The library consortia have played a key role in giving cost effective access to e-scholarship. Indian academic and research institutions took lead in setting up of Consortia for giving access to e-journals, e-books, databases, patents, standards, etc. Council of Scientific and Industrial Research is the first organization in the country to set up a large scale e-journals consortia, now known as National Knowledge Resource Consortia, after DST joined hands for this venture. The other major Indian consortia are INDEST-AICTE Consortium, UGC-INFONET Digital Library Consortium, DRDO E-journals Consortium, Electronic Resources in Medicine (ERMED) Consortium, HELINET Consortium of RGUHS, DBT E-Library Consortium (DeLCON), MCIT Library Consortium, DAE Libaries Consortium, Consortium for e-Resources in Agriculture (CeRA) and FORSA. The author discusses in this article the findings of his doctoral research entitled "E-journals Access and Management: Consortia Models". A descriptive survey among Consortia managers/librarians and Consortia users was carried out after an extensive literature search.

References
Two important models discussed are: 1. Consortia Governance and Management Model. 2. Resource Management Model. Guidelines for consortia models have been discussed elaborately covering Consortia Governance and Management, administrative, operational, resources selection and access guidelines, purchase and pricing guidelines, licensing and archiving guidelines, documentation, evaluation and statistical measures guidelines, information literacy guidelines. Setting up of a National Coordination Committee for consortia (NCCC) has been suggested. The developments in the area of this research as on date have been taken into account as this research work was carried out few years back.

Keywords: Library Consortia, E-journals, Consortia Models, India, Consortia Guidelines

1. Introduction

Over the years the escalating prices of library resources particularly scholarly journals, shrinking budgets of libraries and geometrical growth of all type of scholarly publications have pushed even the big budget libraries to buy even bare minimum publications to meet the information of their requirement. The development of consortia, in its new terminology in library and information services, has its footing from cooperative and coordinated collection development with an objective to meet the maximum information needs of the users at lesser investment. Surprisingly, the publishers, aggregators or subscription agencies all over the world mooted majority of the consortia. Consortia, in its maturation stage, have obvious and serious lack of expertise, establishment of coordination and cooperation among the participant libraries and with the management of host organization. The consortia host, particularly, has the responsibility of consolidating the activities and conducting the cost-benefit analysis, developing suitable feedback system from the participating centers as well as users and on par with the technology developments and users expectations. The consortia initiators need to look at streams of problems, solutions, participants, and opportunities to foster collaborative realignments between organizations. It is also essential to work out suitable methods and systems for training and expertise development as a part of the consortia activities. Most important functional convergence that library may face are technical, political, cultural, cognitive, and economic aspects of consortia. It is very difficult to find out scientifically the complexities that may crop-up due to cultural and cognitive aspects until one starts the consortia. Publishers driven-market is providing access to maximum resources at minimum cost in various ways in line with consortia approach like negotiated for bundled e-journals, subject clusters, etc. It is noticed that the publishers response to the consortia purchase varies from one consortia to another, one library to another. The other factors like aggregators giving low cost access for bundled embargo journals and open access journals influencing e-journals pricing for consortia.

Cooperation of publishers in offering bibliographic data to database producers and linking bibliographic database to full text is increasing the demand for their electronic full text journals and usage promotion at individual user level. Core aims of the consortia are:

- Improving both increased access and efficiency through cooperation; and
- Capacity Building for the libraries to enable them to meet the ever increasing needs of users.

At the same time, consortia planners need to examine the existing electronic and print resources available in the list of their subscription, selection criteria, mode of access that consortia planned to provide, technical issues like user login and passwords, IP addresses, skills issues for staff and users and the content that is going to be provided. At the international level there are many consortia. "International Coalition of
Library Consortia [ICOLC]" is an informal, self-organized group hundreds of library consortia from around the world. The Coalition serves primarily higher education institutions by facilitating discussion among consortia on issues of common interest. A similar coalition in India is yet to come up, although there have been some examples of multiple organizations joining the open ended consortia.

2. Definition of 'Consortia'

The consortia can be defined as "a strategic alliance of institutions having common interest". The main aim of a consortium is to achieve what the members of the group cannot achieve individually. One of the library or the agency works as coordinator for identification of member libraries along with e-resources to be covered through consortia and concerned publishers. A committee appointed by the group will workout in detail the access mechanism, pricing models, payment mechanism, archival and copyright issues. There are two types of popular consortia: a) Centralized consortia b) Decentralized consortia. In decentralized consortia members including the host of the consortia are loosely affiliated to one another or to the host. Decentralized consortia suffer from the exclusive staff and not institutionalized of its identity. Sustainability is better if the participating libraries are involved in decision-making and training is a continued process. The very terminology consortia calls for collective management or governance. The scope of consortia may be international, national, regional, local or libraries under one apex body or loosely affiliated subject cluster libraries. Accessing the electronic resources is infrastructure (IT) intensive and there is general lack of willingness to cancel the printed edition of the journals in the institution.

