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## E-JOURNAL MANAGEMENT IN ACADEMIC LIBRARIES WITH SPECIAL REFERENCE TO INDEST CONSORTIA IN INDIA

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### Abstract

*In the Academic and research libraries, the long-term preservation and management of digital collections is the most important issue. In certain ways, digital materials are incredibly fragile, dependent for their continued utility upon technologies that undergo rapid and continual change. Keeping and managing the e-journal resources accessible for use by future generations will require conscious effort and continual investment. No library is self sufficient to purchase all the books, Journals and other library documents with in their library budget. So customers belonging to different academic institutions or university may purchase e-journals and sharing its cost through consortia.*

*This paper explains the terms and definitions of Electronic Journals (e-journals), followed by the aims and objectives of the e-journal purchase and management. Also the issues in archiving and preserving the back issues of the e-journals, the initiatives taken in archiving them and the role of e-journal agents in purchasing and managing them are discussed. The purchase and management of e-journals through Consortia and the various consortium efforts taken in India with special reference to INDEST consortia also have been explained in this paper.*

**Keywords :** E-journals, Library consortia, INDEST Consortia.

### 1. INTRODUCTION

The advancement of information technology through e-mail, Internet, World Wide Web, CD-ROM Networks etc. have changed the society and have provided opportunities to access and retrieve on-line electronic/digital information using the e-journals and e-texts which are very costly to acquire and maintain in each and every library. The developments in scientific publishing and the pricing policies of publishers posed new challenges and opportunities for academic libraries in purchasing and managing the serials within their restricted budget. So to solve the ongoing Serials crisis, it is essential for a common infra structure or firm to share the resources among libraries.

In the Academic and research libraries, the long-term preservation and management of digital collections is the most important issue. In certain ways, digital materials are incredibly fragile, dependent for their continued utility upon technologies that undergo rapid and continual change. Keeping and managing the e-journal resources accessible for use by future generations will require conscious effort and continual investment. No library is self sufficient to purchase all the books, Journals and other library documents with in their library budget. So customers belonging to different academic institutions or university may purchase e-journals and sharing its cost through consortia. Followed by the definitions and benefits of e-journal, the issues and the possible ways to solve the problems in purchasing and managing the e-journals are explained in this paper.

### 2. TERMS AND DEFINITIONS

Electronic Journals are digital version of printed journals accompanied by extensive hyper linking. They can be read both on-line and off-line.

“Electronic journals” are self-defined (“e-journals” in short); those who produce such journals name them in that way. These journals are generally accessed electronically through communication devices or telephone lines. Some of these electronic serials are traditional paper journals simply made available electronically; others are sample selections, or just the table of contents of the paper journal.

### **3. AIMS AND OBJECTIVES OF E-JOURNAL MANAGEMENT**

The main aim of the e-journal management is to explore the challenges and issues arising in purchasing and managing the e-journals in the academic libraries and the possible ways and means to purchase and maintaining them in such a way that the e-journal resources should be accessible for use by future generations within the budget of the academic libraries.

Following are some of the objectives of consortia based purchase of e-journals and its management in academic libraries:

- Libraries can solve the ongoing Serials crisis and to share the resources among libraries.
- The main objective is to make awareness among the academicians about the on-line availability of e-journals through intra-net, internet and www.
- Libraries can provide better information service regarding the various e-journal retrieval facilities available in India through consortium.
- The collection of digital documents can be maintained in academic libraries.
- Consortia purchasing offers for the single library the opportunity to get access to more journals than they currently have subscriptions to, thus eliminating the continuous cancellation operations.
- For the consortia members -the specific group of libraries- it offers reduced costs in the inter-institutional document delivery processes for specific journals.

