DELNET – the functional resource sharing library network: a success story from India

Sangeeta Kaul
DELNET – Developing Library Network, New Delhi, India

Abstract
Purpose – The purpose of this paper is to describe the work of DELNET, the successful resource sharing and information provider in India.
Design/methodology/approach – The development of DELNET is described, the services it offers and plans for the future.
Findings – The paper finds that DELNET fulfills a vital role in facilitating resource sharing in India and is expanding its role rapidly.
Originality/value – The paper is an up-to-date study of resource sharing in India from the perspective of a successful agency.

Keywords Library networks, Resource sharing, India

Paper type Research paper

Introduction
India, the largest democracy in the world with an estimated population of 114 million, has more than 100,000 libraries comprising academic libraries, public libraries, special libraries and libraries attached to the research and development institutions, government departments and ministries, etc. ICT has brought a paradigm change in the functionality but this change is not uniform across all Indian libraries. On the one hand the country is proud to have the most sophisticated libraries with ISO certifications and the implementation of modern tools and technologies; on the other hand, we do encounter the challenges of providing a better infrastructure in the form of PCs and internet connectivity in the libraries that are still striving hard to acquire the necessary hardware and internet connectivity. The adoption of standards, retrospective conversion work and the adoption of suitable library software packages continue to be the major concerns for libraries and library and information science professionals.

In this diverse and changing situation DELNET has been able to establish itself as an effective, operational resource sharing library network in India. The network whose journey started as a city based library network in 1988 has emerged as a major operational library network, not only in India but also South Asia, connecting more than 1597 libraries in 30 States and Union Territories (UT) in India and seven other countries, see the Appendix, Figure A1 for details. The network is going from strength to strength, with rapidly growing union catalogues, wider coverage of libraries from varied disciplines, growing numbers of users and horizontal and vertical expansion in its services to members. This article highlights the pioneering work being done by DELNET-Developing Library Network (formerly Delhi Library Network) which is a non-governmental, non-profit making organisation with financial support and telecommunication facilities from the Ministry of Communications and Information Technology, Government of India and located in its own building in the well known academic environment of Jawaharlal Nehru University at New Delhi. It should be emphasized that DELNET does not receive any government funding and is based on a self-sustainable model and is considered to be a role model for other library networks especially those in developing nations. A survey has also been conducted by the author to assess the utilisation of DELNET resources in member institutions. A questionnaire was sent to 1,041 libraries and 147 (14 per cent) responded. The results are evaluated below.

The genesis of library networking in India

In India during the late 1980s and 1990s there was a movement to establish city and regional-based library networks by NISSAT (National Information System for Science and Technology), a body under the Dept of Scientific and Industrial Research (DSIR), Government of India. It provided some financial assistance for the setting up of these library networks. This has lead to the mushrooming of various city library networks in India including BONET (Bombay Library Network), CALIBNET (Calcutta Library Network), DELNET (Delhi Library Network which later became Developing Library Network in 2000) and PUNENET (Pune Library Network). The University Grants Commission also developed INFLIBNET (Information and Library Network) in 1991 to network the University Libraries.
in the country. Only a few networks were able to work on the self-sustainable model and continued to exist after the initial phases of implementation and functioning. DELNET, starting as a project in 1988 became a national library network in India in 2000. UGC continued funding INFLIBNET to provide the support to the University Libraries in the country. The remaining city library networks due to the lack of planning for developing the networked resources and its functions soon perished from the networking scene of the country.

DELNET – Developing Library Network

DELNET – Developing Library Network is a major operational resource sharing library network in India connecting 1674 libraries in 32 States and UTs in India and seven other countries. DELNET was conceived as a city based library network in Delhi in 1988 and was known as Delhi Library Network, networking the libraries of the Delhi region and was registered as a society in 1992. With the availability of DELNET services on the World Wide Web, its accessibility was soon transformed from the local dial up connectivity for the Delhi region institutions to global access through the web. This gave a great boost to DELNET and it soon crossed geographical boundaries within the country and also became accessible internationally. In 2000 the name of DELNET was changed to DELNET – Developing Library Network. The main objectives of DELNET are to promote resource sharing among the member libraries by collecting, storing and disseminating information and provide networked services to researchers and scholars to supplement their research activity.