3. Need for the Study

The existing consortia, more or less have adopted publishers/vendors driven pricing models. There are many other burning issues related to consortia like consortia governance, management, administration, technology, collection development, licensing, access, archiving, copyright, information literacy for librarians and users. A need is felt to develop a viable and sustainable consortia model for accessing e-journals for science and technology institutions in India, considering homogeneous and heterogeneous nature of activities (academic/research/corporate) and organizations. There is also need to evolve suitable guidelines for consortia development in the Indian context.

4. Objectives of the Study

The main objectives of the study are:

i. To study in depth the existing e-journals consortia in India;
ii. To study the IT infrastructure/ facility/ services of the existing consortia and its member institutes;
iii. To study the developments in consortia in-consonance with the changing attitude of users and publishers;
iv. To study the existing expertise in consonance with the changing trend of e-publishers, users expectations and publishers' attitudes;
v. To study the user's awareness and satisfaction in accessing e-journals;
vi. To compare single library approach with consortia models in providing e-journals;
vii. To evolve suitable guidelines for the development of consortia and
viii. To develop suitable proposed consortia models for India.

5. Methods and Materials of the Study

The study has undertaken the descriptive survey of the consortia host management, participating libraries and the users of consortia. The scope of the study is confined to science and
technology institutions, both academic and research in India. The study sample is confined to the existing consortia hosts and its member institutions including new initiatives during the study. The study has undertaken the descriptive survey of system staff (Librarians and Consortia Managers) and users of libraries of both host organisation of consortia and participating member institutions. The survey was carried out using two different questionnaires prepared for the purpose of the study. The SWOT analysis of consortia in the Indian context is carried out based on literature survey, observation and interviewing of selected consortia hosts with open-ended questions.

6. Consortia: Indian Scenario

"Coming together is a beginning, staying together leads towards progress and working together results in success".

Escalating prices of journals, geometric growth of scholarly publishing and uncertain foreign exchange rate put already shrinking budget Indian libraries result in steep decline in their resources causing a very wide gap between what is available and, what is needed and affordable. More than 600 universities, 30,000 colleges and major research and development organizations like CSIR, ISRO, DRDO, DAE, ICAR, ICMR and DBT spend annually few hundred crores towards library acquisitions. In spite of this, they are not in a position to maintain the subscription of even core journals. Even the high budget libraries attached to Indian Institute of Science, BARC, IITs are forced to get themselves satisfied with the maximum of 2000 titles as against minimum of 8000 in similar US organizations. Most of the Indian universities barring few centrally funded and private ones have cancelled substantially or completely their foreign journal subscriptions. Resource-sharing initiatives in India during pre-electronic journal period and pre-internet era remained largely academic. These circumstances naturally force Indian universities and R&D organizations to form the consortia for accessing more and more e-journals.

Consortium for Material Science and Aerospace Collection (CoMSAC) is the first known formal consortia initiative led by the National Aerospace Laboratory (NAL) in 1998 for giving access to 14 bibliographic databases of Cambridge Scientific Abstracts. This consortium could not continue beyond second year due to the lack of management commitment by member institutes, inadequacy of Internet access infrastructure and mistaken perception that consortium is only a bargain for discounted buying. The communication gap between managements and librarians was one of the serious bottle neck. Distributed invoicing were not honored as there were no budgetary allocation for resources through consortia in some institutes.

