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# UNIT 12 RESOURCE SHARING NETWORKS

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## 12.0 OBJECTIVES

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In the previous Unit, you have been exposed to the concept of networks and networking. As a result, you have gained knowledge relating to the functions, architecture, topology of networks as also of some of the issues relating to their application. You were provided with the background knowledge relating to network communications. In the present unit, let us make an effort to learn about resource sharing library networks.

After reading this Unit, you will be able to:

- explain the concept of resource-sharing and its need, purpose and objectives;
- understand the nature, development and functions of library resource sharing networks;
- identify the basic requirements for the organisation of resource sharing networks; and
- know the development and functioning of resource-sharing library networks in India.

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## 12.1 INTRODUCTION

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The term 'network' always has a wide range of meanings in everyday life and this situation is further complicated because it has two very specific meanings within the library world: bibliographic networks and resource sharing networks. Now we need to extend the phrase to include "information networking". In other words, we have "library and information networking".

Library-networking is the use of computer-networking to support all forms of communication between libraries, and their users and between libraries and libraries. On the other hand, information networking is concerned with end-user communication and access to networked information services not in any way mediated by the library. It is an information dissemination and gathering activity enabled solely by the presence of the network.



Information networking is not a new activity. The exchange and interchange of information between individuals and peer groups is a common feature of the human condition. Computer -supported information networking places this activity in an entirely new context and requires understanding of issues in the development of computer mediated communications.

For a decade or so now, 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 of materials to supplement the materials held in their own collections to service their clientele. The demand for inter-library lending (ILL) and document delivery service has increased significantly since the 1980s.

This is due to many reasons some of which are: growth in quantity and complexity associated with knowledge and the resultant proliferation of documents of different variety, the increase in the number and cost of periodicals, the shrinking library budgets and the maintenance costs associated with library collections. All these aspects have made it imperative that libraries should cooperate and share their resources with the objective of providing effective library services to their users.

Networks enable librarians, faced with client's information needs beyond their local resources, to identify and obtain materials and services for those clients.

The concept of 'access' to information resources is nothing but a part of the wider philosophy concerned with resource sharing in libraries. It may be stated that access is facilitated by means of cooperative collection development and inter-library loan activities. Network access is an enfranchising mechanism that cannot be viewed as a luxury. One of the significant points that needs to be emphasised is that resource sharing activity is based on the concept of equivalence. In other-words, libraries should not only receive but should also give. In order to facilitate such arrangements, all the participants must know what each of the member libraries has and what resources it will be acquiring in future.

The development of inter-connected computer networking involves formulation and agreement of standards for the exchange of bibliographic data between computer systems and network types through a common interface. This effort is very essential for the successful functioning of resource-sharing library networks. An attempt is made in this unit, to furnish basic know-how relating to resource sharing library networks. It is hoped that the important aspects described and discussed in this unit will facilitate you to properly comprehend the concept of networked resources and their use to satisfy the diverse information needs of the end-users. As we move increasingly into electronic-based information, we can see technology and networks working together to reduce the physical movement of materials from location to location.

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## **12.2 CONCEPT OF RESOURCE SHARING**

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Librarians are very much familiar with the term cooperation. It means formal or informal arrangements between libraries within which they can work together for the common benefit of their users. Few, if any, libraries can regard themselves as islands, endeavouring to keep all the materials required by their users. Throughout the centuries, communication between scholars has resulted in the lending of materials to other libraries and access being provided to special collections. It was not however, until the present century, that formal schemes of library cooperation have come into being. Examples are: preparation of union catalogues, inter library schemes, centralised storage and subject specialisation schemes, etc. All these efforts were aimed at avoiding duplication of efforts on the part of libraries and using the available resources optimally.

Resource sharing, in fact, extends the scope of library cooperation to include certain reciprocity and partnership in which each participant has something useful to contribute as well as receive from others. In other words, there is a willingness and also the capability to make it available when required.

### **12.2.1 Definition**

Allen Kent provides a description of some of the concepts associated with the resource sharing activity in the following terms:



Resource sharing in libraries is defined as a mode of operation where by functions are shared in common by a number of libraries in its most positive effects. Resource sharing entails reciprocity, employing partnership in which each member has something useful to contribute to others and in which every member is willing and able to make available when needed. The term resource is used to designate any or all of the materials, functions, services and the expertise of the professional and non-professional staff. Resource implies a thing, a person or an action to which one turns for aid and help in time of need.

