitudinal issue, in this approach normally, among administrators there are two gatherings frequently give lacking idea to the genuine worth of the PC to the establishment and make uneconomical, erratic utilization of the office. Here this article referenced a few suggested upgrades for improvement of the computerization in the library and information field.

Keywords: Library Automation, Library Software, Computer Hardware

Introduction

Since 1960s, libraries have used technology in general, and computers in particular, to automate a wide range of administrative, public, and technical services tasks. Designed as an overview of major facets of automation activity, this article surveys the current state of computer applications in six areas of library work: circulation control, descriptive cataloging, catalog maintenance and production, reference service, acquisitions, and serials control. For each area, the discussion briefly indicates the motives for automation and describes current dominant approaches, citing examples of representative products and services. As we leave the 1990s and prepare for the year 2000, today's academic librarians are witnessing many radical changes caused by advances in library automation. By all accounts, the marvels of electronic full text, automatic bibliographic indexing, electronic publishing, file transfer of graphic images, and the emerging proliferation of multiple databases, are all capturing the creativity and imagination of librarians and information specialists everywhere. The history of library automation is sufficiently old now. It started in early fifties in the United States of America.

The landmark washed initiation of MARC project by the Library of Congress. During 1960s some experiments were carried out in India in this field but very sparingly. During late seventies there were some achievements like production of National Union Catalogue of Scientific Serials by INSOC, production of Union Catalogue of DRDO libraries of Western Region by the Institute of Armament Technology at Pune. Then came eighties and the whole focus of the librarians shifted. A number of seminars were organized on the library automation and still being done so. We graduated from simple library operations to specialized functions including networking. Now we talk about digital libraries and e-journals. We have come a long way. But we are a country where bullock cart and cars are seen on the same road so blocking the fast-moving traffic and those bullock carts restrict the speed of the cars to its own speed. To overcome this problem there are only two ways. First, replace the bullock cart with a car, and second, bypass the bullock cart and leave it behind. The state of library automation in our university libraries is more or less the same. We have the libraries like IIT libraries which are highly automated and also totally manual libraries which are

really restricting the speed of academic and research in the country.

What is Automation?

Automatic operation is opposed to manual operation and is meant for Controlling of a process, or a system automatically without human interface. Modernization of library housekeeping operations mainly by computerization is know as “Library Automation”. The library automation in the past was used to refer to the mechanization of the traditional library operations like acquisition, serial control, and cataloguing and circulation control.

International Encyclopedia of Information Technology and library science defines automation as “The technology concerned with the design and development of process and system that minimize the necessity of human invention in their operation.”

“Library automation is the application of ICTs to library operations and services. The functions that may be automated are any or all of the following: acquisition, cataloging, public access (OPAC and Web PAC), indexing and abstracting, circulation, serials management, and reference.”

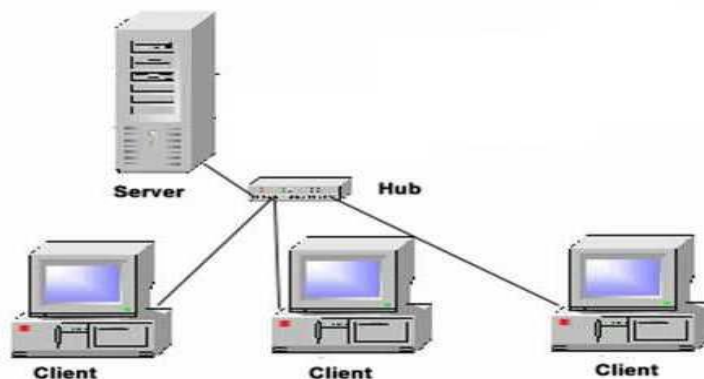
Library Automation:

The history of library automation is sufficiently old now. It started in early Fifties in US. Library automation is where various library functions are operated by Using electronic devices and system application. Library automation started in late70s in few special libraries, has now reached most of the university libraries. It is to take off in college libraries in India. Library automation deals first

ly with automation of library functions and secondly digitization library collections. Automation of functions aims at automating almost all technical and user based functions like, collection, processing, storage, acquisition, circulation, serial collection, retrieval, dissemination, budgeting, reference and transmission for all types of information centers. Library automation not only improves the image of the library and staff but also provides additional services to the userswithexistingstaff. Automationsystemshav ebeendevelopedforlibraryinhouseoperationsinc ludingacquisition cataloguing ,circulation, serials controls, theses and dissertations processing and reference services such as selective dissemination of information and inter library on While changing from traditional library services to automated library services, new equipments and processes are introduced changing the work process or work activities in the library. It has changed the nature and the scope of library work. Introduction of computer library systems cause technological organizational and sociological changes. The most important of these is sociological changes. Introduction of new technology to library services changes their relationship between the library staff and their work.

