Chapter 1

Introduction

1.0 Background

Libraries are the lifeline of research and development (R&D) organisations that support them to continue their R&D activities. Satisfying the information needs of users and providing good quality services has always been a main aim of research libraries. Libraries play a significant role in the preservation as well as dissemination of human knowledge and information. Since time immemorial, libraries are the integral part of higher education system in India. The memory of iconic Nalanda University and its library is undiminished even after eight hundred years of its destruction (n.pag.).

Scientific journals play an important role in the dissemination of scientific and technical (S&T) knowledge as they are the primary channel of scholarly communications. Journals also enhance the S&T capacity of research scientists and are widely used by them to carry out day-to-day quality research. According to Chand and Nishy, journal titles are increasing three folds every 15 years (45). In the last twenty years, cost of journals has also been increased 226% in terms of dollars which may be further compounded by currency conversion. The budget of libraries to acquire all such information resources also has increased by 110% during the same period but vis-a-vis the cost escalation of journals, there is substantial mismatch of 116% (226%-110%=116%) which has constantly been causing reduction in journals information base of the R&D institutions (Chand and Nishy 45). Ware and Mabe reported that there were about 28,100 active scholarly peer-reviewed journals in mid 2012, collectively publishing about 1.8–1.9 million articles a year. The number of articles published each year and the number of journals have both grown steadily for over two centuries, by about 3% and 3.5% per year respectively (5).

Due to various reasons like information explosion, increasing cost of journals, inadequate budget, inter-disciplinary R&D work, and changing needs of users, no single library can satisfy its users; however big or resourceful it is. Libraries have responded these challenges through co-operation with other libraries to increase the resources through synergy in order to satisfy their users need. Although library co-operation has been in existence for a long time and involved sharing of resources
through activities such as interlibrary loan (ILL), compilation of union catalogues and document delivery service, etc.

A new era began in the library world with the application of information communication and technology (ICT) in the libraries. The technological changes in the storage and presentation of information brought a relief for the libraries. Now, in the present environment, information resources are available more in electronic form and are available online via Internet and therefore, easy to use by everyone, sharable and available all the time on Internet.

A Panel Report from the United States President’s Information Technology Advisory Committee (PITAC), *Digital Libraries: Universal Access to Human Knowledge* advocated that all citizens anywhere anytime can use any Internet connected digital device to search all of human knowledge. No matter where the digital information resides physically, sophisticated search software can find it and present it to the user (5). In this vision, no classroom, group, or person is ever isolated from the world's greatest knowledge resources. Due to advancement in technological development, libraries have changed their mode of operation to maximise access to resources. Libraries have expanded their existing information resource-base through consortium formation.

1.1 What is Consortium?

Consortium is a cooperation of a number of powers, companies, etc. for a common purpose. It is an association of similar type of organisation/institution who are engaged for producing and servicing the common things/for providing services for a specific purpose of its users. The origin and etymology of ‘Consortium’ as described on *Merriam Webster* website is that consortium is a Latin word originated from consort-, consors- and its first known use was in year 1829 (n.pag.). Various sources defined consortium as follows:

As per *Cambridge Online Dictionary*, a consortium is “an organization of several businesses or banks joining together as a group for a shared purpose” (“Consortium,” def. n.pag.).

*Merriam-Webster Dictionary*, defined consortium as “an agreement, combination, or group (as of companies) formed to undertake an enterprise beyond the resources of any one member” (“Consortium,” def. n.pag.).
1.2 Library Consortium

The concept of library co-operation among libraries existed since long for the purpose of sharing resources through interlibrary loan and resource sharing has been an international tradition for decades for supporting library services. The library consortium has been defined in the literature variously.

Allen and Hirshon have defined it as a generic term to indicate any group of libraries working together towards a common goal, whether to expand cooperation on traditional library services or electronic information services (36-44). Dong and Zou defined a library consortium is an association of libraries established by formal agreement, usually for the purpose of improving services through resource sharing among its members (1-10). Nfia explains the term “library consortium” as a form of cooperation among libraries (203-12). EIFL (Electronic Information for Libraries) defined “A consortium is a collective group of libraries that can accomplish more together than they could on their own. The consortium membership can encompass libraries of a single type or of different types and sizes, and the consortium may be local, regional or national in scope” (n.pag.). Panchakshari explained consortium as a co-operative association of libraries of different type with a purpose to share human and information resources (n.pag.). Patil described library consortium “as a move from organizational self-sufficiency to a collaborative survival mode” (3). Chand and Nishy defined consortium as an evolutionary form of co-operation among libraries/information centres to meet the challenges of constantly declining information resource base with R&D and academic organisations (45-51). United States Universal Service Administrative Company defined “a library consortium is any local, state-wide, regional, or interstate cooperative association of libraries that provides for the systematic and effective coordination of the resources of schools, public, academic, and special libraries and information centers, for improving services to the clientele of such libraries” (n.pag.).

Consortia as defined by Prytherch in Harrod's Librarians' Glossary and Reference Book is “resource sharing organizations formed by libraries; also termed co-operatives, networks, collectives, alliances, or partnerships. Services covered may vary, but often comprise co-operative collection development, education and training, preservation, centralized services, and network alliances featuring library automation
services, system support, consultation, and administrative support needed for cataloguing, inter-library lending, union listing, retrospective, conversion, and co-operative purchasing. Discounts may be arranged with information suppliers. Consortia members may include any type of library, and may be regionally-based, or subject-based over a large area. Number of members may be from two or three libraries to several hundred” (165).

The common thing in all the definitions is that a library consortium is a group of libraries co-operating each other. It is an institutional alliance with common interests, policies and collective agenda. Consortium is a collective activity of libraries to provide access to new electronic and print resources, opportunities for professional development, sharing expertise among consortium members, and arranging new sources of funds, etc. Library consortium creates a mechanism to share knowledge among members with limited financial resources. One of the library or agency under the consortium works as a coordinator for negotiation, legal matters, etc. with the publishers.

