

## **LESSON 4: LIBRARY HOUSE KEEPING ROUTINES - CATALOGUING**

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### **4.0. Objectives**

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In this unit you will be introduced to the computerization of cataloguing for effective organization of library documents. The unit presents an overview of the developments in computerization of cataloguing activity, the recent trends and the available and accepted procedures. After reading this unit, you will:

- Understand how computers are being used for cataloguing;
- The recent trends in computerized cataloguing;
- Various products and byproducts of computerized cataloguing system.

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#### **4.1. Introduction**

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The primary objective of cataloguing is to give access to a library collection via a number of access points, thus essentially acting as a finding tool. Hence the catalogue is a file of bibliographic records, available in a library. The ordering of stacks and creating index files has been costly, time-consuming, and cumbersome process. Automating of this operation can provide an effective access to library collections besides freeing valuable staff time. Tedd opined that an ideal computer based cataloguing system would include the following characteristics:

- Online access to a database of potentially needed bibliographic records;
- A high percentage of the required records to be already available in the database so that original cataloguing is minimized;
- A consistently high quality of bibliographic records in the database and a conformity with the latest cataloguing and classification codes;
- Online authority control;
- Ability to do original cataloguing online when necessary and to assist the process with appropriate prompts, etc.;
- Ability of the records in the catalogue to be accessed in a variety of ways and in an appropriate physical form.

However, before computerization of catalogue files certain factors such as how catalogue files are presently used, whether it provide reports useful to library staff, how much training is required for staff and users to use computer files, the feasibility in transferring database records between modules and the use of import / export facilities.

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## **4.2. Need for computerized Cataloguing system**

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Some of the reasons that necessitates computerized cataloguing are:

- Lower cost of maintaining automated system;
- Improvement in accessing document records, not only in-house, but also of other libraries;
- Improvement of library services to users;
- Satisfies user preferences;
- Increased ability to share resources among libraries;
- Facilitates access to online services.

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## **4.3. Development of automated catalogue systems: an overview.**

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**4.3.1. The beginning:** The introduction of computers for library operations in late 1950s is a landmark in the history of LIS profession. The Library of Congress applied the techniques for automating bibliographic records. With the financial support of Council of Financial Resources, L.C. initiated converting its catalogue to a machine-readable form for the purpose of printing bibliographic records by computers. The first test tape of MARC was mailed to sixteen libraries in USA in 1966. The feedback helped to identify required modifications and changes. In fact MARC I was based on L.C. Catalogue card and covered only monographs. Further decision to extend for other formats like serials, etc and cover all major Roman alphabet languages lead to the development of MARC II. Meanwhile, British National Bibliography showed interest in the UKMARC Pilot Project. Many other countries have also shown interest in for a standard communication format that helps for interchanging of bibliographical data on cooperative basis among libraries at international level. As a result MARC II, officially began in 1968, which is a Machine Readable Catalogue format that is a common format for international exchange of catalogue and bibliographical data.

**4.3.2. MARC II:** MARC II is a subscription service, by which the subscribing libraries can acquire cataloguing data for American and other materials that includes book and non-book materials. The Library of Congress catalogues the documents, records the data on magnetic tape and supplies copies of the tapes to participating libraries. The libraries in turn can produce printed catalogues of their collections and various bibliographies using computer. At present a number of vendors supply the MARC databases on optical disks or CD-ROMs. According to P.S.G.Kumar the uses of MARC format are:

- “A centrally prepared catalogue can be distributed to the receiving libraries in a machine readable form;
- In spite of increasing acquisitions, the catalogue can be kept up-to-date without employing additional staff;
- The production cost of card catalogue on the computer is lesser than that of purchasing the LC Catalogue cards;
- The MARC tapes can be utilized for acquisition functions i.e. selecting, ordering and claiming unsupplied books without additional cost. They can be used to produce spine labels, book pockets, etc.
- The MARC tapes can be used for producing conventional card catalogue by the subscribing libraries.
- The MARC data can also be used for producing book catalogue as demonstrated by Washington State library;
- The MARC tapes can be used for computerized SDI;
- It automatically performs resource-sharing functions”.

However, George Piternick points out some of the limitations of MARC catalogue system:

- The MARC record for any title is almost similar to the conventional bibliographic record, as such it inherits all its limitations;
- The MARC format will be limited, at least for the next few years, to the English speaking language books because the MARC character set is severely limited in respect of special characteristics;

- The time gap between the creation of MARC record and a catalogue record copy by the participating, which is inherent at present in the card production methods of the Library of Congress, will not be removed until and unless both the cards and tapes are prepared from the same machine readable record;
- Expenditure on account of machine time by the participating libraries will go on increasing in view of the weekly shipment of records ...”.