Library automation is divided in four kinds:

- Preparation of bibliographic database.
- Computerization of housekeeping operations.
- Networking and acquisition of materials in digital forms.
- Digitization of library documents.



Automation of back-office functions

After an extensive period of showing conversion the back-office operation Modules such as cataloguing, ordering, and serial control have been initiated one by one. The major challenges of this phase of the project were the training and motivating the assistant staff and make stronger the infrastructure with necessary software and hardware components.

Benefits of Library Automation

- Improved productivity/efficiency
- Better use of information resources
- improved access
- Improved resource sharing through the
- virtual catalog or network
- Facilitates interlibrary loan
- Reduces duplication
- Avoids duplication of cataloguing effort
- Optimizes the use of human and other resources
- Enhances the national and regional information infrastructure

Need of Library Automation

Today the single most important issue for libraries is managing change without losing their identify. Change is nothing but a transformation of today's requirements to tomorrow's performance. It is the only thing that has made possible the journey of libraries from storehouses to the stage of information centres. Computers have revolutionized all fields of knowledge and it has been gradually weaving electronic webs in various parts of the globe for quite a few years. Now it is being used extensively in libraries by developed countries and in the third world countries up to certain extents. The need for automation is emphasized because of the following:

- Traditional methods for handling the information are inadequate. One is bulk and growth rate of information.
- Difficult to update the information due to voluminous increase and

rise in the degree of specialization involved.

- Techniques are suggested for applying the computers with its advantage of speed, vast storage capacity and accuracy to library work.
- The need for co-operation and resource sharing and hope of achieving some saving through automation made to switch over to automation.
- To facilitate wider and deeper access to information.
- To increase the irretrievability of the resources.
- To achieve a new level of library management.
- To improve control over collection.
- To have an efficient control over the entire operation.
- To avoid the duplication of work.
- To facilitate sharing of the resources among various libraries.

Operational advantages:

- Offer flexibility.
- Speeds up processing.
- Greater accuracy, efficiency, consistency and improved work control.
- Reduces repetitive clerical work.
- Permits ease of bibliography control, checking and updating.
- Permits improved budget control.

Essentials for the library automation

The essential things for the library automation include-

- Good collection
- Finance
- Computer hardware
- Computer software
- Staff training
- User training

Hardware Required for Automation:

Pentium IV with 845 GVSR Mother Board, 80 GD hard disk, 256 MB DDRAM, CD Drive, Floppy Drive, printer etc.

Library Software: A software is generally invisible and unverifiable till it is acquired and used in the library .There are many library software packages today in the market .Some of them

are CDS/ISISWHIZKID,TULIPS,LIBSYS,OASIS,BASICPLUSTECHLIB,DELPLUS,SOUL, MAITAYEE,EGranthalay,AliceforWindow, Libsuite,Netlib,KOHA,Greenstone,NewGenlib ,etc..

The following are the areas where automation is being used at present

- Online public access catalogue
- Circulation
- Acquisition
- Serial control
- Intranet
- Internet
- CD-ROM services

There are Some Issues Raised in Library Automation

Economic Issues: The major obstacle for 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. Library and information processing is done either with spare computer capacity made available by the institution itself, or with computer time hired from another institution. The cost of hiring computer time and storage space is very high and often cannot be justified at the management level by cost-benefit analysis. At IIT, for example, CPU time per hour cost ` 1000 for educational purposes and ` 2000 for business and industrial use.

In India, libraries and information centers are attached to government organizations or research institutions, so library services cannot be calculated on a profit/loss basis. Long term benefits have to keep in mind while justifying such services. The libraries that have computerized some of their services or

operations often have not taken such steps as a result of serious thought. Computerization has glamour of its own in the minds of many librarians. Overly enthusiastic librarians often run uneconomical programmes, producing lengthy listings for instance in the name of computerized service

Technological Issues: Technological problems include both the hardware, i.e., the computer as an instrument for information processing and the software, i.e. the methodology which is applied. The major problems faced today in terms of the hardware are due to the variety of computers being used in different types of research and business institutions. The computers, manufactured by various firm are not compatible. Developing countries sometimes receive sophisticated technology like computers as gifts from more developed countries; these often become obsolete from the manufacturer's point of view. In most institutions, organizational goal receive priority over the library's requirements, meaning that the librarian must use the computer available rather than what is actually required according to specifications. Library activities in all institutions are done through sharing disk space as well as computer time. Therefore, when the storage capacity is not large enough to accommodate various types of data, bibliographic data are given the lowest priority. On-line facilities are rare in India. In fact, only TIFR's library has access to an on-line terminal for bibliographic data, the DEC-1077 computer of the National Centre for Software Development and Computing Techniques.