The 5 Cs – functional parameters of DELNET

There are five factors which are essential for an operational library network and which govern its functionality. These can be described as the 5 Cs:
1. Connectivity.
2. Cost.
5. Content.

These five parameters will be discussed in relation to DELNET and its member libraries and how they have contributed to the growth and success of DELNET.

Connectivity

Connectivity is a life line for the smooth functioning of a library network and is facilitated by leased-line, wireless, broadband, VSAT and Wifi in the libraries.

DELNET services are accessible through the world wide web by registered member libraries. The DELNET databases are hosted on a basis web – Opentext server and are connected with an 11 mbps RF link offered by The National Informatics Centre of the Ministry of Communications and Information Technology. The network remains functional on a 24/7 basis. The web tracking software installed at DELNET servers gives a day to day picture of the usage of the DELNET services by the member libraries. It is heartening to note that access to the servers hosting the databases are being made by researchers and scholars of the member libraries at different times starting from midnight to early morning besides the usual peak hour network access.

The survey conducted among the member libraries has shown very encouraging figures regarding the availability of the dedicated links in the libraries. 90 per cent of the respondents have confirmed the availability of the dedicated internet facility in their libraries. The University Libraries have the highest availability with 95 per cent, followed by 91 per cent in Institutes, 90 per cent in Research/Special Libraries and 87 per cent in Colleges. The survey results show that the internet penetrates most libraries in India.

Additionally in 97 per cent of organisations, faculty has internet access at their own desk. It is essential to have direct internet access in order to utilise the library network’s resource and services to the fullest.

Cost

The cost of membership of the library network and the resources provided through the network are important factors for determining the network’s sustainability. DELNET membership charges are quite nominal at Rs 7,500 (US$150) per annum for libraries in India and South Asian Association for Regional Cooperation (SAARC) nations, non-SAARC members pay US$500 per annum. The membership fee is the same for all institutional members whether it is a University, an institution, an R&D organisation, a specialized library or a school library. This democratic and unbiased approach helps to promote resource sharing and also implies an equal participatory role in a network for resource sharing. It is worth reporting that some of the library networks in India could not sustain themselves due to the exorbitant membership charges and different categorization of the members on the basis of their collections, etc. In contrast, DELNET charges the actual courier fee for sending books on interlibrary loan and the member institutions and their researchers find this affordable. In a developing country like India, the costs of obtaining the desired material plays a crucial role. In India researchers and scholars are not helped financially through scholarships, grants, etc. as generously as their counterparts in the Western world.

Computers

In order to facilitate the optimum use of the library network resources and services, the researchers, scholars and faculty of the member institutions should have adequate access to computers. The survey found that 43 per cent of all libraries have up to ten computers. However 59 per cent of University Libraries have more than 20 computers compared to only 32 per cent of all respondents having more than 20 computers in their libraries. Clearly university libraries are best equipped with computers.

Client (member-libraries)

The wider the library network, the more effective are the resources available. In DELNET, the participating libraries are from various disciplines and they pool their resources, sharing them across the network. So for example a technical book required by a S&T Library was available in a library...
specialising in Commerce rather than being available in the best technical libraries. The details of the DELNET membership by subject and type of institution are described in the Appendix, Figure A2.

The survey results show that 92 per cent of the member libraries are aware of the DELNET services (Figure 1) and 61 per cent are frequent users (Figure 2). DELNET organizes one day orientation programmes in member institutions round the country. This enables better promotion and spreads awareness about DELNET and popularizes the services among the users, faculty and researchers.

Content
Content is a major resource of a library network and the greatest concern is to consolidate resources distributed across the member libraries. Since inception, DELNET has been actively engaged in developing union catalogues and union lists together with location data; these are major benefits of the library network and are growing rapidly. The database is built by electronic transfer of the exported records through the online facility, email, ftp protocols; in addition data is physically sent on CDs by the member libraries. In a country like India, cooperative cataloguing and cooperative collection building is still not in existence and thus there is much duplicate cataloguing. Libraries are using various software packages which range from the commercial software packages (Libsys, Alice for Windows, Virtua, etc.) which may be adhering to international standards, to the inhouse software packages developed with a backend on SQL, Access, Excel, Oracle, Sybase, etc. DELNET collects the records from the member libraries in the default exported format and conversion programs are being developed to convert the base records into the standard ISO 2709 format before they are finally merged with the Union Catalogues. Information is also collected from the prominent libraries of the country who although they maybe non members can be approached for obtaining the desired references. There is an online facility for uploading the machine readable records to DELNET by the member libraries. The bibliographical databases do not strictly adhere to the international bibliographic formats and

Figure 1. Awareness about DELNET services among the library users

![Figure 1](image1.png)

Figure 2. How often do you use DELNET services?

