
UNIT 6 RESOURCE SHARING TECHNOLOGY

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6.0 OBJECTIVES

After reading this unit, you will be able to understand :

- The role of library and information networks in resource sharing;
- Objectives, services with hardware and software requirements for the resource sharing network;
- Document delivery procedures, both traditional and electronic;
- Inter-library loan protocol and ILL-Code;
- Copyright issues relating to resource sharing in a networked environment; and
- Guidelines for resource sharing provided by international associations/ organizations.

6.1 INTRODUCTION

Libraries are facing new challenges with the increase in the cost of publications and at the same time the reduced budgets. There is a continuous demand from the users for effective services while the staff and resources are being reduced at many libraries. The voluminous growth of published documents in the recent past, increasing cost of information sources, technological advancements that offer newer methods of information processing, retrieval and dissemination are some of the factors which have made resource sharing a necessity. Inter-library co-operation is a very old concept and a form of resource sharing. There are many instances of such co-operation among libraries in the library literature (Kaul, 1999).

The need for resource sharing was realised by libraries long ago. Besides the practice of inter-library loan, libraries also thought seriously of resource sharing in many other areas, such as cooperative acquisition, cooperative cataloguing, cooperative classification, etc. Inter-library loan has been practised as one of the most popular resource sharing activities among libraries. Inter-library loan in a traditional library is severely affected by barriers of information communication, such as apathy of the lending library, distance, language, time, etc. A computerised inter-library loan system overcomes these limitations.

For resource sharing, the participating libraries need to come together and co-operate in two broad areas: (a) Developing the collection on a shared basis, and (b) Developing services for exploiting such collection. Developing shared resources is of great importance and central to the concept of resource sharing. In developing the shared resources, the focus is first on eliminating duplication in the acquisitions of various participating libraries to the extent possible. Thereafter, the focus is on the selection of such publications which the participating libraries agree to share, and later on their acquisitions. The efforts of participating libraries in developing the shared resources are, therefore, directed in two distinct directions: (a) Rationalisation, and (b) Acquisition. There are several limitations to resource sharing in the print environment as it existed till recently: a) open access to shared resource not feasible; b) service depends upon library performance; c) access to shared resource at a cost.

User services are critical to the resource-sharing programme for its performance and effectiveness in providing access to shared resources. The libraries required to organise and provide the user services are not always fully equipped to meet such obligations. However, modern information technology has made the task of resource sharing very simple and convenient. The new technology brings forward to the information field many products and services which have changed the nature of fundamental library objectives and operations. There are two technologies that have contributed to these revolutionary changes. These are computer technology and telecommunication technology.

6.2 DEFINITIONS

Some of the key definitions are :

“Document Delivery Service” is the provision of documents published, or unpublished in hard copy or microform, at an established cost upon request, not including the on-campus delivery of documents to patron’s offices.

“Document supplier” A person or organization, which provides copies of articles, books or other information whether free or at a cost or for profit.

“Inter-library loan” is the process by which a library requests materials from, or supplies materials to, another library.

Another definition of inter-library loan is “A transaction in which, upon request, one library lends an item from its collections, or furnishes a copy of the item, to another library not under the same administration or on the same campus”.

Resource sharing is defined as “Activities engaged in by the libraries for the purpose of improving access to and delivery of the holdings of other libraries or information providers. Resource sharing may be established by informal or formal agreements or by contract and may operate locally, regionally, nationally, or internationally”.

6.3 ROLE OF LIBRARY NETWORKS IN RESOURCE SHARING

Library networks have grown mostly during the last thirty years in different geographical environments in order to cater to the specific needs of the users. In the United States there has been a proliferation of them. Library networks in other countries are also growing. Several models have emerged that provide specific services. Not all networks conform to the essential functions of library networks. However, the essential functions should include the promotion of resource sharing, creation of resource sharing tools like union catalogue development, rationalisation of acquisition of library materials, and maintenance of international standards for creation of records uniformly. Libraries should be able to join different types of networks depending upon the need and select a model which conforms to the requirements. (Kaul, 1999).

The library networks in the USA are in a most advanced level of development. The favourable factors responsible for successful development of library networking in the USA are the long tradition of cooperation among libraries, introduction of library automation as early as the 1960s, advances in information science during the 1970s and the 1980's and introduction of MARC format by the Library of Congress in 1968. The experience of the USA is valuable for networking in other countries for sharing of resources among libraries.

The three foremost bibliographic utilities and networks in the USA are: Online Computer Library Centre (OCLC), Research Libraries and Information Network (RLIN) and Washington Library Network. Library networking is based on three major areas of technology, viz., creation of bibliographic databases in machine readable format for storage and retrieval; hardware/software of database use; and services and telecommunication mechanism for transmission of information. Read more on OCLC, RLIN, etc., discussed in unit 3 of this block.

Resource sharing work in the UK is also well established. The best example is Birmingham Library Co-operative Maintenance Project (BLCMP) in Birmingham, having 13 million bibliographic records of books, serials, music, etc., in its database and its catalogues get a hit rate of above 90 per cent with more than 60 libraries comprising public libraries, college libraries, university libraries, national and special libraries. BLCMP has introduced EDI clearing house service in about 15 25 libraries. In Australia the resource sharing tools have grown from catalogue cards to national

databases with contributions from many older and larger libraries. In Australian Bibliographical Network, the national and central bibliographic databases are maintained and coordinated and maintained by a national agency. The Swedish model for resource sharing is called the Consortium Model. This model is developed only for six major science and technology libraries in Sweden.

The developing countries like India are lagging behind in library cooperation. The reasons are poor funding in the beginning and non-existence of the spirit of give and take or exchange which are delaying the prospects of resource sharing programmes. The practice of resource sharing in the Republic of China (Taiwan) has been as limited in scale as has been in India. Greater efforts have been made in China for the development of documentary information resources because it was considered that these resources would work as China's knowledge reserve to promote the development of economy, science, technology and culture. The main effort was made on the rational distribution of the resources with the adoption of new technology. In some countries, resource sharing has become an important library programme such as in Thailand. In the 1970s work on the creation of bibliographic tools such as union catalogues and union lists of serials had begun but in the 1990s networking was considered to be the main tool for resource sharing. Best examples are MOSTE (Ministry of Science Technology and Environment) library network and CHULALINET (Kaul, 1999).