However now L.C. is not the only source for generation of MARC catalogue. There are available through bibliographic utilities and commercial services like O.C.L.C. (Online Library Catalogue). MARC formats have also been developed in countries like Canada, Spain, Denmark, Australia, Japan, Germany, France; Switzerland etc. the multiplicity of these formats made it difficult to achieve standardization for international exchange of bibliographical data. Hence, the IFLA Working Group on content Designators formed in 1973 under the joint auspices of Committee on Cataloguing and Committee on Mechanization took steps to establish UNIMARC that facilitates translation of records and international exchange of data. The basis of UNIMARC is ISBD and is under use since 1976. It provides full content designation for all data elements.

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#### **4.4. Retrospective conversion**

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As libraries converting catalogue card into machine-readable form, there is a need to retrospective conversion of existing records into MARC format. The MARC distribution service was enlarged and proved to be efficient in making retrospective conversion of all current holdings; but the libraries want to convert their older holdings also, that are in card form, into machine readable form. This is an expensive task, especially if libraries work in isolation. Hence coordinated efforts are required. RECON Pilot Project of L.C. and BNB/LASER file of British national Bibliography are some important attempts in this regard. However, nowadays, the vendors offer retrospective conversion services. Increasingly such conversions have come to mean the use of MARC format.

Libraries wishing to exchange bibliographic data with other libraries came to use MARC format as a standard. Although all full records take more space, they also allow more options in the exchanging bibliographic information, developing special indexes, collection assessment etc.

Creation of a catalogue database: Basic information on each item in the collection must be entered into a computer-based database. The vendor's software usually provides a menu-driven program for such data entry. Creating such a database is labour intensive and therefore expensive. Careful planning is necessary when a library is converting into an online catalogue, and retrospective conversion of catalogue records to a format, which can be used by the online catalogue software.

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#### **4.5. Services / Products of MARC files**

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The MARC formats offer a variety of services, from traditional bibliographies to the online information access. The services that can be accrued from the MARC can be summarized as follows.

##### **4.5.1. Services:**

Complete tape file service: The current retrospective U.K. and L.C. files are available on magnetic tape for subscription.

Selective record service:

Selective records service is being offered by matching the appropriate record with MARC files. For the service, a nominal fee of 10 paise is being charged per record.

Full catalogue service: This service is available for subscribing libraries' the required records are produced as a catalogue of chosen format for which, specific requirements of the subscribing library can be incorporated.

Local Catalogues: Several libraries use MARC format for records of items in their catalogue. E.g. Records of monographs in a library.

Current Awareness Lists: Several libraries use MARC format for creating Current Awareness and Selective Disseminator of Information bulletins and / or lists.

Co-operative Services: The MARC database supports several co-operative cataloguing services. O.C.L.C. is the best example in this context.

#### **4.5.2. Products:**

Online catalogues: In the initial stages, the MARC formats for machine-readable cataloguing are done off line in batch process mode. Since it is labour intensive and time consuming, online systems for cataloguing are initiated in 1970s. In the online system, the machine-readable files are transferred from magnetic tape to the magnetic disk or drum where random access is possible. Computer terminals are being used for input and output and printers for hard copy output.

James Rice stated "An online catalogue is a fully interactive catalogue of holdings that has the potential of being accessible in any number of ways. It is by far the most dynamic form of catalogue because the user does not need to adapt to any physical limitations (e.g., dictionary listing, divided catalogue, or book pages). Users simply input a query such as an author's name, subject responds with an answer that allows for further communications".

Computer output Microform: COM catalogue developed as an outgrowth of book catalogue. COM record is a type of non-impact computer printer, which converts machine-readable data of microfilm or microfiche without creating an intervening paper copy. COM comes in many forms such as cartridge, cassettes, aperture cards, reel and fiche. But most commonly used by librarians are 105x 148 mm microfiche or 16mm microfilm. However, with the emergence of information technologies, the use of COM formats became out dated.

Online Public Access Catalog: Computerized cataloguing has finally produced online public access catalogues (OPAC). OPAC is an online catalog of a library collection that is available to the public. A computer catalog is list of books and other materials such as manuscripts, newspapers, serials, audio-visuals, and electronic documents, owned by a library or group of libraries. Online catalog can be accessed either at a library computer terminal or accessed via the Web

or Internet. It allows the users to search for library holdings, informs of its location, status of availability etc. Today most libraries make their OPAC publicly accessible via the Web. Though, not all online catalogues are public access catalogues, the Internet has made it possible to access OPACs of major libraries online. E.g. Library of Congress, British Library OPACs. The OPAC is the most important piece of software libraries offer to their end users. It is the interface to the bibliographic database. The success of OPACs depends on combining an intuitive interface with powerful retrieval capabilities.

