Chapter 10

Resource Sharing Barriers

1 The Obstacles: General Overview

The barriers to resource sharing have been discussed in the previous chapters in relation to the specific issues, in a generalised form, but in this chapter an overview of the barriers as such is made in order to pinpoint their impact on resource sharing. Several scholars and experts have identified them in different contexts but it may be necessary to refer to some of them.

According to L.B. Woods et. al., there are four sources of resistance to resource sharing:[1]

- economic resources;
- political decisions and neglect;
- personal and professional concerns; and
- social and cultural pressures.

They maintain that lack of resources would have promoted resource sharing if the basic structures of sharing were in place. In the Third World countries these basic structures may not be in place for many years. They further add that:

(a) Many countries do not have modern library postal and telecommunication network;
(b) Access to photocopy and facsimile machine is rare;
(c) The protective attitude by institutions in Third World countries is because of (a) and (b) above;
(d) Library planning in developing countries is either sporadic or non-existent;
(e) Libraries within the same campuses do not exchange documents or the same catalogue standards;
(f) Little support is available for learning;
(g) Lack of national bibliographies and union catalogue.

Barriers to resource sharing take various forms and concern different departments of a major library. Sharon C. Bonk[2] reminds us that before one looks into the barriers as such one should understand "what is known and what is still conjecture or myth or unsubstantiated wishful thinking before the promises and potentials are realised or not as the case may be." She lists the following barriers to resource sharing:[3]

1. "the belief that the technical infrastructure is not complete and is becoming more fragmented rather than complete;"
2. "It will move the locus of control of collection development off campus; it will change priorities in collection development;"
3. "Faculty will not be well served;"
4. "Document delivery time is too slow to meet local needs;"
5. "Staff attitudes: Extra work; it won't work;"
6. "It is too costly of staff time and operations dollars; it is not worth dollars saved or deployed within the acquisitions budget;"
7. "Library users lack education on the scope of local collections
   and the extent of document delivery services available and
   their efficiency;
8. "Procedures developed to support resource sharing do not
   exist or are too difficult to institute across department lines;
9. "Administrative structure and support are lacking;
10. "There is often difficulty in locating suitable partners;
11. "There is a lack of common language for collection description
    and common definitions for cost studies; and
12. "Politics at a regional or national level may prohibit or
    undermine efforts."

Before the highlights of library cooperation are listed, we find that
cooperation results in resource sharing. And, if it is not effective,
cooperation loses its purpose. Joseph A. Bramin looks into this subject and
lists 11 obstacles to resource sharing: [4]

1. A desire for everything here and now;
2. Changing priorities for collection development;
3. Control of collection policies and priorities;
4. Staff and faculty attitudes;
5. Document delivery time;
6. Lack of awareness among users about cooperation;
7. Lack of needed support services;
8. Lack of required administrative structure and support;
9. Non-conducive political environment;
10. Reluctance to yield autonomy; and
11. Lack of common language for analysis and description.
Several barriers hamper resource sharing activities. While we are able to remove some of the barriers, we can reduce the impact of some others. R. G. Prasher[5] lists the following eight factors that hamper resource sharing:

1. Attitude of some of the librarians is conservative and are unwilling to part with the material for resource sharing or do not take up additional responsibilities;
2. Restrictions, mainly local in lending the library materials to others;
3. Due to limited resources, libraries may not participate in ILL;
4. Lack of adequate funds can hamper resource sharing programme;
5. Shortage of staff for handling ILL requests;
6. Lack of reprographic facilities;
7. Distances between the libraries and lack of proper communication system; and
8. Lack of awareness about the usefulness of resource sharing.

In addition, some of the other barriers that come up in the way leave resource sharing a concept at times. Mr Prasher refers to the following regulations that are important and need to be introduced:

(a) Interlibrary Loan

1. "Borrowing library will bear the expenditure;
2. "Books taken on loan are to be returned within the stipulated time;
3. "The books on loan should not be issued out by the borrowing library;
4. "The reader for whom the book has been borrowed should use it within the library;
5. "If necessary, reproduction of any part of the document may be made permissible;
6. "Lending libraries may not loan rare materials;
7. "Request for a book which costs less than five rupees and is easily available for purchase should not be made; and
8. "Borrowing library will be solely responsible for the safety of the document."

(b) Cooperative procurement of books and other documents, which could be economically desirable does not happen.

(c) Cooperation for centralised system for classification and cataloguing which would reduce duplication does not happen. DELNET has introduced, under its "Books in Print" project free catalogue data and database service for those that purchase through its "Books in Print" scheme.

(d) Preparation of union catalogues could be done cooperatively for resource sharing. DELNET has created the following union catalogues/lists, and has begun work on the pilot project for the creation of a National Bibliographic Database in union catalogue format. This union catalogue could be used by users all over the world:

*Union Catalogue of Books: MARC*
*Union List of Serials*
Union Catalogue of Serials
Multilingual Books
CD-ROM Database
Union List of Videorecordings
Urdu Manuscripts Database

(e) Cooperative storage could also be achieved if the institutions retained the weeded out books and journals at one place both for storage and reference. Reference may be made to NASSDOC's effort in this regard which could not become a regular activity due to financial reasons.

(f) Non-cooperation in documentation work results in duplication in documentation work by the institutions specialising in the same subjects. This barrier of non-cooperation needs to be removed by:

(i) Allotting subjects for documentation work in a discipline to different institutions to avoid duplication; and
(ii) offering all documentation lists to the users through a network.

The example of DELNET needs to be given as DELNET collects databases of articles and other materials prepared by its participating libraries and makes them available online for larger and better use. However, in case of DELNET, DELNET does not recommend subjects for documentation, but makes participating libraries know what documentation work is being done by other libraries.

(g) The exchange of surplus/duplicate copies of journals and books can fill vital gaps in the libraries. Cooperation in this regard
is very scanty and it can be promoted only if the management have liberal policies and the librarians take extra effort to inform intended libraries about their surplus stocks.

(h) The exchange of experts in the library and information science field is becoming increasingly important as information technology is changing very fast.

2 The Dilemmas

Thomas J. Dorst[6] considers that the role of Cooperative Collection Management in resource sharing hinges on three principal elements:

a) Bibliographic access to information must exist in a relatively convenient and effective form. The dilemma here is that the better the access facilities develop, the database numbers on INTERNET are becoming much too large and complex. Dorst observes: "In the organic resource sharing model, we are speaking about the potentials or limits of access. For example, a debate is emerging in Illinois over whether the increasingly rapid evolution of access systems is creating a "fitter species of resource sharing or some troublesome mutations that threaten its long-term viability."

b) The physical delivery has to graduate to its electronic era which will, probably be its final form. Dorst says: "As full text databases and electronic journals emerge, the lines between the units of information storage and their mode of delivery
blur dramatically. Some aspects of what is today labelled delivery may merge into other elements of resource sharing equation although the issues of timeliness, cost, and intellectual property rights associated with such methods of physical delivery, will become more complex.” The dilemma therefore is when will the physical delivery grow to its final form?

(c) The third dilemma arises from the large number of databases, created, upgraded and serviced in limitless permutations and combinations. The collections are a rich resource. The dilemma is that “we are in danger of losing that richness and thus, the capacity to share equitably.” Dorst adds: “Money both impels and limits resource sharing leading to the often frustrating service equilibrium within which libraries operate today.[7] On one hand, technology gives hope of accessing every kind of information and on the other, there are no human interactions between the operators of resource sharing and the end users in general. The dilemmas are perplexing but efforts have to be made to eliminate barriers in resource sharing so that readers have access to the information of their choice and every bit of information reaches the users for whom it is created.

3 The Network Concerns

For promoting resource sharing networks of libraries, it is necessary to look into the following important facets of library networking.
3.1 The participating libraries:

For efficient resource sharing work, the selection of libraries joining a network should be based on the following criteria: [8]

(a) Each library should be willing to buy its own hardware, software and at least have one telephone connection, either a direct line or a line with zero dialling facility.