![Figure 2](image2.png)
the library professionals are not very familiar with MARC 21 cataloguing.

**DELNET databases and their significance**

**Union catalogue of books**

DELNET provides access to more than eight million bibliographic records of books in English available from member libraries both in and outside the country. The databases can be accessed by any desired field including Title, Author, Subject, Date of Publication, etc. The Boolean operators can also be used for refining the search queries. Sorting can be carried out on the searched results. Searching is by phrase or, any words can be used. The records can also be retrieved using the specific indexes including Title, Author, Subject, etc. DELNET has developed its own modules on Basisplus software, a relational database management system.

Member libraries wishing to use the document delivery facility can place requests online and it is one of the most popular services of DELNET. It operates not only in India, but also internationally. It is heartening that DELNET has evolved a very successful functional model for Interlibrary Loan and Document Delivery. Through these services, the users – faculty, researchers and scholars of the member libraries are able to obtain books which are not readily available in their own libraries. At times the books are out of print and are not even available from the book publishers themselves. The Reference books are also lent but for a shorter period. It is worth mentioning that certain libraries in the country which are reference libraries like Central Reference Library, Delhi University, Indian Institute of Advanced Study, Shimla do lend books via DELNET. This is only possible due to the mutual cooperation and benefit that the libraries generate from the process of resource sharing. It demonstrates a win-win situation. DELNET charges only the courier costs for sending the books on loan and it is the responsibility of the borrowing institution to return them at their own cost.

DELNET has also created a database of e-books which are available in the public domain and the links are provided to their respective URL wherein they are freely available for download.

**Union list of current journals and e-journals consortium in India**

Journals are a vital source of current information for scientific research. Information on availability of current journals is of great help for document delivery services. DELNET maintains an online union list of current journals available in the fields of Science and Technology, Social Sciences and Humanities. This database has more than 25,000 unique titles of current journals and is available to all libraries whether members or non members. The database is updated continuously with currently subscribed journals and contains information about journals not only available for the member libraries but also with major libraries in India even where they are non-members. Photocopies of journal articles are arranged from the libraries and are supplied to the requesting libraries and is one of the most popular services of DELNET.

In India a major e-journals consortium was formed in 2000 named INDEST (Indian National Digital Library in Science and Technology Consortium) with a financial contribution of Rs 200 million from the Ministry of Human Resource Development (MHRD). The All India Council for Technical Education (AICTE) has also contributed Rs 37.5 million. A total of 38 centrally funded government institutions including the Indian Institutes of Technology (IITs) and the National Institutes of Technology (NITs) and a few others are the core members of INDEST. The consortium provides access to over 6,500 journals from publishers and aggregators. The UGC Infonet E-journals consortium covers over 4,453 e-journals and provides access to nearly 100 Indian universities. It has been noted that private institutions who cannot afford membership of the consortium are greatly utilizing the DELNET Document Delivery Services. Moreover, at times members of the Consortium also approach DELNET for journal articles not available from their own collections. There is much speculation about the extent of utilization of e-journals in the Institutions and a large number of studies have been carried out. For example about 60 per cent of the respondents in one study faced problems in using E-resources (UGC Infonet) and lack of training is a major cause with 55 per cent (Naqvi, 2007). Moreover it has been noticed that if an Institution ceases to be a member of the Consortium because of the non availability of the digital archiving, the users are deprived of the opportunity to browse the issues for which they have paid.

**Database of journal articles**

There are a number of libraries, though not many on the network, who are involved with article indexing in machine readable form. A large portion of the library budget is spent annually on subscribing to journals, either in print or online but libraries lack access to databases containing bibliographic details of these journal articles themselves. For the researchers and scholars it is essential to know about the latest articles being published in their fields. Therefore DELNET has developed a database containing more than 800,000 records and this is growing. Researchers send requests by e-mail and DELNET arranges for full text delivery from the holding library. DELNET also helps in providing a list of articles through various other networked sources and the full text copies of the selected articles are provided on demand.