The growth of library networks in India can be traced to the initiatives made by NISSAT in establishing CALIBNET in 1986, DELNET in 1988 and other networks subsequently. Information and Library Network (INFLIBNET), a major programme of the University Grants Commission (UGC), was initiated in 1991. It aimed at establishing a national network of libraries and information centres in universities, institutions of higher learning and R and D institutions in India. It is basically a co-operative endeavour in resource development, sharing and its utilization at the national level.

Over the years, the INFLIBNET programme has progressed steadily and since May, 1996 it is an independent autonomous Inter-University Centre under the UGC to co-ordinate and implement nationwide high-speed data network using state-of-the-art technologies for connecting all the university libraries in the country. INFLIBNET is set out to be a major player in promoting scholarly communication among academicians and researchers in India.

INFLIBNET Centre, in its initial phase, has focussed on the building up the infrastructure at the participating libraries, and preparing them to accept the change brought about by information technology. More importantly, INFLIBNET has been able to create an IT conscious environment in university libraries. Librarians have now accepted and are eagerly working to bring these changes to their libraries.

No efforts have yet been made to network public libraries. However, considerable progress has been made by other regional networks, viz., DELNET, ADINET, BONET, MALIBNET, PUNENET, etc, which are discussed in unit 3 of this block.

6.4 RESOURCE SHARING NETWORKS - A MODEL

Computer application in the library and information field has made phenomenal progress in industrialised countries where hardware, software and communication

facilities are well developed. In view of their technological advancement, they are able to computerise their entire library and information system with a great success. Besides improving the services and operations for a better performance, libraries are able to evolve effective computer networks towards optimum utilization of resources and facilities. With developments in the technology and reducing costs, libraries are able to acquire latest IT tools at much reduced prices, thus helping them to achieve what they could not 10 years ago. Technological advancements are helping libraries to bring out new ways of sharing resources and providing efficient services.

6.4.1 Objectives

The objective of a resource sharing model is to have cooperative networks at national, regional or local level. Its activities are directed towards promoting cooperative endeavors in resource development and utilization, with a view to organise library services at macro level at an economical cost with maximum benefits. With the resource sharing model, libraries are expected to coordinate their activities to avoid duplication to the extent possible. By doing so, the total library funds will go a long way in optimizing resources and services. The main motivation of the libraries to participate in the resource sharing network is to spend less than it would were it to have to operate individually. The ultimate aim is to offer speedy and efficient services to users, academics and researchers of the institution.

Resource sharing objectives can be further listed here in the context of Resource Sharing Network Model (Raina, 1997).

- 1) To identify all the potential users of the programme and to be responsive to their scholarly needs.
- 2) To encourage the participants to pool and share resources so that a usable and exhaustive knowledge resource base required in the field of interest and related areas is built up and the limited funds are thus made to go a long way.
- 3) To overcome time, space and language barriers in: (a) accessing; (b) obtaining the desired document /information through; (c) compilation of union catalogues; and (d) promoting faster modes of document delivery.
- 4) To facilitate access to other related national and international databases, information centres and networks in India and abroad.
- 5) To evolve standards and uniform guidelines in techniques, methods, procedures, hardware, software and services and promote their adoption.

6.4.2 Services

The services / benefits accruing from the resource sharing network get maximised and become cost effective. Multiple function / service is more justified than a single function/service. The cost will decline considerably as the use of the network increase. The following are the services listed:

- 1) **Catalogue-based Services**
 - Shared cataloguing of monographs, serials, and non-book materials.
 - Union catalogue of books, serials, theses/dissertations, non-book materials.
 - Online catalogue access for shared cataloguing and location identification.

- Catalogue production in card, book, magnetic tape, floppy, CD-ROM form.
 - List of latest additions.
 - Retrospective conversion.
 - Preparation of Authority files,
 - Bibliographic entry for Indian materials.
- 2) **Database Services**
- Bibliographic database services - retrospective searches, SDI, Current Awareness Service, etc
 - Database of non bibliographic information such as ongoing projects, completed projects, database of specialists, database of institutions.
- 3) **Document Supply Services**
- Document delivery services (Fax,. non-fax)
 - Inter-library loan request processing
- 4) **Collection Development - Acquisition**
- Pre-order searching.
 - Integration with cataloguing, OPAC and searching.
 - Account keeping.
 - Address file for supplier / publisher name etc.
 - Updation of databases when the documents are withdrawn.
- 5) **Serials Controls**
- Serials cataloguing.
 - Check-in.
 - OPAC for serials.
 - Subscription ordering etc.
- 6) **Communication-based Services**
- Referral services.
 - Electronic mail services - transfer and receive messages.
 - Bulletin board - view / update bulletin board.
 - Academic communication through electronic mail, bulletin board, file transfer, computer / audio / video conferencing.

The service stages

The above mentioned services cannot be started at a time. The different stages in which these services are to be implemented are:

First stage

Electronic mail, bulletin board, file transfer, fax transmission and referral services are some of the facilities that can be started once the library systems are inter-connected through reliable electronic communication links.

Second Stage

In the second stage, catalogue and other database services like catalogue search, catalogue production, shared cataloguing, database searches, union catalogues and collection development can be taken up. The conversion of union catalogue into CD's/tapes could be taken up eventually.

Third Stage

Services like CAS, SDI, indexing, abstracting, bibliographic service etc could be taken up in the third stage of development of a resource sharing network. The aim of the network is to finally link all the operations of the participant libraries, including circulation and acquisitions, so that users get a clear picture of the document/s needed by them. The interconnection with other networks will also facilitate data access over much wider regions.

Preconditions for the success of a resource sharing model

It is essential to have an assessment of the status of library computerization which is a pre-requisite for implementation of a successful resource-sharing and networking programme. Availability of the computer systems, computerization of library operations, the softwares used and the connectivity speed, etc., are the preconditions for resource sharing network.

