Chapter-2
Retroconversion
CHAPTER-2
RETROCONVERSION

This chapter gives the brief picture about library automation, followed by overall picture of retroconversion, its background, need, objectives, scope, planning, assumptions, issues, steps and methods etc.

2.1 Introduction

Libraries are now universally recognized as important social institutions for diffusion of knowledge and information. No community, institution or organization is considered complete without the support of a library and its effective services. Library is a growing organization which requires constant change in order to maintain a high degree of relevance to the environment. Scarcity of resources, information and document explosion, increase in clientele etc and their demand for consistent, responsive, prompt, assured, tangible processed, repackaged and value added services have tremendously forced the university librarian to find out solution for efficient and effective management of their libraries. Like five laws of library science, quality improvement programmes have become the talk of the day and requires exhaustive, expeditious and pinpointed services. Traditional library operation system is laborious and time consuming, so to get rid of it and to save time of the reader automation has been introduced in the libraries. In an automated system, retrieval process becomes easier, faster and comprehensive. At present modern library and information centre play a vital role in information generation, collection, storage, process and transmission. Today information generation creates tremendous pressure on libraries. To cope with this, libraries should have to be equipped as potential information centre to cater with this growing technology and meet the demand of potential users.

The automation word was first used in 1936 by D.S. Harder, who was then with General Motors Corporation in the U.S. He defined it initially as “Automatic Handling of Parts between progressing production processes”. He later extended the meaning so that the efforts of automatic handling were considered in each and every phase of manufacturing process.
2.2 Library Automation

In libraries, automation or mechanization is playing a vital role during these days. The librarians are being designated as library scientists, information scientists, information officers, documentalists, and technical officers. Automation in libraries means cutting short the distance in terms of time, space and even language between the documents and users of the document. Library automation stated in single term is the application of computers and utilization of computer based products and services in the performance of different library operation and functions in provision of various services and production of output products. Library automation refers to use of computers, associated peripheral media such as magnetic tapes, disks, optical media etc. and utilization of computer based products and services in the performance of all type of library functions and operations. Computers are capable of introducing a great degree of automation in operations, functions since they are electronic, programmable and are capable to control over the process being performed. The utilization of computer and related techniques make the provision to provide the right information to right reader at the rightly time in a right form in a right personal way. Automation of library activities provides the services very efficiently, rapidly, effectively, adequately and economically. The modem libraries and information center facilitates free communication because access to information has become a fundamental right of the clientele. 

2.3 Definitions of Library Automation

The ALA Glossary of Library & Information Science defines library automation as “The use of computers and other machines by a library to support its systems and services.” 

According to International Encyclopedia of Information & Library Science “The use of computer-based systems in libraries both for accessioning information (often referred to as information retrieval) and for library management.”

Dictionary for Library & Information Science defines library automation as “The design and implementation of ever more sophisticated computer systems to accomplish tasks originally done by hand in libraries.”
2.4 History of Library Automation

In 1930s, the effort of the library automation system was started by Herman Hollerith of the U.S. Censes Bureau who invented punched card technology. In 1935, Dr. Ralph H. Parker created a circulation control system at the University of Texas at Austin using the Hollerith punched card or IBM punched card equipments. In 1960s, the first trend of library automation was developed in US, using computers for creating bibliographic databases as library catalogues. Library of Congress developed a machine-readable catalogue of its holdings records using the MARC input format. In 1967, the OCLC (Online Computer Library Center), was started the first computer-based library network. During the 1970s, the development of the integrated computer chip and storage devices led to an explosion of library automation. RLIN (Research Libraries Information Network) and WLN (Washington Library Network) was started as the online library networks. During 1980s, when the rapid development of low cost microcomputers and its easily availability in libraries, the automation became possible for all types and sizes of libraries. Many library automation packages also came into the market. The introduction of CD-ROM in the late 1980s has changed the way libraries operate, CD-ROMs containing databases, software, and information previously only available through print, became available making the information more accessible. The 1990s have seen the rise of computer networking. Libraries also started Internet and the World Wide Web on a large-scale providing quick library and information services to their users. Also, hardware-specific automation packages, packages with web-interface, came into the market. In the new millennium, every library, small medium or large are now using the computers and plans or implements automation of its activities and services. Computerized catalogues or OPACs largely replace traditional library catalogues. The latest technology penetration in library automation system is barcode technology, digital library and RFID security system. The library automation, which started in the 1970s in a few special libraries, has now reached most of the special and university libraries. It is get to take off in college libraries in India owing to various problems.