Major Consortia Initiatives in India


The National Knowledge Resource Consortium (NKRC), established in year 2009, is a network of libraries and information centres of 39 CSIR and 24 DST institutes. The first ever consortia concept in the country was conceived at a meeting of Heads of CSIR Libraries & Information Centres held at NAL, Bangalore during 1993 itself. In 2000 the idea of setting up CSIR Consortia was discussed in an informal meeting of about 20 librarians of CSIR LIs at NAL. However this got good momentum during the fifth meeting of Heads of Libraries and Information Centers (HOLIC) at RRL, Thiruvananthapuram in February 2001. Without waiting for CSIR Consortia to come up some CSIR labs including NCL, NAL, CDRI, RRLT, NIO and IMTECH went ahead of providing access to e-journal of Elsevier since Sept 2000 itself. Later a group of heads of 6 CSIR LIs met DG-CSIR and submitted a proposal to set up Consortia. The same group met at NCL and firmed up its plans to launch the consortia with
three major publishers-Elsevier (Science Direct), Kluwer, and Springer (Goudar and Narayana 2003 & 2004). Recommendations of the study group appointed by DG-CSIR submitted its report to CSIR in October 2001. The recommendations were accepted by CSIR on 19-12-2001 and it was decided to set up the CSIR E-Journals Consortium. The NISCAIR was identified as the CSIR Consortia Coordinator and a Monitoring/Steering Committee was constituted with NISCAIR as the focal point. Further NISCAIR set up a Task Force Team comprising of some Nodal Officers from some of the major laboratories. The CSIR Electronic Journals Consortium started providing access to 1200 journals of Elsevier Science to all its users. Over a period of time, the Consortium not only grew in terms of the number of resources but also in terms of the number of users as more like-minded institutes evinced interest to join the Consortium. This Consortium was built upon sound footing with clear policies covering access, pricing, tenure, usage statistics, MOU among participating members, complaint and management system, archival policy, training, walk-in-users clause, etc. In fact documentation can serve as a guide for starting a new E-resources Consortia. In 2009 the CSIR e-journal’s Consortium was rechristened as NKRC with the joining of 24 DST institutions. NKRC facilitates access to 5,000+ e-journals of all major publishers, patents, standards, citation and bibliographic databases. Apart from licensed resources, NKRC 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. However there was some disturbance as CSIR had almost taken an unilateral decision to close down NKRC without consulting its partner DST. Somehow the problem was blown out and NKRC has been revived with little bit reduced budget.

6.2 INDEST-AICTE Consortium: (http://paniit.iitd.ac.in/indest/)

The "Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium" was set up in 2003 by the Ministry of Human Resource Development (MHRD) on the recommendation of an Expert Group appointed by the Ministry. The IIT Delhi has been designated as the Consortium Headquarters to coordinate its activities. The Consortium was renamed as INDEST-AICTE Consortium in December 2005 with the AICTE playing a pivotal role in enrolling its approved engineering colleges and institutions as members of the Consortium for selected e-resources at much lower rates of subscription. The Ministry provides funds required for subscription to electronic resources for 62 centrally-funded Government institutions including IITs, IISc Bangalore, NITs, ISM, IIITs, IIMs, NITTTR’s and few other institutions that are considered as core members of the Consortium. The benefit of consortia based subscription to electronic resources is not confined to its core members but is also extended to all educational institutions under its open-ended proposition. 60 Govt./Govt-aided engineering colleges are provided access to selected electronic resources with financial support from the AICTE and 102 universities/institutions have joined the Consortium under its self-supported category in 2012. Recently 1237 engineering colleges and institutions joined under self support- new scheme. The INDEST-AICTE Consortium is the most ambitious initiative taken so far in the country. It is the biggest Consortium in terms of number of member institutions in Asia. The Consortium attracts the best possible price and terms of agreement from the publishers on the basis of strength of its present and prospective member institutions. The Consortium subscribes to over 12,000 e-journals from a number of publishers and aggregators. The Consortium has an active mailing list and a Web site hosted at the IIT Delhi.
Infonet is the first consortium to address the infrastructure issues at the member library sites before planning the content licensing stage. The thoughtfully adopted e-only model without any links to the current print holdings by its member universities is ideal for funding the conventional universities in India. INFLIBNET administers and monitors the programme and have independent electronic access to all the publications to help with the process. INFLIBNET gets one free print copy of each journal from many publishers, which can be a national repository at Ahmedabad on the Gujarat University Campus. The E-Journals programme covers all fields of learning of relevance to various universities including:

- Arts, Humanities and Social Sciences
- Physical and Chemical Sciences
- Life Sciences
- Computer Science, Mathematics, Statistics

**Members of Consortium**

The University Grants Commission (UGC) provides funds through INFLIBNET required for providing differential access to various electronic resources subscribed by the Consortium for selected member institutions. The members of core group of Institutions are as follows:

- Universities covered under Phase I (50)
- Universities covered under Phase II (50)
- Universities covered under Phase III (87)
- Associate Members (118)
- IUCs and Other Institutions (5)
- National Law Schools/Universities (14)