(b) The library should have at least two professional staff with a degree in library science and familiarity with bibliographic standards;

(c) It should undertake to pay the necessary participation fee to a network or more networks.

(d) The participating library should follow rules and regulations of the network and be willing to create bibliographic records according to standards laid down.

(e) It should pool its bibliographic records that it creates in machine-readable form in the Central Host of the network. The copyright of the records created by the library should vest in the library but the copyright of the records so pooled in the Central Host of the network should vest with the network.

(f) The librarians specialising in any subject should be able to join a library network in a city.

(g) The gradation of libraries should not be made on the number of books they hold, but the rate at which they convert their records into machine-readable form, and the number of
transactions they have or are likely to have in a graded form through the automated system.

3.2 Institutional Autonomy

Resource sharing among libraries is based always on an understanding among the libraries that they will share their resources. This needs decisions to be taken and such decisions are taken fast by the institutions when they are autonomous. Otherwise, it has been noticed in DELNET that the institutions that are dependent financially upon others or sponsoring organisations cannot take decisions on their own. As such the absence of autonomy in an institution can act as a barrier in resource sharing activities.

3.3 Locating Suitable Partners

Resource sharing can be done best by the institutions acquiring the same type of material so that they can rationalise their acquisition programmes. It becomes very essential to locate suitable institutional partners that are ready to cooperate in acquisition and sharing of resources. As a result, collection development work becomes smooth and reciprocal.

3.4 Geographic Proximity

The location of suitable partners is an important factor in resource sharing, for, until all resources are not converted into electronic form, it is necessary that the documents, other than
those that could be faxed, are physically transported fast. As such close proximity of the locations of institutions facilitates resource sharing work.

3.5 Role of Librarians

Resource sharing is not possible unless the librarians cooperate among each other and with their management. It has been noticed in DELNET that some of the librarians who were not interested in resource sharing with other libraries managed to send notes to their management against resource sharing on one pretext or the other. It is therefore considered that the librarians themselves could act as major barriers in resource sharing if they were not interested in it.

3.6 Training of Librarians

Lack of proper training in the use of online catalogues, INTERNET and network databases like those at DELNET for locating materials and making online ILL requests, would hamper the speed of acquisition of materials. As retrieval commands change from time to time, officials in charge of resource sharing would have to remain in touch with the changes and update themselves regularly.

3.7 Participation in Resource Sharing Networks

Resource sharing is not possible unless the participating libraries begin to agree to share and this sharing takes different
forms. The agreement to share depends upon the compulsions of the participating libraries and their desire to help other institutions and users. An interesting example of this is seen in the resource sharing networks started by the Committee on Institutional Cooperation, USA in which they agreed to cooperate in:[9]

a) Microfilming project;
b) Reciprocal borrowing facility for faculty;
c) Telecommunication/networking infrastructure;
d) Free loans and photocopies and waive interlibrary loan fees;
e) Five of the eleven CIC libraries agreed to lend materials including dissertations/theses, bound serials, fragile materials and audiovisual materials; and
f) Eight CIC libraries agreed to send all articles requests by fax.

The non-participation of libraries in a network can act as a major barrier in resource sharing. But, if the participation is full, the barrier vanishes to a greater extent. A typical example that needs a mention is from Illinois Libraries Computer Systems Organisaiton (ILCSO) which according to B.G. Sloan, has three levels of participation.[10]

1. “Forty libraries use the system in support of local operations, and for resource sharing and interlibrary circulation. This group includes the libraries of each state-supported university, 19 privately supported colleges and universities, four community colleges, one state-supported high school for mathematics and
science, and the Illinois State Library (the state library agency and library to state government).

2. "Eight hundred libraries contribute catalogue records to the database through their subscription to the State's ILLINET/OCLC services. The University of Illinois receives weekly subscription tapes from OCLC, and these records are processed through a series of programmes that prepare the data for entry into the ILLINET Online database.

3. "Twenty-six hundred Illinois libraries participate in the Illinois Library and Information Network (ILLINET) and may connect to ILLINET Online via dial access. ILLINET Online borrower IDs have been assigned to each of those twenty-six hundred libraries, and may be used to initiate requests for materials held by the forty ILCSO member libraries."

We notice that the large participation of libraries in the network have promoted the network for effective resource sharing. The large scale participation of libraries has greatly reduced the impact of obstacles which could have affected resource sharing.

One of the major concerns of a network for better network participation is to introduce services so that the access to various types of databases becomes possible. An example of ILLINET Online system is worth noting. The system first started with providing access to its online union catalogue, but later began offering access to CARL Uncover (a current contents database) and to the Illinois Bibliographic Information System (IBIS), a collection of online journal indexes including ERIC and a selection
of W.H. Wilson databases covering several subjects. The role of networks as the experiences of established networks go, is to introduce a large number of relevant databases among its users so that the dark chamber of ignorance which acts as a barrier between the resources and the users is diminished.

3.8 The In-House Functions

In-house functions like acquisition, cataloguing, classification, series control, circulation, SDI, current awareness service, etc. should be left to the libraries. The network software should support these operations of the libraries and the libraries should use the data in Central Host for this purpose.

3.9 The hardware

(a) The network should be able to recommend to participating libraries the type of hardware they need for their in-house functions and for networking purposes.

(b) It must be noted that the use of microcomputers in networking is going to grow further.

(c) Hardware should be selected considering the number of entries the participating libraries can generate within the next 3-5 years which will also dictate the configuration.

(d) The size of collection at a library should never be regarded as the norm for hardware selection.

(e) For a library that is likely to generate less than 50,000 entries during the next 3-5 years the following hardware configuration is recommended:
One Pentium 166 MHz PC with 16 MB RAM, 1.2 GB hard disk, 3 terminals, 1.44 MB floppy drives, 1 Cartridge Tape Drive, 1 CD-ROM and one Printer.

(f) For a library that is likely to generate upto 5 lakh entries during the next 3-5 years the following configuration is recommended:

INTEL Pentium II @ 233 MHz/64 MB SD RAM with ECC/2x4.3 GB ultra wide SCSI Hard Disk/1.44 MB FDD, 24X CD ROM Drive/100Mbps ETHERNET Interface/14” SVGA Colour Monitor/2 High Speed Serial Ports/32 Bit Integrated Intel 82557

(g) The hardware at the Central Host may be upgraded depending upon the speed with which participating libraries generate records and pool them into the Central Host.

3.10 The Software

(a) A common software must preferably be used by all the participating libraries.

(b) The network should be able to provide a networking software for creating bibliographic databases.

(c) Commercial software that has not been internationally tested on large databases should not be used.

(d) A networking software should be able to handle in-house operations of libraries including SDI and CAS, promote
database creation and accommodate communication interfaces.

(e) The network should maintain or arrange to see that the software in use is upgraded from time to time.

3.11 The Standards

The absence of common standards creates incompatibility problems and stops the flow of bibliographic and related information. The standards, protocols and the software that convert data from one format to another should essentially be of international standing.

Format compatibilities are necessary for computerised catalogue data and these are being standardised by the ISO standards. ISO2709 has been adopted the world over and the efforts to harmonise MARC formats are on. Reference may be made to the efforts made by the British Library, Library of Congress and National Library of Canada who achieved a major milestone in harmonising their MARC formats in January 1997. According to the joint communique published on INTERNET:[12] “The benefits of a harmonised format include easier and more efficient record exchange between the users and procedures of MARC records, elimination of the need for conversion programs, and potential reductions in the expense of format maintenance and documentation. Whereas full harmonisation of USMARC and CANMARC has been accomplished, the three libraries recognise that UKMARC must retain certain features of particular value to the UKMARC user community, and therefore full
harmonisation is not achievable in the short term. Partial alignment is being pursued immediately with full harmonisation as a long-term goal."