**Databases of non-print materials**

DELNET maintains databases of CD-ROM, video recordings and sound recordings available in the member libraries. Generally speaking the non-print materials cannot be loaned from the libraries, however video recordings and sound recordings are being loaned in special cases although
for a shorter period. The CD-ROMs are used for keyword searching and the concerned bibliography containing the abstracts is provided to the requesting libraries. There are 2,281 CDs available to member libraries, 748 sound recordings and more than 5,000 video recordings listings in the respective databases.

**Database of theses and dissertations**

This database contains around 45,000 records of theses and dissertations submitted to Universities and Institutions. This database contains bibliographic information and researchers use this database to identify works being carried out in their fields. There have been projects in India concerning the digitization of the Thesis and Dissertations by INFLIBNET and the University of Mysore (Vidyavahini project), but these have not taken off due to the copyright restrictions.

**Usefulness of DELNET union catalogues**

The access to union catalogues created and developed by the library networks remains the most highly used service by member libraries. The locations data available in the union catalogues helps users to find the availability of documents in their own regions, state and country as well as internationally. It is a very effective resource discovery tool and is a great boon to the scholars and researchers of the country. The survey results have highlighted the fact that 86 per cent of member libraries find DELNET union catalogues useful and 86 per cent of the library users are benefitting. While 79 per cent of the postgraduate students, 62 per cent of the faculty and 54 per cent of the graduate students are benefitting from the DELNET services. The content available through the union catalogues is very selective in nature since the libraries purchase the titles through a strict selection process (see Figures 3-5).

**DELNET services and their utilisation**

**Inter Library Loan (ILL) and Document Delivery Services (DDS)**

DELNET’s ILL and DDS services are one of the most popular services with member libraries. Requests for the supply of books on Interlibrary Loan or requests for journal articles are received by DELNET through various modes including DELNET Online System (options are available through the online databases), e-mail (one of the most prevalent methods used by member libraries), also through fax and at times through post. DELNET promotes electronic communication since it is faster and interactive and facilitates the process of quick and safe delivery of the ILL/DDS items. DELNET has an ILL tracking system for the date of dispatch, date of return, etc. The material is sent through insured courier services. It is worth mentioning that DELNET not only provides the ILL/DDS to its member libraries located in various parts of the country but is also engaged with international interlending. DELNET sends books on Interlibrary Loan to member institutions outside India such as Baha Social Sciences in Kathmandu, Nepal and the Caledonian College of Engineering in Oman; Waljat College of Applied Sciences in Muscat. Also photocopies of journal articles are provided to member libraries in Sri Lanka, the Philippines, etc. DELNET is also working towards the implementation of ISO ILL protocols.

The DELNET ILL/DDS services are at the core of DELNET. There is a great sense of satisfaction among member libraries using the services where speed is essential. The survey found that 31 per cent of the respondents find the response time excellent, while 36 per cent rate it “very good” and 33 per cent find the response time “good” (see Figure 6).

Regarding the overall impression of DELNET services, 35 per cent considered it “good”, 32 per cent founds it to be “very good” and the rating of “excellent” was given by 23 per cent and less than 3 per cent considered the services poor (see Figure 7). The growth of DELNET membership since 1992 when it was registered as a society is highlighted in the Appendix, Figure A3.

DELNET has also opened a coordination unit in Southern India in Bangalore (Karnataka). This unit uses the nation wide catalogue for satisfying ILL/DDS requests from member libraries.
Figure 4. Do you feel library users are benefitting?

![Bar chart showing the percentage distribution of responses to the question: 'Do you feel library users are benefitting?' The chart indicates that 86.3% answered 'Yes' and 13.7% answered 'No'.](chart1.png)

Figure 5. Kind of users benefitting from DELNET services

![Bar chart showing the percentage of users benefitting from DELNET services by category: Graduate (53.7%), PG/Research Scholars (78.9%), and Faculty (62.5%).](chart2.png)

Figure 6. Response time of ILL/DDS services

![Bar chart showing the percentage of responses to the question: 'How do you rate the response time of ILL/DDS services?' The chart indicates that 33.3% rated it 'Good', 36% rated it 'Very Good', and 30.7% rated it 'Excellent'.](chart3.png)
Reference services
DELNET receives a large number of reference queries every day and it maintains a referral centre which provides reference services to researchers from and outside India. DELNET is planning to start a national referral centre where the reference queries will be saved and accessed by the users on an anytime, anywhere basis. It will be based on question answering technology.

