CHAPTER 4
UGC - INFLIBNET – Growth and Development

Introduction:

Higher education seeks to preserve, transmit and advance knowledge. It is one of the most important instruments of change and progress. The observation of Kothari Commission is true even today: the destiny of India is now being shaped in her classrooms. This is no more rhetoric. In a world, based on science and technology, it is education that determines the level of prosperity, welfare and security of the people. The quality and number of persons coming out of schools and colleges will determine success in the great enterprise of national reconstruction. (1)

The structure of higher education consists of one third government colleges and two thirds private. The government colleges were performing very well in pre-independence days as funding was no problem. The decline of these colleges started with decrease in government funding the formal private education sector consists of colleges founded and managed by private trusts and societies. They are largely funded and recognized by the University Grants Commission. Communication in education programmes will no doubt, continue to reflect the special and sometimes parochial needs and interests of the learners and of those who manage their learning environments. Hence communication professionals are expected to have a good grasp on a vast store of general knowledge.

In the contemporary information based society; the user community has been demanding pinpointed, exhaustive and expeditious information due to its pivotal role in various branches of human activity. To cater this information needs of the clientele, the libraries require procuring, making available and accessible a variety of information resources, which are available in various formats. From the beginning, India has been a center for learning and it constitutes one of the largest higher education systems in the world, with more than 644 universities and institutes, 33,000 affiliated colleges, around 11.5
million students. However, the library and information centers of today are facing the challenges of information growth, diversified user demands, diminishing budgets, escalating prices of periodicals subscription and purchasing books etc. Hence, the explosion of information in multidimensional forms on one side and voluminous development of information on the other side have posed a challenge before the library and information professionals in adjusting their limited financial resources towards achievements of high degree of user satisfaction. To do this job more effectively the librarians have been urged to adopt new philosophies and technologies.

**Decreasing Library Budget**

In the library, the aim of librarians and the hope of users have been to amass in a single library all the resources for research in various branches of knowledge. Though this was always a fantastic and imaginary notion, none the less, it has persistently reduced librarians and readers into pursuing unrealistic objectives and into making false assumptions. Due to the exponential growth and the increasing cost of information resources, it has become difficult for a library to acquire the suitable collection required by the library users. A library collection could be classified into two groups – one satisfies the core interests of the institution to which the library belongs, and other serving peripheral interest.

The National Information System for Science and Technology programme envisages promotion and support to the development of a compatible set of information systems on science and technology and interlinking these into a network. The approach adopted by the Government is to bring the existing centres, systems, and services to a higher level of operation so that the interests of the national community of information users could be served, for the purpose the programme also contemplates experimentation, handling tools and techniques and the development of indigenous capabilities. This programme continued support to information
centers and centers to access international databases services and these centres are connected through E-mail.

Faced with financial crunch, while a library could restrict acquisition of materials in the restricted areas, it tries its best not shed anything from its core acquisition list. Therefore in a collective development situation, it is logical for a library to look up the other institutions for meeting its related interest. Even in this situation a library can leave an item from the core item if the same is ensured by another library in the neighborhood. To achieve aforesaid objectives various library and information center networks were emerged. A number of resource sharing networks have been recognized at local, regional, national and international levels. Normally three levels of Library networks are seen in India include Metropolitan Library network, Country wide Network like INFLIBNET (For University libraries) and sectorial networks like BTISNET, ENVIS, and FOSTIS etc. These Networks are working according to their objectives of providing information resources to its member libraries rationalizing acquisition and utilization of information resources; providing current awareness services; helping to automate their member libraries. As one of the objectives of the networks is to adopt cooperation between different networks, except few there is not a single agency who will promote the cooperation among the networks available in India. Not a single network has mentioned the role of national library in the resource sharing activity, which is regarded as the national wealth of the information resources. The objective of the National library is to cater information needs of the nation while it is confined to Kolkata region. In spite of developing a National Bibliography it does not have the national union catalogue; where in countries like USA, UK, and Canada have developed National Union Catalogs which are also available online through the World Wide Web. So there is a need for developing a resource sharing network in which national library should play major role. (2)
National Information Network

The concept of network aims at evolving a mechanism of partnership in which each member has something useful to contribute to the others in the network. Basically, it is a cooperative venture of two or more libraries with a view to optimize the utilization of available resources. However the old cooperative arrangements and the new networking differ in several ways, while the traditional one is informal, unstructured the new one is a formalized system with integrated organizational structure whose potential for rendering service is greater than that of its parts.