### **4. E-JOURNAL ARCHIVING**

In the past two or three years, e-journals have become the largest and fastest growing segment of the digital collections for most libraries. Collections that a few years ago numbered in the few hundreds of titles now number in the thousands, and the rate of growth continues to increase. In many ways, archiving and preserving e-journals will be dramatically different from what has been done for paper-based journals. In the paper era, there was large-scale redundancy in the storage of journals. Many different institutions collected the same titles. The copies of journals being saved for future generations were the same copies being read by the current generation of users. The common service model for e-journals is quite different than that for paper journals. Most e-journal access is through a single delivery system maintained either by the publisher or its agent. There is little replication, and only a few institutions actually hold copies of journals locally. Libraries can fulfill their current service requirements without facing the issues involved in the preservation of the resources. Further, in the digital realm the issues involved in day-to-day service are quite different from those involved in long-term preservation(1)

### **5. ISSUES IN ARCHIVING THE E-JOURNALS**

- The issue of long-term archiving and preservation of e-journal content has become one of increasing importance. Specifically because of archiving concerns, many research libraries continue to collect paper copies at the same time they pay for access to the electronic versions. This dual expense is not likely to be sustainable over time.

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- Publishers are finding that authors, editors, scholarly societies, and libraries frequently resist moving to electronic-only publication because of concern that long-term preservation and access to the electronic version is uncertain.
  - While libraries continue to rely on the paper copy as the archival version, from the viewpoint of publishers it is increasingly the electronic versions of titles that are the version of record, containing content not available in the print version.

## 6. INITIATIVES TAKEN IN ARCHIVING THE E-JOURNALS:

The problems and issues in archiving and managing the e-journals led to a series of meetings over the past few years among publishers, librarians, and technologists sponsored by a variety of organizations, including the Society of Scholarly Publishers, the National Science Foundation, the Council on Library and Information Resources, and the Coalition for Networked Information. While these meetings helped to identify many of the issues, they did not result in any specific follow-up action. Finally, in the summer of 2000, the Andrew W. Mellon Foundation, working with the Council on Library and Information Resources (CLIR), took the initiative to move beyond exchanges of viewpoint to experimentation and implementation.

### Mellon/CLIR initiative :

- In a series of meetings with libraries and publishers, CLIR defined a framework for e-journal archiving [1]. Based on this framework, the Mellon Foundation then invited a number of research libraries to apply for one-year planning grants to develop projects to create and operate experimental e-journal archives. In December 2000, six planning grants were awarded, and a seventh grant was given for a related technical development.

A seventh grant was made to Stanford University to fund the further development and beta testing of the LOCKSS system, which is intended to automatically, and with little cost or overhead, support the large-scale replication of e-journal content [2].

The planning projects generally shared a number of key assumptions:

- Archives should be independent of publishers, and that archiving needs to be the responsibility of institutions for whom it is a core mission;
- Archiving should be based on active partnership with publishers, and that it will require a different kind of license agreement than the normal content usage license;
- Archives should address preservation over very long timeframes (100 years or more); long timeframes are likely to raise issues very different from those encountered in daily service provision;
- Archives will need to conform to standards and best practice guidelines as they evolve in the digital world and should be subject to auditing and certification;
- Archives should be based on the Open Archival Information System reference model, currently being vetted by the International Organization for Standardization (ISO).

## 7. E-JOURNAL PACKAGES

E-Journal Package refers to the practice of aggregating all titles produced by a publisher into a single product, or subject-based subsections. This comprehensive product is then marketed and sold as an all-or-nothing deal: a library can purchase access only to all of the titles within the package, or to none at all. Within the last five years, these packages have become the favored subscription model for the dominant commercial publishers of Science, Technology, and Medical (STM) electronic journals.(3)

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The e-journal packages offer the opportunity of providing access to a broader and deeper range of titles than most libraries currently can provide their user communities. This is particularly true concerning consortium-purchased packages, when all institutions gain electronic access not only to the titles in their subscriptions, but to the titles of any and all of their consortia partners.

## **8. CHALLENGES IN E-JOURNAL PURCHASE AND MANAGEMENT**

At present, e-journals management remains considerably less efficient than the administration of print subscriptions. The full impact of electronic journals on subscription administration processes and delivery requirements is only now becoming fully clear. Although agents and publishers have been actively experimenting, both parties have yet to provide a comprehensive service portfolio that properly addresses libraries' full e-journal management needs. Some libraries have resorted to doing it themselves and in most cases, libraries are moving more of their print holdings to electronic versions without any increase in their internal administration resources. The new complexities faced by librarians include:

- Knowing what e-content is available in the market;
- Tracking usage and negotiating complex licensing deals;
- Efficiently processing payments and maintaining payment records;
- Recording and complying with the unique terms and conditions of each e-journal licence;
- Keeping a comprehensive listing of electronic journals holdings;
- Communicating the full list of electronic journal holdings to users; and
- Connecting users to content.