Availability of information in electronic form has increased the ease and efficiency to access and share information resources. Revolution in access to information due to developments in information and communication and technology has contributed a major part in the development of library consortium. Now library consortium has become a global phenomenon and is not restricted to any geographic region or subject.

Consortium increases the purchasing power of individual libraries and also maximise opportunities for cooperative collection building for resource sharing with the member libraries of consortium. Singh said that library consortium creates an opportunity to provide enhanced library services by making use of electronic resources, bibliographic databases and services offered through Internet and World Wide Web amongst the consortium members (301-09). Library consortium has made it possible to increase information resources and providing access to a much broader range of material through an economically collaborative approach. Pal and Das also described the benefits of consortium as library consortium facilitates the end-users with benefits of more resources than would be available through one library, and library staff can customise the system to meet their individual library’s needs (1-27).
There has been a rapid growth of library consortia now-a-days. The reason for rapid growth of library consortia is well indicated by Allen and Hirshon as, “the most important development … during the current decade has been move from organizational self-sufficiency to a collaborative survival mode as personified by the growth of library consortia” (36-44).

Library consortia have also evolved because of mutual interest of the libraries as well as publishers. Publishers have the opportunity to sell to a very large number of users at once and to save on their marketing and administrative costs whereas libraries under consortium generally get more products at a lower cost.

1.3 Consortium: International and National

There has been exponential growth of information which exerts pressure on libraries to provide more efficient services to the users. Schilling has written that until 1900, human knowledge doubled approximately every century and by the end of World War II, knowledge was doubling every 25 years. He further reported that nanotechnology knowledge is doubling every two years and clinical knowledge every 18 months, but on average human knowledge is doubling every 13 months (n.pag.). This indicates that no library, however big it is can satisfy the needs of its readers. The basic objective of a consortium-international or national is to promote access to materials/information for those who need amongst the participating members.

1.3.1 International Library Consortia

Consortia in Asia

JUSTICE

JUSTICE (Japan Alliance of University Library Consortia for E-Resources) consortium came into being in 2011 with the support of the National Institute of Informatics (NII). JUSTICE is a consortium providing continuously academic information, including e-journal that is essential for education and research activities of the university in Japan. The mission assigned to JUSTICE is to contribute to the enhancement of the nation's academic information infrastructure by contracting, managing, providing, and preserving e-resources and by training personnel with necessary skills. Presently, JUSTICE comprises of nearly 500 participating libraries and is the nation’s largest organisation of library consortia.
KESLI

KESLI (Korean Electronic Site License Initiative) Consortium started in 1999 as a library consortium for joint buying scholarly e-journals. Currently, 542 libraries including academic, public, research, corporate and medical libraries are members of KESLI Consortium.

LALC

LALC (Lebanese Academic Library Consortium) is the first library consortium in Lebanon started in January 2002 by the libraries of four private academic institutions (American University of Beirut, the Lebanese American University, Notre-Dame University and the University of Balamand) and the number reached to 9 universities in 2011. Mission of LALC members is “to cooperate in the selection, pricing negotiations and access methods of electronic resources” for the best interests of the universities and their library users.

MOLEC

MOLEC (Malaysian Online E-Resources Consortium) was established in 2000 with the objective to share resources of commercial databases and to subscribe to commercial databases as a consortium. Its current members are the National Library of Malaysia, 20 public university libraries, 5 university libraries, 6 government/non-government agency libraries, bringing the total membership to 32.

u-Pustaka

u-Pustaka (u-Pustaka Consortium Libraries) aims to link all public libraries in Malaysia. u-Pustaka portal provides access to various kinds of information resources and offers a variety of library services to the Malaysians. “Think Knowledge, Think u-Pustaka” is the theme for u-Pustaka. u-Pustaka provides members with efficient, integrated, seamless, “anytime, anywhere” access to content and services in two languages viz BahasaMelayu and English.

NDLP

NDLP (National Digital Library Program) launched in 2003 by Higher Education Commission (HEC), Pakistan is one of the main achievements of the HEC. It provides access to high class peer-reviewed journals, databases, books and articles in a variety of disciplines to approximately 400 member institutions.
NELIC

NELIC (Nepal Library and Information Consortium) was established in 2009 with the purpose of facilitating access to electronic resources to Nepali educational institutions.

CONCERT

CONCERT (COntsortium on Core Electronic Resources in Taiwan) was officially launched in 1990. It is conducted by the Science and Technology Policy Research and Information Center (STPI). The main tasks of the STPI is to negotiate prices, review contracts, coordinate training sessions and provide information services to the CONCERT members. Consortium has licensed over 100 databases. The CONCERT members covers 70 national as well as private universities, 51 Sci-Tech universities, 36 colleges, 15 junior colleges, 30 R&D organisations and 18 government organisations.

Consortium in Africa

SANLIC

SANLIC (South African National Library and Information Consortium) is a national consortium for providing electronic information resources to public academic and research libraries in South Africa.

Consortia in North America

Consortia Canada

This is an informal group of library consortia representing all library types (public, post-secondary, health, special, and K-12 schools) working together to license electronic resources that are useful and relevant to members across the country. With a “made in Canada” approach, Consortia Canada's primary goal is to contribute to the collection and organisation of information and knowledge in digital form for the benefit of all Canadians.

BC ELN (British Columbia Electronic Library Network)

BC ELN (British Columbia Electronic Library Network) is a partnership between the Province of British Columbia and its 33 post-secondary libraries. BC ELN's purpose is to develop, promote and maintain system-wide mechanisms that allow post-secondary libraries to meet the expanding information needs of the province's learners, educators, and researchers at the lowest possible cost.
CRKN

CRKN (Canadian Research Knowledge Network) is a national consortium started in 2000. The 75 institutions in Canada that currently participate in CRKN include all research universities offering degrees at the Masters and Doctoral level as well as the vast majority of institutions offering Baccalaureate degrees, and represent over 1,000,000 full-time equivalent faculty, graduate students and undergraduates. CRKN primarily conducts negotiations with publishers and vendors to license large scale digital journal and database content on behalf of its members.