DELNET has been successfully using CCF (Common Communication Format). This format incorporates only necessary and sufficient fields, and conversion of databases in this format is possible at international levels. For compatibility with international and national bibliographical databases DELNET has now started the use of MARC format.

Maintenance of bibliographic standards uniformly is essential for quick exchange of records.

(a) AACR2 is the widely accepted code for cataloguing. It helps in the creation of standard records.
(b) LCSH is used by DELNET and many networks in the world. It should be used as a guide for creating subject descriptors. Other thesauri available on specialised subjects could also be used whenever needed in specialised libraries.
(c) A network should also maintain the authority and thesaurus data. DELNET has already begin authority data on its MARC database.
(d) DDC is commonly used as the classification scheme.

3.12 Language Barriers

Intellectual barriers include language, subject heading lists, authority files besides descriptive cataloguing rules.[13]
A language acts as a major barrier in resource sharing as it does not allow the use of information to be made by users who do not know that particular language. The system designers need to consider not only the accessibility of text but also screen displays, documentation, character sets, etc. for the users who may not know the language of the text. In the bibliographic database which is interconnected with housekeeping functions in order to ascertain the availability of a particular document the system search is more complex, especially if it has to cater to bibliographic data in several languages. Rowland C. W. Brown adds: [14]

"Acceptance of vernacular non-roman alphabets and characters along with multiple transliteration schemes present significant obstacles which will not be overcome by cooperative action of interested international partners."

In this regard reference may be made to GIST technology developed by C-DAC in Pune and adopted by DELNET for bibliographic databases. It is being used successfully for Indian languages except for Perso-Arabic scripts.

The rendering of subject headings in a standard way and terminology that is comprehensible to the users all over the world becomes very essential in bringing the right users closer to the right documents. The use of Library of Congress Subject Headings is growing although the use of (PRECIS Preserved Context Index System) and specialised indexes are being used.
The authority files like those of the Library of Congress have to grow so that we develop an authority file and system acceptable to users all over the world. But all this has to be done in conformity with the standard cataloguing rules. Anglo-American Cataloguing Rules, 2nd edition are being used in major libraries in the world. DELNET is also promoting the use of AACR 2 as it introduces uniformity in database structure. DELNET is providing human intervention in selecting the right kind of records and for merging of records.

3.13 Promotion of Database Creation

(a) The maintenance of centralised databases are good when the communication facilities are not reliable.

A Central Host machine should be installed for creating a union catalogue, comprising catalogues of all participating libraries.

(b) A Central Host that can accommodate about 10 lakh bibliographic records with work space for data handling, system software, communication software, application software, etc. may be used. DELNET uses the following hardware configuration:

UNIX Server 266 MHz Pentium
64 MB RAM
4.2 GB HDD
SVGA Monitor
1.44 MB FDD
1 Catridge Tape Drive
2 Parallel ports
2 Serial ports
1 LTS(Lan Terminal Server) 16 Port
8 Dumb GIST Terminals

3.14 Electronic Mail and INTERNET

(a) Electronic mail is a must for each participating library. DELNET offers offline database search facility through DELSEARCH, which is an E-mail based facility.
(b) Besides E-mail, the use of INTERNET is essential as it enables wider access to international databases.

3.15 Classification

(a) As libraries in India use mainly DDC, UDC and CCC for classification of books, it would not be within the means and worth the effort to have one classification scheme in all participating libraries.
(b) One class number preferably a Dewey number should be given in machine-readable bibliographic data. DELNET uses this practice.
(c) As search requests would mostly be by authors, titles, editors and subject descriptors, the network would offer a commendable service. For the few classification based search
requests the network staff could make special searches using class numbers.
(d) For the National Bibliographic Database Pilot Project DELNET is giving class numbers of a record in each library along with the standard Dewey Decimal class number.

3.16 Interlibrary Loan

(a) The network should promote online interlibrary loan service.
(b) Rationalisation of foreign periodicals should be attempted. As far as possible foreign exchange should be saved on avoidable duplicate titles.
(c) A courier facility should be established by the network to support the sharing of resources.

3.17 Network Topology

(a) A centralised topology may be preferred in India due to limitations in the communication facilities and in big cities a mix of distributed-cum-centralised topology may be preferred.
(b) Efforts should be made to develop union catalogues in a central database.

3.18 Communication Links

(a) The network operation should be established on circuit switching principle.
(b) Packet switching data network should be used.
(c) Transactions between libraries and the Central Host could be in batch mode or online.

(d) The user in a network should be able to log into the Central Host or his request should be sent to the system in batch mode.

(e) Network specifications as recommended for DELNET may be considered for a city network in India with suitable adjustments.

3.19 Legal Issues

Copyright issues are acting as major barriers in the free flow of information. In case of bibliographic records, their exchange and use has to be authorised by the copyright holder or the licensed authority. In the international scenario data protection laws and transborder dataflow regulations affect online access and exchange and transfer of information. OCLC has successfully met several issues through a variety of solutions.[15]

3.20 Governance

(a) A network should have a clear aim of resource sharing as a guide for all activities.

(b) The constitution should be democratic with scope for participation of libraries in the Governing Board of a network.

3.21 Agreements
Agreements between libraries are essential for resource sharing. DELNET which has about 80 libraries as members began its resource sharing programmes with the signing of MOUs. A reference may be made to the increasing pressure on university libraries in South Africa for rationalising INTERNET operations and improvement of mutual resource sharing. The recommendations made by E.D. Gerryts and H. de Brun on improving resource sharing and rationalisation have given considerable support to the idea of formal, cooperative service, agreements between university libraries for the possible establishment of a cooperative organisation.[16]

4 International and National Policies

Resource sharing policies come into existence at several points. The policies of international agencies like IFLA, national governments, resource sharing networks, institutional members of networks and institutions outside the networks all act as agents of resource sharing. Their policies or non-policies either promote resource sharing or act as barriers, thus slowing down or stopping genuine efforts for the execution of resource sharing work.

4.1 International Concerns

International Federation of Library Associations and Institutions (IFLA) has been undertaking various projects for resource sharing. The latest in its efforts for resource sharing has been the creation of IFLA Training Database which helps in locating suitable partners the world over for resource sharing.
purposes. Such efforts and policies have to grow more. This is becoming possible through INTERNET and electronic publishing programmes.

There is a great deal of duplication going on in the cataloguing all over the world and as a result, non-existence of universal union catalogues result in either delays in resource sharing or no resource sharing at all in case of a majority of publications. IFLA’s core programmes, Universal Bibliographic Control and International MARC (UBCIM) promotes the production of internationally compatible bibliographic records and their exchange on internationally accepted standards. There is a need to share catalogue records. In order to do so electronically OSI is considered to work as an effective tool for the transfer of bibliographic records.

On the international scene, Cynthia J. Durance and Neil McLean note that barriers exist in resource sharing. “First, the citation/verification and the location process. As electronic abstracting and indexing databases and bibliographic union files proliferate, one’s ability to search multiple databases is restricted by several things: different proprietary terminals are sometimes required and if so, there are costs associated with maintaining these separate terminals; there are difficulties of unconnected databases; there are separate billing mechanisms for each; and finally, different search arguments and language must be used to search different databases to find either the desired citation or location, or both.[17]
“Having located the desired item, the second barrier is encountered; the multiple methods of messaging the request for the item are often slow and require separate procedures. Processing of unformatted requests and of the status reports that are needed to control an interlibrary loan transaction at the target institution often manual, resulting in further delays.

“Finally, there are barriers to effective document delivery. The delivery of photocopies has speeded the process, but often at the expense of risking infringement of copyright laws. However, be it a book or a photocopy, the item is still usually transmitted by mail which is slow. So, present methods of delivery remain a detriment to providing client services effectively. All these barriers have the potential of being overcome or reduced by technological means.”