Due to inefficiencies in the e-journals management chain, libraries are being forced to invest heavily in systems and tools, rather than committing their resources to acquiring content.

## **9. THE ROLE OF THE AGENT IN E-JOURNAL MANAGEMENT**

Once agents and publishers have increased their expertise in e-journal administration and management, libraries will once again be able to focus on their forté – purchasing relevant content and guiding users in their search for information. Swets – An e-journal agent, believes that the current market complexity of migration from print to electronic and new publishing models, including usage-based purchase and open access, creates a real need for intermediaries such as Swets to drive efficiency in traditional services such as ordering, paying, claiming and consolidating as well as access, search, rights, administration and other e-journal management issues.(4)

So far how the e-journals have been archived and what are e-journal packages, the challenges and management of e-journals and the role of e-journal agents are discussed. Since the main objective of the e-journal management in academic libraries depend upon the cost of the e-journals combined with the lack of funding for academic libraries, it is better to find a common infra structure or firm to purchase and maintain the e-journal collections in the Libraries. The technological developments in Internet, www etc. seem to include the opportunity to solve the crisis in the form of Library Consortium.

## **10. LIBRARY CONSORTIA : A COMMON INFRASTRUCTURE TO PURCHASE AND MANAGE E-JOURNALS IN ACADEMIC LIBRARIES**

The way by which the Customers belong to different institutions or university, joined together and purchasing the costly electronic products and sharing its cost creating a common infrastructure is called "Consortia".

That is, every member of the consortium will have electronic access not only to the journals currently subscribed to but all the journals. As we all know libraries currently subscribe only to those journals that they can afford on any specific time of date, and there will be a number of other journals of the specific publisher the library occasionally will have to interlend as well. Such a consortium agreement will give the library, and therefore also the user, extended access—that is better service—and reduce the costs—that is staff costs and document delivery costs—in inter-lending procedures.(5)

### 10.1 Why Consortium needed for Libraries ?

- The developments in scientific publishing and the pricing policies of publishers posed new challenges and opportunities for academic libraries in purchasing and managing the serials within their restricted budget. So to solve the ongoing Serials crisis, it is essential for a common infra structure or firm to share the resources among libraries.
- The continuous price increase for scientific information combined with the lack of funding for academic libraries has led to massive yearly cancellations of scientific journals. The exponential growth in the production of knowledge has made it more and more impossible for the individual library to purchase all the relevant information.
- The rapid technological developments have resulted in a constant pressure for new hardware, software and education and training of library staff.
- And finally, the overwhelming application of new technologies—especially the World Wide Web and Internet—in all media has contributed to rapid escalating user expectations in the sense that the users expect library information to be delivered just as fast as any other information they need in their daily lives.
- However, precisely the same technological developments seem to include the opportunity to solve the crisis in the form of Library Consortium.

## 11. CONSORTIUM INITIATIVES IN INDIA

1. **FORSA Consortium** : The Indian Astrophysics Consortium called Forum for Resource Sharing in Astronomy (FORSA) is a typical example of homogeneous group of members wherein the libraries have common area of interest and establishing the consortium is slightly easier than in heterogeneous type of members. The FORSA consortium consists of five members who joined the consortium for negotiating licensing for astronomy journals and identified a subscription agent as a supplier of journals. Subscriptions for both print and electronic format are paid through their supplier. The agreement made meant for only astronomy journals published by a particular publisher. Under the consortium Nature journal was also subscribed by six libraries those committed to share the license fee to access the Nature electronically.(6)

2. **CSIR – Consortium** : The Council of Scientific and Industrial Research (CSIR) in India has 40 scientific Laboratories involved in basic and applied research in various disciplines. Many of the laboratories have well equipped libraries, and some of them act as the main information centres in different subjects functioning as consultant libraries at the national level. Access to electronic journals through the use of state-of-the art technology is possible in many of the libraries belonging to these laboratories. Each of the laboratories have a well established library or documentation centre that is also backed up with strategic information support from the National Institute of Science Communication and Information Resource (NISCAIR), a constituent establishment of CSIR formed with the merger of INSDOC and (NISCOM).(6)

As a first step, in recent past INSCAIR on behalf of CSIR has entered into an agreement with M/s. Elsevier Science to access its odd 1,500 e-journals and further intends to strengthen its information resource

base by subscribing e-access of more and more journals published globally. CSIR consortium extended its access by creating appropriate agreements on consortium basis with the other providers of E-journals.