CARLI

CARLI (Consortium of Academic and Research Libraries in Illinois) began operating on July 1, 2005. CARLI was formed by consolidating three existing Illinois academic library consortia i.e. Illinois Cooperative Collection Management Program (ICCMP), formed in 1986, Illinois Digital Academic Library (IDAL), formed in 1999, and Illinois Library Computer Systems Organization (ILCSO) formed in 1980. CARLI is one of the premiere library consortia in the United States. There are 134 member libraries—individually and collectively. CARLI is committed to meet the information and research needs of their 900,000 students, thousands of faculty and staff.

OhioLINK

OhioLINK (Ohio Library and Information Network, USA) is a consortium of 90 Ohio college and university libraries, plus the State Library of Ohio, that work together to provide Ohio students, faculty and researchers with the information they need for learning, teaching and research. Serving more than 600,000 students, faculty, and staff, OhioLINK’s membership includes 16 public/research universities, 23 community/technical colleges, 52 independent colleges and the State Library of Ohio.

WRLC

WRLC (Washington Research Library Consortium, USA) was established as a non-profit corporation in 1987 to support and enhance the library and information services of universities in the Washington, DC metropolitan area.
BLC

BLC (Boston Library Consortium, USA) was founded in 1970 with a focus on resource sharing. BLC includes 17 academic and research libraries in Massachusetts, Connecticut and New Hampshire.

**Consortium in South America**

Alerta al Conocimiento (Alert Knowledge) (Chile)

Alert Knowledge is a consortium of universities that meets the needs of information, knowledge, administration, information technology and management of institutions, companies and people doing academic activities, research and development in Chile. Alert Knowledge started its formal activities from the first of January 1994.

**Consortia in Europe**

**CBUC**

CBUC (Consortium of Academic Libraries of Catalonia, Spain) is a consortium of the state-funded universities and the State Library of Catalonia in Spain with a mission to improve library services through cooperation.

**ANKOS**

ANKOS (Anatolian University Libraries Consortium, Turkey) was established in 2000 with 12 member libraries and three database subscriptions. Faculty members at universities all over Turkey as well as the staff of some research institutions now have access to bibliographic and full-text databases in science, mathematics, social sciences, humanities, medicine, agriculture, business, education, informatics and computing, and engineering.

**RUSLANet**

RUSLANet (Regional University and Science Library Advanced Network in the North-West of Russia) project’s goal is to create a common information space of libraries of North-West Russia and its integration with the European and worldwide library information space.

**Research Libraries UK**

Research Libraries (formerly CURL- Consortium of University Research Libraries) is a consortium in UK and Ireland. The motive of the consortium is to increase the ability of research libraries in terms of sharing resources for the benefit of
the research community.

FinELib

FinELib (Finnish National Electronic Library, Finland) is a consortium of Finnish universities, research institutes and public libraries with an aim to acquire electronic resources centrally on behalf of its member organisations. The consortium’s service unit operates at the National Library of Finland.

HEAL-Link

Aim of HEAL-Link (Hellenic Academic Libraries Link, Greece) consortium is to develop co-operation among all the academic libraries in Greece. Through this consortium, members have full-text access to journals, e-books and bibliographic databases.

IREL

IREL (Irish Research electronic Library, Ireland) is a nationally funded electronic research library, initially conceived to support researchers in Biotechnology and Information Technology in mid-summer 2004, and following on the success of this, expanded in 2006 to support research in the Humanities and Social Sciences also.

Jisc Collections Library Consortium

Jisc Collections Library Consortium, UK was established by the Higher Education Funding Council for England (HEFCE), to support the procurement of digital content for education and research in the UK. Main consortial functions are collections sharing, electronic content licensing and electronic content loading/presentation for the members.

KonsortiumBW

KonsortiumBW (Konsortium Baden-Württemberg, Germany) was created in 1999 in an association of Baden-Württemberg university, academic and state libraries with the aim of cost-effective acquisition of rights to electronic information resources.

LIBER

LIBER (Ligue des BibliothèquesEuropéennes de Recherche – Association of European Research Libraries, The Netherlands) was founded in 1971, the association has grown steadily to include more than 400 national, university and other libraries from over 40 countries with the motto “reinventing the research library”.
BIBSAM

BIBSAM (Consortium of University and Research Libraries, Sweden) is operated by the National Library of Sweden. It has 79 active member institutions including universities, university colleges, and government funded research institutions. It manages about 40 licenses for approx. 100 e-resources, including “big deal” agreements with scholarly journal publishers as well as agreements for encyclopaedias and abstract and indexing databases at Swedish universities, institutes, authorities and governmental research institutions.

DEFF

DEFF Denmark’s Electronic Research Library is an organisational and technological collaboration between 230 research libraries, the education libraries and the special libraries, co-financed by the Ministry of Culture, the Ministry of Education and the Ministry of Higher Education and Science. DEFF negotiates and enters into contracts for electronic licences on behalf of all member libraries.

CRIStin Consortium

CRIStin Consortium, Norway is owned by the Ministry of Education and Research in cooperation with the Ministry of Health and Care Services but is hosted by the University of Oslo. The CRIStin Consortium have national responsibility for negotiating licensing and consortium agreements on behalf of 206 member universities and university colleges, institutions, and health trusts.

Iceland Consortium

Iceland Consortium was started in 1999 and a license agreement was signed with Encyclopaedia Britannica for a nationwide access in Iceland. The aim of the IC is to secure access to academic and scholarly content for students and staff of academic and research institutions and the general public in Iceland.

Consortia in Australia

NSLA e-Resources Consortium

NSLA e-Resources Consortium (National & State Libraries Australasia (NSLA) e-Resources Consortium) was established in 2001 by Australian members of the National and State Libraries Australasia (NSLA), the peak body representing national, state and territory libraries in Australasia. The purpose of the consortium is to secure access to commercial e-resources and to simplify and improve licensing
arrangements, maximise efficiency, innovation and sustainability for member libraries.