“Libraries and publishers have always had a symbiotic relationship. From the library point of view, the acquisition of material is a labour-intensive operation. The discovery and selection of available published material, be it new or antiquarian, unavoidably requires knowledge, time and perseverance. However, having made a selection considerable mechanical barriers exist to acquiring the item. Orders are usually typed on multiple part forms and sent by mail to the publisher. Subsequent status reporting, such as out of stock, cannot locate, etc. is also predominantly transacted by mail. In addition to the built-in delay of the mail, the processing at each end is often a totally manual operation.”
“Further the authors add that one of the major barriers is the lack of information about the databases on INTERNET.”[18]

“A generalised obstacle to electronic resource sharing and access to information which is becoming more and more acute as electronic information databases proliferate is that of knowing which databases are available and how they can be accessed. A great deal of information about a database is needed before it can be used; the subject content and coverage of the database; the condition of use; the services it provides; and the costs. In addition, knowledge of access paths and procedures are essential, that is, the telecommunication carrier used, the type of terminal required, the database address, the log-on procedure and the search query procedure, and, the hours of availability. This latter item is complicated by different time zones.”

4.2 National Policies

The national policies should be such that all information except confidential or classified should become available online for public use. Also, each country should have at least one library or a centre which holds at least one copy of all documents that are relevant to that country. Information has become a world resource and participating of each nation in the creation of the world information infrastructure is necessary and useful. In each country, centres need to be promoted for maintaining libraries in specific disciplines and such libraries should play roles for the dissemination of information in that discipline nationally and globally.
Rowland C. W. Brown, President and Chief Executive Officer of OCLC (Online Computer Library Centre), Dublin, Ohio notices some formidable barriers in resource sharing. [19] There are national policies which prohibit or discourage transnational data flows and therefore act as major barriers. This scenario is changing very fast as INTERNET has made transnational data flows much more easy and it will be difficult for such states to control at least the flow of bibliographic information. But for some the use of international bibliographic databases are of great help. The examples such as the use of OCLC by the Dutch and Swedish libraries is to supplement the national system, or by most of the U.S. libraries as a de facto national system or by the French Ministry of Education to build up their national system, reveal how international bibliographic databases can be used for cataloguing, resource sharing purposes and database building purposes.

Lack of Vision and Interest on the Part of Information Professionals

The lack of vision and interest on the part of librarians and information professionals acts as a major barrier in resource sharing. Even if the information is available and the information professional is not willing to help a user, nothing can be done. This missing link can create a great deal of loss or irreparable loss to a user. The information professional has to have faith in serving the users as service to the nation or humanity as such or should at least consider fulfilling his moral obligation by providing the best
service possible to the users. The information service professionals should follow a code of conduct and if need be, should be educated about their obligations to the society or the users in their libraries in particular. This will minimise the impact of this barrier.

6 Growing Barriers in Developing Countries

It may be ideal to get a sampling of barriers from a few developing countries. But, before we refer to them, it may be necessary to highlight the barriers to resource sharing at rural levels as networking of rural libraries can lead to the rapid transformation of the society in the developing countries. As rural libraries are not functional in India, I am not referring to the network scenario of rural libraries in India, but selecting an example in North America.

Rena Fowler describes the obstacles faced in setting up of the Upper Peninsula Region of Library Cooperation, Inc. which was aimed at promoting rural development through automation for resource sharing and improvement of library management techniques[20] which are as follows:

1. The limited human and financial resources;
2. As many libraries, apart from library service agencies and the academic libraries, were one person operations, attendance at the meetings was thin, school librarians generally did not get permission to attend meetings outside the school premises;
3. The telephone-based communications system was complex. Additional communication facilities were needed; and
4. Technology that suits the small libraries needed to be evolved.

6.1 Arabian Gulf Region

M. Saleh Ashoor refers to the barriers in resource sharing in the Arabic Gulf Region. [21] He gives the following reasons:

1. The absence of unified cataloguing rules, standard name and subject authority list, classification scheme and coding system for computerised Arabic materials;
2. Application of bibliographic tools is not uniform and consistent;
3. Absence of bibliographic tools locally created to suit local needs;
4. Non-availability of bibliographic tools in local language;
5. Application of cataloguing rules (AACR 2) is not consistent; and
6. Above all there is a need for legal base and administrative support.

M. Saleh Ashoor makes the following recommendations for this purpose:

a) "Identification of an institution in the Gulf region willing and capable of taking the responsibility for coordination of networking activities."
b) "Identification of membership and location of network nodes.

c) "Motivation and guiding of professional circles and library administrators to reach an agreement for bibliographic procedures, communication formats, etc.

d) "Description of functions and technical requirements and mutual agreement of members on these procedures.

e) "Agreement on a communication method, e.g. a combination of telephone lines and use of a satellite may be required for such a network.

f) "Determination of hardware requirements including computers, terminals, printers, etc.

g) "Definition of manpower requirements including programmers, system analysts, system programmers, etc."

6.2 Republic of China

The experience in the Republic of China highlights the following problems in resource sharing[22]:

Table 35

Resource Sharing Problems: Republic of China

<table>
<thead>
<tr>
<th>Problem</th>
<th>Number of Responses</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of Funds</td>
<td>10</td>
<td>58.8%</td>
</tr>
<tr>
<td>Lack of Union Catalogue</td>
<td>9</td>
<td>52.9%</td>
</tr>
</tbody>
</table>
Inadequate Communication Systems | 9 | 52.9%
---|---|---
Lack of Uniform Classification Scheme | 5 | 29.4%
Lack of Government Support | 5 | 29.4%
Absence of Formal Agreement | 3 | 17.7%
Uncooperative Attitude of Librarians | 3 | 17.7%
Inadequate Security of Materials | 2 | 11.8%

Three libraries also suggested how the problems can be overcome:

1. There should be a comprehensive union catalogue, and libraries should apply a uniform classification scheme.
2. There is need for a library with sufficient funds and resources to handle interlending requests.
3. It is necessary to establish a strong central library for interlending services.

6.3 Latin America

Another case study worth considering is the one made by Robert Vosper concerning interlibrary loan notices and the restrictions on the availability of publications in Columbia, Costa Rica, Mexico and Venezuela. The following were the conclusions:[23]
1. "In the countries studied there does not exist an adequate national centre to develop and oversee lending policies. The libraries, nonetheless, have established their own bilateral agreements which, although not totally inadequate, are costly because of the unnecessary duplication of resources.

2. "There is a lack of up-to-date directories and regular bibliographic publications.

3. "There is little access to union catalogues either online or on CD-ROM.

4. "Response times (particularly negative responses) to selective requests are slow.

5. "There is only very limited use of fax, Internet and electronic mail.

6. "There is a lack of personnel trained in the use of new technology in charge of interlending departments.

7. "The mail services are slow and unreliable and the telecommunication services for receiving and transmitting documents are inadequate.

8. "There is little consistency in the establishment of charging systems for photocopying, shipping and indirect costs.

9. "There is a lack of uniform policy on copyright legislation.

10. "Few statistics are maintained on interlending.

11. "Interlibrary loan services are limited to the local level, despite the demand for extending services to other towns or cities in the countries studied."

The following six points were recommended for consideration:
1. "Each country should create a national centre for establishing and administering interlending norms and procedures. This centre would also be responsible for handling requests and providing the documents requested within a national structure based on simple procedures and clear and uniform policies.

2. "There should be a better understanding of new information technologies, for example, Internet and electronic mail, so that they can be used to improve service.

3. "There should be a systematic acknowledgement of copyright of requested materials.

4. "New policies for the application of standardised photocopying costs of documents should be implemented.

5. "A uniform approach to the collection of ILL statistics should be collected on satisfied requests, failed requests, speed of service, requesting organisations, type of material requested, etc.