The development of a global information infrastructure has resulted in the establishment of digital Library and information centers throughout the world. The Internet has become the network of networks and, as an infrastructure that connects the world; it requires huge bandwidth with fibre optic networks and support from satellite and other communication networks. Several companies have made breakthroughs that allow the Internet to be available on ordinary domestic lines. These breakthroughs are a great help for countries like India and enable the sending of vast amounts of data.

Information networking is a mode of operation, whereby information resources are shared by a number of like-minded people. On failure of local library to serve user needs one library can have his requirements fulfilled by another library. Some of the essential prerequisites for effective information networking include

- Pooling of shareable resources by the participating libraries;
- Willingness to share the resources;
- A planned mechanism of sharing;
- Precise understanding of the use and information potential of their respective collections; and,
- Common bibliographic access to the collections of the participating libraries.
Even libraries with good budgets or collections cannot have enough resources to be self-sufficient. In fact, interdependence has now become a way of life. In recent years the establishment of a great number of networks around the globe through which technology is utilized to facilitate a vast flow of information. This ultimately will enable and support applications which influence people’s daily lives. The major factors which have created the need for networking include the rise in the cost of publications, a lack of funds and adequate manpower, and the geographical dislocations of libraries, *i.e.*, the fact that libraries are now located in remote and far-flung areas.

The ultimate aim of networking is to achieve maximum results with minimum input. This is clearly consonant with the nature of economy, in which capital is scarce. Networking is inevitable in all types of libraries, for it enables users to have access to the resources of many other libraries, in addition to their own. The benefits which accrue from resource sharing are the following:

- Optimum utilization of rare collections;
- Cooperative exchange and distribution and storage of documents;
- Savings - of both technical work and collections;
- Reduction in the cost of library services, in the long run; and,
- Above all, the provision of more materials at low cost and in less time.

**Growth of telecommunication systems:**

Against all odds, India has made rapid strides in recent decades in the field of telecommunications via satellite and microwave links. Networking systems have been developing fast at local, state, national, regional, and international levels all over the world since the 1980s. In order to keep pace with the world, the Indian government is developing its own networking systems via NICNET. Libraries have to plan their acquisitions keeping in mind the resources available in other libraries in the area, so that they can get the maximum number of books and publications which are not available in their vicinity. In
the past few years, considerable progress has taken place in the planning and building of library and information networks

Several initiatives have taken place at different levels since 1988, such as INFLIBNET, DELNET, CALIBNET, MALIBNET, BONET, and in the next few years all these networks in India will have to be linked to one network, and access extended to all educational institutions. To begin with 75,000 high schools and 8,000 colleges could be connected to the network. The application of IT in Government and in the country in general is very slow: out of 65,000 bank branches and 150,000 post offices, only 5,000 and 800 respectively have been computerized; among Government departments, the railways alone have undertaken a near total computerization of passenger reservations. (3)

**Establishment of Indian National Scientific Documentation Centre**

Extensive educational infrastructure and resources are required to meet the challenge of producing quality trained personnel in sufficient numbers in the country. While the requirement of having sufficient numbers of quality educational institutions with adequate research facilities cannot be compromised, it is understood that one way of meeting this challenge is to share the existing educational material, equipment and facilities available in the limited number of centres of excellence, with a large number of universities and technical, agricultural and medical institutions throughout the country. In addition, Research and Development activity world-over in various fields, is increasingly being carried out through inter institution even trans-country collaborative approach. This has become necessary owing to the increased activity in computationally intensive and data intensive research problems. The key ingredients in this approach are consultations, data sharing, and resource sharing. It is therefore necessary to create the facilities to enable Indian researchers to undertake such collaborative efforts albeit at reasonable costs. Sharing of R&D infrastructure and data which has been an approach favoured in Europe from the 80's, and since then adopted by other countries around the world, could thus provide a viable solution for India as well.(4)
In 1952, CSIR started publication unit called Indian National Scientific Documentation Centre (INSDOC), Indian Council for Industrial Research which is responsible for developing science and technology in the country has established many laboratories and field stations and extension centres all over the country to undertake Research and Development in various areas and disciplines. The areas vary from molecular biology to leather, from aerospace to ocean sciences, from microelectronics to a variety of test facilities and so on. The extension and regional centers reach the users and disseminate knowledge and information in Research and Development capabilities techniques and technologies developed in the national laboratories. The CSIR provides technical know-how for up gradation of existing technologies and generates new indigenous technologies in response to emerging needs of the industry. Over the years, CSIR has made significant contributions to the industrial and socio economic development and promoting science and technology manpower in the country.