UNILINC

UNILINC (formerly CLANN, New South Wales, Australia) founded in 1978, is a not for profit cooperative network of libraries comprising university, college, school and special libraries in Australia. The aim of UNILINC is to facilitate resource sharing among members and to support this through the best technology solutions at the least cost.

EPIC

EPIC (Electronic Purchasing in Collaboration, New Zealand) is a non-profit national consortium established in 2004, with a common interest to enhance access to e-content for all New Zealanders and to negotiate and facilitate access to e-content for approximately 130 library and information organisations and their customers.

Consortium for Antarctica

In Antarctica there is no consortium but National Science Foundation has formed this consortium to provide information to polar scientists.

a²dc

a²dc (Antarctic and Arctic Data Consortium) is supported by the National Science Foundation, USA in collaboration of research centres and support organisations that provide polar scientists with data and tools to complete their research objectives. From searching historical weather observations to submitting geologic samples, polar researchers utilise the a²dc to search and contribute to the wealth of polar scientific and geospatial data.

1.3.2 Consortium of Consortia

ICOLC

ICOLC (International Coalition of Library Consortia) is known as consortium of consortia. The ICOLC is an informal, self-organised group currently comprising approximately 200 library consortia in North and South America, Europe, Australia, Asia, and Africa. ICOLC has been in existence since 1996. All library consortia, anywhere in the world, may be part of the ICOLC. There is no membership fees or barriers to participation. ICOLC supports participating consortia by facilitating discussion on the issues of common interest. The organisation is dedicated to keeping
its members informed about electronic information resources, pricing practices of
electronic publishers and vendors, and any other issues of importance. CSIR-DST e-
Journals Consortium (NKRC) is also a member of ICOLC.

EIFL

EIFL stands for Electronic Information for Libraries, originally known as
eIFL.net. The name has been changed EIFL in 2010. EIFL is an international not-for-
profit organisation that works with libraries to enable access to knowledge in
developing and transition economy countries in Africa, Asia Pacific, Europe and Latin
America. Over the last 16 years, library consortia in 47 countries in Africa, Asia and
Europe, representing more than 2,300 libraries, have joined the EIFL network.

1.3.3 Library Consortia in India

The history of library consortia for online subscription and online access in the
country is just a decade old. Libraries and institutions made serious efforts towards
formation of consortia of libraries for providing access to electronic resources to the
users. Some of the important Indian subject-oriented consortiums were established to
improve the quality and status of research and development in 1990s. Forum for
Resource Sharing in Astronomy and Astrophysics (FORSA) consortium is one of the
oldest library consortia in India for physics related subject areas was established in
1982. Subsequently, the consortium like CSIR-DST e-Journals Consortium of
Council for Scientific and Industrial Research (CSIR), New Delhi was set up in 2002
as CSIR e-Journals consortium now from 2009-10 known as National Knowledge
Resource Consortium (NKRC)) for providing scientific and technical information to
CSIR laboratories and Department of Science and Technology (DST) institutes.
Indian National Digital Library in Engineering and Science and Technology
(INDEST) was established in 2003 for engineering colleges and institutions. Later on
many consortia like Tata Institute of Fundamental Research (TIFR) consortium for
scientific and technical subject areas, IIMs (Indian Institute of Management)
consortium for management, and Health Science Library Network (HELINET) for
medical sciences subject, also came in existence. Various other organisations had also
established consortiums for their specific information needs like Indian Council of
Agricultural Research (ICAR), and Defence Research and Development Organisation
(DRDO), etc. Indian Council of Social Science Research (ICSSR) has established
ICSSR Consortium of e-resources providing access to JSTOR for ICSSR research institutes.

Antariksh Gyaan

Antariksh Gyaan is a consortium to improve the information infrastructure and to ensure equal access to information for employees of all centres of ISRO. Resources subscribed under consortium are IEEE/IET Electronic Library, Journal TOCs, SPIE Digital Library, AIAA Journals and Meeting Papers.

CeRA

CeRA (Consortium for e-Resources in Agriculture) was established in November 2007 for facilitating accessibility of scientific journals to all researchers / teachers in the National Agricultural Research System (NARS) by providing access to information specially access to journals online which is crucial for having excellence in research and teaching. Currently 147 institutions in NARS have 24x7 online access to important journals in CeRA platform through IP authentication.

e-ShodhSindhu

The MHRD has formed e-ShodhSindhu merging three consortia initiatives, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium. The e-ShodhSindhu will continue to provide current as well as archival access to more than 15,000 core and peer-reviewed journals and a number of bibliographic, citation and factual databases in different disciplines from a large number of publishers and aggregators to its member institutions including centrally-funded technical institutions, universities and colleges. The main objective of the e-ShodhSindhu is to provide access to qualitative electronic resources including full-text, bibliographic and factual databases to academic institutions at a lower rates of subscription.

ERMED Consortium

ERMED (Electronic Resources in Medicine) Consortium is managed by National Medical Library, New Delhi, India. National Medical Library’s Electronic Resources in Medicine (ERMED) Consortium is an initiative taken by DGHS & MOHFW to develop nationwide electronic information resources in the field of medicine for delivering effective health care. 70 state and centrally funded Government Institutions including all AIIMS are selected as its members. There is no
membership fee charged from members and the MOHFW has provided funds required for the purchase of electronic journals under the NML-ERMED consortium project. Presently consortium is subscribing 242 high quality online e-journals from 5 leading publishers namely British Medical Journal Publishing, Cambridge University Press, Lippincott Williams & Wilkins, Oxford University Press, and John Wiley.

HELINET

HELINET (Health Science Library & Information Network) conceived by the Rajiv Gandhi University of Health Sciences (RGUHS) since 2002. The HELINET Consortium was started with a vision to improve the quality of education and research in the colleges affiliated to RGUHS in the state of Karnataka through enhanced access to high quality medical literature. HELINET provides access to about 600+ core international e-journals, 2000+ e-books, 1500+ videos and databases are being subscribed/ procured and provided to students and faculties and research scholars pursuing their studies in various faculties of health sciences of 660+ health sciences colleges in the state of Karnataka affiliated under RGUHS.