6.4.3 Hardware

The participating libraries of the resource sharing network ideally have to go in for computer systems which-

- have hardware redundancy;
- have scope for upgradation;
- have high computing facilities;
- are compatible with improved softwares;
- are compatible with other computer systems.

6.4.4 Software

Software required can be grouped under:

- System software;
- Application Software; and
- Networking Software

System software is a part of the hardware and is offered by the hardware vendor. It controls computers and peripherals. In the library environment, the application software in Ms-DOS environment can be good for database creation, etc., while the unix/xenix are essential for networking. The libraries participating in the programme should go for the integrated library software package which can meet the requirements such as:

- Compatibility with hardware systems
- Compatibility with to Indian and international bibliographic standards

- Should operate in a multi-user environment
- Should be user friendly and menu driven
- Should have the least response time
- Should be capable of handling text as well as graphics with variable fields, sub-fields
- Support data security through passwords
- Should have provision for authority file maintenance
- Should have facility to generate card printing
- Should facilitate search through Boolean logic, single term search and subsequent coordination, truncation, etc.
- Import/export of data through standard exchange format.

6.4.5 Standardisation

Standards are essential to ensure compatibility for interconnection of libraries and information centres. Standards promote economy of human effort, cost and time, facilitate interchangeability of information across units of a network, improve the quality of information services and reduce the economic and technical barriers in information flow. Adoption of a good set of standards by the participant libraries in the programme is a pre-requisite for achieving a certain level of quality consistency. It contributes to the optimum utilization of resources and facilities of the total network. Participating libraries will have to follow certain procedures and practices without which the resources held by them cannot be effectively and meaningfully shared.

Areas of standardization include

- Information handling
- Communication
- Application software and hardware

Information handling

The specific areas of information handling, where standardisation is required, are:

- Classification
- Subject headings
- Cataloguing of monographs, serials, and non-book materials
- Forms of headings in catalogue - personal, corporate
- Bibliographic description
- Standard identification numbers, code, abbreviations
- Transliteration
- Abstracting and indexing
- Physical formats for catalogue, bibliography and indexing service production

- Interchange of bibliographic data
- Search command language to use database.

Communication

The resource sharing network envisages a wider accessibility of its resources, facilities and services to information users disbursed all over the network by inter-connecting the libraries. A user irrespective of his/her distance and location, can access information available from anywhere on the network. In the network, physical availability of information at a place is not a consideration, because the user can draw upon the entire resources of the network sitting at a terminal in his own place.

Communication is the most crucial aspect of the network. Advances in the computer and communication technologies have now brought about a new change and global distances are no longer a barrier in data communication. Together with computer, communication has made data transmission and reception a common utility in daily life.

Application software and hardware

A clear distinction is to be made between the application software requirements for services at network level as a whole, such as union catalogue compilation and database maintenance and for individual library automation at the local level such as circulation, cataloguing, serials control operations etc. At the network level, only computerisation of cataloguing sub-system in each participating library is implemented. The other functions at each individual libraries such as circulation, serials control etc, may be computerized at convenience as they do not matter for networking requirements.

Application software should incorporate some of the special features listed below.

Desirable that the package be an integrated one to support (a) library automation and (b) database construction and information retrieval. It should support phased implementation, according to the particular library's priorities.

- Should not be tied to a specific hardware system
- Should be adaptable to varying local library requirements
- Should be compatible with relevant Indian and international standards
- Should be user friendly, supported with user manuals, etc.
- Should handle the bibliographic data consisting of textual / graphic / variable fields and sub-fields and record lengths
- Should support data security, export-import, backup / restore etc.

The Resource sharing network will operate at various levels. The functions and services at each level or node vary in dimension. The hardware system to be provided at each level should take into consideration the features characteristic of that level. The technical specifications of the computer hardware system change from time to time. The best suited for the requirement needs to be used.

Self Check Exercise

- 1) Discuss the objectives of a resource sharing network. Explain the components

of a resource sharing network.

- Note:** 1) Write your answer in the space given below.
 2) Check your answer with the answer given at the end of this unit.

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6.5 DOCUMENT DELIVERY

This service enables a library to request another library for a copy of a document, to be transmitted via telefacsimile/e-mail or supply of hard copy through post. Document delivery, in its widest sense, refers to all aspects of the process of providing documents to end users. Specifically, it is defined as “the provision of documents as surrogates (e.g; photocopies, microforms, digital images) that are retained by the user.” This definition is meant to apply regardless of whether the request is made directly by the user or is intermediated by a library or where or what type of source provides the document.

6.5.1 Current Patterns

To understand the need to make systems supporting document delivery more efficient through electronic means, it is important to examine the current patterns of document delivery, and the problems that can reduce its overall efficiency.

Since the 1940s, few libraries have been able to collect individually the full range and quantity of materials demanded by their users. They have by necessity, become heavily dependent upon external sources, or materials to supplement the materials held in their local collections. In the last half a century, there has been an exponential growth in the amount of information published annually. More information was produced in the last 30 years, for example, than in the previous 5000 years (Wurman, 1989).

The funds available to libraries for acquisitions have not kept pace with the increase in published information. Libraries cannot afford to acquire, catalogue and house all the materials that may be required by their patrons. Despite rising costs, shrinking budgets and the information explosion, the library’s role remains to mediate access to recorded information required by their users, which each library is unable to individually acquire and preserve in its entirety. To continue to provide users with access to as wide an array of information as possible, libraries have had to shift away from acquisition of materials for local collections to cooperating with other libraries to provide access to them (Graves and Wulff, 1990).

Currently the document delivery is not restricted solely to inter-library loans, or to libraries. Traditional sources of documents and methods for procuring them have multiplied such that there are many ways to obtain requested materials for users. For example, document delivery may take the form of photocopies or originals, requested over a telephone, by e-mail or ILL, procured from libraries, or the document supply centres or commercial suppliers and sent by mail, courier or fax, etc.

6.5.2 Electronic Document Delivery

Electronic document delivery enables a library to request another library for a copy of a document, to be transmitted via network facilities. This involves conversion of paper documents to electronic documents. Scanning and optical character recognition (OCR) technologies, which automatically put materials into electronic format, can help to speed up the conversion process. Apart from this, there is an increasing trend to generate the documents in electronic format. This will make electronic document delivery much easier.