INSDOC is a premier organization dealing with library, documentation and information science, technology, services and systems. It is a national laboratory providing information and documentation services both at the national and the international level. INSDOC's activities fall under five broad categories:

1. Services, Products and Publications
2. Projects in Competency Areas
4. Education and Training
5. International Collaboration

Since its inception in 1952, INSDOC has been providing information services that aim at fulfilling the information needs of researchers and scientists in the country. Over the years, INSDOC has designed several information products and services for the corporate and business sector as well. Keeping pace with technological developments, new information products are being brought out on CD-ROMs and floppies and many services are being offered on
networks like the Internet. INSDOC merged on 30th September, 2002 giving rise to National Institute of Science Communication and Information Resources (NISCAIR), which devotes itself to science communication, dissemination and Science & Technology information management systems and services user with the application of modern Information Technology infrastructure

INSDOC's competency areas included Library automation, Library networks, Computer networking, Electronic libraries, CD-ROM networking, Design and development of databases, Access to international information sources, On-line system, Feasibility studies, and Design, establishment and operational management of library-cum-information centres. INSDOC housed the National Science Library that acts as a major information resource centre in the country in the area of Science and Technology and a strong reference collection in general S&T aspects. It offered a Master's level programme in Information Science as part of the academic programme. INSDOC has set up an information technology laboratory which is equipped with the state of the art computer and networking facilities to ensure high quality education and training to the students.

INSDOC undertook the activities in association with International Federation for Information and Documentation (FID), International Federation of Library Associations (IFLA) and the Documentation Centre of the South Asian Association for Regional Co-operation (SAARC). Since 2002 the said institution is merged with another unit and named as NISCAIR.

National Institute of Science Communication and Information Resources (NISCAIR)

Though research literature was published prior to the existence of National Institute of Science Communication and Information Resources it was in different banner. With the emergence of this the publications had a wider range. The mission of this institution is to become the prime custodian of all
information resources on current and traditional knowledge systems in science and technology in the country, and to promote communication in science to diverse constituents at all levels, using the most appropriate technologies.

The objectives of NISCAIR are to provide formal linkages of communication among the scientific community in the form of research journals in different areas of S & T. To disseminate S & T information to general public, particularly school students, to inculcate interest in science among them. To collect, collate and disseminate information on plant, animal and mineral wealth of the country; to harness information technology applications in information management with particular reference to science communication and modernizing libraries. To act as a facilitator in furthering the economic, social, industrial, scientific and commercial development by providing timely access to relevant and accurate information, to develop human resources in science communication, library, documentation and information science and S&T information management systems and services. To collaborate with international institutions and organizations having objectives and goals similar to those of NISCAIR. Any other activity in consonance with the mission statement of NISCAIR

The core activity of NISCAIR is to collect/store, publish and disseminate S & T information through a mix of traditional and modern means, which benefits different segments of society. Acquisition of Information Resources this programme, the institute is building comprehensive collection of S & T publications in print as well as in electronic form and disseminating through traditional as well as modern means benefiting different segments of the society. National Science Library which was set up in 1964 has a comprehensive collection of over 2,00,000 volumes including monographs and bound volumes of journals in the country and is offering services on a national scale. It also acts as a referral centre and clearing house for the best utilisation of the existing collection in the country. It is enriching with electronic resources, online databases, CD-ROM Databases. In-house Databases
developed by NISCAIR includes National Union Catalogue of Scientific Serials in India (NUCSSI), Indian Patents (INPAT) Database, Medicinal and Aromatic Plants Abstracts (MAPA), Indian Science Abstract (ISA). NISCAIR has set up a Herbarium and Museum housing economically important raw materials of plant, animal and mineral origin from India at one place, to cater to the needs of scientists, researchers, industrialist’s students and the public. Based on this and in-house expertise, NISCAIR herbarium serves as one of the nodal agencies in India for authentication of crude drugs used in the Indigenous Systems of Medicine.