**CD-ROM Catalogue:** When an OPAC is made available on CD-ROM, it is called as CD-ROM catalogue. Generally it is used for union catalogues, which provides bibliographic data of more number of libraries within a region or country, or for retrospective conversion of bibliographic records to maintain as a back up file. Hence, the CD-ROM catalogue is mostly used as an offline mode. It is advantageous for its large storage capacity, less production cost and computer – based searchability.

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#### **4. 6. Development of Rules for Cataloguing Electronic Resources:**

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**4.6.1. AACR2:** The Anglo-American Catalogue Code (AACR) is the first code to introduce rules for the description of machine-readable data formats. Before that the attempts were on standards for cataloguing of non-book materials. However with the emergence of microcomputer files, AACR2 devoted chapter 9 with the rules for cataloguing of machine-readable data files or machine-readable catalogues (MRDF/MARC).

In June 1979 the Library of Congress Network Development Office, in cooperation with its Automated Systems Office, began to work compiling of MARC format for machine-readable data files. The MRDF format has been designed to accommodate the data elements specified in the second edition of the Anglo-American Cataloguing Rules (AACR2) but the data elements included in the format have not been limited to those described in AACR2. However with the emergence of new generation computer files librarians were not happy with

chapter 9 of AACR2, as their concern was lack of rules for describing microcomputer files in their various manifestations and physical configurations. In 1983 ALA has appointed a special task force and in U.K., Library Association and British Library appointed a task force to study the problems of cataloguing microcomputer files. The result was 'Guidelines for Using AACR2 Chapter 9 for Cataloguing Microcomputer Software' developed in U.S.A. and 'Study of Cataloguing Computer Software: Applying AACR2 to Microcomputer Programs' in U.K. to assist librarians in applying Chapter 9 of AACR2. The AACR2 1998 revision has made wider provision for cataloguing electronic resources.

**4.6.2. CCF:** The other standard format for cataloguing of machine-readable format is Common Communication Format (CCF), developed with the support of UNESCO, with in the framework of General Information Programme (PGI). The purpose of CCF is for structuring bibliographic records so that they can be freely exchanged among different libraries and information centers.

**4.6.3. ISBD (ER):** Another significant development in the cataloguing of electronic resources is publication of International Standard Bibliographic Description for Electronic Resources ISBD (ER) in 1997. The ISBD (ER) is a revision of ISBD Computer Files (CF), which, in turn was developed from ISBD Non Book Materials (NBM), first published in 1977. Recognizing the rapid changes in computer technology and the dynamic evolution of new forms of computer files - most notably interactive multimedia, optical discs, and remote electronic files on the Internet - the International Federation of Library Associations and Institutions (IFLA) Sections on Cataloguing and the Information Technology initiated, in 1994, a revision to the International Standard Bibliographic Description for Computer Files ISBD (CF) published in 1990. IFLA sponsors approved, following extensive consultation and worldwide review, a final version of the ISBD (ER). The ISBD (ER) is one of seven ISBDs. The present rules reflects the technological developments such as more content are becoming digital and more of it is accessible through remote access that may well influence the content and direction of ISBD (ER).

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#### **4.7. Functions of a computerized library catalogue**

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Functions of computerized Catalogue system:

- The primary functions of computerized catalogue system are :
- Inputting complete details of new documents
- Duplicate checking
- Preparation of authority file
- Maintaining the master file
- Generation of various lists like author, subjects and other bibliographies, list of additions, indexes etc.
- Generation of output in various catalogue formats like AACR, CCF, MARC etc.
- Integrate with other subsystems like circulation, acquisition and reference systems.

The computerized cataloguing system will have a Master file for bibliographic records, index files for access elements (inverted files) and authority files and directories. Several alternatives are possible for adding records to the computerized catalogue, such as local input, online data entry, batch data entry etc. that is internal data. In adding external data to the catalogue, which is another alternative, catalogue data from MARC of external agencies like National libraries can be extracted.

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#### **4.8. How a computerized catalogue works**

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In the traditional card catalogue, librarians created access to the collection by creating unit cards for every access point viz author, title, subject, call number etc. Each card contained all of the information about the particular item in the collection. Most libraries purchased sets of cards and added the various access headings to each card. Even with the advent of the bibliographic utilities such as OCLC, many libraries continued to use the systems to produce such unit cards for filing.

Relational Data Base Management for online catalogues: In automated catalogues the bibliographic record is treated as a 'record' in the system and given a unique number. Indexes to the fields of that record (author, title words, subject headings etc.) are created. These alphabetically arranged indexes contain a list of terms followed by the unique number of the bibliographic records. All searching is done in these indexes. Once a particular index item is chosen, the system will retrieve the bibliographic record using the unique number as a key. That record may be displayed in an abbreviated format, a format, which gives all the information usually found in a catalogue record, or MARC format.