Secondly the term sharing implies apportioning, allotting or contribution something that is owned to benefit others. It implies partnership for mutual benefit.

Library resources encompass print and non-print materials as well as human resources that are eligible to be shared in ways that enhance the quality of service." From the foregoing explanation of Kent, it must be easy for any one to understand the meaning and significance of 'Resource Sharing'. Obviously it does not mean that individual identity of participating libraries would be affected in any way. In fact, the gains of resource sharing are to be obtained without in any way adversely affecting the objectives or interests of the participating libraries. However, some minor adjustments may have to be made in exceptional situations, with regard to the operational methods.

### 12.2.2 Objectives of Resource Sharing

The objectives implied in resource sharing activity are very idealistic in nature. They are mainly aimed at providing convenient access to information to library users irrespective of the location of the resources. That is to say that libraries go beyond their own resources to satisfy the user requirements. The main reasons for resource sharing activity are:

- Reduction in cost;
- Avoidance of unnecessary duplication in information resources and their processing as well as maintenance costs;
- Provision of greater access to information resources to a wider category of users; and
- Development of specialised areas of collection building each member library concentrating on areas of its own concern.

#### Self Check Exercise

1) State the objectives of resource sharing.

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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## 12.3 DEVELOPMENT OF LIBRARY RESOURCE SHARING NETWORKS

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The development of library networks is the result of computerisation of catalogues and bibliographic databases and the development of various MARC data standards for record exchange between libraries and other library agencies. The addition of the telecommunications element to this work proliferated online search services and resource sharing library networks. During the 1980s major bibliographic utilities came into existence. These bibliographic utilities were initially based on specific geographical areas or particular sectoral needs and often supported by a particular institution. It may be mentioned that major bibliographic utilities first emerged from North America, though in the later period networks came into being in UK and other countries. The significant bibliographic utilities in North America are: OCLC, WLN, UTLAS and RLN of these the OCLC (Online Computer Library Centre), is the largest of the bibliographic networks. Ever since its establishment originally as Ohio



college Library Centre, it has been playing a significant role as a resource sharing network in U.S.A. Though OCLC is based in the United States, it has a world wide library membership including Europe and the Far East.

OCLC possesses the largest database of MARC format data records and services a large number of libraries in the production of bibliographic data bases and also-in inter library loan and reference service. To aid these activities, OCLC developed a dedicated US-wide network to link the participating libraries to its central databases. The network is structured on a regional basis with an individual library making a local link to the regional network and through it to the central network to avail the range of services provided by the OCLC. This arrangement prevented the direct communication between the participating libraries without going through the OCLC. In fact, this was a limitation and many libraries desired the facility to directly interact with one another. During the 1980s the OCLC responded to the changed requirements by a gradual opening of access to the existing systems obviating limitation. This change resulted in the establishment of a new X.25 network, using capacity from the US Sprint Commercial value-added network in 1991. This facilitated the introduction of network to network links, and standardisation on X.25 rather than proprietary protocols permitted the building up of direct links. This arrangement naturally increases the connectivity to the user by allowing more flexible connections. The OCLC network service now provides gateway access to other reference services such as The Easy Net Information Service as well as its own reference services from the local network of an institution. The Gateway project allows local network terminals to connect to OCLC Inter library Loan and Reference Services so that any user may retrieve bibliographic information and also the available location and make arrangement for a local reservation or request for an inter library loan.

Like OCLC, a number of important networks emerged in other countries like U.K. Two long standing organisations in this regard are BLCMP and LASER.

BLCMP, formerly known as Birmingham Libraries Cooperative Mechanisation Project is a cooperative effort which embraces a range of services that are used by a large number of libraries. BLCMP maintains extensive MARC databases.

LASER (London and South Eastern Region) has a focus on interlending and resource sharing. A significant recent development in LASER is the EARL (Electronic Access to Resources in Libraries). The EARL consortium was established in 1995 to develop the role of public libraries in providing library and information services over the network. Its membership includes more than 50% of the public libraries in U.K. The significant contribution of EARL Web, a network of public library information resources and also a purchase deal to OCLC's First Search Service.