The two major methods of creating electronic documents are conversion, or the capture of a document's image in digital form, and generation of documents in electronic format from the outset.

Conversion of print and microform materials

Fundamental to all conversion of paper documents into machine-processable form is the capture of the image into an electronic representation. This process has come to be called scanning or digitization. Once an image has been digitized, various hardware and software transformations can be applied to it to compress the amount of storage required for an image, to convert the machine-specific encoding of the image into a standard format for storage or exchange, and to analyze the content of the image.

Electronic document generation

While capture and storage of page images is required for that vast majority of the world's published heritage produced before the computer era, most documents today are generated through some electronic means. Computer typesetting and photolithography of computer-generated page images has now almost completely replaced the earlier mechanical methods of generating printed text. Computer text editors and word processors of varying degrees of sophistication have largely replaced mechanical and electro-mechanical typewriters for originating documents or producing fair copies of manuscript documents, non-textual documents such as graphs, illustrations, and maps through electronic means.

Documents originated with the aid of a computer system have important differences from those captured by means of image scanning. Most notably, computer "originals" are generally stored as encoded text that can be subsequently manipulated by computer programs and users. Thus, in a text file, the letter "A" is not stored as an analogue of the graphic character, but as a code which represents the linguistic or logical meaning of the character. Because the code represents a meaning rather than an image, it can easily be processed by computer systems. Additionally, electronic originals will include some method for indicating structural elements of the text, such as headings and tables, and explicit instructions for producing human-readable output.

Electronic document Delivery System Model

The electronic document delivery system consists of some applications and a server, which contains the online public access catalog. In a LAN environment, the server interacts with local devices and uses the LAN for electronic document transmission and user notifications by means of electronic mail.

The electronic document delivery system includes (Assunta Arte, 2001), in its design, the support user facilities like: The collective catalogue of serials available online, an

alpha station running the unix operating system for file transmission, an electronic mail module to communicate requests, a scanner to transfer images into files, a power PC Macintosh 76000, and a laser writer 16/600 PS.

The phases involved in electronic document delivery developed as a model are given below.

Request management

The server receives requests from local and remote users by electronic mail in conformity with IFLA recommendations. Requests are stored in a database on unix server. The request on the web form allows the user to send single requests. This web form can be used by the users as regular requesting method or as an alternative to ordering known items from other sources, such as the online public access catalogue.

The method used to accept applications is through in-person, Internet web pages, and e-mail. E-mail is the method of choice for bringing to people's attention information, i.e., immediate or "one time use" in nature. For example, when we want to advertise certain new additions/acquisitions picked up from web surfing. It is particularly successful because requests can be made electronically without users having to come to the library and filling in a form. Users increasingly want to order material via their PCs and have it delivered to their desks. Applications can easily be written and sent to the library staff, so that requests can be received, processed and satisfied without human intervention.

Document production

The majority of new networked e-journals and many other electronic serials are delivered via the web and are currently based on an HTML (hyper text Markup Language) backbone linking articles either in HTML or different formats viz., PDF, RTF, LaTeX, SGML etc. The best among the formats which can take care of physical, mathematical, and chemical symbols is PDF format. The preparation of a document consists of scanning of journal articles, with Adobe acrobat capture and saving the files in PDF format. Storage of documents scanned is done on a server to be distributed to its destination.

Document transmission

The documents generated by the scanner are sent by e-mail, in 24-48 hours to the destination. The introduction of an electronic document delivery system for forwarding requests by e-mail reduces the waiting time. Libraries have to shift from manual to electronic service as the user and the other library needs the document in less time. When users submit a request they are interested in receiving articles within 24 hours as direct personal delivery, i.e., via e-mail or fax without a visit to the library or in case of other cities without waiting for post. Electronic formats largely satisfy the users concerned with a good quality, clear copy of the requested article.

6.6 INTER-LIBRARY LOAN STANDARDS

6.6.1 The ISO Inter-library Loan Protocol Standard

The inter-library loan protocol was approved as an International Standard in 1991 by the International Organization for Standardization (ISO) after several years of international consultations and reviews. The standard itself is made up of two

documents which have ISO standard numbers assigned to them: ISO 10160 for the Inter-library Loan Application Service Definition and ISO 10161 for the Inter-library Loan Application Protocol Specification.

The Inter-library Loan Protocol Standard is the international library community's response to ILL communication barriers resulting from the proliferation of incompatible ILL messaging systems. A variety of North American and European ILL systems have been developed for different hardware and software environments with each system supporting a unique set of messages and message formats. The different messages produced by these systems have made their exchange between disparate ILL systems impossible without elaborate conversion activity.

The inter-library loan protocol is a communication standard which permits the exchange of ILL messages between systems that use different hardware and software by defining a standard set of messages and message formats. It also specifies transaction states to define each stage of an ILL transaction. The implementation of the standard not only enables the exchange of ILL messages between dissimilar systems but also provides a mechanism for the control and management of ILL transactions for both lending and borrowing.

Much of what goes on in the protocol is hidden from the user by the application and the user interface. The amount and way ILL information is presented to the user is dependent on the design of the ILL system. It is therefore possible to build ILL systems to meet local processing or operational requirements; the only common feature of these systems would be the ILL protocol module.

ILL Protocol Features

The Inter-library Loan Protocol Standard is very rich in features and capabilities, thanks in large part to international participation in its development. For discussion on standards for ILL/DD, the most relevant features of the ILL protocol are described under the headings: protocol services and messages, transaction states, data elements, transaction types and transaction management information.

ILL Protocol Standard Summary

The ILL protocol is a communication standard involving the invocation of protocol services within a local system and the transmission of optional messages between two or more systems representing the transaction partners. The ILL protocol provides a wide range of services and options to meet the needs of most ILL/DD scenarios. Although it is separate from any searching application, the ILL protocol is an important component within the greater information retrieval process. In an attempt to keep pace with a rapidly evolving technological and service environment, it is constantly being examined for possible additions.