### 6.4 N-LIST: (http://nlist.inflibnet.ac.in)

The Project entitled “National Library and Information Services Infrastructure for Scholarly Content (N-LIST)”, being
jointly executed by the UGC-INFONET Digital Library Consortium, INFLIBNET Centre and the INDEST-AICTE Consortium, IIT Delhi provides for i) cross-subscription to e-resources subscribed by the two Consortia, i.e. subscription to INDEST-AICTE resources for universities and UGC-INFONET resources for technical institutions; and ii) access to selected e-resources to colleges. The N-LIST project provides access to e-resources to students, researchers and faculty from colleges and other beneficiary institutions through server(s) installed at the INFLIBNET Centre. The N-list has four distinct components, i.e. i ) to subscribe and provide access to selected UGC-INFONET e-resources to technical institutions (IITs, IISc, IISERs and NITs) and monitor its usage; ii) to subscribe and provide access to selected INDEST e-resources to selected universities and monitor its usage; iii) to subscribe and provide access to selected e-resources to 6,000 Govt./ Govt.-aided colleges and monitor its usage; and iv) to act as a Monitoring Agency for colleges and evaluate, promote, impart training and monitor all activities involved in the process of providing effective and efficient access to e-resources to colleges. The INDEST and UGC-INFONET are jointly responsible for activity listed at i) and ii) above. The INFLIBNET Centre, Ahmedabad is responsible for activities listed at iii) and iv) above. The INFLIBNET Centre is also responsible for developing and deploying appropriate software tools and techniques for authenticating authorized users. As on Feb 13, 2013, a total number of 3176 colleges have registered themselves with the N-LIST programme including 2901 Govt. / Govt.-aided colleges covered under the section 12 B/2F of UGC Act as well as Non-Aided colleges with a total 445638 individual users.

6.5 HELINET Consortia of RGUHS: (www.rguhs.ac.in)

Karnataka State has maximum number of health science institutes in the country with the number touching 333, covering all disciplines such as Medical, Dental, Pharmacy, Nursing, Physiotherapy, Indian Medicine Specialties like Ayurveda, Yogic sciences etc. Karnataka promoted Rajiv Gandhi University of Health Sciences (RGUHS) in 1994 to focus distinctly on a better planned development of health science education. The RGUHS Digital Library (RDL) started in 90's has set a mission - to provide convenient and cost-effective access to global and local health science literature for students and faculty of all the colleges affiliated to RGUHS. Health Science Library and Information Network (HELINET) concept was adopted by RGUHS in 2001 to network all health science libraries under its affiliation and develop a consortium for resource sharing. HELINET adopted the following basic guidelines for subscribing/buying e-resources and raising the required funds:

- The consortium has adopted e-only model.
- Adopted a combination of need based publisher, aggregator model.
- Funding comes from the College Managements in a participatory.
- The licensing model for e-journals: Perpetual access with local archiving rights.
- All the colleges affiliated to the university are the members
- Board of Management with -
  o The Vice-chancellor as its Chairman
  o The University Librarian as Co-coordinator
  o The Registrar and the Finance Officer as ex-officio members
  o Members from the Deans of Faculties nominated by the University.

E-resources made available include those of publishers/aggregators like ScienceDirect, Ovid, Annual Reviews, Springer Link, Thieme Verlag, Taylor & Francis, Blackwell, Bentham, Ebrary and Oxford University Press.
6.6 MCIT Library Consortium:
(http://mcitconsortium.nic.in/)

Ministry of Communications and Information Technology comprises of three departments those are Department of Information Technology (DIT); Department of Telecommunication (DOT) and; Department of Posts (DOP). Each department has a number of PSU/ Organizations/ Autonomous Bodies. Looking into the trends of e-Journals, MCIT Libraries Consortium is in the process of common subscription on Consortium Platform. Department of Information Technology, Department of Telecommunications, Department of Post and other Autonomous Bodies, PSUs subscribe journals/Magazines related to ICT in print form. As the users of our Library systems spread across the nations and cyber savvy in nature looks forward for e-version of Journals/Magazine. The most beneficial properties of e-Journals like round the clock accessibility, retrieval of information at light speed and mouse click access are the add on features to refer e-Journals. In the common e-Journals subscription of MCIT Libraries Consortium Digital Libraries/e-Journals/Database of are enlisted.

6.7 CeRA Consortium: (www.cera.jccc.in)

The National Agricultural Innovation Project (NAIP) has funded for establishing the Consortium for e-Resources in Agriculture (CeRA) at the Indian Agricultural Research Institute (IARI) in November 2007 for facilitating accessibility of scientific journals to all researchers / teachers in the National Agricultural Research System by providing access to information specially access to journals online which is crucial for having excellence in research and teaching.