It is not our intention to enumerate here all the networking developments taking place through out the world but only to give you a few examples of important resource sharing networks.

In the following paragraphs we would like to acquaint you with the developments in India as regards the emergence of resource sharing library networks.

### Self Check Exercise

- 1) What are the activities of OCLC bibliographic network of U.S.A.?
- 2) Name the two important bibliographic networks that emerged in U.K.

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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### 12.3.1 Development of Resource Sharing Networks in India

In the foregoing sections of this Unit, we have discussed major factors associated with networking. We attempted to understand the concept of networked resources and the advantages and benefits of resource sharing activity. Most of our awareness is based on the developments and environment existing in the developed countries. It may be pointed out at this stage, that



Successful implementation of networking and resource sharing by and large depends upon the telecommunications facilities available in the country and the use of modern computer technology for the management of libraries and information services in the country. Apart from this essential condition, other conditions such as desire and cooperation among existing information institute to share their resources for the maximum benefit of the users of library and information services are also necessary.

It w consider the developments taking place in India since the 7th five year plan we may discern a significant change in the policies of the government of India favouring modernisatin of libraries and information services in the country. This has been eloquently advocated by the Report of the Working Group of the planning commission under the chairmanship of Dr. N. Seshagiri and also the subsequent report of the Working Group constituted by the Planning Commission under the chairmanship of B.P. Singh for the Ninth flat- period (1997-2002 ). The efforts made by NISSAT and Us: h've also contributed in a large measure for the establishment, development and operation of library resource sharing network in India. Let us try to learn more about the indigenous networks and their objectives and performance.

### Self Check Exercise

4) What are the important conditions for the successful implementation of the networking and resource sharing?

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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### 12.3.2 INFLIBNET (Information and Library Network)

The University Grants Commission (UGC) in its attempt to establish networking has taken the initiative and decided to develop a network of academic libraries to effectively mange and administer the resources of these libraries and provide efficient library services to a large number of users, using modern computer and communications technologies. As a consequence of UGC 's efforts INTLIBNET, a network of university and college libraries in India was established in 1988. The network became functional in 1991. As part of its development plan, INFLIBNET provided financial assistance to a large number of university libraries to modernise their operations using computer technology.

#### Objectives of INFLIBNET

The main objectives INFLIENET are as under:

- To evolve a national network of libraries and information centres in the country and to improve information handling capability;
- To provide reliable access to document collection through online union catalogue;
- To provide better access to bibliographic information sources with citation and abstracts through online accessing of international databases held by international information networks and centres;
- To provide document services by establishing resource centres around libraries having a rich collection of documents;
- To promote information resource utilisation through shared cataloguing inter-library loan service;
- To computerise operations of libraries and information centres in the country following a uniform standard;
- To facilitate communication among scientists, engineers, researchers social-scientists, academics, faculties, and students through electronic-mail,



- To enable users regarding of location and distance to access information;
- To create online information service and
- To encourage cooperation among libraries.

As one of the steps towards achieving the laudable objectives mentioned above, the INFLIBNET has initiated the automation process by funding 54 university libraries. It appears that only 17 of these libraries which received financial assistance from INFLIBNET have so far acquired the hardware to commence the automation activity. Even the progress in respect of resource sharing during the period is stated to be rather slow.

INFLIBNET has also taken a number of other measures which facilitate the realisation of its objectives some of the significant steps in this direction are: i) for the purposes of promoting resource sharing activity, it has already created a union catalogue of 50,000 records. It may mentioned here that union catalogue is one of the important tools which facilitates the resource identification, location and sharing aspects of resource sharing activity as a whole among members of the network; ii) INFLIBNET has also took great initiative the creation of databases containing 65,000 records of theses/dissertations and also a periodicals database having 30,000 records. These are some of pioneering efforts undertaken by-INFLIBNET to realise its basic objectives. It is making some efforts in software development and also for the creation of suitable manpower necessary for the purpose.