ICMR e-Consortia

ICMR e-Consortia (Indian Council of Medical Research) has been subscribing to the following e-resources in a consortia mode to all ICMR institutes- Science, NEJM, Lancet, J-Gate Plus and Nature. All the scientists can access these journals from their desktop.

IIM Libraries Consortium

IIM (Indian Institute of Management) Libraries Consortium was initiated in 2000. Growing from six IIMs, today the consortium consists of 13 libraries. The IIM Consortium has four major resources in its domain and they include Wiley, Springer, Taylor & Francis and Sage.

MCIT Library Consortium

MCIT (Ministry of Communications and Information Technology) Library Consortium comprises of three departments namely Department of Information Technology (DIT); Department of Telecommunication (DOT) and; Department of Post (DOP) . Each department has a number of PSU/Organisations/Autonomous
Bodies. MCIT Libraries Consortium is in the process of common subscription on Consortium Platform.

1.4 Statement of Problem

Libraries have been cooperating and sharing resources for a long time. The main purpose of library cooperation is to increase the availability and accessibility of information to the users so that their information requirements can be fulfilled. Previously libraries were cooperating with other libraries through interlibrary loan using union catalogue of periodicals and union list of books. But it was not an easy task because of the distances among the libraries, homogenous interest, etc. The major hindrance to conduct research in S&T in India was the limitation of getting quick access to current information among many other resources.

Over the past two decades, the Internet has emerged as a powerful tool for dissemination of knowledge and information. The Internet with its worldwide access, transparency and seamless flow of information has removed the distances between libraries. Moreover, developments in information and communication technologies (ICT), an integration of telecommunications, computers as well as necessary software and hardware for storage of audio-video, visual, digital, etc. information have enabled users to access, store, transmit and manipulate information. In libraries and information centres, developments in ICT have significantly helped in automation of libraries hence given development to library consortium and sharing of information.

The Council of Scientific and Industrial Research (CSIR) is a premier industrial research and development (R&D) organisation in India. Its 38 national laboratories/ institutes and 5 units address various scientific and technological needs of an emerging economy, such as providing industrial competitiveness, social welfare and inclusiveness, building up a strong S&T base for strategic sectors and advancement of fundamental knowledge. CSIR’s R&D portfolio embraces areas as diverse as Aerospace, Biotechnology, Chemicals, etc. CSIR is recognised as one of the world’s largest public funded R&D organisation having linkages to academia, R&D organisations and industry (Council for Scientific and Industrial Research, Welcome to the World of CSIR n.pag.).
One of the prerequisites to remain in the forefront of international knowledge generation is the availability of journals. But it has been observed that over the years, subscriptions to journals by libraries of CSIR laboratories have been on the decline mainly because of financial crunch. Table 1.1 shows that there has been a constant decrease in the print journals base of CSIR laboratories libraries (Chand and Nishy 48).

**Table 1.1: Journal base in CSIR System**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Year</th>
<th>No. of Subscription</th>
<th>Unique Titles</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>1993</td>
<td>8,384</td>
<td>5126</td>
</tr>
<tr>
<td>2</td>
<td>2000</td>
<td>3,356</td>
<td>2,500</td>
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<tr>
<td>3</td>
<td>2005</td>
<td>2,717</td>
<td>1,732</td>
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<tr>
<td>4</td>
<td>2006</td>
<td>2,717</td>
<td>1,732</td>
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<tr>
<td>5</td>
<td>2007</td>
<td>2,717</td>
<td>1,732</td>
</tr>
</tbody>
</table>


Increase in the cost of international journals has forced many librarians to reduce their numbers. Due to constant decline of journals information base in CSIR laboratories, an initiative was taken with the creation of CSIR e-Journals Consortium in 2002.

### 1.5 CSIR-DST e-Journals Consortium

The CSIR-DST e-Journals Consortium under study facilitates access to 5,000+ e-journals of all major publishers, patents, standards, citation and bibliographic databases (National Knowledge Resource Consortium n.pag.). Apart from licensed resources, consortium is also a single point entity that provides its users with access to a multitude of open access resources. The consortium envisions emerging as a leader to serve the R&D sector with much needed information to strengthen the research and development system in the country. In order to know the impact of the CSIR-DST e-Journals consortium in enhancing resource sharing and enriching research output, this study has been taken.

### 1.6 Need for the Study

Most of the work to study the role of consortium in enhancing resource sharing, revenue saving and enriching research output has been done in western countries. However, in India also studies have been done but most of them are based on consortia like INDEST, INFONET, etc. The studies have focused on the usage and
other aspects of such consortia. For CSIR-DST e-Journals Consortium, no such study has been done so far. In this study five laboratories namely CSIR-HQ, NPL, CRRI, IGIB, and NISTADS has been covered. This study intends to assess the impact of e-journals consortium in enhancing the resource sharing and enriching the research output in CSIR laboratories in Delhi. In future, keeping in view the present study, attempts can be made for other CSIR and DST laboratories and institutes.

1.7 Objectives of the Study

The objectives of the present study are:

1. To know the existing e-journals consortia in India and abroad with special reference to CSIR-DST e-Journals Consortium.

2. To find the infrastructure facilities available in the laboratories libraries in terms of staff strength, computers, Internet accessibility, budget, etc.

3. To study the functioning of the CSIR-DST e-Journals Consortium, its funding, governance, resources subscribed under consortium and their accessibility in the laboratories.

4. To study the awareness of the consortium among users, purpose of using e-journals, frequency of use of e-journals (usage statistics), user’s satisfaction, etc.

5. To study the resource sharing activities and resource enrichment processes in the libraries of the CSIR laboratories.

6. To know if the revenue saving has been achieved and to what extent by the libraries in the CSIR laboratories.

7. To find out the impact of increased access to information resources on the research output by the CSIR scientists with relation to their research publications in international and national peer-reviewed and SCI/SSCI indexed journals.