2.5 Library Automation in India

The Indian Statistical Institute, Calcutta was first in India to install a computer system in 1955, and to develop an indigenous computer in 1964. As far as use of
computer for library work is concerned, in India computers were used in library work for the first time possible by INSDOC when they computerised the author and subject indexes of ‘Indian Science Abstract’ in 1965. In 1967, the INSDOC brought out the ‘Roster of Indian Scientific and Technical, Translators’ with the help of computers. INSDOC 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 data-bases, with the use of CAN/SDI software of IIT Madras. Through the initiative and financial support of NISSAT many libraries ventured in preparing computerized databases, with the financial support of NISSAT many library networks were initiated and are operative. Notables of these networks are CALIBNET (Calcutta Library Network), DELNET (Delhi Libraries Network), INFLIBNET (Information and Library Network), PUNENET (Pune Library Network) etc. 

2.6 Need for Library Automation

The need for automation is emphasized due to the following factors:

2.6.1 Capacity to handle any amount of data and information
2.6.2 Flexibility in information search
2.6.3 Standardization of library procedure
2.6.4 Provide better bibliographic control at local/regional/national and international level
2.6.5 Library staff and patrons can have access to all pertinent information at one location
2.6.6 Operational advantages
2.6.6.1 Offer flexibility
2.6.6.2 Speed up processing and work flow
2.6.6.3 Greater accuracy, efficiency, consistency and improved work control
2.6.6.4 Reduces repetitive clerical work
2.6.6.5 Permits ease of bibliographic control, checking and updating
2.6.6.6 Facilitated interdisciplinary nature of research and information
2.7 Objectives of Library Automation

The main objectives of automation in libraries are cited below:

2.7.1 Easy functioning

Several jobs which human beings requires longer duration can easily be done by using mechanical or electro mechanical devices in shortest time period.

2.7.2 Accuracy

A computer does not get tired and does not normally make mistakes. Human conclusion is conditioned by several factors such as social, psychological, environmental, hence chances of error may occur. Mechanization avoids mistakes.

2.7.3 Promptness in service

Several jobs are such that it requires months and years of labor. The computer is expected to reduce the work load involved. Queries such as number of books issued to one, date of issue of a particular book can be handled immediately with the help of automated procedure. It also facilitates promptness in other areas of reader’s services.

2.7.4 Economy in Human Labor, Money and Time

Mechanized system controlled automatic equipments can perform several tasks, therefore it is economical. It reduces human labor, with the result that the present staff can be left enough time to furnish better personal services to readers.

2.7.5 Elimination of duplication of jobs

In automation one set of cards can be used in several processes such as acquisition, cataloguing, circulation, thus avoids the duplication of the same process which is used in manual system.

2.7.6 Better service & ready access to information

With the help of microfilming and reprography it is possible to supply the readers true copies of the document. They need in a very short time and at a nominal cost. By mechanized indexing an enquirer can have reply of his query immediately. Searching is very fruitful and effective through automated system which provides ready access to information.
2.7.7 Greater speed in manipulation of data

Speed of manual system is very slow and manipulation is also troublesome, while the data manipulated by “Data processing system” is very fast, e.g. 600 pages an hour. Manipulation of data by computer is a few minutes job, which normally takes month for human efforts. 10

2.8 Pre-Requisites

There have always been some pre-requisites for the execution and implementation of any project. Similarly, for any small or big library, following are some of the basic requirements of library automation:

2.8.1 Finance

2.8.2 Hardware

2.8.3 Library maintenance software

2.8.4 Motivation of library staff

2.8.5 Willingness of the parent organization

In addition to the above, there are many factors associated with such kinds of projects like over all work Environment: support of the principal, library committee and its convener: faculty members and other staff members particularly library.11

2.9 Areas of Library Automation in Libraries & Information Centres

Ranganathan five laws of the library science stipulates that documents of the library should have maximum numbers of users. With the application of Information Technology (IT) in the areas of libraries and information centers there has been a tremendous improvement in the library services offered by the library to the users.