If we critically examine the achievements of INFLIBNET as given in the Review Committee Report, 1996 and try to compare these with the original targets contained in original report of 1988, prepared by the Inter-agency Working Group, we notice that the achievements fall short of expectations of Inter-agency Working Group. For instance, some of the targets mentioned in the INFLIBNET report were:

- compilation of union catalogue of 9 million unique records of retrospective collections of 179 university libraries as against 50,000 records as mentioned above
- at least 200 research and development (R& D) organisations were to be linked to INFLIBNET. (Even this target does not seen to be realised till now)
- Support would be given to 170 universities and 500 college libraries for library automation (this also remains to be achieved).

It may be stated here that UGC has drafted a new Memorandum of Association and Rules and registered the INFLIBNET Society in the year 1996. The objectives included in this Memorandum of Association are different from those recommended in the working Group Report of 1988. However, it may be noted here that the INFLIBNET Review Committee under the chairmanship of Dr. S. Venkateswaran in its report, submitted in 1996, also recommended revision of the objectives for INFLIBNET. INFLIBNET is also engaged in the manpower development activity by undertaking some short term training programmes and workshops. These are very meagre efforts. The network must attempt to develop some standardised software, which it appears, it has not yet succeeded in achieving. Much is expected of this network. It must however be mentioned that the human resources presently engaged in this work appears to be rather inadequate if INFLIBNET is to realise its stated objectives in the near future.

### Self Check Exercise

5) Mention the steps taken by INFLIBNET to meet its objectives;

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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### 2.3.3 CALIBNET (Calcutta Library Network)

The formation of Calcutta Library Network (CALIBNET) is the result of the efforts made by NISSAT (National Information System for Science and Technology). The DSIR (Department





of Scientific and Industrial Research) initiated action for this purpose. Accordingly a feasibility study report for networking about 40 libraries in Calcutta was prepared by the CMC Limited. As per the details contained in the report, an amount Rs.233.8 lakhs was to be spent during the two phases (Phase I and Phase II) of its implementation. The software required for this purpose was to be developed by CMC Limited based on INGRES 5.2 for CALIBNET with the financial support of NISSAT. The package named MAITRAYEE was developed and handed over to CALIBNET. It is understood that no database has been created using MAITRAYEE package in machine-readable form. It appears that no automation activity has yet been commenced utilising MAITRAYEE by any of the libraries, which were expected to be the participating members of CALIBNET. It is stated that CALIBNET is presently playing the role of a centre for CD-ROM databases which are acquired from outside sources. The other networks, namely BONET in Mumbai, BALNET in Bangalore, PUNENET in Pune, MYLIBNET in Mysore and ADINET in Ahmedabad all supported by NISSAT have not yet taken off by creating their own value-added databases and have commenced the resource sharing activity in a very effective manner. It appears that these networks are only providing E-mail and CD-ROM facilities. In other words, it may be stated that network technology usage cannot be perceived in the functioning of these networks.

### Self Check Exercise

1) Name the networks supported by NISSAT.

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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### 12.3.4 DELNET(Delhi Library Network)

India international Center took the first initiative in the establishment of Delhi Library Network. It organised a discussion on the sharing of resources and networking in Delhi libraries in January , 1988. At this meeting a committee was constituted to study the possibilities of establishing a network of Delhi Libraries . NISSAT arranged the feasibility study through CMC Limited and provided funds for the purpose. It was established as a joint project by IIC and NISSAT in 1998.

DELNET was registered as a society under the Societies Registration Act of 1860, with following main objectives:

- to promote sharing of resources among the libraries by developing a network of libraries, by collecting, storing and disseminating information and by offering computerised services to the users;
- to offer guidance to the member libraries on cataloguing, database services, circulation, acquisition, serials control, online services, selection of hardware and software, etc.;
- to coordinate efforts for suitable collection development and reduce unnecessary duplication wherever possible;
- to establish a referral centre, to monitor and/or facilitate catalogue search and maintain a central online union catalogue of books, serials, and non-book materials of all the participating libraries;
- to facilitate and promote delivery of documents manually and mechanically;
- to develop specialist bibliographic database of books, serials and non-book materials;
- to develop .database of projects, specialists and institutions;
- to possess and maintain electronic and mechanical equipment for fast communication of information and delivery of electronic mail;



- to coordinate with other regional, national and international networks for exchange of Resource Sharing Networks information and documents; and
- to undertake, facilitate and provide for the publication of newsletters and/or journals devoted to networking and sharing of resources.