6. "Seminars and formal or informal courses on interlending should be held in the region in order to promote the fundamental role in which this service plays a part in the universal availability of a publications programme."

7 Financial Implications

7.1 General Issues

It is a well-known fact that due to the limitations of finance and space no library can afford to house every document. As such efforts are made to share resources. But it becomes necessary to see how we save finances by resource sharing. Therefore, our attention gets drawn to the jobs the resource sharing networks..."
take for coordinating the processes of sharing. These networks also spend finances to develop tools so that the processes of sharing are made efficient. The union lists and union catalogues of serials and books that are used as tools are expensive to create and to maintain. These lists and catalogues need regular updating.

Resource sharing also results in actual savings financially. A successful resource sharing and interlibrary loan programme started by the Committee on Institutional Cooperation in USA showed financial gains as well in 1987-88. "One library indicated a savings of only $200-$400 while two reported savings of $13,000 and $14,000.... the interlending revenues had declined since each institution's overall lending activity had increased. Three libraries indicated no decline, four indicated a slight decline, and four indicated a decline of $4,000-$12,000."[24]

Sharon Bonk of the State University of New York at Albany in her review of the approaches taken to costing in different countries stressed that:[25]

"As librarians have been forced to accept the concept that the provision of access to information and documents not held by their own library is a vital service that complements the selective rather than the comprehensive acquisition of materials, they have recognised the need for efficient and cost-effective identification, ordering and supply systems for acquiring those documents. A key aspect in developing this is the knowledge of the direct and indirect costs of alternative methods and sources of supply.” Graham Cornish of IFLA adds:[26]
"A circulating voucher system would avoid many small transactions which are expensive to administer, and could be used by both developed and less developed countries, since it could be adapted to be used electronically in developed networks as well as manually by libraries in the early stages of development or in countries which have currency problems. The IFLA UAP Programme is currently investigating such a scheme."

Supply of documents at the international level also need to be streamlined as the service and duplication costs in developing countries are much lower than those in the developed countries. In this regard the Australian Library and Information Association in July 1990 introduced the membership fee concept before vouchers for ILL could be obtained. A generalised rate system was introduced: A $ 6.00 for copies (1-3 pages) exceeding 30 pages.

Economic facts also limit the free flow of information. If we price an information product so high which many users may not afford, we create a barrier. So is the case with the costing of service provided to a user. But to have uniform price structure for a product and the service may not be achieved due to different levels of economy prevailing in the countries. Similarly frequent changes in the currency rates in the countries makes access to information at the international level difficult. For OCLC has tried to solve this problem by providing certain solutions which would include even providing standard data of a country in return of the
Rowland C. W. Brown raises several issues in this regard. He adds: "Significant economic questions will arise as to the appropriate infrastructure required to deliver service to overseas users. How, for example, will an organisation enter the market place? Will it capitalize on existing agencies by becoming partners in a cooperative endeavour - much as OCLC has done in France with SUNIST/DBMIST? Or, would a joint venture enterprise be more appropriate? The most rational approach would appear to be to use, to the greatest degree possible, existing organisations and institutions. This has generally been OCLC's approach: examples of this are PICA in the Netherlands, the British Library in the United Kingdom, and the Deutshces Bibliotheksinstitut in West Germany. It is likely to be most cost-effective, but equally-or more important-it does much to bolster local or national feelings and position."[27]

According to the British standards, a union list of 1000-2000 titles, with a fair overlap of holdings in 30-50 libraries can cost about Rs. 1,500 per annum or about Rs. 82,000 per annum. It is worthwhile if it is used frequently. Michael Carmel calculates, using a formula (discussed later in this chapter) that each time the system is used, it saves about 1 UK pound against a running cost of 1500 UK pounds per annum. The calculations are based on if used on an average 8,000 times per annum. However, keeping in view the union lists of any kind, Michael J. Carmel notes that the key problems are:[28]
- "high overhead costs;
- "low rate of additional lists;
- "long lines of communication;
- "interface with (and from) regional systems; and
- "lack of an appropriate infrastructure to maintain the system and to impose uniform protocols."

In the ILL transactions, expenditures are made, on postage/courier, and packing besides infrastructures and staff. As such, ILL service can be priced. The job thus involves the pricing of the service and the recovery of costs. In this connection, a reference may be made to the pricing of ILL service by the University of New South Wales (UNSW) and the controversy it created. C.D. Marshall of Riverina Community Library Service claimed that UNSW did not consult fellow professional colleagues, did not "carry out proper research into either the costs of ILL or the impact of charging on the end user." He also maintains that cost-recovery is a difficult job to perform in academic libraries. He was against charging as he considered: "To charge for ILL is penalising the many of the benefit of the academically - privileged few." Marshall had supporters in the profession. But in the modern world information is considered as a commodity and the efforts made for sharing it and for facilitating its use has to be compensated in order to see to it that the resource sharing networks run on a no-profit-no-loss basis. [29]
The advanced technology is reducing slowly the impact of obstacles in resource sharing and it is likely that one day the role of the librarian and nature of resource sharing will be redefined. Librarians could be the person who could help the user in selecting right information from thousands and thousands of items. Thus the resource sharing and accessing techniques will change and so will the economic parameters.

In order to apply these characteristics to DELNET in detail, it is important to first present the method advanced by Michael J. Carmel for calculating the economic benefit of a resource sharing scheme.

7.2 Calculating the Economic Benefit of a Resource Sharing Scheme

This is a method to compare the cost of cooperative interlibrary photocopying using a union list of serials with that of using the prepaid British Library Document Supply Centre (BLDSC) forms.[30]

Step 1: To compare costs between a scheme and use of BLDSC

"Let C = the sum of all those costs which are specific to the system (i.e. excluding those which are also incurred when using BLDSC by prepaid form)"

"Let B = the cost of each BLDSC form"
"Then if $C < B$ the system is cost saving (although not guaranteed to be worth doing)
"If $C = B$ the system is viable
"If $C > B$ the system has a net cost, which may be worth bearing if the organisational or service benefits are sufficient.

Step 2: To calculate $C$

"Let $O =$ the fixed annual overhead costs incurred at the centre administering the scheme.
"Let $N =$ the number of times the list is successfully used each year
"Let $Cr =$ the specific costs incurred at the requesting library
"Let $Cs =$ the specific costs incurred at the supplying library
"Then $C = Cr + Cs + O/N$.

Step 3: To calculate $O/N$

""$O'$ comprises all the capital, labour and materials costs assignable to the maintenance of the system itself (agreeing procedures, training, etc.) and the collection, processing, reproduction and distribution of information about holdings, availability, location, and both temporary and long-term amendments.

"This calculation can be substituted by an estimate of 1,500 UK pounds pa +/- 500 UK pound p.a. However, this does depend on there as infrastructure already exists. Data on $N$ is available in regional systems, and would need to be collected for others.
Step 4: To calculate $Cr$

"Let $I(\text{look-up}) =$ time in minutes spent looking up each item in the union list and recording the information on the form

"Let $h$ (hit-rate) = the proportion of items searched for that are actually in the list (if half the items are found, $h=1/2$). (This element is extremely important).

"Let $t=$ cost per minute of staff time, averaged over the staff doing the work

"Let $o=$ cost to library of keeping the union list up-to-date (sending in own amendments, writing in amendments, etc.)

"Let $n =$ number of successful uses

"Then $Cr=t \cdot h + o/n$

Step 5: To calculate $Cs$

"Let $r =$ average time in minutes spent receiving, identifying and sorting each request

"Let $w1 =$ average time in minutes spent walking to the shelves and finding the item

"Let $h(\text{hit-rate}) =$ proportion of items found on shelves each time

"Let $w2 =$ average time in minutes spent walking to the photocopier, and then returning the item to the shelves

"Let $c =$ time spent copying the item

"Let $d =$ time spent dispatching the item

"Let $p1 =$ cost of copy paper etc.