Many libraries mainly concentration on the house keeping functions consists of acquisition, serial control, cataloguing, circulation, reference etc. In some libraries it has expanded on the library management system to incorporate OPAC’S, Web OPAC’S, CD-ROM Network, DTP, Office Automation etc. A large number of libraries and information centers in the world have automated one or more of the functions depending upon the type of libraries and information centers.
2.9.1 Acquisition System

Acquisition of books, monographs, audio-visual, electronic materials such as CD-ROM, maps and so on, there are some specific functions of an acquisition process. Suggestion, recommendations and selection of library collection, duplication checking, library holding checking, vendor selection, preparation of order, cancellations of order lists with terms and conditions of the supply, checking of overdue orders, record of items on order, record of received and non-received items and receipt to the vendor, items verification with order file and invoice, prepare for payment after accessioning and final report, Items, subjects wise, chronologically, booksellers report etc.

2.9.2 Cataloguing System

The cataloguing system maintained titles-in process file of all items that are accessioned. They are than catalogued. Catalogues are also produced by data import, or by network down loading or by direct data entry. In addition, this system covers catalogue maintenance; thesaurus construction; authority files and holding updates. Cataloguing system provides the facility to provide Current Awareness Service (CAS), SDI, special bibliographies, and lists of recent arrivals.

2.9.3 Circulation System

Circulation system supports front desk operations such as checking and checkouts, renewal, reservation and membership registration. It provides the option to generate and print bar coded ID cards with the member’s photographs. The system monitors titles on display. In circulation and in bindery, has overdue follow up and recall facility, inter library loan and stock verification. The circulation system keeps a complete log of all circulation transactions.

2.9.4 Serial control

The serial control system provides, order list of new serials, mode of payment, prepare for payment, receipt and updating the records, receipt to vendors or publishers, preparing the list of present holding, additions, missing, cancelled serials chronologically, subject-wise etc, renewal and cancellation of present subscriptions, sending reminders and follow-up of missing issues, binding control, accession register of bound serials, prepare budget and maintain accounts statistics such as subject wise, binding etc.
2.9.5 Documentation and allied services

Library automation also helps in indexing and abstracting of micro and macro documents, thesaurus construction, compilation of union catalogue, bibliographic control, Current awareness services, literature search, selective dissemination of information and newspaper clippings.

2.9.6 Online Public Access Catalogue (OPAC)

OPAC system provides access to the library’s holdings through various catalogues and indexes such as author catalogue, title catalogue, subject catalogue, classified catalogue, publisher’s indexes etc. It is also possible to apply combination searches using Boolean operators (AND; OR; and NOT) that yield highly satisfying and precise results. OPAC system also provides the facility to request acquisition of titles, to reserve material and to send personalized SDI, overdue/recall/collect notices and messages by e-mail.

2.9.7 Web OPAC

It provides an advanced GUI to enable searching of the library databases through Web Browser such as Netscape, Navigator, and Microsoft internet Explorer etc.

2.10 Selection of Software

To offer complete satisfaction of users and perform the above mentioned library activities and functions, we must select a competent and suitable software which can meet out our requirements or can be developed on contract basis by any software company or can be developed by professional of the institution keeping in view the requirements of the library. An increasing number of library software companies and their attractive advertisements propaganda's confused the libraries about the relevant softwares. So librarians should keep in mind the following criteria to select the right software for library house-keeping operations.

2.10.1 Leading Software

2.10.1.1 Indian Software

Some most popular Indian library softwares are given below:
SOUL (Software for University Libraries)

INFLIBNET center has developed Windows based Library Management Software “SOUL”, which provides total solution for library automation. SOUL is designed using Client-Server Architecture which imparts extra strength to storage capacity, multiple access to single database, various levels of security, back up and storage facilities etc. It has MS-SQL Server 6.5, RDBMS as the back end. The software comprises following modules.