Consultancy Services are offered in the identification of plants and crude drug samples against payment. Information on plants regarding availability, use, cultivation, and export/import data is provided on request. Services on other important aspects of plants, animals and minerals of commercial and industrial uses are also supplied against payment. NISCAIR is the nodal agency for developing a "Consortium for CSIR Laboratories for Accessing e-journals". The activity ranges from creation to monitoring of the access facility of scientific periodicals published by leading international institutions. NISCAIR provides translation of S & T documents from 20 foreign languages into English. The languages include Chinese, Czech, Danish, Dutch, French, German, Hungarian, Italian, Japanese, Norwegian, Polish, Portuguese, Rumanian, Russian, Serbo-Croatian, Spanish, Swedish, etc. The clients include National Laboratories, S&T institutes, R&D organisations, Corporate and Public Sector Undertakings, Universities, Research Scholars, etc. NISCAIR also provides reverse translation (English into foreign language). NISCAIR provides Document Copy Supply Service to the Indian scientific community by supplying copies of articles from Indian and foreign journals at nominal charges. Copies of Indian and foreign patents and standards can also be obtained from NISCAIR. NISCAIR conducts training programs in library and information science, documentation, science communication and herbarium techniques with an objective of human resource development. Short-Term /
Attachment / On-site Training Programmes including a two year master’s level academic course The institute brings out 17 primary and two secondary scientific journals of international repute. The institute also brings out three popular science magazines in Hindi, English and Urdu to meet the scientific quest of the masses. Encyclopedic volumes of "The Wealth of India" and "Bharat Ki Sampada", which deal with the natural resources of the country, cater to the needs of entrepreneurs, progressive farmers, students, researchers, etc. Besides, Fortnightly issues of CSIR News in English and monthly issues of CSIR Samachar in Hindi serve as an effective link between various CSIR constituents and users of information on various R & D programs and other activities of CSIR, other R&D organizations, university departments and industry. The journal published by the institute includes Indian Journal of Traditional Knowledge (IJTK) and Medicinal and Aromatic Plants Abstracts (MAPA). It also publishes digitized versions of Indian Science Abstracts (ISA), Medicinal and Aromatic Plants Abstracts (MAPA), The Wealth of India, Raw Materials Series.

NISCAIR is the National Centre of the ISSN International Centre for assigning ISSN numbers for serials published in India. NISCAIR exchanges publications with over 150 institutions in 44 countries in the world. Distinguished experts from other countries visit the institute every year. NISCAIR’s scientists also attend international conferences, seminars, workshops and training programmes. In addition, NISCAIR provides various services such as Medicinal and Aromatic Plants Information Service; Contents, Abstracts and Photocopy Service (CAPS); Literature Search Service; S & T Translation Service; Bibliometric Service; Editing, Designing, Production and Printing of scientific publications. (5)

With the growth of the Internet and availability of vast amounts of information in an instant, a librarian’s role must be one of teaching critical thinking and resource-based learning. New vocabulary in education such as: living curriculum, critical literacy, information power, information literacy, and
information problem solving mandate that re-examine roles as professional information providers and educators. Students need to acquire the skills of evaluating information. No longer have the luxury of having professionals in subject areas to evaluate and filter ‘bad’ information from ‘good’ information in magazines and books with clear references to experts in a field. Valid information is published on the Web daily along with opinions and rumor. This new vocabulary is bringing new challenges in library instruction.(6)

Glance at NASSDOC

The organization of information/knowledge is an essential preliminary to its effective exploitation and dissemination. As the quantity of knowledge expands, the need to organize it becomes more pressing. A vast number of different means of organizing information have been devised and exploited since the earliest times. With the vast output of new information and ever-increasing degree of specialization in all areas of human knowledge, heavy demands are being placed on library information storage and retrieval systems, which can be scarcely met by the traditional methods except with the use of IT devices. The improvements and changes in computing and telecommunications and the integration of the two fields have had a huge role to play in the methods of information processing and dissemination in academic libraries; thus improving the quality of use to which such libraries are put.

The need for information in social science was the national concern over a long period. Hence the organization with such an object of satisfying the wants of social workers and researchers came forward to set up a centre for the information dissemination for social sciences. It came true when Indian Council for Social Science Research (ICSSR) established National Social Science Documentation Centre (NASSDOC) in the year 1970. NASSDOC procures and disseminates information in the social sciences to all the social scientists in the country. It acts as a clearing house in the social sciences. Services are provided to everyone without any restriction on the institution or
type of user. Services include photocopying, indexing, content page supply, and document delivery. NASSDOC also procures copies of the Ph.D. theses submitted to Indian universities in the social sciences.

