Introduction

Resource sharing in libraries is not a new concept. It has long been used to improve access and service through borrowing and lending from other libraries. Cooperation and sharing have been transformed by information technology and the move from a print to a digital environment. There has been a proliferation of web-based, full-text resources. Nearly all publishers have moved to web-based delivery platforms, and libraries and information centers are benefitting. The high cost of electronic information products has put pressure on libraries, which have committed larger portions of their budgets to these resources (Young, 1983).

Ameen (2008) says that “the Alexandria library shared its collection with the Pergamum library in 200 B.C.” Malviya and Kumar (2007) trace the history of consortia and cooperation beginning in the 19th century. Major methods of resource sharing in print era are:

- Interlibrary loan
- Document delivery
- Institutional membership
- Consortia

Consortia are formed at the local, regional, or international level, and may be grouped around function or subject. In India, there are two open-ended national consortia: INDEST (for the information needs of technical education) and UGC-INFONET (for the information needs of university education).

Laxman Rao (2006) describes the need for consortia, which, “deal collectively with the problems of purchasing online products, to benefit from the best possible volume pricing, and to secure the best terms of agreement from online publishers.”

Collaboration in library collection development is indispensable for meeting the needs of users, and to:

“Consortia and Cooperative Collection Development in the Libraries of Technological Institutes of North India,” M P Satija, Dr. Sarbrinder Kaur. Library Philosophy and Practice 2009 (July)
• Increase the library's access base
• Avoid unnecessary duplication of materials
• Multiply library materials within a limited budget
• Facilitate accountability to external agencies
• To develop specialization in the collection
• Enhance the image and prestige of the library
• Provide desktop access for users
• Place emphasis on access over ownership
• Help solve space problems
• Increase the use of books and information and cut costs nationally (Malviya and Kumar 2007)

The access rights, including number of simultaneous users and perpetual access options

• Password based or IP authenticated
• Ability to download information
• Archiving and preservation of print and online information

Obligations of Consortium Members

Well-planned Collection Development

A collective collection development policy should be adopted, with areas of specialisation well-defined to avoid duplication. The libraries of Indian Institutes of Technology, National Institutes of Technology, Sant Longowal Institute of Engineering and Technology, Thapar University, and Birla Institute of Technology and Science, Pilani have collection development policies specifically for e-resources. Consortial subscriptions are finalized after consulting all members. Demands of a majority of users are considered when adding new resources. Every year, collection development policies are reviewed. Institutions supported by the Ministry of Human Resources Development (MHRD) agree that none of the resources subscribed to consortially will be duplicated with a local print subscription.

Union Catalogue

A union catalogue of consortial holdings is essential. An alternative is making the web OPAC of each institution available to others. The important features of a union catalogue include:

• Browse journal Table of Contents (TOC).
• Search articles by author, title, keywords, etc.
• Create alerts
• Send email request for material held at another library

The INDEST consortium has outsourced this service, using Informatics India: http://jccc-indest.informindia.co.in/

The other fifteen consortial libraries are not part of this union catalogue; however, they enjoy the benefits of the union catalogue of IITs. Both institutions provide free document delivery service other government agencies.

Networking of Member Libraries and Availability of Intranet

Interlibrary networking and a strong communication system is the core of successful resource sharing. All the libraries surveyed, except for the libraries of CT Institute of Management and Information
Technology, Jalandhar, and Shaheed Bhagat Singh College of Engineering and Technology, Ferozepur have Internet connections in the libraries and the libraries are connected to through an intranet. Library users can access the resources and OPACs of other libraries.

Information Literacy and Staff Training

Members of consortia must provide training for staff in order to make resource sharing more effective and useful. User orientation and training on the services and sources available is equally important. This training is not being provided in many libraries in India. The libraries of IIT Delhi and IIT Roorkee are provide regular information literacy programmes. NIT Kurukshetra and NIT Jalandhar have had one such programme, but it is not a regular activity. Attendance of librarians at the INDEST annual meet and workshop is also going down every year. Many institutions send a teaching faculty members to this meet instead of the librarian, which does not serve the purpose. In a recent INDEST-AICTE Consortium workshop and annual conference a faculty member from NIT Hamirpur represented her institution.

Special Consideration for Weaker Members

In the present era of competition, the idea of marketing information is attracting attention, but most users still consider libraries as service organizations. It is the moral duty of stronger libraries to give special consideration to libraries that do not have many financial resources. A good example is the JCCC-J Gate Custom Contents for Consortia, a union catalogue of periodical holdings of the libraries of IIT Delhi and IIT Roorkee, which is available for users of other level one members of INDEST (http://jccc-indest.informindia.co.in)

Trends in Consortia Subscriptions

Consortia are becoming the main platform for resource sharing. The following trends are prevalent in consortial subscriptions:

Group or Aggregated Subscriptions

E-journals are the major source being subscribed under consortia subscriptions. In most libraries subscriptions are not for single or individual journal, but for aggregations of journals.