Objectives of CeRA:
- To upscale the existing R & D information resource base of ICAR Institutions/Universities comparable to world's leading institutions / organizations.
- To subscribe e-journals and create e-access culture among scientists /teachers in ICAR Institutes / Agricultural Universities.
- To assess the impact of CeRA on the level of research publications measured through NAAS ID and Science Citation Index.

IP addresses from Institutions in NARS were collated for providing online accessibility of articles from more than 2900 journals related to agricultural sciences comprising Consortium Subscribed, Library Subscribed and Open Access Journals. Compiled three reports (one on IP address and contact details; library subscribed journals based on (1) Publishers and (2) Institutions in NARS. A web-based application was developed for facilitating the online access. Currently 147 institutions in NARS have 24x7 online access to important journals in CeRA platform through IP authentication. Thomson Web of Science for Science Citation Index (SCI) has been made available to the Lead Institute (IARI), but the facility is available to all members of CeRA. E-Journals at CeRA: Elsevier, Springer, Annual Reviews, Taylor and Francis, CSIRO, Indian Journals

6.8 Electronic Resources in Medicine (ERMED) Consortium
(http://www.nmlermed.in/)

Electronic Resources in Medicine (ERMED) Consortium is an initiative taken by Director General of Heath Services (DGHS) to develop nation wide electronic information resources in the field of medicine for delivering effective health care for all. The authorities decided to provide financial support required for the purchase of electronic journals under the ERMED consortium project for Government medical colleges and institutions. For private Medical colleges/institutions the payment per site for e-resources purchased by the consortium will be charged. The Consortium is being coordinated through it's headquarter set up at the National Medical Library (NML). NML Started
ERMED e-journal consortium in 2008 with 40 members including 28 ICMR+10 DGHS + AIIMS + NTR Health University, Vijaywada, Andhra Pradesh. It provided electronic journals from 5 publishers, which contained 1515 medical journals. The ERMED invested Rs. 2.6 Crore for electronic journals in 2008. In 2009 the ERMED members increased from 40 to 72 Government Medical Colleges/Institutes across the country. NML paid Rs. 7.55 crore for Government Medical Colleges/Institutes. The letter for self payment has been sent to some Private Medical Colleges/Institutes. ERMED is providing over 1600 medical journals in 2009 from 9 leading medical journal publishers including those of American Academy of Pediatrics, BMJ Publishing, Cambridge University Press, Cengage Learning, IOS Press, Lippincott William Wilkins, Oxford University Press, Proquest and Royal Society of Medicine Press

6.9 DBT e-Library Consortium (DeLCON):
(http://delcon.gov.in/about.htm)

DBT e-Library Consortium (DeLCON) is a unique Electronic Journal Consortium which is operational since January 2009. Currently the Consortium includes 14 DBT Institutions including ICGEB, New Delhi and 18 North Eastern Region (NER) Institutions. The Biotechnology Industry Research Assistance Programme (BIRAP), New Delhi is also part of DeLCON. Now, the total ‘DeLCON Members’ are 33. A total of 917 selective Journals and a Database (SCOPUS) are covered under DeLCON. Others can also view and access abstracts of papers free of costs.

The Objectives of the DeLCON are:

- To Promote better, faster and more cost-effective ways of providing information resources to the officials at the consortia member institutions.
- To avoid duplication of subscription of Journals and E-resources and promote the rational use of funds by the consortia members.
- To ensure continuous subscription of e-resources and availability of these to the scientists working at the consortia member institutions.
- Better rates and terms for purchase of electronic journals
- Availability of a larger spectrum of journals to the DBT Institutions with lesser costs.

The Consortium operates through its Headquarter set-up at the National Brain Research Centre, Gurgaon, Haryana and Department of Biotechnology (DBT), Government of India provides funds required for subscription to electronic resources for Universities/Institutions. The consortium headquarter functions under a DeLCON Steering Committee for inter-institutional coordination and for taking decisions on policy issues under the overall policy direction of the Government of India. Resources include those of American Association for Advancement of Science, American Association for Cancer Research (AACR), American Chemical Society (ACS), American Society for Biochemistry and Molecular Biology, American Society for Microbiology, Cold Spring Harbor Laboratory Press Journals, Informa Healthcare / Taylor and Francis, Marry ANN Liebert, Nature Publications, Oxford University Press (OUP, Springer India, Society for General Microbiology, Society for Hematology, Wiley-Blackwell, Elsevier Science, American Society of Plant Biologist and American Association of Immunologist.