The Services of NASSDOC are Library and Reference Service, Bibliography on demand, Online Databases/CDs, Literature Search from Electronic Resources, Acquisition of Ph.d theses/ Grey literature, Document Delivery / Inter-Library Loan Service Current Awareness Service is being provided by bringing out different publications on regular basis.


**Web-hosting of ICSSR Journals:** Following five journals of ICSSR are hosted on INFLIBNET website:

1. ICSSR Journal of Abstracts and Reviews: Economics
2. ICSSR Journal of Abstracts and Reviews: Geography
3. ICSSR Journal of Abstracts and Reviews: Political Science
4. ICSSR Journal of Abstracts and Reviews: Sociology and Social Anthropology
5. Indian Psychological Abstracts and Reviews

**Consortium of E-resources:** ICSSR has established ICSSR Consortium of e-resources. Provides access to JSTORE to ICSSR Research Institutes.

ICSSR right from its inception in view of the optimum utilization of library materials, for the convenience of research scholars, and economical
management and dissemination of documents decided to provide the library and documentation services in collaboration with the host university's library i.e. Jawaharlal Nehru Library of the University of Mumbai (JNL) located on the same Campus. Hence the books the Western Regional Centre purchases or receives complementary are merged with the JNL book collection.

It is with the help of science based journal the scientific information has been made available to users of India. It has twofold uses, to the new inventions in the science, and to know if there is yet to contribute to the next generation. Further the exhibition of scientific information through network is also helpful in identifying if the so called information is a renovation for what is traditional knowledge of public domain

**Birth of National Informatics Centre**

With the fast pace of technological change it is becoming important for government to review existing structure of secretariat, hierarchies, policies and procedures. The entire paradigm of the secretariat and in the ‘Information Age’ will necessarily be different from what it is at present. Consequently, a large scale retooling and restructuring in the secretariat will be called for. Secretariat and governance will inevitably be very different from what is today. Digital government will entail flatter organizational hierarchies and more personalized delivery of citizens’ services.

Government of India, established premier S & T institution namely National Informatics Centre (NIC) in 1976, for providing e-Government / e-Governance Solutions adopting best practices, integrated services and global solutions in Government Sector.(7)

With a decision to take effective steps for the development of information systems and utilization of information resources and also for introducing computer based decision support system in government ministries and departments to facilitate planning and programme implementation to further the growth of economic and social development. The Central
Government nucleated a high priority plan project "National Informatics Centre (NIC)" in 1976, and later on with the financial assistance of the United Nations Development Programme.

A government owned network NICNET for exchange of government information has been taken care of by the National Informatics Centre (NIC). It is host for most of the official information of various ministries and departments including agriculture information. It maintains District Rural Development Agency portals. It has initiated Smart Village Project in the Tenth Plan. One of the objectives of this project is to introduce and promote information and communication technologies that are cost effective and appropriate for use in rural areas. It has primary objective to provide a computing and communication infrastructure to aid in planning and monitoring schemes, and decision-making activities in the government. It is constituted of a master earth station connected to a host computer at New Delhi. The other micro earth stations are located at all regional, state, and district centres and at selected commercial centres, that in turn communicate with the master earth station, hence providing the widest reach in the country. (8)

NISSAT

National Information System for Science & Technology (NISSAT) was launched in 1977 in order to meet the demands created by the increasing role of science and technology in the economic and social development of the country. It has been the outcome of coordinated and organized effort of information centres serving the needs of different industries and Research & Development units, into an integrated system to avoid a chaotic growth and repetition of activities and to conform to national and international standards. NISSAT has reoriented its programme activities continually in order to be useful to a wider base of clientele in diverse subjects in tune with the changing global scenario and in pursuance of the national efforts in liberalization and globalization of the economy. Apart from establishing the internal linkages between the information industry, its promoters and users, NISSAT also made efforts to
establish a bridge between information resource developers and users in India and other countries.

Besides establishing the internal linkages between the information industry, its promoters and users, NISSAT also made efforts to establish a bridge between information resource developers and users in India and other countries.

The broad objectives of NISSAT were Development of national information services. Promotion of existing information systems & services. Introduction of modern information handling tools & techniques. Promotion of international cooperation in information. Development of indigenous products & services National Information Centres. Organization of skill development programmes. Promotion of R & D in Information Science & Technology.