- This type of subscription is generally cheaper than individual journals.
- Subscription cost and subscription processing efforts are also comparatively less.
- Some bonuses are available with group subscription.

There are also some problems associated with group subscriptions, including the fact that publishers or a central agency decide groups or aggregates are formed. All the journals in an aggregate may not be use to all the libraries in a consortium. Most of the technical libraries are members a consortium, and all consortia subscriptions such as IEL online, ASME, ASCE, ACM are aggregate subscriptions.

Trial Access

There is lot of competition in the IT sector. Providing trial access to online publications to promote their sale is a way for publishers to compete. In 2007, the library of IIT Delhi subscribed to 25,000 e-books after testing them with trial access. A trial of 500 e-books from Elsevier Science publishers was provided to NIT Jalandhar. Trial access to the management and library science collection from Emerald was provided to NIT Jalandhar.
Resource Sharing: Indian initiatives

The history of resource sharing in India shows that resource-sharing activities fall into four major groups:

Establishment of NISSAT and NIC

NISSAT was established in 1977 with the support of the National Committee on Science and Technology, Council for Scientific and Industrial Research (CSIR), and UNESCO, in order to facilitate provision of information for the advancement of research and academics.

Document Delivery Services (DDL) of NISCAIR (formerly Known as INSDOC)

NISCAIR formed with the merger of INSDOC and NISCOM, and provides document delivery services for a nominal charge.

Interlibrary cooperation in the form of ILL and institutional library membership

Library consortia

In India the concept of library consortia emerged with the birth of library networks, some of which are enlisted below:

- CALIBNET (Kolkata Library Network)
- DELNET (Developing Library Network)
- INFLIBNET (Information and Library Network)
- ADINET (Ahmedabad Library Network)
- PUNENET (Pune Library Network)
- BONET (Bombay Library Network) [8]
- MALIBNET (Madras Libraries Network)

After scattered efforts and a strong feeling that a consortium is required for technical education in India, the MHRD appointed an expert group to discuss this issue with the publishers and create a working model for a consortium. INDEST was formed and commenced operation in December 2002 with Dr. Jagdish Arora as its first coordinator. At present the following consortia are active in academic circles in India:

INDEST

Indian National Digital Library in Science and Technology, sponsored by MHRD, offers consortium access to important full text journals published by major international publishers. It started its operation in December, 2002. The operational area of INDEST has been widened with the inclusion of AICTE-sponsored Institutions and name has also been changed to INDEST-AICTE consortium. [http://indest.iitd.ac.in](http://indest.iitd.ac.in)

CSIR

The consortium sponsored by CSIR for providing access to Elsevier journals at CSRI laboratories [http://202.54.99.7/ejournal/ejournalhome1.htm](http://202.54.99.7/ejournal/ejournalhome1.htm)

UGC-INFONET

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This consortium provides access to e-journals to the readership of the universities under UGC. This consortium was created in January 2004. [www.inflibnet.ac.in/info/ugcinfonet](http://www.inflibnet.ac.in/info/ugcinfonet)

**Forum for Resource Sharing in Astronomy and Astrophysics (FORSA).**

This is a cooperative venture for providing access to select number of journals in the field of Astronomy and Astrophysics. [www.library.yale.edu/consortia/FORSA.html](http://www.library.yale.edu/consortia/FORSA.html)

**IIMs Consortium**

A cooperative venture for providing access to management journals, IIM consortium was formed in 2000.

**National Informatics Center in Delhi**

This group maintains a portal for the Government of India to provide administrative data for planning and governance. [http://home.nic.in](http://home.nic.in)

**HELINET**

A newly-formed consortium, Health Science Library and Information Network is the first medical library consortium in India, and was initiated by Rajiv Gandhi University of Health Sciences (RGUHS), Karnataka. [www.rguhs.ac.in/HELINETHOSTCONSORTIU/IE/homelnethost.htm](http://www.rguhs.ac.in/HELINETHOSTCONSORTIU/IE/homelnethost.htm)

**Nano Science and Technology consortium (NSTC)**

This consortium is found at: [http://wwwnstc.in](http://wwwnstc.in)

Only INDEST-AICTE and UGC-Infonet will be discussed in detail, as the consortia created to serve Indian universities and technical education.