"Let $p2 =$ postal cost
"Then \( C_s = t \left( \frac{(r + w_1)}{h} \right) + c + w_2 + d + p_1 + p_2 \)

"Comment on important variables

"'t' (cost per minute) is central. It must allow for the full annual cost of employment, divided by the actual number of minutes worked per year. Most authorities agree that after allowing for leave and sickness, "wasted" time, breaks, overheads and essential but unproductive tasks, 1,500 hours per year is the average actually worked in white collar occupations. Where posts are graded lower than they should be, it would be sensible to calculate 't' according to preferred rate of pay rather than actual rates. This would show librarians valuing their own time at a proper rate.

"'h' is a decisive variable in both Cr and Cs and can tip the balance of the equation. The viability of the present regional systems rests partly on the similarity of the libraries's subject interests, which produce a high hit-rate for low costs. Extensions to the system would probably involve a high marginal cost per hit. So would any system involving either general libraries or a wide range of special interests.

"'w1' and 'w2' both show up very large differences between supplying libraries according to their physical size and level of development. 'w1' is highest in bigger libraries (where the effect is further emphasized because 'h' is often lower). 'w2' may be high in a small library that does not have its own photocopier."
7.3 DELNET Application

The above formula cannot be applied to DELNET on account of the following reasons:

1. DELNET is a promotional resource sharing network where each member-library is asked to pay a nominal charge of Rs. 5000 per annum only;

2. As only 15 libraries are using online ILL of DELNET and the rest get the books/photocopies direct from the libraries after ascertaining the position from DELNET union catalogues, it is not possible to find the number of times the union catalogues or lists are successfully used;

3. No requesting library maintains accounts of the specific costs incurred by it;

4. No supplying library maintains accounts of the specific costs incurred by it; and

5. ILL ordering is not automatic and therefore the above calculations do not hold good in the Indian scenario at this stage.

However, in an Indian scenario in which DELNET is offering both online ILL and ILL reference service through its unions lists and catalogues, the following scenario emerges:
Diagram 1

DELNET ILL Scenario

A: Requesting Library
B: Supplying Library
C: DELNET Online ILL Service
Scenario I

In this case a library is not a member of DELNET and for borrowing a book it makes several telephone calls before locating a book or deciding not to pursue the search further. In case it locates a book in a library, it sends its person once to collect the book and again to return it.

Scenario II

In this case both the requesting library and borrowing library are members of DELNET. The requesting library searches the union catalogue of books and then gets the book itself and later returns it to the library.

Scenario III

In this case the requesting library and the supplying library are both members of DELNET and the requesting library has paid Rs. 4,000/- as online ILL charges. As soon as the requesting library finds the book in the DELNET union catalogue, it enters the request in the DELNET online ILL facility. DELNET immediately sends its courier, collects the book and delivers it to the requesting library. After the borrowing period, the DELNET courier collects the book and returns it to the supplying library.
Scenario IV

In this case the requesting library is a member of DELNET but it does not find about one tenth of the required books in the DELNET union catalogue and thus makes the search on its own to find the book, collect it and return it to the library.

Scenario V

In this case the requesting library is a member and uses ILL online facility but finds the book/document outside DELNET union catalogue. Here also the library requests DELNET to collect the book from a particular library, deliver it and later return it to the supplying library.

In these five scenarios, it may be of interest to find the expenditures incurred by the requesting library, supplying library and DELNET in the promotion of ILL facility.

Requesting/Borrowing Libraries

a= Membership fee
b= Expenditure on staff
c= Misc. expenditure Rs. 5 per book
d= Expenditure on phone
e= Courier
f = Books borrowed per year
g= Number of users
h= Number of books available in library
i= Number of professional staff

a. Membership fee of DELNET is Rs. 5000/-. Membership is used for searching 14 databases and for reference work, including 7 databases for full text and INTERNET services, i.e. for Union Catalogue of Books alone Rs. 357/- are spent if we divide Rs. 5000/- by the number of databases.
b. Expenditure on staff : On an average if a library spends Rs. 7000/- on a person for reference and ILL work.

Expenditure made by Requesting Libraries

Scenario I

b= Expenditure on staff : Rs. \[x\]. This is a variable. The salary will depend upon the type of library and the quality of services offered.
f= books borrowed per year. It is estimated that on an average 10 books are borrowed per month, i.e. 120 per year on an average per year

d= Expenditure on phone
    @Rs. 10/- per book = 10x120 = Rs. 1200/-

e= Expenditure on courier
    @ Rs. 40/- per book each time (i.e. Rs. 80/- per book (two trips, both sides) = 120x80 = Rs. 9,600/-

    c= Misc. expenditure Rs. 5 per book = 5x120 = Rs. 600/-
\[ \text{Total: } x+d+e+c = x + 11,400.00 \]

**Scenario II**

\[ a = \text{Expenditure on account of membership for ILL} = \frac{5000}{14} = 357.00 \]
\[ b = \text{Expenditure on staff} = x \]
\[ d = \text{Expenditure on phone} = 1 \times 120 = 120.00 \]
\[ e = \text{Expenditure on courier} = 80 \times 120 = 9600.00 \]
\[ c = \text{Misc. Expenditure} = 5 \times 120 = 600.00 \]

\[ \text{Total: } x+a+b+d+e+c = x+10,677.00 \]

**Scenario III**

\[ a = \text{Membership expenditure} = \frac{5000}{14} = 357.00 \]
\[ b = \text{Staff} = x \]
\[ d = \text{Phone} = 1 \times 120 = 120.00 \]
\[ e = \text{Courier} = 4000.00 \]
\[ c = \text{Misc. Exp.} = 0 \]

\[ \text{Total: } x+a+b+d+e+c = x + 4477.00 \]
Scenario IV

\[ a = \text{Membership expenditure} = \frac{5000}{14} = 357.00 \]
\[ b = \text{Staff} = x \]
\[ d = \text{Phone} = 10 \times 12 = 120.00 \]
\[ 1 \times 100 = 100.00 \]
\[ e = \text{DELNET Courier} = \frac{5000}{14} = 357.00 \]
\[ f = \text{Local Courier} = 12 \times 80 = 960.00 \]
\[ c = \text{Misc.} = 5 \times 12 = 60.00 \]

\[ \text{Total: } = x + 5597.00 \]

Scenario V

\[ a = \text{Membership Exp.} = \frac{5000}{14} = 357.00 \]
\[ b = \text{Staff} = x \]
\[ d = \text{Phone} = 10 \times 12 = 120.00 \]
\[ 1 \times 100 = 100.00 \]
\[ e = \text{DELNET Courier} = 4000.00 \]

\[ = x + 4577.00 \]

If we sum up the above analysis and consider the value of \( x \), (the staff) as the same for all types of libraries, we get the
following picture of the expenditure involved during one year on ILL for 120 titles:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Rs. 11,400/-</td>
</tr>
<tr>
<td>II</td>
<td>Rs. 10,677/-</td>
</tr>
<tr>
<td>III</td>
<td>Rs. 4,477/-</td>
</tr>
<tr>
<td>IV</td>
<td>Rs. 5,597/-</td>
</tr>
<tr>
<td>V</td>
<td>Rs. 4,577/-</td>
</tr>
</tbody>
</table>

From the above analysis we notice that the use of DELNET's online ILL facility (Scenario III) is the cheapest and it saves the borrowing library from all the botheration of handling ILL requests. Other methods of ILL facility become expensive as we move upwards from Scenario V.

6 Summary and Conclusions

The following conclusions are based on the observations made in this chapter and the previous chapters since this chapter is based on the theme of this thesis:

1. Knowledge and Information

1.1 Knowledge

1.1.1 Knowledge is becoming multidimensional with the application of IT to data, information and knowledge. This trend is growing progressively.