6.10 DRDO E-Journals Consortium: (http://dsl.drdo.gov.in/ejournals/)

This consortium was established in 2007 and came in existence Jan. 2009. Funding - comes from DRDO, MoD, Gol. Number of participating institutions are 50+ DRDO institutions. Annual spending is about Rs.200 Million. It Serves about 7,000+ users. Resources include those of American Chemical Society (ACS), IEL Digital Library, Nature Publishing Group, American Institute of Aeronautics & Astronautics, JCCC@DRDO of
Informatics India Ltd., Science Magazine, Association of Computing Machinery, IHS Jane’s, Elsevier (Science Direct), American Society of Mechanical Engineers and Taylor & Francis Group. Presently DRDO labs can access 551 e-journals, transitions, etc.

6.11 FORSA Library Consortia

FORSA has been an open model Consortium, wherein institutes are affiliated to different government departments. It is a voluntary consortium with shared goals and is governed by the rules emerging out of discussion and consensus among participants. Members of FORSA are the Indian Institute of Astrophysics (IIA), the Inter-University Centre for Astronomy & Astrophysics (IUCAA), the National Centre for Radio Astrophysics (NCRA), the Physical Research Laboratory (PRL), Raman Research Institute (RRI), Tata Institute of Fundamental Research (TIFR), Nizamiah Observatory (NO), HRI, Bose Institute., SNBNCBS, SINP, ARIES, Osmania University Department of Astronomy.and State Observatory, Nainital. FORSA group has formed four consortia purchases: Nature Online; Indian Astrophysics Consortium for Kluwer and Springer Journals; Open Consortium for titles like Monthly Notices of the Royal Astronomical Society (MNRAS) and Lecture Notes in Physics; and Scientific American Archive. FORSA initiative clearly indicates that it is a win-win situation for both the members and the publisher in terms of decreased cost for increased access to e-journals for members and an assured business to publishers for the period of agreement. At the time of writing this article it is learnt that though FORSA exists, it is loosely connected with its members with stoppage of subscriptions almost three years back, as four of the members attached to DST joined NKRC Consortium and other two different consortium. It is heartening to note that still they continue to help each others through ILL.

6.12 TIFR Libraries Consortium

Participating institutions are Homi Bhabha Centre for Science Education (HBCSE), Mumbai; National Centre for Radio Astrophysics (NCRA), Pune; Computational Mathematics Laboratory (CML), Pune; National Centre for Biological Sciences (NCBS), Bangalore; TIFR Centre (Mathematics), Bangalore and 6 Field stations. Resources include Elsevier ScienceDirect, Springer Link, Bio-Med Net, MathsSciNet and Cell Press Online.

6.13 GE-Global Research Consortia

General Electric Company has opened its biggest outside US Research & Development organization in India in the year 2000 by name John F Welch Technology Center (JFWTC). Whitney Knowledge Centre (WKC) plays vital role in providing information for innovation with a clear vision "One Global Knowledge Management Team, committed to be a True Partner to GE Global Research and to the Businesses, with the insatiable desire to Win for GE". WKC is the first and only Information Centre in Indian private R&D set-up which has web-based access to all its Journals, which provides instant access to the technical literature of 300 plus journals. Consortia Resources

- Databases: MicroPatents- Full text database of patents; Engineering Village 2: Compendex; CRC ENGNetBASE; IEL database
- E-Books: Knovel; NetLibrary

WKC has successfully handled challenges like product related, access related and price related with the publishers/agencies very effectively and tactfully.

7. Analysis and Interpretation of the Survey Data

The study has undertaken the descriptive survey of system staff (Librarians and Consortia Managers) and users of libraries
of both host organisation of consortia and participating member institutions. The data collected through survey for doctoral research was presented in 74 tables and inferences were drawn by analyzing the data for each of the table. However for the purpose this article the selective inferences concerned to e-journals and consortia have been listed below:

7.1 E-journals

- E-journals have been penetrating library in one way, although the percentage varies.
- The concept of having separate budget for e-journals or allocating certain percentage out of library/journal budget is yet to pickup.
- E-journals enhance the access of required information satisfying both recall and precision
- E-journal costs will come down
- While e-journals have already emerged as preferred way of access, if one looks at overall picture taking into psycho-infrastructural factors print + online is better for another five years in the Indian context
- "E-journals will be totally free" and "print journals will be phased out" are a myth.
- There is no universally accepted pricing policy either evolved by publishers or accepted/suggested by consumers.
- Pricing based on FTE, although is a well accepted model elsewhere, this model is not even understood by many participating members of the consortia in India due to the confusion of defining FTE clearly.
- Majority of consortia participating libraries in India are already clear about advantages/disadvantages of e-journals subscription directly from publishers/their representatives and negotiated through consortia task force. The aggregator subscriptions, unless cover important publishers both commercial/society and bring down/ totally remove embargo period may find market mostly in humanities and social sciences and not in STM market.
- Certain percentage of users will continue to use print versions also for few more years. If consortia and participating members adopt e-only model, then situation may force users to use e-journals to a large extent. Still some prefer downloading and printing articles of interest rather than reading on the computer screen.
- IP enabled access is most preferred one, although few prefer both IP enabled and Login-Password access. The reason for latter choice is mainly because some users feel like accessing the resources from their home. Few institution may have distant small campuses, experimental stations and satellite PG centers, where setting up of LAN is not feasible economically. It is general observation that most of the users use browsing articles through selection of journals by titles. However the culture of searching database is becoming popular in order to get articles of interest across different journal titles and different publishers. Different kind of membership or becoming member of different consortia may result in varied access level of resources.

7.2 Consortia

- Access more journals at less cost and budget constraints are main factors for participation in consortia.
- Librarians' initiative for consortia is high.
- Apex body or initiative of aggregators or subscription agency is the third factor
- Centralized governance at the top level and decentralized governance at implementation and operational level are required for the success of consortia. The governance structure with clearly specified responsibilities for different
layer committees, involvement of representatives from apex bodies, government, consortia, participating centers and few serious users depending upon the job and level is the essence for success of consortia.

- The role of consortia members depends upon number of staff, budget and users. As participating members, their role has to be more of a liaison between the users, consortia host and the publishers. They need to concentrate on development of infrastructure for accessing e-journals, train the users and attend trouble shooting. Participating members play the catalytic role for the success of consortia.

- The usefulness of consortia are very clear to librarians of participating members, which include filling up of resource gap and combined purchase power especially to negotiate more resources at less cost.

- The majority of existing consortia are initiated and funded by government/apex body under government. The tendency of librarian and management of participating libraries is not to contribute for consortia, but to depend more on apex bodies concerned. The reasons for this attitude are many including dwindling library budgets, expanding area of research and need to have resources specific to organization and not covered by consortia.

- Number of factors contribute for success of consortia. The IT infrastructure with good Internet bandwidth, well planned governance and implementation are main factors. They in turn take care of other factors, which are interrelated and complementary to each others.

- Users need orientation about different e-resources available, search techniques using advanced features and other add on services like e-mail alert services, profile building, downloading in different formats and creating personal databases using tools like reference manager.

- A single gateway, as preferred in survey results enhancing the usage of resources resulting in success of consortia for effective exploitation of all resources across publishers. Consistency in funding ensures sustenance of consortia. The other factors like cost of archiving, adequacy of staff, relation with vendors/publishers/professional societies though received varied preferred responses are important for the success of consortia.

- The media preference for documents depends on various factors like access, technology and information literacy. While electronic media gives additional features searching content of interest randomly, print media provides comfort and less strain for eyes while reading.

8. Consortia Models and Guidelines

The consortia models are developed based on needs, purpose, scope of the consortia, common goals, willingness of the targeted partners and projected outcome. Before starting one needs to assess the strength and weaknesses of the existing products and type of access of the libraries aimed at the use of bibliographic databases in the existing set up, field and number of good bibliographic databases available, the core collection of all the proposed participating libraries, the constraints and level of users, the current spending level and what and where one can be save through consortia and start consortia without putting too much pressure on deviation of budget. Most important models are:

1. Consortia Governance and Management Model
2. Resource Management Model

Guidelines

The study lists out the consortia guidelines for - consortia governance and management; consortia administration and operation; purchase and pricing od resources; access and
licensing of resources; archiving and documentation; evaluation and statistical measures and information literacy and skill development. The following measures will be helpful for setting up of a consortium and its smooth functioning and sustainability:

- Start the cultural change from computer-based networks for library cooperation and formal resource-sharing networks.
- Establish the emergence of online resources in relation to consortia; establish the common protocols integrating to the existing services.
- Ensure safety in numbers (members) as a part of a consortium (larger and more diverse the consortium, the harder it is to find common ground changed dynamics between the libraries and their vendors impact on the scope, functionality, and effectiveness of a library consortium; and
- Publishers, vendors, and librarians need to forge innovative partnerships.

There is a felt need for setting up of National Coordination Committee for consortia (NCCC) for the development of suitable consortia models suitable for India taking into account of structure of academic, research and industrial structure, financial status, infrastructure and requirements of resources.