6.6.2 ILL-Code

This model national code for inter-library loan and document supply was first established in 1983 by the IFLA Office for International Lending (OIL). It has been fully updated and revised by OIL and the IFLA Section on Document Delivery and Interlending in 2000. It is recommended as a model for all countries that do not at present have a national code for inter-library loan, or who wish to revise existing codes.

A model national code clearly cannot take into account all variations in practice between countries. Provision has therefore been made for individual countries to include information specific to them.

If the model code cannot be adapted to any particular country's needs, the following checklist may be used as a guide to the topics that a code should cover:

- definition of interlending
- a statement of any broad principles
- any other national regulations, manuals, etc, that should be known
- verification of requests
- location of required materials and/or channels to be used
- standard formats
- sending the request
- treatment of requests received
- supplying the item
- loan periods, return of material, renewals
- responsibility for loss or damage
- charges and payment procedures
- statistics

The object of this code is to improve efficiency by providing standard procedures for inter-library loan and document supply. It does not preclude other agreements between local or subject-related groups of libraries, nor does it apply to international lending, which is governed by the document.

Definition

Interlending is the process whereby one library obtains from another, specified library material requested by its users and not available from its own stock. The requested material may be sent as a temporary loan or a substitute copy may be supplied instead.

Principles

Interlending should be recognised as a vital element in making library materials available to users. Libraries are expected to acquire materials most likely to be needed by their users but should also expect to borrow material from other libraries to meet legitimate demands by users for material that is not in stock or temporarily inaccessible to the user. All libraries should publicise their interlending services to their users. In the interest of mutual support and the widest possible availability of published documents (which is in the public interest), libraries should be as liberal as possible in their interlending policies and should seek to develop and support a fast and efficient national system.

Requesting libraries should be aware of existing regulations and agreements on interlending. Supplying libraries should make available on request a statement of their interlending policy and charges.

Requesting libraries should be aware of their own collection development policy, as in certain circumstances, permanent acquisition of the item may be more appropriate than obtaining the item through ILL.

It is legitimate to request any kind of library material, but rare, fragile, or bulky items, or items that cannot be photocopied and are in high local demand, are less likely to be readily supplied. The supplying library has the ultimate right to decide whether to supply any requested item.

Requesting

Requests made by users should be scrutinised and despatched by the requesting library as quickly as possible: within one working day for straightforward requests and up to three working days for requests with poor bibliographic details. Where the details given by the user are incomplete or inaccurate, the requesting library should make a reasonable effort to verify the information with whatever bibliographic tools it possesses; if unsuccessful, it should state the sources tried.

Details of the requested item should be adequate for its identification by the supplying library. The exact bibliographic details required may vary from one supplying library to another, but guidelines on what elements to include can be found on the *IFLA International Request Form, in the IFLA Guidelines for sending ILL requests by email, and in the IFLA Fax Guidelines*.

Decisions on where to send requests should depend principally on the likelihood of first-time success; reapplication or circulation of requests among libraries is a principal cause of delay and high costs. If possible, a small number of regular channels should be utilised consistently. Large numbers of requests should be sent only to those libraries that are willing to accept them. Location tools, union catalogues and accessible library catalogues should be used as and where appropriate.

Standard request forms or other standard formats should be used. Where a loan, photocopy, microfilm, etc. is specifically required, this should be stated in the request.

Where copyright restrictions may apply, a declaration should be made by the requesting library that it has conformed to them.

Requests should be despatched by fast transmission methods, for example by electronic transmission, fax or the fastest regular mail service.

Supplying

Libraries receiving requests should deal with them as expeditiously as possible. When a request cannot be satisfied or if there is likely to be a serious delay in supplying, then either the requesting library should be notified immediately or, if there is a rota of locations, the request should be passed to the next location.

The supplying library should ensure that items supplied on loan are clearly marked with the name and address of the owning library, the date by which the loan is to be returned and any special conditions that apply to it. Loan periods should be adequate to allow for transmission in both directions as well as use by the borrower. Items supplied should be packaged carefully and addressed clearly, and despatched by fast postal or other delivery services.

Receipt and return

The borrowing library should take due care of material received on loan and respect any special conditions. Loans should be returned in time to arrive at the supplying library by the due date. Requests for renewals should be made well before the due date; where no response is received, the renewal may be assumed to have been granted.

Notification of receipt of an item on loan or of its return to the supplying library is not necessary, unless specifically requested.

The borrowing library is responsible for any loss or damage of material loaned to it, from the time of its despatch by the supplying library to its return there. However, supplying libraries should take the precaution of insuring any particularly valuable items before despatching them.

Payment

When the number of requests is low or the number of items supplied between libraries is roughly in balance (that is, where accounting costs would be higher than the charges levied), then inter-library payment should be waived. However, large net lenders may justifiably charge for providing interlending services. Payment procedures should be simple and efficient, for example by using flat-rate charges or by batch invoicing. Supplying libraries should make information on their payment procedures and current charges readily available to requesting libraries.

Charges made by supplying libraries should not normally be passed on by requesting libraries to individual users, although a small standard charge may be made so as to deter frivolous requests.

Statistics

Where a national body requires the submission of interlending statistics, libraries should record statistics for this purpose. Statistics elements of electronic ILL management systems should be used wherever possible, and libraries should aim to ensure consistency in type and frequency of statistics collection.

Self-check Exercise

2) Discuss the role of ILL code in the Inter-library loan services.

Note: 1) Write your answer in the space given below.

2) Check your answer with the answer given at the end of this unit.

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6.6.3 Tools for Document Delivery - Ariel— for users of the Internet

How Does Ariel Deliver?

- Transmits over the Internet using both the FTP and MIME e-mail standards, for a whole world of easy connectivity.

- Scans and sends grayscale and colour images.
- Prints variable-resolution images on plain paper—up to 600 dots per inch.
- Lets you scan and print at letter, legal, 11"×17", A3, or A4 paper size, for effortless international transmissions.
- User-friendly Windows interface and online help.
- Works with a wide range of printers and scanners.
- Outperforms the fax in speed, quality, reliability, and cost.