It may be mentioned here that DELNET made progress in several directions as the first operational library network in India. Let us try to examine some of its achievements in realisation of its stated objectives. In the first instance, we shall try to know the services offered by the Network.

### **DELNET Services**

DELNET offers to its member libraries the undermentioned services:

- Online and off-line access to its databases;
- Ill online: Inter-Library loan requests are entertained online for books and other documents;
- INTERNET and E-mail Services: E-mail and Internet connectivity being provided by NIC to DELNET is being extended to all the member libraries at reduced rates. ERNET E-mail is also being provided;
- DELNET-LISTSERV (INTERNET mailing list): Online information on IFLA, Library and information science jobs, happenings and 1vMedical Clippings;
- Online information about forthcoming and new titles from publishers, book reviews, and current contents from INTERNET;
- DELNET conducts training programmes and workshops, seminars and lectures;
- Offers retro-conversion facilities to member libraries through equalised agencies; and
- DELNET has created a Web-page on INTERNET: HYPERLINK  
<http://www.nic.in/delnet>.

In addition to the above services, DELNET has a planned programme for resource sharing. The plan includes such items that have a strong potential of accelerating the pace of resource sharing activity.

The success of DELNET is reflected in the steady growth of its membership. The growth in membership can be observed most among the institutions both research oriented as well as specialised ones. Among academic libraries, it may be mentioned that all the four university libraries are active members of the network. But, the college libraries are yet to seize this opportunity. It appears only a few (i.e., 7) are members at present. The break up of the present membership of DELNET is said to be:

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|------------------------------------|----|
| • Science and Technology Libraries | 41 |
| • Social Science Libraries         | 22 |
| • Humanities Libraries             | 15 |
| • General Libraries                | 25 |

From the statistics provided in one of the documents, it appears that there is a considerable increase in the percentage of increase in databases during the years 1996 and 1997. Also the network is striving to develop the software of its own and in the process has come out with the following:

- 1) **DELSIS:** An integrated modular software package developed on the basis of BASIS plus to undertake cataloguing and production of union catalogues of libraries, network and information centres;
- 2) **DELSERCH:** It is an offline remote database access system through E-mail. It is said to be economical and user-friendly for accessing databases remotely located.
- 3) **DELWINDOWS:** It is an effective tool useful for creating and retrieving bibliographic databases and catalogues.
- 4) **DEL-DOS:** DELNET has created a separate software for database and its retrieval on DOS platform. The software is capable of handling data inputting in Indian and European languages also using GIST.

From the foregoing account, it may be deduced that DELNET is progressing rapidly and is expected to realise its objectives sooner than other networks in India and may turn out to be one of the effective functional resource sharing networks in the country.





This discussion on the development of library networks in India is meant to acquaint you with the developments taking place in India. It is informative and not evaluative in perspective. Neither is it exhaustive in treatment. You may have to read some of the books mentioned for further reading to have a complete account of these efforts.

**Self Check Exercise**

7) Briefly mention the services provided by the DELNET.

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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## 12.4 TECHNOLOGY: RESOURCE SHARING LIBRARY NETWORKS

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Resource sharing is the focal point of library networking and cooperation. The tested technological advances in this field have tremendously increased the ability of retrieving and accessing information over long distances.

Library resource sharing networks entail consideration of available connections. Several capabilities need to be exploited. Some of these are discussed for your benefit.

- **Machine-readability:** The ability to store information in magnetic form with data entered once, and used many times in a variety of requirements.
- **Retrievability:** The ability to select information which has not been arranged in alphabetic sequence; even stored randomly, to make more relevant the material identified.
- **Remote accessing:** The ability to disseminate or exchange information from distant locations based on local and individualistic requirements.

The above capabilities have resulted in the preparation of machine-readable catalogue records (MARC) which could be used centrally or replicated for use locally or regionally. The ability to exploit databases to respond to individual requirements has been enhanced or facilitated by retrievability. On the other hand, the establishment of telecommunications networks which could be accessed over long distances have helped in remote accessing of bibliographic databases. The technology of sharing networks has been discussed extensively in the literature of library science.