The NISSAT programme had the mandate to cover the entire spectrum of science and technology. However, the process of programme implementation, special care was taken not to dwell upon subjects already being handled by other national programmes like the BTIS, ENVIS or an agency like the ICAR. NISSAT always solicited the views of other programmes/agencies, which were responsible for a subject under the allocation of their business. NISSAT also sought the expert views of institutions/individuals working on a given subject or its allied areas when required. As a proactive and progressive step, NISSAT took the onus on itself to strengthen the library movement in the country through the introduction of modern information technology, tools and techniques.

The main function of NISSAT has been:

1. Strengthening of information services through Information Centres in Science and Technology, Value Added Patent Information Services, National Access Centres to International Database Services,
2. CDROM Database facilities etc. Development of an Indian S&T Web server (Vigyan) covering a variety of Indian S&T information and establishment of an Internet School.
3. Development of sector specific Indian websites like Tea, Ocean Data, Food & Technology, IPR Law, IPR on Biotechnology etc.

4. Promotion of information resource sharing in Science and Technology through city-based library and information networks with emphasis on web-based information content development.

5. Development of skills in entire gamut of library and information activities and promotion of development of indigenous database activities.


7. Distribution and technical backup services on internationally developed software CDS/ISIS, MINISIS and IDAMS and development and promotion of CDS/ISIS based co products like SANJAY.

8. Coordination of international activities in collaboration with UNESCO and ASTINFO.


NISSAT established 14 national information centers on specific sectors like Leather Technology, Drugs and Pharmaceuticals, Food Technology, Machine Tools Production and Engineering, Textiles & Allied Subjects, Chemicals and Allied Industries Advanced Ceramics, Crystallography, Bibliometrics, CD-ROM, Management Sciences, Marine and Aquatic Sciences, Publications on CDROMs, Tea Manufacturing & Marketing to provide bibliographic as well as factual and numeric information to meet the various information needs of academicians, scientists, technologists, entrepreneurs, management executives & decision makers. The information Centres were usually built around the existing information resources and facilities. They maintain extensive collections of published and unpublished documents in the form of books, periodicals, R&D reports, technical reports, standards, patents
and trade literature in their subject areas. These services were largely maintained by the parent institutions. (9)

**Virtual Information Centre**

Setting up of a virtual Information Centre at ICICI Knowledge Park, Hyderabad is a three-year project awarded to ICICI Knowledge Park (IKP) for providing a gateway to existing information centres and fast and reliable access to information and interaction among industry, academia, and public research institutions in the area of Science & Technology. Virtual Information Centre has developed a virtual community and knowledge network, by identifying network partners, network users, and customers and establishing a knowledge network. The centre has developed a website for disseminating information.

**Scouting for grass-root level innovations, compilation and dissemination of information in local languages across India**

India presents a rich fabric of innovative activities. While the innovative activities of established institutions are visible and receive attention, a vast reservoir of innovations by farmers, artisans, and tribal have often remained outside the consideration and appreciation. NISSAT initiated a project for a Knowledge Network using local language electronic database of Honey Bee network’s green grassroot innovations. The project was evolved in the context of emerging national thrust of S&T system to contribute towards building knowledge-driven economy. The project focuses on collection, documentation & development of a multilingual database on grass root innovations and development. The project would collect, document and digitize innovations and examples of outstanding traditional knowledge mainly from rural areas, organize these in a multimedia database, translate the information in local languages and establish a mechanism for dissemination and sharing of information on innovations.

**NACIDS: National Access Centres to International Database Services**

NISSAT established eleven NACIDS facilities in Ahmedabad, Bangalore, Calcutta, Chennai, Delhi, Hyderabad, Mumbai, Pune, Thiruvananthapuram, Guwahati and Bhopal for providing online facility to
access international database services. The NACIDS provides search services from Dialog and STN databases. The centres are gaining popularity in spite of the fact that the users have to pay the full cost of a search.

**National server on factual Science and Technology Information**

For promotion and support of S & T activities on one hand and execution of activities on the other, a variety of factual information is required. The project is intended to collect and collate such information from diverse sources, and host these on a server christened VIGYAN for national and international access. While the IISc has set up the server and manages the operations, several institutions are developing the contents such as:

1. Extra-mural schemes of Government of India to support S & T activities: Administrative Staff College of India, Hyderabad on the basis of information compiled by the NSTMIS, DST
2. Database of Experts on Science & Technology in research and academic institutions, INFLIBNET, Ahmedabad.
3. R & D Statistics: Administrative Staff College of India, Hyderabad on the basis of information compiled by the NSTMIS, DST
4. S & T News: Regional Research Laboratory, Trivandrum
5. Faculty members in Engineering colleges: NAFEN, New Delhi
6. Library materials: SNDT University, Mumbai
7. Policies relevant to S & T: NISSAT Secretariat