8. To study the users’ perspectives and their information requirements from consortium for their R&D work.

9. To find out the reasons of success and limitation of CSIR-DST e-Journals Consortium in CSIR laboratories libraries.

10. To find out the problems faced by the libraries in relation to CSIR-DST e-Journals Consortium.
11. To suggest ways and means to overcome the problems faced by libraries and users.

1.8 Research Questions

A research question is a clear, focused, concise, complex and arguable question around which the research revolves. Blaxter, Hughes and Tight have mentioned that “research questions are like objectives, rather than aims: they should contain within themselves the means for assessing their achievement”(35). Research questions help researcher by providing a path through the research and writing process and work toward supporting a specific, arguable thesis. For this study, the following research questions are framed:

1. How has the access to e-journals affected the subscription of print journals?
2. What steps have libraries taken to promote the use of e-journals subscribed under the consortium?
3. Has the usage of e-journals increased with the expansion of the CSIR-DST e-Journals Consortium?
4. How has the consortium facilitated wider access to global information?
5. How are the information needs of scientists fulfilled as a result of resource sharing under the consortium?
6. Whether consortium based access to e-journals has facilitated revenue saving?
7. How has access to more literature resulted in an increased research output of scientists?
8. How has the consortium helped in sharing expertise with other laboratories and outside agencies?

1.9 Scope and Coverage

CSIR was established in 1942, is an autonomous body mainly funded by Ministry of Science and Technology. Presently, CSIR has 38 national laboratories, 5 units and several extension centres of the laboratories spread across the nation. All the CSIR laboratories libraries are well equipped with latest information resources and information technology facilities offering Internet facilities to its users for accessing online information resources.

The scope of this study is confined to CSIR-DST e-Journals Consortium (now known as National Knowledge Resource Consortium) only. The coverage includes
R&D laboratories of CSIR spread in Delhi. CSIR is Headquarters and most of the planning, policy and decision making activities are carried out. In CSIR, the work is more administrative than R&D. Other four CSIR laboratories in Delhi are in different subject field like physical sciences, engineering and technology, biological sciences and information science. Given below are the laboratories whose libraries are selected for this study.

   CSIR-HQ, New Delhi (established in 1942)
   National Physical Laboratory (NPL), New Delhi (established in 1950)
   Central Road Research Institute (CRRI), New Delhi (established in 1952)
   Institute of Genomics & Integrative Biology (IGIB), New Delhi (established in 1977)
   National Institute of Science Technology and Development Studies (NISTADS), New Delhi (established in 1980)

1.10 Limitations of the Study

   Limitations of the study is that only five CSIR laboratories located in Delhi have been selected out of 38 laboratories. Scientists are the main users of the consortium, therefore, study is confined to scientists only. Time period covered for the study is 2002-03 to 2011-12.

Sample of the Study

   This study was conducted on librarians who were also the Nodal Officers and representing their laboratory in consortium activities of the five CSIR laboratories located in Delhi. All the activities related to e-journals consortium are managed by the library of the laboratory. Librarians are the resource person to know about the utilisation of the consortium at institutional level. Therefore, a questionnaire was designed for the librarians to evaluate the consortium from their point of view.

   Scientists are the users of consortium, therefore, it is also important to know if the journals covered under consortium are useful for them or not. Scientists might be interested in some other journals which are important and not covered under consortium. They might also give suggestions for improvement in the consortium. Therefore, a questionnaire was designed for the users of the consortium. Users include scientific staff of the CSIR laboratories:
“Scientific staff” means R&D scientific staff who are expected to generate new knowledge/ methods/ techniques by research/design/development (Council for Scientific and Industrial Research, *CSIR Service Rules, 1994 for Recruitment of Scientific, Technical and Support Staff* 1).

### 1.11 Research Methodology

In this study data collection has been done using survey method with the help of two questionnaires. Data was also gathered through the study of websites of laboratories, annual reports of the laboratories. Frequent visits were made to the laboratories libraries and personally met the librarians and library staff to get data which was not available through other resources.

**Tools Used for the Study**

The following tools are used for the study

- Survey questionnaires (for librarians and scientists of the laboratories)
- Laboratories websites
- Personal visits for interviewing library staff

Data on the libraries, information resources, IT infrastructure was collected from the librarians of the select five laboratories libraries of CSIR laboratories on the following- library budget, manpower, IT infrastructure, collection- books, journals, reasons for entering into consortium, impact of consortium in terms of revenue savings, usage, institutional research output, membership of other library consortium, problems and difficulties faced with respect to consortium.

Separate questionnaire was distributed amongst scientists to collect the following information- awareness regarding e-journals and e-journals consortium, what information sources are consulted more frequently and the purpose of using them, how do the users rate e-journals over print, do the users think that research output has increased due to access to e-journals, problems faced while accessing e-journals, and suggestions for improvement.

### 1.12 Data Collection, Analysis and Interpretation

Data collected has been analysed using the following appropriate techniques.

1. Frequency Distribution: Number of times an event occurs.
2. Percentage: Any proportion or share in relation to a whole.
3. Weighted Index: An index where some important items are given more value/weight than less important ones and index number is computed from these values/weight.

1.13 Chapter Plan

The present study has been organised into eight chapters covering particular aspects of the study from a thematic perspective. Each chapter provides an introduction to the subject matter covered therein thus providing the reader a background knowledge of the topic of the chapter.

Chapter 1: Introduction

This chapter discusses the consortium, national and international scenario of the consortia, the important consortia in the world, need of setting up of consortium for CSIR laboratories. It also includes the statement of the study, scope, limitations of the study, objectives, research questions.

Chapter 2: Review of Literature

To get an overview of the topic, literature published all over the world relevant for the study has been reviewed in this chapter. The literature consulted for the study has been grouped under the following sections- growth of literature, resource sharing: growth and need of consortium, revenue saving, cost-effectiveness of consortium, return on investment, problems/challenges encountered in consortium, and some case studies.