Networking ahead – new challenges
The new challenges posed by the growing knowledge economy are the need to network knowledge more vigorously and dynamically. DELNET is sketching out its plans to move with the times. Below are some of the immediate plans of DELNET. Although they are full of challenges DELNET’s strong networking capabilities in the country means that we are confident of moving ahead in a self-reliant manner:

• DELNET intends to network both libraries and knowledge in the integrated network model. The National Knowledge Commission of the Government of India has identified DELNET as one of the major library networks in India which will link more than 25,000 libraries in the near future.

• DELNET is interested in helping libraries tap into the tacit, i.e. non published, knowledge available in their institutions and to contribute to the development of Institutional Repositories and networking these knowledge resources.

• DELNET is supporting the establishment of Knowledge Centres in India. Plans are under consideration for establishing a Central Institutional Repository for member libraries in order to tap the tacit knowledge available with the researchers, scholars and the faculty members.

• DELNET is planning to open shortly State and Regional Centres in order to provide training to library professionals, promote the usage of network resources and help local libraries develop digital content.

• DELNET wants more libraries, especially those specializing in South Asian studies from different parts of the World to become part of the network and utilize the services and resources created for their researchers and scholars at an affordable cost.

• DELNET wants to implement social networking tools in order to enhance the user interaction thus bringing them closer to DELNET. The DELNET Helpline support is also offered through the Yahoo Messenger Services.

• DELNET is launching the Technical Support System for Koha – the Open source ILS in order to help Indian libraries adopt open source software. An online portal will also be launched soon by DELNET providing online audio/video learning material for implementing Koha, including tutorials on MARC 21. It will be operational 24/7 for a nominal registration fee.

Reference

Further reading


Appendix

Figure A1

DELNET
Number of Member-Libraries as on February 17, 2010-1674

Geographical Distribution

1. India

<table>
<thead>
<tr>
<th>State</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andaman and Nicobar Islands</td>
<td>2</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>175</td>
</tr>
<tr>
<td>Arunachal Pradesh</td>
<td>2</td>
</tr>
<tr>
<td>Assam</td>
<td>8</td>
</tr>
<tr>
<td>Bihar</td>
<td>9</td>
</tr>
<tr>
<td>Chandigarh</td>
<td>5</td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>15</td>
</tr>
<tr>
<td>Delhi</td>
<td>204</td>
</tr>
<tr>
<td>Goa</td>
<td>6</td>
</tr>
<tr>
<td>Gujarat</td>
<td>47</td>
</tr>
<tr>
<td>Haryana</td>
<td>62</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>8</td>
</tr>
<tr>
<td>Jammu &amp; Kashmir</td>
<td>14</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>10</td>
</tr>
<tr>
<td>Karnataka</td>
<td>128</td>
</tr>
<tr>
<td>Kerala</td>
<td>53</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>61</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>178</td>
</tr>
<tr>
<td>Manipur</td>
<td>4</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>1</td>
</tr>
<tr>
<td>Mizoram</td>
<td>2</td>
</tr>
<tr>
<td>Nagaland</td>
<td>1</td>
</tr>
<tr>
<td>Orissa</td>
<td>44</td>
</tr>
<tr>
<td>Puducherry</td>
<td>7</td>
</tr>
<tr>
<td>Punjab</td>
<td>66</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>69</td>
</tr>
<tr>
<td>Sikkim</td>
<td>5</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>257</td>
</tr>
<tr>
<td>Tripura</td>
<td>2</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>145</td>
</tr>
<tr>
<td>Uttarakhand</td>
<td>18</td>
</tr>
<tr>
<td>West Bengal</td>
<td>46</td>
</tr>
</tbody>
</table>

Total 1,654

2. Other SAARC Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepal</td>
<td>2</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 9

3. Outside SAARC

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oman</td>
<td>3</td>
</tr>
<tr>
<td>Philippines</td>
<td>1</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>3</td>
</tr>
<tr>
<td>United States</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 11

GRAND TOTAL 1,674
Corresponding author

Sangeeta Kaul can be contacted at: suga@delnet.ren.nic.in

To purchase reprints of this article please e-mail: reprints@emeraldinsight.com
Or visit our web site for further details: www.emeraldinsight.com/reprints