To sustain the server on a long term basis, an INTERNET School has been set up to generate the funds through conduct of specialized short term courses. It is essential to develop endogenous capabilities for content development which has high potential in India in view of large S & T population having domain expertise, IT expertise and English proficiency. NISSAT has been aggressively nurturing various possibilities. Besides in pursuance of the recommendations of the Task Force on Information Technology, several National websites are being created for national and international access. Few examples are Intellectual Property Rights (http://www.iprlawindia.org), Knowledge Management

**Vidyanidhi – A web-enabled full text database of Ph D thesis**

Young minds at their peak of creativity produce Ph D theses. Unfortunately these are least accessible, least accessed and utilized. The world over an effort is being made to capture and disseminate theses contents. NISSAT supported the Indian effort Vidyanidhi to experiment with various types of these materials and establish the procedure for treatment. The materials will be web-enabled for wider access. The technology will be transferred to various Ph D awarding agencies for information handling and dissemination in a distributed mode.

**E-publishing of scholarly journals**

E-materials have the opportunity for higher exposure and utilization. Under the project, INSA to start with, would convert the back run of their journal publications in e-format and establish a mechanism to publish the current journals also in e-format. After the activity stabilizes, INSA would invite/adopt journals of various professional bodies and institutions for publication in e-format.

**Database Development Activities**

In pursuance of its thrust on contents development, NISSAT encourages indigenous database development activities. Besides library catalogues, union catalogues and lists, the activity could be on subjects in whom global databases do not exist, or on subjects in which Indian elements are not properly represented. NISSAT completed 11 database development projects such as Directory of manufacture of various kinds of Ferrous and Non- Ferrous and
Special Castings, Biographical database of Indian Scientists, Indian Sugar Industry, Directory of Libraries and Information Centres in Gujarat, databases on Virus and Virology, Directory of S&T institutions in India, Database on Silkworms, Database on Agrochemicals Industry, Directory of Database on Engineering Faculty, SR Ranganathan’s work and letters, Database on Folk wisdom, and Database on Indian Traditional Textile Design

**Information Resource Sharing**

With a mandate to facilitate provision of broad based information services in the country, NISSAT has taken initiatives for promoting resource-sharing activities through Library Networks in Calcutta, Delhi, Mumbai, Pune, Ahmedabad and Mysore. These initiatives are aimed at ensuring better utilization of S&T information resources, minimization of functional load of information centres and encouragement of motivational factors to a large extend by better means of communication. Network services centres provide online and CD-ROM based search services. These networks maintain websites to disseminate the information.

**I T Applications**

The demand for use of computers ranges from automation of routine management functions in libraries to information retrieval or analysis of global databases. Since the inception, NISSAT had accorded high priority to all aspects of computer based bibliographic information processing. As a part of the programme, NISSAT acquired proven software packages like CDS/ISIS for bibliographic information processing & retrieval and IDAMS for statistical data processing. NISSAT subsequently obtained the official rights for distribution of the two packages in India from UNESCO. As on date, there are about 1940 installations of CDS/ISIS and 100 installations of IDAMS in India. The implementation of CDS/ISIS is monitored regularly through exchange of information, user's group meetings and periodic surveys. SANJAY is a package developed by NISSAT to help the libraries and information centres in India to improve their housekeeping and service functions through automation. The package is totally menu driven and can be used even by non-professionals. The
package was released for marketing in September 1995, and till now it has an installation base of 65 sites. The development of SANJAY under windows environment with LAN support has been completed. Development of Skills in Information Science and Technology Existing library and information science courses cannot keep pace with the rapid developments in the information field; there is a need to supplement these with continuing education programme at various levels. In view of the situation, NISSAT encourages and supports a variety of manpower development programmes which cover topics such as CDS/ISIS, WINISIS, Internet and Web Designing, TQM in Library Services, Patent Information for R&D and Industry, ISO 9000 Quality Management System, etc.

**Post Graduate course on Information and Knowledge Management**

Information collection, collation, consolidation, packaging etc is getting more and more difficult due to proliferation of information sources and ever-developing tools and techniques for information handling. The user’s demands have also matured. Besides, the institutions and corporates are in dire need to systematically capture, package and share “in-house” information and experiences to subsist in this competitive world. Traditional university education is not geared up to prepare the students in the new art of IK Management. The management institutions today conduct only short term courses to give the first exposure. Realizing the need, a pilot market-driven Post-Graduate course has been designed in collaboration with National Centre for Science Information (NCSI), Indian Institute of Science, Bangalore to evolve a model that can fill in the gap in professional manpower demand and supply and can be replicated elsewhere.