Chapter 3: Research Methodology

This chapter describes the various data collection and analysis methods like questionnaire, frequency distribution, percentage, weighted index used for this study. Beginning with introduction, chapter discusses the research design, scope and coverage of the study in terms of time period, sample population, different stages of questionnaires preparation like designing, pre-testing of questionnaire, administration of questionnaire (circulation and collection of questionnaire), data collection. It further covers response rate, techniques used in analysis and interpretation of data like frequency distribution, percentage, weighted index and likert scale. The style of compilation of bibliographical references has also been discussed.
Chapter 4: CSIR Laboratories Libraries

This chapter gives an overview of all the five laboratories namely CSIR-HQ, NPL, CRRI, IGIB, NISTADS and their libraries and users covered for this study. It further discusses the infrastructure facilities available at CSIR laboratory’s libraries, staff strength, library budget, demographic profile of the users like age, gender, designation, laboratory’s name, discipline/area in which they work, etc.

Chapter 5: CSIR-DST e-Journal Consortium: An Overview

This chapter outlines the features and functioning of the consortium under various headings like CSIR-DST e-Journals Consortium, its funding, governance, resources subscribed under consortium, benefits of a library consortium, availability of print journals and e-journals in laboratories, accessibility of e-journals in five laboratories under study- CSIR-HQ, NPL, CRRI, IGIB, and NISTADS, awareness of consortium, sources of awareness about consortium, purpose and use of e-journals by scientists, sources used for searching e-journals, frequency of use of publisher/journals/database by scientists available through consortium, importance of e-journals in research, satisfaction level of scientists, and problems faced while using e-journals consortium.

Chapter 6: Role of Consortium in Enhancing Resource Sharing and Revenue Saving

This chapter describes the impact of consortium on various aspects in libraries and how users are benefitted with the consortium. The aspects are discussed under various headings like allocation of library budget in CSIR laboratories libraries, expenditure on print journals by CSIR laboratories libraries, laboratory-wise total expenditure on books and journals (print and e-journals), a case study of CRRI laboratory library, resource sharing, resource sharing through consortium and five laws of library science, efforts to enhance resource sharing like sending requests through e-mail, search interface linking users directly to the websites of e-journals subscribed under Consortium, journals gateway- a union catalogue of serials subscribed by CSIR and DST laboratories/ institutions and organising training programmes by the librarians, revenue saving and consortium, problems faced by libraries in implementing consortium, user’s perception on consortium.
Chapter 7: Impact of the Consortium in Enriching Research Output of CSIR Laboratories Scientists

This chapter describes the impact of consortium on research output of laboratories scientists. It discusses the usage statistics of e-journals in the libraries of CSIR laboratories, research output of five CSIR laboratories under study, research output of laboratories in SCI/SSCI journals, research output of respondents, research papers of respondents cited in SCI/SSCI journals, research projects, satisfaction level on use of resources subscribed under consortium and librarians perception, impact of consortium on library activities.

Chapter 8: Findings, Suggestions and Recommendations for Further Studies

This chapter summarises the results of the study under various headings like findings, and suggestions. It also includes recommendations for further area of research. Findings are based on the information collected from the librarians and users through questionnaire method. Information collected on various aspects like infrastructure facilities in libraries, budget and expenditure, impact of consortium on library services like resource sharing and on users like research output, demographic profile of users, problems faced by librarians as well as users with regard to usage of consortium, etc. has been analysed to draw conclusions and further suggestions has been given for improvement of the consortium. Recommendations have also been made for doing research in the different yet related areas of consortium.

Bibliography

A list of source materials that are used and consulted during this study has been compiled. MLA (Modern Language Association) Handbook for Writers of Research Papers 7th ed. New Delhi: Affiliated East-West Press, 2009 has been used to compile the bibliography. List has been arranged alphabetically by author. Lists of websites and annual reports used have also been given separately.

Appendices

Supplementary documents which are part of the study but not included in the main text are appended at the end as follows:

Appendix 1 Questionnaire for CSIR Libraries
Appendix 2 Questionnaire for Laboratory Library Users
Appendix 3 Additional Tables for Chapter 4
Appendix 4 Additional Tables for Chapter 5
Appendix 5 Additional Tables for Chapter 7

1.14 Definition of Terms Used

Some of the terms frequently used in the study are explained here keeping in view the context of this study.

Big Deal

The term Big Deal is explained by Harrod’s Librarians’ Glossary and Reference Book under the term Basket deal as “an offer made to libraries by publishers whereby a large number of (primarily electronic) journals from related subject areas, or the complete collection of journals, are offered at a rate discounted from the sum of their individual subscriptions but usually at a price higher than the library is paying for the currently-subscribed journals from that particular publisher. An economic model derived by publishers in transferring from paper-based journals to the supply of electronic full text. The system is generally disliked by libraries as little or no choice is provided in the content of the basket. Also known as Big deal, Bundling” (“Big Deal,” def. 223).

Consortium

An association of independent libraries and/or library systems established by formal agreement, usually for the purpose of resource sharing. Membership may be restricted to a specific geographic region, type of library (public, academic, special), or subject specialisation.

Consultancy Projects

In consultancy projects, consultancy services comprising scientific, technical, engineering or other professional assistance/advice based on available knowledge or expertise of the laboratory are provided.

Electronic Journal or e-journal

A journal which is available in electronic format; a physical, printed version may also be available. Electronic journal may be a digital version of a print journal made available via the Web, e-mail, or other means of Internet access.
Externally Funded Projects

Externally funded projects cover sponsored projects, collaborative projects and Gran-in-aid projects. These projects are funded by the agency other than CSIR with specified R&D objectives.

In-house Projects

In-house projects are the projects where R&D has been undertaken within the institute and expenses are met from CSIR funds.

Interlibrary Loan

As per Harrod’s Librarians’ Glossary and Reference Book “a book or other item lent between libraries” (“Interlibrary Loan,” def. 363)

Journal Impact Factor

The journal Impact Factor is the average number of times articles from the journal published in the past two years have been cited in the JCR (Journal Citation Report) year. The Impact Factor is calculated by dividing the number of citations in the JCR year by the total number of articles published in the two previous years.