**3. UGC- Infonet Consortium :** The e-subscription initiative under UGC-Infonet is expected to trigger remarkable increase in sharing of both print and electronic resources amongst university libraries through one of the gateway portal being identified. The gateway portals provide customized solution not only to access the resource online but also access resources of other libraries participating in the consortium. The consortium headquarter (INFLIBNET) is assigned to function as a resource center with an aim to cater to the needs of its members for resources not accessible to them in electronic media or are available in print media. With subscribed resources accessible online in electronic format, the member libraries would have less pressure on space requirement for storing and managing print-based library resources. Moreover, all problems associated with print media such as their wear and tear, location, shelving, binding, organizing, etc. would not be an issue for electronic resources.

The objective of e-subscription is to provide the University community E-access to research journals, and abstracting and review publications and databases. INFLIBNET Centre will Administer, monitor and fund the E-access-only scheme through a single nodal agency. It Cover all areas of learning: science and technology, social sciences and humanities. The gateway portals play a very important role for providing access full text of the journals. This can be done by subscribing to one of the gateway portals and provide access the articles up to abstract level. One can get full text access to subscribed titles through these gateway portals avoiding duplication of searching all the publishers separately. There are quite good number of gateway portals providing variety of services, however looking at the comprehensive collections, two major gateway portals identified and needs evaluation. These gateway portals will provide access to more than 10,000 electronic journals and also facilitates the customization by linking the sources of individual universities. Work relating to evaluation of the gateway portals is being done by several university librarians and faculty members from universities across the country. Based on the recommendations and usefulness of the portal, the committee will be taking decision on the gateway portal access to universities.

## **12. INDEST CONSORTIA : INDIAN NATIONAL DIGITAL LIBRARY IN SCIENCE AND TECHNOLOGY**

The Ministry of Human Resource Development (MHRD) has set-up a "Consortia-based Subscription to Electronic Resources for Technical Education System in India" on the recommendations made by the Expert Group appointed by the ministry. The consortium is named as the Indian National Digital Library in Science and Technology (INDEST) Consortium. The INDEST Consortium has commenced its operation since Dec., 2002 through its headquarters at the IIT Delhi. The Consortium subscribes to full-text electronic resources and bibliographic databases for 38 leading engineering and technological institutions in India including IITs (7), IISc (1), NITs / RECs (17), IIMs (6) and a few other institutions directly funded by the Ministry of Human Resource Development (MHRD). While the expenditure on electronic resources proposed for subscription under the consortium for these 38 institutions are being met from the funds made available by the MHRD, the consortium being an open-ended proposition, welcomes all other institutions to join it on their own for sharing benefits it offers in terms of highly discounted subscription rates and better terms of agreement with the publishers. Moreover, beneficiary institutions may also subscribe to additional electronic resources through the consortium that are not being funded by the MHRD. This article introduces the INDEST Consortium, its activities and services. (7)

The following electronic journals are provided on-line to the users under the INDEST CONSORTIA. These resources are being made available by INDEST to various institutions as per the recommendation of the expert group. All electronic resources are made available from the publisher's Web site.

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## 12.1 Full-text E-Resources