**INDEST-AICTE**

INDEST-AICTE was created in 2002 as the INDEST consortium, which in 2006, with the entry of AICTE sponsored Institutions, became INDEST-AICTE. Thirty-seven centrally-funded government institutions including IITs, IISc Bangalore, NITs. IIITs and IIMs are members. The Ministry provides funds for electronic resources through the consortium headquarters at IIT Delhi. ([http://indest.iitd.ac.in](http://indest.iitd.ac.in))

The benefit of consortium-based subscriptions to electronic resources is not confined to the 37 major technological institutes, but is extended to all educational Institutes under its open-ended proposition. INDEST has 773 members, including core members, AICTE- supported members, and self-supported institutes. The consortium subscribes to more than 6,500 e-journals from a number of publishers and aggregators. The INDEST-AICTE website has a search interface as well as an alphabetical list. ([http://indest.iitd.ac.in](http://indest.iitd.ac.in))

**Objectives of INDEST-AICTE Consortium**

- to subscribe electronic resources for the members of Consortia at highly discounted rates of subscription and at the best terms and conditions;
- to extend the benefits of consortia based subscription beyond the core members to other engineering and technological institutions;
to impart training to users and librarians of member institutions on subscribed electronic resources with the aim to optimize the usages of electronic resources;

- to find more avenues of cooperation and interaction among member libraries;
- to increase interaction among member institutions; and
- to increase scientific productivity of member institutions in terms of quality and quantity.

### Major Activities

- To arrange subscription to identified electronic resources for member institutions;
- Identification and subscription of new resources;
- Interaction with member libraries to ensure optimal utilization of subscribed electronic resources;
- Organise training programmes for the member Institutes on use of Electronic resources;
- Initiate additional activities complementary to the present activities of the consortium and;
- Encourage interaction amongst member libraries.

### Membership:

The consortium has the following three types of members:

### Core Member Institutions

Thirty-seven centrally funded government institutions, including IITs, IISc, NITs, IIITs, IIMs, ISM, SLIET, NERIST, and NITIE are core members of the INDEST.

### Members with Financial Support

The INDEST-AICTE consortium has enrolled sixty additional members with financial support from the All India Council of Technical Education.

### Self-supported Engineering Colleges and Institutions

The consortium invites AICTE-accredited and UGC-affiliated institutions to join. Nearly 700 engineering colleges and institutions have already joined the consortium.

### Governance

The consortium operates through its headquarters at the IIT Delhi. The MHRD provides funds for subscription to electronic resources for 37 core members including IISc, IITs, NITs, and other institutions and for operation of the consortium.

The consortium functions under the National Steering Committee (NSC) and under the overall policy direction of the Government of India. The NSC consists of members from the institutions and has the Director IIT, and Chairman AICTE as its co-chairman. The Ministry has set up a National Review Committee (NRC) for the INDEST-AICTE Consortium. It is responsible for policy, coordination with UGC and AICTE, and promoting the activities of the consortium. The NRC functions under the chairmanship of Joint Secretary, Technical Education, Government of India.

### Membership of INDEST- AICTE Consortium

Members have been divided into groups on the basis of core subject areas.
• Group 1: IITs and IISc
• Group 2: NITs, ISM, SLIET and NERIST
• Group 3: IIITM Gawaliar and IIIT Allahabad
• Group 4: IIMs, IIITM and NITIE

All other members subscribe to the e-resources of their choice as according to their funds and requirements.

Benefits of Collaboration

• Savings from the considerable decline in print journal subscriptions

A major portion (75-80 percent) of library budgets of all libraries was being spent on journal subscriptions. Consortial subscription has solved this problem to a large extent. All institutes reported saving a considerable amount, between 8-10 lac rupees.

• A solution to storage problems

The problem of storage space has been solved to a great extent by the transition to electronic journals. With the exception of a few journals, all publishers have provided archival access to their publications from the very first issue.

• Saving human resources

With consortial subscriptions, digital resources are made available to a large group of readers from a central place. This reduces the need for staff. Print journals require a lot of time and effort in their acquisition and display. E- journals have proved easier to handle.