- Acquisition
- Catalogue
- Circulation
- OPAC
- Serial Control
- Administration

Benefits of Using SOUL –

- Available at nominal cost to university libraries
- Software designed and developed exclusively to work under university environment
- Network feature of the software will allow multiple libraries of university to function together
- Exhaustive training at INFLIBNET supported by comprehensive manual
- On-site training
- Free updating/modification
- Free technical assistance

LIBSYS –

Libsys for library automation is the prime mission of New Delhi based software company InfoTech Consultants Pvt. Ltd. Its head office is situated at Gurgaon in India. Presently Libsys is available as two products:
**LibSys-4**: A standard product with full fledged functionalities as usually required in universities, large academic institutions, special libraries, public libraries, etc.

**LSEase**: A downsized product derived from LibSys-4 for corporate, colleges and school libraries where some special functionality may not be required. Both Libsys-4 and LSEase can be implemented in Client-Server mode providing complete range of features expected from any advanced library system. The integrated system consisting acquisition, cataloging, circulation, serials control and OPAC modules. In Libsys a special option of ‘Add on’ facilities are available in the standard LibSys-4 and LSEase.

**Rovan LMS** –

Rovan LMS is the product of Rovan Technologies, the leading company in Sivakasi, India. Rovan LMS, the state of art library management system helps the librarians to manage the resources effectively and provide improved services to the members. Rovan LMS is suitable for school, college, public and business libraries. It is available in three editions and all are priced nominally.

- Rovan LMS Gold
- Rovan LMS Silver
- Rovan LMS Bronze

**Libsuite** –

Libsuite is an ISO 9001-2000 company, located in India in the city of Pune. It supports various operations of library like cataloging, circulation, serial control, budgeting and OPAC. It supports digital library functionalities with multimedia file attachments etc. It works with various backend like Oracle, SQL Server, Sybase and is also available with MS Access for smaller databases.

**Autolib** –

Autolib provides total library automation solution at a very nominal cost. It has been designed and promoted by M/S Auto Lib Software Systems.
2.10.2 International Software

Some most popular international library softwares are given below:

VTLS (VIRTUA) –

VTLS is a leading global company that creates and provides visionary technology in library solutions. It has three distinctive divisions that provide three solutions to a diverse customer base of more than 900 libraries in over 32 countries.

☐ VIRTUA division remains focused on ILS solutions

☐ Digital Asset Creation and Management division provides cutting edge software and services for Digital Libraries. VTLS is also one of the few ISO 9001 quality certified companies within the library industry

☐ VTRAX division focuses on RFID type technologies through its partnership with Tagsys

VOYAGER –

Voyager, the integrated Library Management System from Endeavor Information Systems Incorporation. Voyager includes web based public access, acquisitions and serial control, cataloguing and authority control, circulation and course reserves, and reporting and systems administration. It is highly customizable to maximize each library workflow. Designed with a graphical user interface operating on Microsoft Windows, it is easy to learn, use and saves time through operator efficiency. Since it is built on open system technology, it will inter-operate with existing library technology and scale to accommodate future needs.

For academic and research libraries that are faced with increasing user demands and the need to plan for the future Endeavor’s product suite provides a synthesized approach to information management and access. They provide holistic solution to the challenges faced by libraries today.

Voyager: Endeavor’s integrated library system is used by 1300 academic and research libraries around the world. Unicode compliant and feature rich, Voyager has a proven track record helping research institutions manage and provide access to their library collections.
Meridian: It is an Electronic Resource Management System. It supports all of
the administrative tasks associated with evaluating, licensing and providing access to
electronic content. It provides vital e-resource information to the library’s users while
alleviating the headaches of back office management of electronic resources.

Encompass (Digital Library System): It is endeavor’s enterprise-level system
for managing and accessing content from a wide range of electronic resources, local
and external. It is composed of a suite of modules, each tuned to a specific need-
federated searching, building digital collections, etc. at academic libraries and other
research organizations.