The communication infrastructure of India is still not suitable for extensive on-line information facilities; the telephone system is not reliable enough to support an effective network facility. Software problems arise because programmes must be developed in terms of the machine on which they are to operate. Therefore, the incompatibility of equipment tends to make the software incompatible as well, especially when

programmes are written in machine or assembly language. While using languages which are not machine bound, such as FORTRAN, COBOL, ALGOL, etc, may seem like a solution, in actual practice such languages cannot be interchanged without suitable modifications.

A software package developed for the IBM 360 model 30 would require many changes not only in the programme but also in the programming language if it were to run on any other computer. Development of a programme suitable for the available machine is therefore preferable to acceptance of a package programme. This makes the development and use of package programme difficult and leads to a lack of standardization in programming language as well as in output. Machine-readable databases are byproducts of international information network systems and are available on magnetic tapes.

Attitudinal Issues: Computers appear very awesome to developing countries. They are powerful machines which can perform many functions and therefore offer a solution to the many types of manual inefficiency which often plague the developing countries. Among librarians there are two groups often give insufficient thought to the real value of the computer to the organization/institution and make uneconomical, haphazard use of the facility. They should neither overestimate computer capabilities nor be afraid of interacting with the computer systems. Another obstacle is that, because batch processing systems are still in use in India, there are bulky printouts in monotonous type faces and formats which prove to be a headache not only for the librarian, but also for the user. There is no dearth of manpower in systems analysis and computer programming in India. We are already exporting software packages to countries that find them less expensive than developing their own. Library automation is still neglected, however; it is an area which has not attracted young people with appropriate

expertise. Training should be given to both the librarian and the computer specialist about each other's functions and possibilities. Both INSDOC and DRTC conduct courses on automation systems in libraries. Under the forthcoming NISSAT plan, steps are being taken to be building the requisite technical manpower. Moreover, the Indian government's Department of Electronics is developing training programmes for the National Informatics Centre. There are two main objectives in training for library automation: to orient the programmers and system analysts to writing programmes suitable for automating library facilities, and to persuade librarians to accept the utility of automation and teach them to prepare accurate inputs to make the system worthwhile.

Some issues of library automation system are follows:

- Unwillingness to change.
- Low prestige given to library and information work.
- Lack of Management support on library automation.
- Understanding of library and information in productivity and quality of work within organization.
- Lack of leadership.
- Lack of Trained of library staff.
- Fear of new technology.
- Poor understanding of results from new technology.
- Limited resources for capital investment.
- Inability to pay running cost.

Challenges of Automated Library Services

The computerization of the college is not without its challenges. There is the challenge of optimum utilizing small fund allocation to address wide segments of the automation areas. Library automation and require vast knowledge in the areas of computer engineering, civil

engineering, computer networking and software installation and training. By implication, these specialists are to be brought together and coordinated to ensure success at the end. Librarians of 21st century should brace up to overcome the gap in computer application and use which presently constitutes a cog between them and system analysts. Librarians must be good in the area of Internet signal deployment and bandwidth assessment and sizes. In order to circumvent these challenges, there must be drastic attitudinal change in the way librarians leave the entire library automation in the hands of computer experts. There is the challenge of daily and routine maintenance of computer sets that are connected to the servers. There is the urgent need to employ a system librarian/analyst who will take charge of overseeing the system administration. This is very important as the college plans to gradually expand Internet service to all schools and service units. Besides, the system librarian/analyst will ensure that appropriate volume of Internet signals are received and utilized using appropriate bandwidth software manager to monitor it. Again, minor repairs of computer sets and quick response to networking problems fall within the preview of this expert. The college plans to increase the 2 megabytes size of bandwidth currently under subscription to 4 megabytes. This has the potential of extending the Internet coverage to the school of Vocational and Technical Education. School of vocational and Technical Education is a separate campus few kilometers within the town. Lack of steady funding of library services poses serious challenge to the sustenance of automation. That books and journals are obsolete, equipment and furniture are dilapidated, personnel are scanty, and poorly trained. There is complete absence of oversea training for college library staff. This scenario further testifies to the glooming and precarious financial situation of the funding support for

automation at college level. The following challenges are:

- Librarian' insufficiency in technical know-how and system concepts: Most librarians being oriented in the humanities and social sciences, have little back – ground in computer technology. Librarians are usually not knowledgeable enough to illustrate their needs in order to make the system analysis and specification writing feasible. Our needs and requirements must be identified in order to utilize computer application for any type of operations. Regrettably, most librarians are unable to do that very well.
- The fear of replacement: Certain librarians resist library automation because of a false conception; they are afraid of being replaced by machines and as a result are resisting it.
- The techniques of finding and the information seekers need how the readers express their needs, and ways to fulfill their needs through “user friendly” products.
- Intellectual property right.
- Security.
- Technological change.
- Lack of expertise.
- Inadequate finance and other infrastructure.
- Compatibility to Indian community.
- Information explosion in Internet.

Recommendations

- Appoint an IT committee in each university library including both library and computer staff to deal with automation activities. This committee should regularly review

the progress and propose developments. This can overcome the slowness in the process of full automation and updating.

- Formulation of a special committee of university librarians for library automation project. This committee can discuss problems and obstacles and find solutions; persuade the UGC or higher management to provide adequate funds needed for automation of libraries and for the maintenance of automated libraries. This will meet the problems of lack of infrastructure, hardware and lack of funds for infrastructure, hardware, software and training for staff.
- It is recommended that each library should formulate a proper written down policy on library automation. It should identify appropriate hardware, software and manpower; it should specify long and short-term targets in automation. This policy will help each library to select suitable hardware and software after evaluating the hardware and software used in other libraries. This can be a solution for the problems and shortcomings in the existing software and hardware. This policy should be reviewed and updated at least every two years.
- It is recommended to develop and provide training opportunities suitable to train library staff on the use of computers, especially on the use of existing software and hardware with adequate practical experience. These training opportunities will help to overcome the problem of insufficient skilled and trained staff and inadequacy for training opportunities. Training should be continuous.
- The computers used in India should not very so widely. Production of computers with special capacity for library automation should be taken into consideration
- Government policy has taken a positive step in establishing large computer systems, with one sophisticated central computer capable of handling complex information to indigenous minicomputers. The National Informatics Centre project dealing with agricultural and other governmental data processing is designed along similar lines. Such plans should be pursued.
- Indigenous, inexpensive library package programmes are very necessary. These should be usable on a large variety of machines and be capable of handling different activities in the library. The MARC format would be ideal if it could be adapted for the smaller indigenous computers. DRTC is currently involved in preparing software packages for information retrieval.
- The international databases are being used by some organizations. However, these are expensive and often not applicable to Indian research needs. Indigenous databases with our specific requirement should be prepared. Core periodicals in each subject relevant to India, and literature from important periodicals, should be used as input for such databases.
- A national standard or common language for bibliographic information exchange is necessary. Efforts are being made to achieve a standard language compatible with any international standard.

- Training of personnel, i.e., proper communication among the librarian, computer programmer and systems analyst is very important. Courses offering training in library automation are being taught, but there is a general need for better understanding among these three architects of library automation.
- User awareness and orientation is very much needed. The users comprise managerial policy makers as well as the research scholars and regular clientele of a library. The need for, as well as the possibilities of, automated library facilities have to be highlighted by professionals and experts in this area. A few seminars and workshops have been conducted at New Delhi and Bangalore, namely the UNISIST workshop in August 1975 and the Indo-U.S., seminar in 1977; however, little else has been accomplished in this area.

Conclusion

The capacity of the automation in enhancing the library service is not limited to automation of library functions and providing online access to library catalogue. There are many more advanced features. The technology is successfully used now in many libraries around the world for security control. Electromagnetic security control system is very effective technology that identifies the materials, which marked with a tiny tape hidden inside the spine of the material, by the antennas at the library exist. 'Radio frequency identification (RFID) systems have been in use in libraries for book identification, for self-checkout, for anti-theft control, for inventory control, and for sorting and conveying of library books and annual verification materials. I do not intend to belittle the efforts to build a sophisticated information system such as NISSAT. India is a country in which the levels proposals of development are varied in different areas. Its planners must therefore cater to the needs of each area in its

own right. On the whole, however, our priorities still differ. Both librarians and clientele must be made information-conscious before anything as expensive, sophisticated and dumb as a computer can become a tool in their hands. Technology offers libraries an ideal solution to a number of problems of managing a modern research library. Also, it is very important for librarians to interact with computer professionals as the library automation at all levels needs good co-ordination among both these professionals.

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