The Power of FTP and E-Mail Transmissions

Ariel allows for choice of sending and receiving documents through MIME (multipurpose Internet mail extensions) as well as FTP (Internet file transfer protocol). Like FTP, MIME enables complex documents to be transmitted and received. These include very long texts, information containing non-ASCII character sets (such as non-Latin scripts), material containing multiple fonts, images, and more.

Ariel provides the basis for librarians and information centers to excel in online document delivery—*right to the user's desktop*. A robust campus or regional delivery system of this sort requires that end users have access to MIME e-mail, enough electronic mailbox capacity, and access to TIFF viewers. RLG (Research Libraries Group) assists librarians in locating free or shareware multipage viewers.

Ariel features:

- Has the ability to import and print documents created at any resolution.
- Incorporates an enhanced internal document viewer that enables you to preview material as you scan or receive it.
- Lets insert and delete images in scanned documents.
- Lets monitor the status of materials sent and see what is still pending receipt; see the real-time status of incoming Ariel e-mail and items sent via FTP; and set the intervals when Ariel will check for incoming items in your mailbox. And Ariel files unrelated messages (such as network messages) in a separate folder for disposal.
- Can print a range of pages or selected pages in a document to evaluate and select pertinent pages for use, without having to print or forward the entire document.
- Enables me to select and configure a scanner from the menu. It's easier to add a new scanner or switch over to another if maintenance is needed.
- Conforms to Windows application and set-up guidelines.

6.7 COPYRIGHT ISSUES FOR RESOURCE SHARING

The shift from paper-based information systems to integrated electronic document delivery and resource sharing has a strong impact upon established patterns and processes associated with information production, access and distribution. While there are many issues that invariably arise during this transition, the two most important are Intellectual Property Rights (IPR) in the electronic environment and the impact

upon the scholarly communication system. The issue of copyright in the electronic environment is extremely complex and multifaceted.

Copyright, an important type of intellectual property (IP), protects the labour, skill and judgement someone - author, artist or some other creator - expends in the creation of an original piece of work. Different countries apply different tests in order for copyright to be enjoyed. In the majority of countries, copyright is an automatic right. One need not even register with any authority. The owner of copyright has the right to prevent others from copying, selling hiring out, performing, broadcasting or amending the work.

Fair dealing or fair use permits copying for certain specific purposes and under certain conditions. It is intended as defence against an infringement action, and relies on the argument that the individual made the copy or multiple copies of not too substantial a part of the literary work and would not damage the legitimate interests of the copyright owner.

Electro copying, electronic copyright, multimedia networking

Electro copying means the conversion of printed materials into machine readable form using document image processing and OCR technology. It is a violation of copyright to convert, without prior permission, items owned by third parties into machine readable form and to store them in a database. Scanning of material in preparation for sending it down a network without permission is "adaptation" of the work, and therefore infringement. Sending material via telecom network, although virtually instantaneous, is infringement. Similarly printing out copies at a remote terminal without permission is again infringement.

How can these issues be addressed?. An obvious way forward is through site licensing, although other models may develop. Site licensing pricing is typically based on the number of users, but it could be simply a fixed fee. In the case of a fee based on the number of clients, the subscriber must make annual declaration of the number of terminals used for access. There is no way the vendor can check the truthfulness of the declaration. Publishers' trade association is opposed to such an approach. The user wants a simple arrangement to avoid time wasting individual negotiations. Unless a blanket electrocopying agency develops, users will either ignore publishers or deal directly with authors. Indeed in scholarly communications, the authors may prefer to deal directly with users ignoring the publishers.

A network environment gives users access to a vast quantities and variety of material, some of it unpublished but still available for downloading and dissemination. This creates a potential conflict between the right holder's need to retain control and earn an income, and the user's right to make the use of the material. The way publishers, and other rights holders respond is bound to be varied. There is little doubt that there will be changes to the idea of publishing' 'journal' 'book' and 'article'

An electronic copyright management system (ECMS) can address these issues. One type is software that would automatically tag the document in a tamper proof fashion. This could be read by anyone to identify the original author and / or copyright owner of the material, and to identify who had made the amendments to the document. An audit trail would thus be clearly identified. Another type of ECMS is software solely to govern or control distribution of the work, which may be in printed or electronic form. This can be used to limit what can be done with the original or copy

of the file containing the work. It can limit the use of the file to view only. It can also limit the number of times the work can be retrieved, opened, duplicated or printed. (Oppenheim,1997)

Copyright is a central issue when considering document supply electronically because actions seen as simple in themselves are technically complex and raise many legal issues. The basic concepts of copyright law apply whatever the situation but trying to map these on to the electronic situation can be difficult. Proposals from the European Commission to change the law will make the provision of document supply services even more difficult. The use of vehicles such as the World Wide Web for delivering documents and information generally, while offering exciting opportunities, is full of obstacles.

Here is a checklist of suggested actions for copyright in networked environment:

- Be aware of current and future copyright laws
- Devise a copyright policy outlining the aims and objectives of the network
- Make a decision about what content to include
- Identify who owns the copyright in protected works. Establish clearance mechanisms as necessary
- Involve legal advisors when negotiating licenses and permissions.
- Establish who will have access and for what purposes. Make a decision about network security and how copying and use will be controlled.
- Finally, think like a right holder but act like a librarian.

6.8 IFLA - GUIDELINES FOR RESOURCE SHARING

The shared use of individual library collections is a necessary element of international cooperation by libraries. Just as no library can be self-sufficient in meeting all the information needs of its users, so no country can be self-sufficient. The supply of loans and copies between libraries in different countries is a valuable and necessary part of the ILL process. Since every country must determine the ways in which it conducts interlending and document supply, the following principles and guidelines have no mandatory force. However, individual countries and libraries are strongly encouraged to use these guidelines as a basis for the conduct of international lending. The principles protect the interests of all libraries, and set out the recommended practice by individual nations for document provision.

There are eight major principles, each of which is supported by a number of guidelines.

Principles and Guidelines for Procedure

- 1) **National responsibility:** Each country should accept responsibility for supplying copies of its own publications to any other country, by loan, photocopy or other appropriate method. This applies certainly to those published from the present date, and as far as possible retrospectively.