1.1.2 The ongoing integration of new principles with the existing disciplines reveal an in-built network in the
universe of knowledge. The more we explore it, the more complex the network becomes.

1.1.3 Any library or any user should be able to access knowledge databases from any part of the world.

1.1.4 The library cooperation will become multitype as the universe of knowledge becomes increasingly interdisciplinary in nature.

1.2 Information

1.2.1 Information resources are growing on the INTERNET at the rate of 1 tetra byte per day.

1.2.2 More user-friendly and effective ways of accessing information both bibliographic, full text and multimedia based should become available.

1.2.3 Information markets are growing as quality databases become available.

2. Resources

Resource sharing should result in the creation of quality publications.

2.1.1 Due to limited resources, libraries will be forced to adopt resource sharing with other libraries and networks.
2.1.2 Libraries are going to become switching centres for users to access computerised databases. They need to be modernised.

2.1.3 Efforts will have to be made continuously to integrate library and information services for resource sharing.

2.1.4 Modernisation of public libraries has not been a priority in India. Efforts need to be made to modernise them at state and district levels to begin with.

2.1.5 Pilot projects need to be undertaken to modernise rural libraries.

2.1.6 Borrowing libraries should ensure the safety of the documents.

2.2 Bibliographies and Directories

2.2.1 Bibliographic publications/directories need to be made available.

2.2.2 Up-to-date published union catalogues are important for resource sharing where online resources are not available.

2.3 Databases
2.3.1 In India a large number of international and national databases should become available for the use of researchers through library networks.

2.3.2 Necessary databases of all types including full text and bibliographic tools like union catalogues and union lists need be created.

2.3.3 Databases will have to be produced in Indian languages.

2.3.4 DELNET should pay more attention to the quality of its databases and refinement to its DELSIS, DEL-WINDOWS and DEL-DOS softwares so that union-catalogue creation becomes automatic.

2.3.5 Efforts need to be made by DELNET to establish Books-in-Print database on a regular basis. Support to publishers for creating standard bibliographic records is essential.

2.3.6 Integration of data unique to particular procedures in the library should become available at one place in an integrated form.

2.3.7 Resource sharing can be more functional if the National Bibliographic Database is functional in a country.
2.3.8 Large databases may be stored at several places for research and reference.

2.3.9 Special databases such as bibliographical databases, and those on grey literature, patents and multimedia based, need to be introduced quickly.

2.3.10 Specific programmes need to be introduced to undertake retro-conversion work in Indian libraries using international standards and avoiding duplication in record creation work.

2.3.11 The maintenance of central databases become necessary when the communication facilities are not efficient and reliable.

2.3.12 Databases like IFLA Training Databases help in locating suitable partners the world over for resource sharing purposes.

2.4 Digital Information

2.4.1 The haphazard order of the databases on the INTERNET should become organised as full text databases become accessible with multimedia applications.

2.4.2 The digital information should get standardised and should achieve full networking capability.
2.4.3 Digital information is going to introduce a continuing change in human activity.

2.4.4 Research in long-term preservation of digital publications is becoming necessary.

2.4.5 The electronic, digital and virtual libraries are bound to grow in future.

2.4.6 Digitisation of existing library collections needs to be done as resources become available.

2.4.7 Digitisation of non-book material could be introduced.

2.4.8 Access to digitised collections should be improved and made online/off-line to the users in the world.

2.4.9 Digitised databases should be integrated/connected with other networks.

2.5 Holdings Data

2.5.1 Holdings data should be made available with each record.

2.5.2 Appropriate holdings data enhances the utility of library databases and union catalogues.
2.6 Collection Development

2.6.1 Collection development policies should be coordinated in order to rationalise the resources in libraries. It will change priorities in collections development.

2.6.2 Duplicate purchase of titles should be reduced among institutions that are physically closer.

2.6.3 Development of special collections will become a necessity and should be preferred.

2.6.4 Acquisitions librarians should have the authority to decide about acquisitions and alternate sources through resource sharing.

2.6.5 In order to know what should be purchased and what should be accessed through a network, there is a need for a closer integration between acquisitions, resource sharing and document delivery.

2.6.6 Rationalisation of acquisitions should be done primarily in libraries specialising in one discipline.

2.7 Cooperative Efforts
2.7.1 Cooperative procurement of books and documents may be economically desirable among certain institutions.

2.7.2 Cooperation for centralised classification and cataloguing would be useful.

2.7.3 Administrative structure and support needs to be created for resource sharing.

2.7.4 Exchange of surplus/duplicate copies of journals and books needs to be promoted.

2.7.5 Cooperation in documentation and database creation work among institutions can reduce duplication.

2.7.6 Exchange of experts promotes resource sharing and transfer of technology.

2.8 Institutional Constraints

2.8.1 Institutions should agree to share library resources.

2.8.2 Institutional autonomy is necessary for effective resource sharing.

2.8.3 Administrative structure and support needs to be created for resource sharing.
2.8.4 The protective attitude of some institutions due to lack of funds for automation and communication tools is persisting in Third World countries.

2.8.5 Libraries within the same campuses need to exchange documents and use the same catalogue standards.

3 Resource Sharing Technology and Procedures

3.1 Library Networks

3.1.1 Library networks be established for cooperation and resource sharing among libraries in a city, state, region, or a country.

3.1.2 The network scenarios discussed in the dissertation reveal that networks that offer services on all subjects and serve all types of users and libraries will progress as they will attract a large number of users that will make them sustain their services.

3.1.3 Specialised library networks among one type of libraries or among the libraries in one discipline may also be established.

3.1.4 Library networks should have governing boards which are democratic and which accommodate both the top professionals and the representatives of member-libraries.
3.1.5 Libraries selected for joining a network should be selected on the criteria given in this chapter. They should follow common practices and procedures.

3.1.6 Participation of member-libraries of a network should be coordinated through MOUs which stress on resource sharing and cooperation.

3.1.7 Networks should be engaged with efficient ILL and document delivery services.

3.1.8 Networks should aim at developing online access among member-libraries to each other's specialised collections and services either through the network or directly.

3.1.9 Library networks should also offer shared cataloguing cooperative collection development, reference service, training contribution, etc.

3.1.10 A network model should be selected keeping in mind the purpose for which the sharing is to be done by the participating libraries.

3.1.11 The networks should be recommending the type of hardware needed by the participating libraries.

3.1.12 The network should be upgrading its software regularly.
3.1.13 Library network such as CALIBNET, BONET, PUNENET, etc. should follow the DELNET model to avoid wastage of finance and effort on experimentation which DELNET has already undertaken.

3.1.14 As DELNET has emerged as the first operational library network in India, it should strive to be one of the best resource sharing networks.

3.1.15 As DELNET membership outside Delhi is increasing, it should improve accessibility to its databases through INTERNET.

3.2 Resource Sharing Tools/Technology

3.2.1 If local call numbers are given with each document in a union catalogue, search becomes easier.

3.2.2 Network catalogue may be distributed through CDs among the non-members and members of a network if online access in not reliable.

3.2.3 A centralised network topology may be preferred by library networks in India until communication facilities improve.

3.2.4 The network operation should be established on circuit switching principle.
3.2.5 Packet switching data network should be used. Transaction between libraries and the Central Host may be batch mode or online.

3.2.6 The Web technology is one of the important technologies for resource sharing. This technology needs to be explored for better hypertext applications for research and reference.

3.2.7 A Resource Sharing Technology Lab should be established by a network like DELNET for application of new technology and creation of methods for better sharing of resources.

3.2.8 The dramatic changes in IT and enormous growth in the databases on INTERNET is making access to quality information.

3.2.9 The use of EDI in acquisitions of publications should get introduced in the developing countries also in order to support networking of publishers, distributors of books with libraries and vendors of information.