Alice for Windows –

This software is designed and developed by Soft Link Pvt. Ltd., Australia and
marketed in India by Soft Link Asia, New Delhi. It includes acquisition, cataloguing,
circulation, and OPAC etc.

MINISIS –

This library software is designed and developed by International Development
Research Centre (IDRC), Ottawa, Canada.14

2.11. Hardware Requirements

Generally the configuration of computer hardware depend upon the size of the
library, which include the total collection of items such as strength of books, journals,
clienteles, services, functions and type of the library. Large size library have more than
one lakh holdings, medium sized library contains more than 50,000 holding and less
than this, is called small library.15

Followings are required for implementation of automation in libraries:

- Server
- UPS
- CVT
- Nodes with LAN Card
- Input Devices: Barcode Scanner- CCD, Scanner, Sign Pad and Data Collecting
  Unit (DCU)
2.12 Challenges and Issues

The challenges of library automation are concerned with training programme, standards to be selected for the bibliographical formats and records, retrospective conversion of the manual catalogue so that the library users can access the machine-readable catalogue for the entire collection, indexing policy, hardware and software. Another important challenge facing the profession is the design of automated systems, especially in the absence of computer culture and lack of funds. In designing the system, following factors should be considered:

(a) Choice of the system
(b) Mode of operation (e.g., PC-based, batch mode, LAN-based, online etc
(c) Method of inputting identification data (of documents and borrowers) for acquisition, circulation, cataloguing, etc
(d) Available hardware/software

The major issues in evolving a policy on library automation can be summarized as:

☐ Managing IT resources
☐ Data security for transfer of data, in databases etc
☐ Standards (difficult to introduce, because of the rapid growth as well as the changes in the information technology; it is however a necessity)
☐ Problems due to the international networks (although there are many advantages, problems are many; for instance, domination of the multinationals, transfer of data in audio form, cultural issues etc.
☐ Manpower development in' IT sector with end-user point of view at university level to take care of annual maintenance (a mass programme may be required to take care of annual maintenance).
2.13 Retroconversion

The libraries are experiencing tremendous paradigm shift from ownership to access of information; and from informing to involving the users. In this context, automation of libraries has become the top most priority. Automation should be viewed as a means to increase efficiency, manage costs, improve library service and management or shortcomings of existing manual systems. It required a tremendous amount of planning and work, including preparing the staff for the radical change in their work. Retroconversion is the process of conversion of libraries and existing paper catalogue record into machine-readable form.

These days libraries are automating their activities and functions to meet the users increasing needs efficiently and effectively. The first major bottleneck is the retroconversion of existing catalogue into machine-readable form. It may take years depending upon the size of the existing collection of the libraries or information centers. Smaller and new libraries have an advantage over the larger and established libraries because of the lesser quantity of data for retroconversion.

The word “Retro” indicates that the process is only for already existing records, and the meaning of the word “Conversion” refers to the form and format of the records changing something from one form to another. Thus, retroconversion in library and information center means “changing already existing catalogue from existing traditional form to a machine-readable form.

2.14 Definitions of Retroconversion

According to Bryant Philip, "Retrospective conversion is one such area where once money has been invested, a permanent benefit is assured."^17

David Stoker observed that "retrospective catalogue conversion is a one-off cost which will ultimately result in savings in staff's time and efforts in the libraries concerned and will also convey tangible benefits to the library community as a whole."^18

Retroactive conversion, according to ALA Glossary of Library & Information Science has been defined as “the process of converting the database of a library holdings from non-machine-readable form to machine-readable form and that are not converted during day to day process”.^19
Harrold's Librarian's Glossary defines “retrospective conversion (information retrieval) is a partial or complete conversion of an existing catalogue into machine-readable form as opposed to converting records created currently”.

From the above definitions, it can be concluded that retrospective conversion is:

i) Conversion of bibliographical information of library holdings

ii) From non-machine-readable form to machine-readable form

iii) That is not created during day to day process.