The emergence of integrated online public access catalogues: Software to replace the existing catalogue with a single desk top computer gave away to the development of software modules to perform various library functions from acquisition through public catalogue services. Some modules could be purchased as a basic system with other modules being added as needed.

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#### **4.9. Advantage of Computerized Catalogue system**

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The major advantage of a computerized catalogue system is that

- Exchange of bibliographic records becomes easier, particularly if standard formats are used.
- Filing and related works are avoided.
- Additional copies of catalogue can be easily generated.
- Due to the possibilities of searching catalogue data with other libraries, local efforts in cataloguing can be reduced drastically.

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#### **4.10. Difficulties in developing computerized catalogue system**

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Difficulties in computerization of catalogue files includes:

- The change in operation disrupts the regular work and access;
- It is a time consuming procedure;

- The software problems and delivery delays are common;
- The project is complex because it involves a number of decisions about data formats, number of terminals, options in capabilities, policy matters and budget questions;
- They require commitment from the library staff to work as a team and support from the governing boards.

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#### **4.11. Selection of software for a computerized catalogue system**

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Checklist points for computerized online catalogues:

- A command dialogue mode and menu driven commands;
- Consistent entry patterns that helps staff and user;
- Provision for as many index points as possible like personal author, corporate author, author title combination, title, series, subject headings, keywords, ISBN etc.;
- Search capabilities such as subject headings authority file, name authority file etc.; browsing capability of indexes; direct Boolean operator searching; initiating new search at any point; save search capabilities for future use;
- Screen display features such as display of multiple records and allows user to select for the full record; display subject headings with full bibliographic details; allows user to select different types of bibliographic records; allows user to sort selected records into author, publication date, or title order; use of special commands;
- Help procedures of the system such as introductory instructions, error messages etc.;
- Catalogue maintenance module features like ability to print shelf list or full set of catalogue cards; automatic creation of circulation record from bibliographic file; pass word protection etc.

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#### **4.12. SUMMARY**

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The library documents come from various countries, and are published in various editions and languages. Hence bibliographic description of the documents and creation of catalogue files is quite complex. The automation of the catalogue files allows the library to provide services and discover information not available before. Now the libraries can have more retrieval speed, with more accession points such as authors, titles, subject, call numbers etc., to be precise any selected field of a record. More over, as many libraries have been adapting to computer based cataloguing systems, the resulting OPACs support resource sharing through networking. It further reduces the local catalogue efforts drastically. Keeping these developments in view, the MARC formats have been developed during 1960s. Rules also have been framed to achieve standardization in bibliographic description and exchange of information in electronic media. As a result of these developments the libraries are now able to produce a variety of products and services from their machine-readable catalogues.

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#### **4.13 Further Readings**

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1. Rowley, J.E. Computers For Libraries, 2<sup>nd</sup>ed. London, Clive Bingley, 1986.
2. Lovecy, Ian. Automating Library Procedures: a survivor's handbook. New Delhi, D.K.Agency, 1984.
3. Wright, Keith C. Computer-related technologies in library operation. Hampshire, England, Gower, 1995.
4. Tedd, L.A. An introduction to computer based library systems. 2<sup>nd</sup> Ed. New York, USA, John Wiley & sons, 1984.
5. Kumar, P.S.G. Information Technology Applications (Theory & Practice) New Delhi, B.R.Publications, 2004.
6. PGDLAN Course 421: cataloguing System.(Reading Material) Hyderabad: Univ. of Hyderabad.

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#### **4.14. Unit-end-questions**

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1. What are the major developments for machine-readable cataloguing at international level?
2. What check points you consider for selecting software for computerized catalogue?

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#### **4.15. Answers to unit-end-questions**

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1. MARC I, and MARCII formats in early and late 1960s brought in tremendous changes in the cataloguing procedures of libraries. Further development of UNIMARC helped to achieve standardization for exchange of bibliographic data in machine-readable form.

2. Checklist points for computerized online catalogues:

- A command dialogue mode and menu driven commands;
- Consistent entry patterns that helps staff and user;
- Provision for as many index points as possible like personal author, corporate author, author title combination, title, series, subject headings, keywords, ISBN etc.;
- Search capabilities such as subject headings authority file, name authority file etc.; browsing capability of indexes; direct Boolean operator searching; initiating new search at any point; save search capabilities for future use;
- Screen display features such as display of multiple records and allows user to select for the full record; display subject headings with full bibliographic details; allows user to select different types of bibliographic records; allows user to sort selected records into author, publication date, or title order; use of special commands;
- Help procedures of the system such as introductory instructions, error messages etc.;

- Catalogue maintenance module features like ability to print shelf list or full set of catalogue cards; automatic creation of circulation record from bibliographic file; pass word protection etc.