Use of E-Resources: A Comparative Evaluation of the Status of Libraries Surveyed

INDEST has a system for MHRD sponsored institutes for monitoring use, called E-resource Access Management System. The use in self-supported and state government run colleges and institutes is not monitored centrally. Reviewing use data from the 27 institutions (available on the consortium website [http://indest.iitd.ac.in](http://indest.iitd.ac.in)) shows a divide between the IITs and NITs and other institutes of NIT status such as SLIET and Thapar University. The use statistics of six major institutions shows the following:

The average monthly use of Science Direct (a multidisciplinary aggregation) is 11,700 downloads for NIT Jalandhar and 260,964 downloads at IIT Delhi. The annual subscription amount for both institutions is same. The rate of downloads affects the per article cost, i.e., NIT Jalandhar pays Rs. 47/- per article whereas the average cost of the same article for IIT, Delhi is Rs 2/-. The situation is even worse for the subscription to journals of ASCE. For one article, IIT Delhi paid an average of Rs.5/-, IIT Roorkee paid Rs.6/-, NIT Hamirpur Rs.169/-, SLIET paid Rs.3923/- and so on.

When librarians and users were asked about the lower use at some institutions, reasons offered included the idea that users at these institutes are not accustomed to e-resources. Some are of the view that the research culture at IITs is at a more advanced stage than that of NITs. Lack of information literacy is also an important reason for low use of e-resources. Moreover, some institutions with low use have only recently begun their post graduate and doctoral courses. It is expected that use will increase with the growth of research there.
Global collection development is another approach to resource sharing and has the potential to bring the academic community together. Dhawan, Sardana, and Jeevan (2004) describe the steps in this approach and its effects.

- Enactment of Digital Library Act in India.
- Establishment of consortia for content creation.
- Democratization of information
- Capacity and capability building in digital library
- Formation of National Digital Library Policy
- Launching of Digital India Initiative (DII 2006)

Similar recommendations have been made by the National Knowledge Commission in its report of 2007. (www.knowledgecommission.gov.org)

The commission has proposed to the Government of India to formulate strategies in LIS sector:

- To set up a national commission on libraries.
- To prepare a national census of all libraries.
- To revamp LIS education, training and research facilities.
- To reassess staffing of libraries.
- To set up a central library fund.
- To modernize library services and management
- Encourage greater community participation in library management.
- To promote information and communication technology application in all libraries.
- To facilitate donations and maintenance of private collections.
- To encourage public private partnership in LIS development.

We are eagerly waiting for the government to give practical shape to these proposals.

User Perspective on INDEST

The large number of e-resources provided by INDEST created a lot of excitement. After this initial excitement, reactions are more mixed. A large number of users were interviewed and their reactions include the following. Use of paper has increased. In the past, users read articles in the library but now they print multiple articles rather than reading from a computer screen. More journals are available but users find a lower percentage relevant to their needs. The use of the resources is low in comparison to the subscription cost. Once an aggregated journal package is chosen, access continues for years without any periodic review. Members are not consulted about inclusion or exclusion of any resources.

User Perspective on Resource Sharing

The INDEST consortium provides two major streams of e-resources: e-journals from major publishers and aggregators of the world; JCCC J-Gate Custom Contents for Consortia, a bibliographic database of the periodical holdings of IITs and IIMs. In the second example, IITs and IIMs are the contributing institutes, while the NITs and other similar status institutes are the receiving libraries. This is the major platform of resource sharing among these institutes. The problems being faced by users are detailed below.

The librarians the three government engineering colleges in Punjab and their users expressed the feeling that the central government provides fewer resources for the state government run engineering colleges. The expenditures for the central government run institutes come from a central pool, whereas the state government run institutes pay independently for the resources they access. The users of these
libraries visit the IITs and NITs to have access to resources that are not available to them. Hardware to access these resources is also often only available to the users of IITs and NITs. Even in these libraries the users report on a shortage of printing facilities. In state run and private colleges adequate infrastructure is not available. The users of nearly all libraries also find a lack of publicity about library services.

**Conclusion**

Resource sharing demands shared values, vision, and commitment, as well as a good political situation, special funding and full participation by all the stakeholders. Members of a consortium belong to different parent institutions with different organizations and rules, and administration of a consortium is not an easy task. Consortial subscriptions are the most common channel of resource sharing. In view of the globalization of all spheres of life, this trend will continue. INDEST- AICTE and UGC-INFONET, both open-ended consortia, have brought about a revolution in the field of resource sharing. Libraries still have the responsibility for collection development, preservation, retrieval, and dissemination of information. Librarians are often short of time to do justice to all these activities. Vital and well-run consortia are an important source of help. In August 2007 Dr Jagdish Arora, Librarian IIT Delhi and the national coordinator of INDEST-AICTE consortium left the consortium to join a higher post of INFLIBNET Director. A new national coordinator has not been designated. If this situation continues it can affect the working of the consortium. With the introduction of many multidisciplinary courses in the member institutes, the use of consortium resources is expected to increase, so it requires a permanent and active managing body. Any venture to be successful needs continuous support, supervision, and periodic review. These things are essential to make resource sharing a success in India.

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