It can be accomplished in a number of ways, and the choice of the best methods for any library or information center depends on the type and size of the collection, budget available, quality standards desired, time constraints, and staff, etc. Though essential and one time activity, it is a time consuming and costly undertaking for a library.

2.15 Evaluation of Retrospective Conversion process: International and National Scenario

Retrospective conversion means conversion of manually prepared or printed catalogue records of a library into a machine-readable form. Though the process is expensive, laborious and time-consuming, but all these can be justified in relation to the benefits it generates for the researchers community.

During the 1980s, retrospective conversion generated considerable interest at the international level. Henriette Avram of Library of Congress argued that "complete conversion of our retrospective catalogues has become not so much as ideal as a necessity". Philip Bryant considered it a topic of vital importance to the national and international library community. David Stoker observed that "retrospective catalogue conversion is a one-off cost which will ultimately result in savings staff's time and efforts in the libraries concerned and will also convey tangible benefits to the library community as a whole." During 1995-96, Philip Bryant, with a group of specialists, conducted two studies: first on higher education sector and second on other types of libraries in Britain. They basically studied the logistical and financial issues involving the retrospective cataloguing programme. In the higher education sector, British academic libraries had 28 million under-catalogued items awaiting retrospective conversion. The study on other types of libraries, financed by British Library Research
and Innovations Centre, estimated that public library authorities had about 12 million records for retrospective conversion. The report of these studies addressed the complexity of the task and recommended the need for having a coordinated national programme to complete the task of retrospective conversion. One must mention here the emergence of retrospective conversion services rendered by Online Computer Library Centre (OCLC) during this period. OCLC made retrospective conversion easy and quick. Further, it provide conversion services with OCLC MARC records. This helped many libraries to convert their manual bibliographical records into machine-readable format. OCLC has greatly facilitated searching of the entire collection, and improvement in the circulation of all types of records, thereby making possible for the users to find hidden sources in their respective libraries.

In the Indian context, libraries have started gearing themselves to retrospective conversion to give the boost to more and more resource sharing among libraries, though in laggardly manner the challenges put forward by information and communication technologies, networking, electronic information, etc. In India there are more than 65,000 libraries (all types). Out of these, an overwhelming 97 per cent are traditional libraries, not even 3 per cent are automated; there are only 300 electronic libraries. So inspite of all the hype, India is still very slow in embracing the benefits of modernisation. The University Grants Commission (UGC) has initiated efforts in this direction through its INFLIBNET Project. This project has made the beginning of computerisation of academic libraries in India. The focus is to access information from anywhere and boost the concept of resource sharing among libraries.21

2.16 Need of Retroconversion

The conversion of database of library holdings from non-machine-readable form to machine-readable form is a pre-requisite to implementing an automated system. This database would become the foundation for other library activities such as on-line public access catalogue (OPAC), circulation, catalogue maintenance, resource sharing, etc. These records provide the means of generating statistics and other information that is needed to improve the existing services and introduction of new one.
2.17 Objectives of Retroconversion

The objectives of retrospective conversion are:

i) To create a database for the automation system

ii) To maximize access to the collection

iii) To improve the services

iv) Reduction in time for document searching

v) To improve library internal procedures: the integration of acquisition and cataloguing through automation and streamlining of other technical services

vi) To maximize returns on automation expenditure.

2.18 Scope of Retroconversion

To achieve the desired results it is necessary to have a good understanding of the relationship of each aspect of retrospective conversion process. Decision made on one part of the project will have an impact on others. Thus, once it is decided to initiate the retrospective conversion project, it is essential to determine the scope of the project by:

i) Stages/phases and schedule of process

ii) Deciding what areas of the collections will be converted

iii) Prioritizing the order of conversion

iv) Desired speed of conversion

v) By whom and how the conversion is to be completed

vi) Project costing and budget

It is better to ensure that everyone involved in retrospective conversion project should understand the scope, goals, and objectives of the project. Staff participation is most important non-cash input for the success of the project.