3.2.10 Lack of proper communication facilities are a major barrier.

3.2.11 Communication technology has given birth to networking and the network will make demands on
the communication technology for pinpointed access
to information.

3.2.12 The DELSEARCH software developed by DELNET
should be extensively used until online
communication from outside Delhi becomes more
economical.

3.2.13 The National Informatics Centre and the Departments
of Telecommunications and Electronics individually
and collectively should provide an efficient
information infrastructure for networking of libraries
in India.

3.2.14 The use of ILL softwares and protocols should be
made by Indian library networks.

3.2.15 The use of ILL generic scripts as prepared by the
National Library of Canada may be useful in the
Indian situation and therefore its applications may be
explored.

3.2.16 The OSI based ILL software be developed so that it
can be based on all types of hardware, software and
communication facilities.

3.2.17 The use of Z39.50 protocol needs to be made by
Indian networks.
3.2.18 Research in Expert Systems and Case-Based Reasoning (CBR) will become increasingly intensive in digital databases.

3.2.19 E-mail and INTERNET facilities should be available with the libraries.

3.2.20 The push technology being adopted by DELNET for introducing various listservs and INTERNET databases need to be made more extensive and popular.

3.2.21 A common library software of world standard should preferably be used by all the participating libraries in a network.

3.3 Bibliographic Standards/Classification

3.3.1 Format compatibilities are necessary for computerised catalogue data.

3.3.2 All libraries should follow a standard MARC format, AACR II cataloguing code and a standard thesaurus like LCSH.

3.3.3 Harmonisation of all MARC formats should be done.
3.3.4 Call numbers as far as possible should be given in the holdings data of all libraries. The network may give one number in a union catalogue to begin with.

3.4 Language Barriers

3.4.1 Language barriers need not be slowly eliminated.

3.4.2 Difficulties in the use of knowledge in several languages, through appropriate subject heading lists or compatible authority files needs to be achieved.

4 ILL/Document Delivery

4.1 ILL should not be limited to local level only.

4.2 Statistics on ILL needs to be maintained and coordinated.

4.3 Applications of modern communications methods (E-mail, fax, ftp, etc.) needs to be promoted for document delivery.

4.4 Document delivery has to graduate to electronic form which will be its final form.

4.5 Efficient document delivery service can emerge in India through the library networks.

4.6 Document delivery facilities provided by networks like DELNET are very reasonable.
4.7 ILL-Online of DELNET should become increasingly popular.

4.8 A circulating voucher system would avoid many small transactions which are expensive to administer.

4.9 ILL transactions are not conducted on a uniform pattern all over the world. There is a need to promote IFLA guidelines for this purpose for borrowing libraries, lending libraries and the users.

4.10 Users need to be encouraged to use ILL regularly.

4.11 ILL standards including standard terminology needs to be used for online ILL transactions.

4.12 All online ILL transactions should adjust requests from system to system until the documents are located and the lending library has confirmed to supply them.

4.13 The use of INTERNET is increasing the use of ILL services.

4.14 Barriers to ILL such as lack of finance and communication facilities and growth of library collections in haphazard orders need to be checked.

4.15 National efforts should be made for faster transfer of new information technologies.
4.16 A national centre should be established for establishing and administering interlending norms and procedures.

4.17 National Document Delivery Centres need to be established and resource sharing tools such as national union catalogues and national bibliographies need to be made available for effective ILL and document delivery.

4.18 Document delivery needs to be subsidised.

5 National and International Scenario

5.1 National Policies

5.1.1 Wrong political decisions and neglect affect resource sharing. Social and cultural pressures for not sharing should be resisted.

5.1.2 New policies and arrangements will be adopted by governments and institutions to bring library and information services closer for coordination.

5.1.3 While the national policies are made for the modernisation and networking of libraries, their implementation does not take off owing to low priority to education and bureaucratic and financial constraints.
5.1.4 All information available through databases in a country, except confidential or classified should become available online for public use.

5.1.5 At least one library in a country should hold one copy of all documents published in a country.

5.1.6 Each country should maintain at least one library in a specific discipline and such libraries should disseminate information nationally and globally.

5.1.7 Development of national bibliographies and national union catalogue are necessary.

5.1.8 Countries should not restrict trans national data flows of development information and should contribute the world information infrastructure.

5.1.9 The National Library in Calcutta is not modernised. It will therefore be difficult for it to spearhead a National Library Systems.

5.1.10 The attitude of Governments towards library development and document delivery should become liberal. Developing countries like India will have to work a great deal to be a part of the universal resource sharing programmes.
5.2 International Efforts

5.2.1 Efforts at the international level by agencies like IFLA for Universal Bibliographic Control, Universal Availability of Publications, International MARC Programme and Transborder Data Flow need to be further strengthened.

5.2.2 It is important to make access to international databases simpler by streamlining access to proprietary terminals, reducing multiple methods of messaging, simplifying billing mechanisms and make appropriate terminology simpler and readily available.

5.2.3 ILL transactions at the international level should be cost effective and readily possible.

5.2.4 Information about the growing number of databases on the INTERNET has to be made available to any user in the world. The search engines at this time do not provide a thorough search.

5.3 Copyright

5.3.1 Efforts will have to be made for the copyright protection of digital works.
5.3.2 Copyright regulations should not hamper the use of knowledge.

5.3.3 Uniform policy on copyright legislation needs to be achieved.

5.3.4 There should be a systematic acknowledgement of copyright of requested materials.

6 Manpower and Training

6.1 Librarians should agree to share resources.

6.2 Librarians are going to grow as information engineers and specialists in the 21st century with a more specialised agenda for the dissemination of knowledge.

6.3 Training courses in computer applications, networking and interlending will have to be organised by networks. IT Centres and Departments of Library and Information Science for networking of libraries on a firm footing.

6.4 Workshops need to be organised in developing countries for promoting the applications of IT in ILL.

6.5 Appropriate training of library professionals is urgently needed and the attitude of librarians should change towards document delivery.

6.6 The syllabi of the Departments of Library and Information Science in the Universities should be overhauled totally to
train efficient manpower to meet the growing demand of the libraries.

6.7 Training of working library professionals in IT should be undertaken on a regular basis.

6.8 The professional manpower being trained at the Departments of Library and Information Science need to be upgraded.

6.9 An expert committee be appointed to access the manpower requirements in the country in the Library and Information Science field.

6.10 Library networks be recognised and assisted to offer short-term training courses.

6.11 New staffing norms for different types of jobs including those needed for handling ILL requests be finalised and adopted.

6.12 An All-India Centre for Library and Information Service with complete training in IT be introduced.

6.13 The barriers in training of Library and Information Science manpower could arise because of various factors including:

- Psychological
- Institutional
- Technological
- Historical
- Political and national and
- International

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6.14 The jobs be redefined and attention be given to personality specifications that highlight the potential to serve users.

6.15 The best staff be rewarded and promoted fast in order to fill in key IT positions in libraries. No regard should be given to the age but to the proficiency of the staff.

7 Users

7.1 Library users lack education on the scope of local collections or the extent of document delivery services available and their efficiency.

7.2 Satisfaction of DELNET users should increase. User awareness programmes through member-libraries should be stepped up.

8 Finance

8.1 Lack of sufficient economic resources can act as a barrier.

8.2 High prices of information products induces resource sharing, yet resource sharing can take place for information products of low cost as well.

8.3 Making payment for information will slowly get established in India as researchers become serious and their research becomes internationally meaningful.
8.4 Consistency in charging indirect photocopying, shipping and indirect costs have to be achieved.

8.5 Charging of users for ILL has to be based on the policy of each participating institution of the network. There cannot be a general rule in this regard since the relationship of its users with the institutions will vary from institution to institution.

8.6 Appropriate resource sharing methodology should be adopted to achieve results in actual savings financially.

References
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