- 1.1) Each country has a special responsibility to supply its own national imprints to libraries in other countries. The concept of universal availability of published material (UAP) relies on this principle, and this responsibility should be accepted readily by all countries.
 - 1.2) No country or library is under an obligation to supply a work that has been requested, but all reasonable efforts should be made to satisfy international requests.
 - 1.3) Particular effort should be made to satisfy requests received from libraries in less developed countries, in support of the concept of UAP.
 - 1.4) All communication should be in clear and simple language in order to avoid misunderstanding across linguistic barriers.
- 2) **National lending system:** Each country should aim to develop an efficient national lending system, since national lending systems are the essential infrastructure of international lending.
- 2.1. Recommendations on developing efficient national lending systems are outside the scope of these guidelines, but users are referred to the *Model National Inter-library Loan Code*, also produced by IFLA, which sets out the basic requirements of a national system.
- 3) **National policy for international lending:** Each country should have a national policy for the international lending and document delivery of its own publications. The policy should be disseminated through the national library, national library association, or other major interlending institution.
- 3.1) Where a country has a national centre for inter-library loan and document delivery, this centre should be the main focus for the development of a national policy. Where there is no national centre, responsibility should rest clearly with the national library, a national interlending co-ordinating body, or major lending institutions.
 - 3.2) All libraries in the country involved in international lending or document delivery should be aware of, and work within, the national policy.
 - 3.3) The national policy for international lending should be made available to all libraries outside the country, via the national library or other lending institutions, or by other individual libraries that receive international interlending requests. Similarly, all major libraries should make available to requesting libraries their own policy on handling international requests.
 - 3.4) The national policy should indicate whether outgoing requests should be sent via the national centre where one exists, and whether individual libraries may send requests direct to supplying libraries outside the country.
 - 3.5) Similarly, the national policy should make clear whether incoming requests should go via the national centre (where one exists), and to what extent individual libraries should accept and satisfy international requests. The IFLA publications *Guide to Centres of International Lending* and *Guide to Centres of International Document Delivery* list institutions to be contacted in the first instance, if in doubt.

- 3.6) All libraries within the country should aim to handle requests from other countries in a consistent manner, in order to offer a clear and effective service for international requests.
- 4) **Sending the request:** Supplying libraries should accept requests submitted in any format wherever possible. Requesting libraries should be aware that not all formats will be accepted by all supplying libraries. Accuracy should be ensured at all points in the request process.
 - 4.1) The requesting library should endeavour to use electronic ILL request facilities whenever these are provided.
 - 4.2) Requests submitted by e-mail, fax, or other fast methods should conform to agreed standards, such as the *IFLA Guidelines for Email Requests* the *IFLA Fax Guidelines*, or the ISO ILL Protocol, if appropriate.
 - 4.3) Requests using paper forms should be on *IFLA Request Forms*, or on other forms authorised by IFLA.
 - 4.4) Where the loan of an original or a specific type of copy is essential, this should be stated on the request.
 - 4.5) Where the loan of an original is required, reasonable effort should be made to ensure that no copy is available in the requesting library's own country before a request is sent abroad.
 - 4.6) Incomplete or inaccurate requests cause delays and may have to be returned for further checking. It is the responsibility of the requesting library to verify, and where necessary complete the bibliographic details of the item requested to the best of its ability.
- 5) **Supplying the item:** The decision whether to supply a substitute copy or to loan the original rests with the supplying library. Each country should be sympathetic to the requesting library's ability to access the supplied format.
 - 5.1) The supplying library should send the item or provide a response as quickly as possible and by the fastest available method.
 - 5.2) Items should be sent direct to the requesting library, except where it is specifically stated that they must be sent to a national centre.
 - 5.3) All items lent should be clearly marked with the name of the owning library.
 - 5.4) The supplying library should be as generous as possible in setting the due date for the return of loaned items, taking into account the time required for postal delivery and return of the item.
 - 5.5) Where an item cannot be supplied, the reason for non-supply should be given as clearly and as fully as possible. *The IFLA multilingual list of ILL Response Codes* should be used for this purpose
- 6) **Copyright :** Due regard must be given to the copyright laws of the supplying country. While material requested on international ILL may often fall within 'fair use' or 'fair dealing' provision, responsibility rests with the supplying library to inform the requesting library of any copyright restrictions which might apply.

- 6.1) These guidelines relating to copyright and international lending support the *IFLA Position Statement on Copyright in the Digital Environment*. Libraries should be aware of this position statement.
- 6.2) Each supplying library should be aware of, and work within, the copyright laws of its own country. In addition, the supplying library should ensure that relevant copyright information is made available and communicated to requesting libraries.
- 6.3) Lending, and limited copying for purposes such as research or private study, are usually exceptions within national copyright legislation.
- 6.4) The requesting library should pay due regard to the copyright laws of the supplying library's country.
- 6.5) Each supplying library must abide by any licenses agreed to by their organisation, which may have some restrictions on the use of electronic resources for ILL transactions.
- 6.6) Libraries should be aware of the *IFLA Licensing Principles* when considering ILL from licensed sources.
- 6.7) The supplying library is not obliged to participate in services which enable copyright fee-paid copies to be supplied.
- 7) **Responsibility for loaned material:** The requesting library assumes responsibility for borrowed materials from the time the material leaves the supplying library until it is safely received back. Fast secure methods should be used for supplying and returning items.
 - 7.1) Loans should be packaged and labelled by both the supplying and requesting libraries to ensure that they conform to customs requirements. It is the responsibility of both the requesting and supplying libraries to ensure that they are aware of current customs regulations with respect to the international loan of items.
 - 7.2) Original documents, when received by the requesting library, must be used in accordance with its normal regulations unless the supplying library stipulates certain conditions.
 - 7.3) It is the responsibility of the requesting library to ensure that the item is securely packaged, clearly labelled and adequately insured for its return.
 - 7.4) Items should be returned by the fastest service reasonably available to the requester. Airmail should be used whenever possible.
 - 7.5) From the moment a library despatches an item to a requesting library until it returns, the requesting library is responsible for any loss or damage incurred. The requesting library is responsible for replacing the item, or for paying the supplying library the full estimated cost of any such loss or damage, including where requested, any administrative costs involved.
 - 7.6) The requesting library should request renewal of the loan period well before the due date. Where no response is received, the renewal may be assumed to have been granted. If renewal is known to be unavailable on an item loaned abroad, this should be communicated to the requesting library at the time of delivery of the item.