Since there is a need to share data about acquisitions, holdings, inter-library loan requests, and completed transactions - and to share this data over distances - the technology of computers and telecommunications is dominant in the design and operation of resource sharing systems.

There is a whole range of computers, which can be considered for resource sharing systems. Small inexpensive computers (microcomputers) to more expensive large scale computer facilities are available for this purpose. Libraries participating in resource sharing networks may wish to utilise any of these to support local automation requirements. Careful analysis is needed to ensure that equipment choices for local and/or to support consortium requirements to ensure compatibility. In a resource sharing network participating libraries must recognise both the potential and problems that result because of adoption of technology. Successful cooperation is closely related to adherence of standards. Standardisation is a must in the electronic environment.

**Self Check Exercise**



8) Which are the capabilities of information technology for library resource sharing networks?

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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## **12.5 REQUIREMENTS FOR THE ORGANISATION OF RESOURCE SHARING LIBRARY NETWORKS**

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One of the significant aspects that needs attention is that in a resource sharing network, each participating library should have a clear cut policy as regards the type of resources it would be in a position to share with other member libraries. In other words, the library would have some materials which are very much used by its own clientele constantly and cannot be lent out of the premises. Such documents may not fall under the purview of resource sharing. Therefore, for effective resource sharing, it is necessary to have agreements among the participating members of the network.

### **12.5.1 Agreements**

The first agreement, obviously is the agreement to share currently owned materials (that is, to permit access to the holdings among partners), with protocols, limitations and priorities clearly spelt out. The agreement should provide for an independent administration of resource sharing but one which does not in any way adversely affect the goals and missions of the cooperating libraries.

Secondly, there should be agreement on acquisitions policies, both to ensure consistent development of holdings and to avoid redundancy when this is judged jointly to be unproductive.

Thirdly, there should be agreement on bibliographic control. The best way is standardisation, so that users of each cooperating library may have consistent means of accessing the catalogues and others. If standardisation is not feasible, then the second best option is the provision of adequate training for users and/or access to the local reference staff to provide aid in locating materials. Other necessary agreements may include loan periods, renewals, procedures for earlier return of materials if needed, payment for lost materials, etc,

Ultimately, effectiveness of resource sharing depends on the availability of an infrastructure including appropriate communications, technology and delivery mechanisms, The computer has been an extremely effective device for processing and locating materials conveniently, but an adequate infrastructure must be assured: consistent, reliable electric power and appropriately trained personnel are the essential requirements.

### **12.5.2 Constraints**

There are a number of constraints under which resource sharing networks must operate. Some of these are briefly discussed in this section. Of course, these constraints may be present to some degree even when no resource sharing takes place.

It is obvious that resource sharing cannot be accomplished unilaterally. Rather it requires concerted action of a number of libraries and entails changes in functions and attitudes on the part of users, librarians, and administrators. It definitely involves application of processes and technology which might exceed the financial means of single libraries and probably requires involvement of nationally supported activities.

It is clear that a commitment to the network concept carries with it a high degree of mutual inter-dependence among individual member libraries. M important question in this regard is how much of traditional local autonomy and democratic governance structures can be retained,



while still preserving the rights of all members and protecting the right of the user to equality of access? In other words, how can individual and institutional values be protected in the face of a dominant network technology?

It appears that of late, attention is being directed through the packaging of various computer-based

- traditional automated systems,
- public access catalogues,
- online search services,
- electronic document delivery,
- microcomputer-based video disk services,
- electronic mail service, and
- non-bibliographic databases.

This type of packaging of services might eventually lead to the system whereby a library user can sit down at a computer system and interact with it moving through both local and resources of other libraries distantly located emerging with a question answered, a document retrieved, a document ordered and with a sense of great achievement of having learnt something. This may be far too much to envisage in a country like India, but not at all utopian in concept, as we know that the concept of virtual library is already on the way?

### Self Check Exercise

9) Mention some of the agreements required among the members of the resource sharing library networks.

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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## 12.6 CD-ROM NETWORKS

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CD-ROM has become an important medium for the storage and dissemination of information. Many information products are now available on CD-ROM. CD-ROMs represent a means of access to information alternative to online access to external databases via telecommunications networks.