1. **IEL Online URL: <http://ieeexplore.ieee.org/>** : The IEEE/IEE Electronic Library (IEL) provides The IEEE/IEE Electronic Library (IEL) covers almost one third of the world's current electrical engineering and computer science literature, providing unparalleled access to publications from the Institute of Electrical and Electronics Engineers (IEEE) and the Institution of Electrical Engineers (IEE). The resource covers more than 780,000 documents from over 12,000 publications, including 120 journals, transactions, magazines, conference proceedings, IEEE Standards from 1988 onwards.
2. **Elsevier's Science Direct URL: <http://www.sciencedirect.com/>** : Science Direct is the web-based interface to the full-text database of Elsevier Science journals and Academic Press (Ideal), one of the world's largest providers of scientific, technical and medical (STM) literature. The ScienceDirect offers a rich electronic environment for research journals, bibliographic databases and reference works. The database offers more than 1700 scientific, technical and medical peer-reviewed journals, over 59 million abstracts, over two million full-text scientific journal articles, an expanding suite of bibliographic databases and linking to another one million full-text articles via CrossRef to other publishers' platforms with back files from 1995 onwards.
3. **Springer Verlag's Link URL: <http://link.springer.de/>** : The Springer's Link is the online e-books and e-journals service from Springer Verlag, one of the world's leading scientific publishers. Key subject areas include: Mathematics, Computer Science, Physics, Astronomy, Geosciences, Chemistry Engineering and Medicine. The resource include over 400 current journals of the highest quality, as well as more than 20 book series. Currently over 3,40,000 full-text articles are available in Springer Link with back files from 1995.
4. **Applied Science and Technology Plus URL: <http://www.il.proquest.com/pqdauto>** : The Applied Science & Technology Plus (ASTP) is a CD-ROM database (with access to the Web). The database provides indices and full abstracts to more than 556 key science and engineering titles, plus full-image of 160 titles. All titles are indexed from 1994 onward; the database is updated monthly. The resource is offered on Web with CD ROM backup.
5. **ABI/ Inform Complete URL: <http://www.il.proquest.com/pqdauto>** : The ABI/ Inform is one of the world's first electronic databases. It has been a premier source of business information for more than 30 years. The database contains content from thousands of journals that help researchers track business conditions, trends, management techniques, corporate strategies, and industry-specific topics worldwide. It consists of 1800 full-text journals and 2000 journals that are indexed and abstracted. The resource is offered on Web with CD ROM backup with archives from 1985.
6. **Digital Library URL: <http://portal.acm.org/portal.cfm>** : The ACM Digital Library incorporates digital versions of works published by ACM since its inception. The major components of the resource is an enhanced version of the ACM Digital Library plus an extended bibliographic database, consisting of more than a quarter-million citations of core works in computing. The ACM Digital Library hosts over 103,000 full-text articles from ACM journals, magazines, and conference proceedings and half million bibliographic Records with about 2,50,000 links to full bibliographic information and 70,000 further links to full text resources since 1995.
7. **ASCE Journals URL: <http://www.pubs.asce.org/journals/jrns.html>** : The American Society of Civil Engineers (ASCE) is recognized globally for their significant contribution and dedication to the advancement of science and education in the civil engineering profession. The ASCE publishes 30 journals, periodicals and transactions that cover a comprehensive range of the civil engineering profession. ASCE journals are highly cited and are most relevant to the civil engineers for exchanging technical and professional knowledge since 1995.

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**8. ASME Journals URL: <http://www.asme.org/pubs/journals/> :**

The American Society of Mechanical Engineers is a nonprofit educational and technical organization serving a worldwide community of mechanical engineers. The ASME conducts one of the world's largest technical publishing operations. The society holds more than 30 technical conferences and 200 professional development courses each year with back files from 2000 onwards.

**12.2 Bibliographics Databases**

**1. COMPENDEX on EI Village URL: <http://www.engineeringvillage2.org/> :** The Compendex is the most comprehensive bibliographic database of engineering research available today, containing almost seven million references and abstracts taken from over 5,000 engineering journals, conferences and technical reports. The broad subject areas of engineering and applied science are comprehensively represented. Coverage includes nuclear technology, bioengineering, transportation, chemical and process engineering, light and optical technology, agricultural engineering and food technology, computers and data processing, applied physics, electronics and communications, control, civil, mechanical, materials, petroleum, aerospace and automotive engineering as well as narrower subtopics within all these and other major engineering fields with archives from 1970+.

**2. INSPEC on EI Village URL <http://www.engineeringvillage2.org/> :** The INSPEC, from the Institute of Electrical Engineers (IEE), is the world's leading database in the fields of physics, electronics and electrical engineering, computers and control, and information technology. It contains citations with abstracts of the worldwide literature in physics, electronics and electrical engineering, and computer fields. Primary coverage is of journal articles and papers presented at conferences, although significant books, technical reports, and dissertations are also included in the database's 7.3 million records. Sources include more than 4,200 journals and more than 2,000 conference proceedings, books, and reports corresponding to the publications of Physics Abstracts, electrical & Electronics Abstracts, and Computer & Control Abstracts, as well as to the online INSPEC database with archives from 1969+.