9. Users' Views on Consortia

A good number of users have made some interesting remarks additionally in the questionnaire about e-journals, consortia, its usefulness for academic, teaching and research, open access, bureaucratic delay, subject wise consortia, national consortia, access method, making available back volumes free, etc. These views have been given below verbatim as stated by users. One of the view is worth mentioning here - "Consortia is a dandy venture - future is unlimited".

- Consortia give free access for previous year e-journals.
- Complete open access unlikely.
- Consortia are relevant developments in e-environment.
- Best way for maximum access with minimum expense.
- Bureaucratic delay hampers consortia agreement.
- Very useful for academic, teaching and research.
- Open access may result in shift of cost burden from reader to author and page charges may become mandatory.
- Consortia will dominate in future.
- Consortia are required till open access takes off in a big way.
- Consortia should buy back volumes.
- National consortia (distributed) is present need of the country.
- Subject wise consortia would be more meaningful and provide access to maximum resources and also facilitate collaboration.
- Consortia serves as booster for e-access of journals.
- Common interface required.
- Back volumes of e-journals should be free.
- E-journal may not replace print totally.
- Login ID/Password access required in addition to IP enabling.
- Consortia are must for future of scientific growth.
- Desk top access helps to attend my administrative work, it was difficult.
- Large volume of information and making it accessible by single institute not possible, but consortia can.
- Consortia is the only future solution for this growing information requirement of heterogeneous group of students, scientists and academicians.
Apart from e-journals, we should have e-books through consortia.

Backup is required as we may not have access to earlier issues, preferably on CDs.

There is need to make consortia more visible and active.

10. Future Trends

- Libraries/Institutions seem to continue consortia in more matured way.
- Spirit of cooperation, collaboration, and coordination as was viewed in beginning is still strong and need to be stronger.
- Psychology of owning is in decline with slow pace.
- Competitive, fair, and transparency is in demand.
- Monopoly of big players has gone up.
- Society publishers are victim of monopolistic commercial approach of big players Pricing structure is shifting to value of information gauged by usage.
- Courage to publish more in foreign journals by Indian Authors.
- Acquisition in big way of Indian journals by international commercial publishers.
- All major international players have opened their offices in India.
- Large scale marketing/publicity events are being organized.

11. Conclusion

Many libraries depending upon their subject of interest and affiliation to apex bodies in India are slowly moving towards consortia formation at least by adding journals of major publishers in the initial stage. In India the consortia success and sustainability depends on forms of networks, external partners,
cooperation namely economic tightening, quality improvement, expanding information universe and growth of information technology. Further the feedback system like usage statistical analysis, need assessments, user survey, focus groups and observation studies shape the consortia for optimum utilization for the investment. The operation effectiveness can be achieved by operational process, effectiveness of service/operation, cost benefit analysis, comparative institutional data and improving internal process.

The procurement of electronic content, in India, by majority of the libraries, is still more for bargaining of the cost/deal for return on investment. In fact the consortia is not just a purchase club, it should play major role in upliftment of access to resources and facelift for users feeling expertise and responsibility sharing for library staff. However in India, consortia are suffering due to lack of suitable leadership in library and information sciences profession or the reorganization of library and information professionals as leaders in development of consortia. Of course majority of the librarians are still to understand the role of consortia, role of publishers/aggregators and ups and downs of switching over to consortia. The set back for consortia are due to lack of infrastructure, lack of training, lack of user pressure, scarcity of funds and delayed leadership development. There are number of practical problem in India including lack of IT infrastructure even at traditional universities level, even electricity at village level and IT literacy level both at users level and the staff level. The consortia should be an evolutionary nature development than immediate shift in the process and function. It should smooth transition to electronic environment without disturbing the traditional approach at once.

References
A Study of the Use and Performance of Integrated Library Software in Indian University Libraries

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Abstract

This study describes a questionnaire survey of 115 university libraries in India which are funded by INFLIBNET Programme under UGC. The survey was conducted to study the level of use of integrated library software in selected university libraries in India for housekeeping operations and services in libraries. The study provides a broad overview of the physical infrastructure and resources of libraries in general and use of integrated library software in housekeeping operations, services and administration in particular. Thus the study indicates that usage of functions and services of ILS across all the universities in India needs to be improved.

Keywords: Library Automation-Surveys, Integrated Library Software --Library practice, University Libraries - India

1. Introduction

Information technology has great influence on all aspects of life. Almost all places of work and living environment are being...