- 8) **Charges and payments:** The decision whether to charge a fee for transactions rests with the individual library. Where such a charge is made, the library should endeavour to keep the mechanism for charging and payment as simple as possible.
 - 8.1) Transaction charges may be made or waived according to agreements between the two libraries involved.
 - 8.2) Requesting libraries should indicate their willingness (or otherwise) to pay a fee (and the maximum amount they are willing to pay) at the time of making the request. If the charges are greater than the maximum cost, the supplying library is not required to fulfill the request.
 - 8.3) Both supplying and requesting libraries must be aware of possible requirements under national copyright law which relate to making a charge for copies supplied.
 - 8.4) Suggested simplified payment methods

Self-check Exercise

- 3) What are the international guidelines for Document Delivery and Inter-library loan services?

Note: 1) Write your answer in the space given below.

- 2) Check your answer with the answer given at the end of this unit.

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6.9 SUMMARY

The voluminous growth of published documents in the recent past, increasing cost of information sources, technological advancements that offer newer methods of information processing, retrieval and dissemination call for the concept of resource sharing. Over the last two decades libraries have felt the impact of information technology that has been effecting the structure of the services to a great extent. The various methods and tools for document delivery and inter library loan have given a way for improved services to the patrons. The international guidelines discussed in the unit will help the libraries to implement standards to meet the requirement of their users. The copyright issues in the electronic environment have to be looked into.

6.10 ANSWERS TO SELF CHECK EXERCISES

- 1) The objective of the resource sharing model is to have a cooperative network at the national, regional or at local level. Its activities are directed towards promoting cooperative endeavours in resource development and utilization, with a view to organising library services at the macro level with an economical cost

for maximum benefit. With the resource sharing model, libraries are expected to coordinate their activities to avoid duplication to the extent possible. The ultimate aim is to offer speedy and efficient services to users, academics and researchers of the institutions. Resource sharing also encourages the participants to pool and share resources so that a usable and exhaustive knowledge resource base required in the field of interest and related areas is built up and the limited funds are thus made to go a long way. Various services, viz., Catalogue-based services, Database services, Document Supply, Collection development – Acquisition, Communication-based Services, etc can be enhanced using the resource sharing network.

Components of resource sharing network include: hardware at the participating libraries, different types of software, use of standards in information handling, communication, application software and hardware.

- 2) The object of ILL code is to improve efficiency by providing standard procedures for interlibrary loan and document supply. Interlending is the process whereby one library obtains from another specified library material requested by its users and not available from its own stock. The requested material may be sent as a temporary loan or a substitute copy may be supplied instead. Libraries are expected to acquire materials most likely to be needed by their users but should also expect to borrow material from other libraries to meet legitimate demands by users for material that is not in stock or temporarily inaccessible to the user. All libraries should publicise their interlending services to their users, in the interest of mutual support and the widest possible availability of published documents.

Requesting libraries should be aware of existing regulations and agreements on interlending. Supplying libraries should make available on request a statement of their interlending policy and charges. Requesting libraries should be aware of their own collection development policy, as in certain circumstances permanent acquisition of the item may be more appropriate than obtaining the item through ILL.

Standard request forms or other standard formats should be used. Where a loan, photocopy, microfilm, etc is specifically required, this should be stated in the request. Where a national body requires the submission of interlending statistics, libraries should record statistics for this purpose. Statistics elements of electronic ILL management systems should be used wherever possible, and libraries should aim to ensure consistency in type and frequency of statistics collection.

- 3) There are a number of guidelines given by various international organisations such as International Federation of Library Associations and Institutions (IFLA), the American Library Association (ALA), Interlibrary Loan Code for the United States, 2001 Guidelines from the Association of College and Research Libraries (ARL), Guidelines for the Loan of Rare and Unique Materials, Guidelines on Shipping Inter-library Loan Materials from the U.S. to Canada.

The shared use of individual library collections is a necessary element of international cooperation by libraries. Just as no library can be self-sufficient in meeting all the information needs of its users, so no country can be self-sufficient. The supply of loans and copies between libraries in different countries is a valuable and necessary part of the ILL process. There are eight major principles, each of which is supported by a number of guidelines.

Principles and Guidelines for Procedure given by IFLA include: National responsibility, National lending system, National policy for international lending, Sending the request, Supplying the item, Copyright, Responsibility for loaned material, Charges and payments.

6.11 KEYWORDS

- Document Delivery** : This term is commonly used to refer to the complete process of supplying a document to its ultimate user, including formulating and issuing the request, as well as managing the physical or electronic delivery of the document.
- Inter-library Loan** : An arrangement by which a library can make a document that is not in its own collection available to its patron by temporarily acquiring it from a library that does own it.
- Inter-library Loan Protocol** : The international standards for inter-library loan: ISO 10160 and 10161. These are OSI (Open Systems Interconnection) standards for intersystem communication for ILL. The international standards are in two parts, a service definition (ISO 10160) that defines the ILL services made available to applications using the protocol and a protocol specification (ISO 10161) that specifies the content of protocol messages and procedural rules for exchanging them.
- Protocol** : Used here to refer to a communications protocol, which is a set of agreed rules and procedures governing the form and content of data communications to allow interoperation to take place between different, and possibly mutually incompatible, systems.
- Copyright** : Copyright is a right of intellectual property, whereby authors obtain, for a limited time, certain exclusive rights to their works.
- HTML** : Hypertext Markup Language. A standardized language of computer code, imbedded in “source” documents behind all Web documents, containing the textual content, images, links to other documents and formatting instructions for display on the screen.
- Electronic Mail (E-mail)** : The use of a network to transmit text messages, and reports. Users can send a message to one or more individual users, to a predefined group, or to all users on a system. When you receive a message, you can read, print, forward, answer, or delete it.

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