**3. SciFinder Scholar URL <http://www.cas.org/SCIFINDER/SCHOLAR/index.html> :** The SciFinder Scholar is a Z39.50 Windows-based interface that provides easy access to the rich and diverse scientific information contained in the CAS databases including Chemical Abstracts from 1907 onwards. The SciFinder Scholar offers a variety of pathways to explore CAS databases as well as MEDLINE. The SciFinder interface provides the most accurate and comprehensive chemical and related scientific information including: journal articles and patents together in one source, substance data, chemical reactions, chemical regulatory data, chemical suppliers, biomedical literature with the archives from 1907+

**4. MathSciNet URL: <http://www.ams.org/mathscinet> :** MathSciNet is a comprehensive database covering the world's mathematical literature since 1940. It provides Web access to the bibliographic data and reviews of mathematical research literature contained in the Mathematical Reviews Database. The MathSciNet has signed reviews, powerful search functionality, and timely updates. It fosters the navigation of mathematics literature by providing links to original articles and other

original documents, when available, and by encouraging links from journal article references to MathSciNet. The MathSciNet offers World-wide access to mathematical literature through multiple mirror sites with back files from 1940.

**5. Web of Science URL: <http://isiknowledge.com> :** The ISI Web of Science provides access to information for all levels of academic, corporate, and government research. It offers a comprehensive, fully integrated platform that empowers researchers and accelerates discovery. It offers citations and cited reference searching. The ISI Web of Knowledge provides a single interface, enabling natural-language searches across multiple content sources: journal articles; proceedings papers; patents; chemical reactions and compounds; and content from preprint, funding information, and research activity Web sites with 10 years back files.

**6. J-Gate Custom Content for Consortia (JCCC) URL <http://jccc-indest.informindia.co.in/> :** The J-Gate Custom Content for Consortium (JCCC) is a virtual library of journal literature created as customized e-journals access gateway and database solution for the INDEST consortium. It acts as one-point access to 4,000+ subscribed currently by all the IITs and IISc and available online. Through JCCC, all NIT, ISM, SLIET, NERIST and IITs can have access to the journals subscribed by all the IITs and IISc.

**7. J-Gate URL: <http://j-gate.informindia.co.in/> :** The J-Gate is an Internet gateway and portal set up nearly two-years ago by Informatics (India) Ltd. It offers affordable access to global electronic journal literature. It provides seamless access to journal articles through database interface of 10,000+ e-journals.

Currently J-Gate offers the followings types of products / services:

“Directory of e-Journals” that includes more than 10,000 journals listed with link to journal / publishers site. Table of Contents (TOC) for an equal number of journals

A comprehensive searchable database consisting of more than 10 Lakhs+ articles added every year across all disciplines. More than 10,000 journals including 1200+ free journals and 22 Lakhs articles across all subjects areas.

### 13. CONCLUSION

In this period of shrinking or stable university and library budgets, and of rising costs in serial print subscriptions, it is important for academic libraries and for researchers to understand the trends and implications of the digital information revolution. Some academics are very aware of these trends in scholarly communication through electronic journal and Other academics remain less aware of these new trends. Electronic journal facilitates dissemination of research results in less time, at low cost and offer universal accessibility, flexibility and interactivity. So to overcome the above library budget problems to purchase and manage e-journals and to disseminate effective e-journal service to the users, Library Consortium is the best way of a common infrastructure and it has become very important in the last two decades with the emergence of e-publishing. Libraries have realized or have to realize that working together can accomplish far more than they can do individually. The age of library consortia is at the doorsteps to prove cooperation locally, regionally, nationally and internationally. It is an encouraging sign with good number of consortia efforts are done in India by the consortium for group of libraries falling under certain disciplines viz. FORSA for Astronomy CSIR for Scientific labs, INDEST for academic libraries in the area of Engineering and Technology including management libraries and the effective INFLIBNET E-journal consortia are also include.

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