The networking environment changes fundamentally with the use of CD-ROMs. A popular use of local networks, within a library and information service context, has been to make CD-ROM databases accessible to the network risers from remote workstations. In fact, the development of CD-ROMs has widened access to information, which was previously available through online searching systems.

The advantages of resource sharing which a local network of libraries can offer becomes an attractive proposition as this does not involve telecommunications overhead and tends to be effective.

### 12.6.1 Network Configurations

The basic components of a single CD-Rom workstation are a microcomputer and a CD-ROM drive. A printer will be necessary if you want to obtain a paper copy of searches and if you wish to do an online search to update CD-ROM search a modem and a telephone line will also be needed. If more than one person needs to use the system at a time, networking has to be taken, recourse to. The ideal CD-ROM configuration offers multi-user access to many databases.



The advantages of putting CD-ROMs on a network are providing multiple concurrent access to information and help in streamlining of the disks themselves which otherwise would be distributed and loaded manually.

CD-ROM networks are normally mounted on PC-based local area networks. Standard available LANs do not properly support the use of CD-ROM, and require additional software add-ons to manage the optical drives. These are generally controlled by a separate optical file server (i.e., a computer adapted with CD controller cards to which drives are attached).

There are three alternative architectures for implementing CD-ROMs on a network. These are:

- i) a file server arrangement with the data files located on the file server itself, and the user interface and the search engine residing on the client workstation;
- ii) a centralised approach, where both data and search engine and interface reside on a multi-user machine, with the workstation acting as a terminal;
- iii) a client-server approach, where the data files and the search engine reside on the server machine, and the user interface with the client workstation. This arrangement reduces the communications load by keeping the processing close to the data storage, and enables the full power of the workstation to be available to the client.

At present, CD-ROMs running on local area networks have to compromise with all these basic aspects.

The IGNOU library recently acquired CD-Net software with high quality network server which 28 drives of online CD-ROMs. Direct network connection is provided through the local area network already existing in the university allowing CD-Net Server to be accessed from any of the schools located in the university campus. Some 14 CDs which are compatible to be used with CD-Net are available on the network for end-user searches.

### Self Check Exercise

- 10) Briefly explain the alternative architectures for implementing CD-ROMs on a network

**Note:** i) Write your answer in the space given below

ii) Check your answer with the answers given at the end of this Unit.

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## 12.7 SUMMARY

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In this Unit, an attempt has been made to explain to you the concept of library networking, especially resource sharing library networks. Library networking is the use of computer networking to support all forms of communication between libraries, between libraries and their users.

The present Unit discusses resource sharing library networks, their functions and services to the end-users.

The Unit also provides a brief account on the development of library resource sharing networks in USA and UK as historic background to this subject. The concept of resource sharing and how it can be implemented using technology is "explained to you in simple terms. Important resource sharing networks like OCLC, along with their functions have been discussed as illustrations of successful resource sharing library networks in the advanced countries.

You have also been provided with an exposure to the developments taking place in this direction in India. Details regarding the establishment, functioning, services and other related issues concerning INFLIBNET, DELNET, CALIBNET and other resource sharing library networks presently operating in the country, have been described and explained in the text of the Unit.



To enable you to participate effectively in the learning process, Self Check Exercises and answers to them along with Key Words have been incorporated. These features would be of great help and assistance to you to comprehend the functioning of resource sharing library networks.

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## 12.8 ANSWERS T SELF-CHECK EXERCISES