2.19 Planning of Retroconversion

For successful retrospective conversion project, there is a need for sound and detailed plan tempered with realistic expectations. The plan should:
i) Clearly identify the objectives

ii) Carefully document procedures (paying close attention to efficient workflow)

iii) Specify standards to be used

iv) Identify reporting requirements

v) Identify the necessary staff training

vi) Plan for regular monitoring of quality and schedule

If in-house conversion is to be done, each staff member on the project must clearly understand his/her tasks and responsibilities, the proper sequence of activities, and the standards to be enforced. If the conversion is undertaken through a vendor, care must be taken to ensure that the contract has no loopholes, and that sufficient legal safeguards are included to protect the library in the event of serious difficulties with the vendor. In this regard libraries can prevent many problems by requiring progress checkpoints and periodic tests of the quality results.

Retrospective Conversion is never easy. It can be done successfully with minimal problems, if expectations are clearly understood at the outset, and if planning and documentation precedes the actual conversion. Once the project begins, success can be best assured through regular and frequent monitoring of progress and quality towards as per plan documents.

The plan and schedule for the conversion project must take care of all the parameters of the conversion project. These parameters have multiple dependencies as follows:

Budget = f (number of records, fields, quality and rate)

Quality = f (manpower quality, supervision and planning)

Manpower = f (number of records and speed)

Manpower Quality = f (wages and training)

Supervision = f (quality and speed)

Speed = f (manpower, quality and number of fields)

Period = f (number of records, fields speed speed).
If anyone of these variable is changed it may affect several others. It implies that a single variable cannot be changed with affecting the related parameters. The above variables mean:

- **Budget**: Total budget of the conversion project.
- **Quality**: Standards and freedom from errors of records on OPAC.
- **Manpower**: Number of persons working on the conversion project.

### 2.20 Assumptions for Retroconversion

The following considerations provide a logical progression and suggest a series of checkpoints to guide library administrators in developing a basic framework for retrospective conversion. Firstly the librarians should examine four basic assumptions of the library automation:

1. **i)** Provide patrons with a broad range of services in a timely, reliable, and cost-effective manner
2. **ii)** Allow the staff to complete necessary tasks with less efforts
3. **iii)** Requires a database of bibliographical records in order to function
4. **iv)** The rate of expansion of library automation services is dependant on the allocation of resources and the growth of the bibliographic database.

Based on assumptions, librarian should address these important questions:

1. **i)** What minimum set of records must be converted to establish a database that will support enhanced, labour saving services
2. **ii)** What functions can be supported by library automation to achieve the desired level of services
3. **iii)** How should resources be allocated most economically to achieve a balance retrospective conversion and the range of automated functions to be acquired

By working through these assumptions and questions, librarian can develop an approach to automation that links retrospective conversion and library automation, so that these can be managed as a single integrated effort.
2.21 Preconversion Issues for Retroconversion

Record Format

To ensure that first conversion is the last conversion of the library or information center, it is important that the bibliographical information of the documents should be converted into standard format.

Fields in the Database

It is time to decide that what fields are to be included in the database and what not. Current practices for recording the bibliographical information may need modification when added to the machine-readable form. Decision should be taken after considering the users' present requirements and future needs. Source for Bibliographical Information

Accession register, shelf list, or public catalogue are the source to record the bibliographical information for conversion? The choice should be based on the source which has accurate and complete information to meet the requirements and quality standards.

Priorities of Conversion

Determine priorities of the areas of conversion so that more important areas of holdings may be converted first in machine-readable format.