Laboratory’s Library

Every laboratory in CSIR has a well-equipped library for acquisition of technical publications and collection development in the area of specialisation of the laboratory.

Library Cooperation

Methods by which libraries and library systems work together for the mutual benefit of their users, including centralised processing, cooperative cataloguing, international exchange of bibliographic information, union catalogues, resource sharing, etc.

National Laboratory

As per Council of Scientific and Industrial Research Memorandum of Association Rules & Regulations and Bye-Laws “The “National Laboratory” shall mean a research laboratory or institute or any other scientific, engineering or technological institution set up and/or functioning under the authority of the Society” (14). CSIR laboratories carry out basic and applied research in almost all areas of science and technology for the growth of industry.
Nodal Officer

Nodal Officer (NO) in CSIR-DST e-Journals Consortium is normally Head, Library. NO is responsible for coordination with NISCAIR- nodal laboratory for the consortium in the matters of subscription of e-journals through consortium.

Open Access

Open access is to make the literature freely available on the public Internet, allowing any users to read, download, copy, distribute, print, search, or link to the full texts of these articles and use it without financial, legal, or technical barriers.

Peer Review

According to *Harrod’s Librarians’ Glossary and Reference Book* “the process of obtaining impartial opinions from the research and academic community in order to ascertain whether papers submitted for publication in journals or at conferences are of a suitable standard. The opinions are sought by publishers and conference organizers, and are requested from those whose expertise and stature are similar to the author’s” (“Peer review,” def. 532).

Research Output

A publication, report or creative output, including but not limited to: journal articles, conference contributions, chapters, reports, books, performances, artefacts, patents/trademarks, exhibitions, scholarly edition, software, compositions, Internet publications, design, presentations, grant applications, etc.

Resource Sharing

The activities that result from an agreement, formal or informal, among a group of libraries (usually a consortium or network) to share collections, data, facilities, personnel, etc., for the benefit of their users and to reduce the expense of collection development.

Return on Investment (ROI)

Return on Investment (ROI) is the benefit to an investor resulting from an investment of some resource. In a library, ROI is the research output of users in relation to the budget spent on print and e-resources by the organisation.
1.15 Conclusion

This study has tried to assess the impact of CSIR-DST e-Journals Consortium in enhancing resource sharing among the participating libraries of the consortium and enriching the research output of S&T staff in CSIR laboratories in Delhi during ten years i.e. 2002-03 to 2011-12. This study has also focused on the problems faced by the librarians as well as the users of the consortium. This study will be helpful in upgrading the services offered by the consortium for the libraries. Libraries in turn will be able to provide more services to the users in a more efficient way.
References


<https://www.nalandauniv.edu.in/about-nalanda/history-and-revival/>


**Websites of International and National Consortia**

**Asia**

JUSTICE (Japan) <http://www.nii.ac.jp/content/justice_en/>

KESLI (Korea) <http://www.kesli.or.kr/2012/index.html>

LALC (Lebanon) <http://lalc.lau.edu.lb/>

MOLEC (Malaysia) <http://library.oum.edu.my/molec/db>

u-Pustaka (Malaysia) <http://www.u-library.gov.my>

NDLP (Pakistan) <http://www.digitallibrary.edu.pk>

NELIC (Nepal) <http://www.nelic.org>

CONCERT (Taiwan) <http://concert.stpi.narl.org.tw>
Africa
SANLIC (South Africa)  <http://www.eifl.net/country/ethiopia>

North America
Consortia Canada (Canada)  <http://www.concan.ca/>
BC ELN (British Columbia)  <http://www.eln.bc.ca/>
CRKN (Canada)  <http://www.crkn-rcdr.ca>
OhioLINK (Ohio, USA)  <https://www.ohiolink.edu>
WRLC (USA)  <https://www.wrlc.org/>
BLC (Boston, USA)  <https://www.blc.org/>

South America
Alert Knowledge (Chile)  <http://www.alerta.cl/es/Default.aspx>

Europe
CBUC (Spain)  <http://www.csuc.cat/en/libraries-cbuc>
ANKOS (Turkey)  <http://www.ankos.org.tr/>
RUSLANet (Russia)  <http://consortium.ruslan.ru/>
RL (UK)  <http://www.rluk.ac.uk/>
FinELib (Finland)  <http://www.nationallibrary.fi/en/libraries/finelib.html>
The HEAL-Link (Greece)  <http://www.heal-link.gr/?lang=en>
IREL (Ireland)  <http://www.irelibrary.ie/>
JISC (U K)  <http://www.jisc-collections.ac.uk>
Konsortium BW (Germany)  <http://www.konsortium-bw.de/>
LIBER (The Netherlands)  <http://www.libereurope.eu>
BIBSAM (Sweden)  <http://www.kb.se/bibliotek цentrala-avtal/>
DEFF (Denmark)  <http://www.deff.dk/english/>
CRISTin (Norway)  <http://www.cristin.no/english/consortium/>

Australia
NSLA (Australia)  <http://www.nslaconsortium.org.au>
UNILINc (Australia)  <http://www.unilinc.edu.au>
EPIC (New Zealand)  <http://epic.org.nz>

For Antarctica
a2dc (USA)  <http://www.a2dc.org/>
Consortium of Consortia

ICOLC  <http://icolc.net/about-icolc>
EIFL   <http://www.eifl.net/page/about>

India

Antariksh Gyaan  <http://14.139.110.237/AE/>
CeRA  <http://cera.ari.res.in/attachments/article/19/cera_leaflet-2012-FINAL.pdf>
e-ShodhSindhu  <http://www.inflibnet.ac.in/ess/about.php>
ERMED CONSORTIUM  <http://www.ermad.in/>
HELINET Consortium  <http://www.rguhs.ac.in/digitallibrary/Helinet%20about%20us.html>
ICMR e-Consortia  <http://icmr.nic.in/icmrnews/e_consortia.htm>
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