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- 1) Resource sharing activities are mainly aimed at providing convenient access to information to library users irrespective of the location of the resources. The main objectives of resource sharing activity are:
  - 1) reduction in cost;
  - 2) avoidance of unnecessary duplication in information resources and the processing as well as maintenance costs;
  - 3) provision of greater access to information resources to a wider category of users; and
  - 4) development of specialised areas of collection building each member library concentrating on areas of its own concern.
- 2) OCLC possesses the largest database of MARC format data records and services a large number of libraries in the production of bibliographic databases and also in inter-library loan and reference services.
- 3) The two important resource sharing networks- that emerged in UK are:
  - 1) BLCMP
  - 2) LASER
- 4) The successful implementation of networking and resource sharing largely depends upon:
  - use of modern computer technology for the management of libraries and information services in the country; and
  - desire and cooperation among existing information institutions to share their resources and information services for the maximum benefit of the users of library.
- 5) INFLIBNET has taken a number of steps to meet its objectives. They are:
  - 1) For the purpose of promoting resource sharing activity, it has already created a union catalogue of 50,000 records.
  - 2) INFLIBNET has also taken great initiative in the creation of databases containing 65,000 records of these/dissertation and also a periodicals database having 30,000 records,
  - 3) INFLIBNET is also making some efforts in the software development and also in the creation of suitable manpower necessary for the purpose.
- 6) Networks supported by NISSAT are:
  - CALIBNET
  - BONET
  - BA.LNET
  - PUNENET
  - MYLIBNET
  - ADINET
- 7) DELNET provides the below mentioned services to its member libraries:
  - Online and offline access to databases.
  - Interlibrary loan requests are entertained online.
  - Provide INTERNET and E-mail services at reduced
  - ERNET E-Mail service is also being provided.
  - DELNET LIST SERVE (INTERNET Mailing list): Online information on IFLA, on LIS jobs, Net happenings and Medical Clippings.



- Online information about forthcoming and new titles from publishers
- DELNET conducts training programmes, workshops and seminars, lectures, etc.
- Offers retro-conversion facilities to member libraries through specialising agencies.
- DELNET has created a web-page on INTERNET: <http://www.nic.in/delnet>.

8) The information technology should have the following capabilities for library resource sharing networks:

- Machine-readability;
- Retrievability; and
- Remote Accessing.

9) The first agreement, obviously is the agreement to share currently owned materials, with protocols, limitation and priorities.

The second agreement should be on acquisitions policies, both to ensure consistent development of holdings and to avoid redundancy when this is judged jointly to be unproductive.

The third agreement should be on bibliographic control,

Other agreements may include loan periods, renewals, procedure' for earlier returns, payment for lost materials, etc.

10) The alternative architectures for implementing CD-ROMs on a network are:

- 1) file server arrangement with the data, files located on the file server itself, and the user interface and the search engine residing on the client workstation.
- 2) A centralised approach, where both data and search engine and interface reside on a multi-user machine, with the workstation acting as a terminal.
- 3) A client-server approach, where the data files and the search engine reside on the server machine, and the user interface with the client workstation.

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## 12.9 KEYWORDS

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<b>CALIBNET (Calcutta Library Network) Client</b>	: A network of Calcutta Libraries for resource sharing
<b>Client</b>	: A network node which is more concerned with presentation and display to the user, and which is able to work with the specialist services of a server node elsewhere on the network
<b>Computer Network</b>	: An assemblage of computer systems linked together by common set of protocols for data communications.
<b>Connectivity</b>	: The ability to interconnect computer systems and networks for the exchange of information.
<b>DELNET</b>	: Delhi Network of libraries. A bibliographic resource sharing library network of libraries in Delhi
<b>INFLIBNET</b>	: Information and Library Network. A resource sharing network among academic libraries.
<b>Information Network</b>	: A network for the exchange of information often via one or more computer networks between human participants. Information networking is concerned with end-user communication and access to networked information services not in any way mediated by the library.
<b>Inter-Library Loan (ILL) :</b>	: A library activity which lends on loan documents required by other library users.
<b>Library Networking</b>	: is the use of computer networking to support all forms of communication between libraries, between libraries and their users and between libraries and their suppliers



<b>Modem</b>	: A hardware device for translating between digital computer and analogue telephone signals
<b>OCLC</b>	: Online Library Computer Centre: a large US-based bibliographic network active in library networking.
<b>Resource Sharing</b>	: A sort of agreement amongst participating libraries wherein each participant is willing to share its resources with other members and in turn is privileged to share the, resources of other participant members as and when need arises.
<b>Server</b>	: A node on a network which provides a particular service for other nodes, for example access to files, or database records, management of mail messages, etc. A server node is accessed through a client node
<b>Terminal Networks</b>	: A computer network built in a star topology in which many terminals are connected to a central computer system.

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## **12.10 REFERENCES AND FURTHER READING**

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