2.22 Problems behind Retroconversion

Retrospective conversion is troublesome primarily because of the following facts:

i) With traditional techniques, retrospective conversion is very expensive

ii) Typically it is multi-year project

iii) Since it is often considered such a lackluster or boring subject, the topic generates little managerial interest and involvement

Despite the unfortunate reputation retrospective conversion has acquired, its importance cannot be overemphasized. The database resulting from a retrospective conversion project may long outlive the first, second, or third generation of automated systems installed in a library. Over the years, it can be very difficult to try to live with a
poor database that is the result of budgetary or staff shortages. As Barbara Markuson has commented, "Librarians never have enough money to do the job right the first time, but libraries have enough money to do the job over again a second time." 23

2.23 Retroconversion Guidelines

The success of any Retroconversion project is closely tied to a number decision. First, the library staff must decide whether to undertake a partial or full conversion, and whether the conversion will be done in-house or through an outside agency. A library must make decisions of equally critical importance regarding the completeness and consistency of records. It is inevitable that converted records will differ qualitatively, to some extent, from new catalogue, because converted records are derived from local data that are limited by previous cataloguing practices. Nevertheless a library’s catalogue database is long-term investment, and machine-readable records should reflect information that is as complete and accurate as possible. 24

2.24 Methods of Retroconversion

There are number of ways to convert the catalogue into machine-readable form. Best method for a library or information center depends upon the available resources at hand.

In-House Conversion

In-house conversion is completed by the existing library staff that leads to high quality and control, as the staff understands the users’ needs, quality requirements, and the objectives of the conversion well. But it has some disadvantages as:

i) It disturbs the routine work;

ii) Increases work-load; and

iii) More time is required for completion of the project.

Outsourced In-House Conversion

In outsourced in-house conversion, the conversion is completed by outside contracted persons within the library premises. It is important to consider that the persons doing conversion should be competent.
Advantages:

i) Easy to meet quality standards as conversion is done under the supervision of the library staff, and

ii) Less disturbance the routine work of the library.

Disadvantages:

i) Temporarily additional space is required

ii) Higher cost of conversion

Outsourced Off-site Conversion

In outsourced off-site conversion is completed by an agency away from the library or information center. The advantage of it is only that the process is completed within the time frame with less impact on the library’s routine work

Disadvantages:

i) Conversion cost per item will be more

ii) Library has least control during the process

iii) Shelf list/catalogue may probably have to leave the library

One possible solution to the above is to provide photocopy of the title page of each of the document but it incurs additional cost and labour intensive.

2.25 Steps in Retroconversion

Filling of Data Input Sheets/Worksheets

Current practices for recording the bibliographical information may need modification when converted to the machine-readable format. Thus, as per requirements Data Input Sheets/Worksheets may be printed so that all the required information may be noted forgetting no field and repeating none. Those who have good knowledge of cataloguing, scope, goals, and objectives of the project must design the Data Input Sheets. The person employed to fill up the Data Input Sheets must have good knowledge of cataloguing and must be aware of what information has to be recorded and what not. These Data Input Sheets/Worksheets must be checked by
library staff to ensure that correct and required information has been recorded to meet the quality standards.

**Entering Data into Software**

After filling the Data Input Sheets/Worksheets, the information is keyed in the Library Automation Package. This can be done by one who has basic knowledge of computer and is good at typing. Here, the knowledge of cataloguing is not required but it will be good if he is made aware of cataloguing rules to reduce the mistakes.

**Editing of the Database**

After keying the bibliographical information into the software, the database must be checked for errors and edited by a responsible person to achieve the quality standards. This process must be repeated into a loop till the required precision is not achieved. Type graphic spelling mistakes make the catalogue problematic for search.25

2.26 Key to Success

The key to successful retrospective conversions is careful and meticulous planning. There are several actions on the part of a library can take that will contribute significantly to the success of the conversion project. These measures include:

i) Careful planning;

ii) Close examination of each method of the conversion, taking into account the library’s budget, time, and manpower constraints

iii) Weeding of titles and copies that have marginal value. Since it is expensive, it makes no economic sense to convert materials that are of little or no worth

2.27 Conclusion

Retrospective conversion is the process of converting the existing catalogue of libraries and information centers from non machine-readable to machine-readable database form. The best method for conversion for a library or information center depends upon the type and size of the collections, time, quality standards and manpower, etc. To achieve the desired results, it is necessary to have good understanding of the relationship of each aspect of conversion process. Planning and proper documentation of procedures and achievable milestones for monitoring will lead to consistency in the conversion. The database thus created would be able to achieve
the objectives and will reflect the image of the library or information center as well as of the institute.

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