**Model for web-driven distance education system**

The NISSAT in collaboration with Indira Gandhi National Open University, New Delhi initiated a project to evolve a model that would include online lectures, chat discussions with experts, online submission and evaluation of exercises etc. Initially, for experiment, training on WINISIS text
management software would be tried. Afterwards, the IGNOU would use it for its own courses and transfer the technology to other institutions conducting distance education courses.

**R&D Studies/Surveys**

Studies on Productivity of Indian S & T Quantitative assessment of the output of research & development is a difficult exercise. Hitherto only mundane physical and financial parameters were being used. The scientometric studies of NISSAT used publication pattern and citation pattern for national mapping in various subjects. In order to study the trends ten studies on “whole range of S & T through SCI scan”, Chemistry and Chemical Engineering, Physics, Biosciences, Mathematics, Geosciences, Agriculture, Medical Science, Indian Patent Literature, and Social Sciences were taken up. NISSAT also promotes and supports research and development and survey studies.

NISSAT has been bringing out its NISSAT Newsletter -- a quarterly newsletter since the beginning of the programme. Over the years, the format has undergone several revisions in keeping with the changing information scenario. Now, the contents include information on new tools and techniques, events concluded and announcements, interesting Internet sites, new database products and services. With a change in the title, Information Today & Tomorrow (ITT), the quarterly periodical is distributed free to 5000 individuals and institutions. (10)

**Birth of National Centre for Science Information (NCSI)**

National Centre for Science Information (NCSI) is the information centre of Indian Institute of Science, Bangalore that provides electronic information services to the Institute academic community. The Centre also undertakes sponsored R&D projects and conducts a training programme on Library and Information Management. NCSI was established in 1983, as a University Grants Commission (India) Inter-University Centre (IUC). Formerly, as UGC-IUC for science information, NCSI provided national level
current awareness services to researchers in Indian universities during 1984 to 2002.

NCSI vision is to bring world class electronic information services to the IISc academic community. The objectives are to provide seamless, network access to worldwide scholarly information resources of relevance to the IISc academic community, facilitating improved learning, teaching, research, collaboration and information sharing. To provide orientation and training to the IISc academic community in making effective use of electronic information sources, tools and services. To participate in the e-publishing and e-dissemination of Institute's intellectual contributions, and conduct teaching, research and training in Library and Information Management, with focus on set up, operation and management of digital information facilities and services. Apart from e-information services provided to the Institute community, the Centre undertakes sponsored R&D projects and conducts one year postgraduate training programme in Library and Information and Management.

NCSI provides variety of electronic information services to the Institute scholars. These includes intranet and Internet access to world's leading bibliographic databases; gateway services for electronic journals and open access resources on the Internet; customized web access; IISc e-print archive; and Electronic Theses and Dissertations archive services. NCSI also publishes a monthly electronic newsletter 'InfoWatch' reporting new Internet resources of relevance to S&T researchers. NCSI also operates a moderated, free discussion forum (List service) 'LIS-Forum' for library & information professionals in India.

NCSI has all the requisite facilities for the development, hosting and management of state-of-the-art information products and services, handling R&D projects and to conduct training programmes. This includes a switch-based LAN, web servers, laboratory, lecture hall, discussion room, Internet connectivity, e-publishing and digital library tools, information kiosk for the
use of end-users, licensed databases, and a library. Staff includes specialists in computing and information sciences. NCSI and JRD Tata Memorial Library jointly conduct 12 months training programme in Library and Information Management. (11)

**Birth of INFLIBNET**

The users are exposed to the uses of Internet and other benefits like collecting new information worldwide, ideas and data in their respective fields of the study. They keep themselves abreast of the rapidly changing scenario in the electronic, medical biotechnology, business and engineering fields through the net. The cyber world has helped to a great extent in solving the unemployment problem. Lots of professionals have been absorbed worldwide in the field and are doing very well financially and socially. The IT has opened enormous scopes for talented people in India and outside world. Indian IT professionals are working in almost all the western countries including the different countries. Besides the computer professionals many non-professionals also earn their living through net

Information and Library Network (INFLIBNET) Centre is an autonomous Inter-University Centre of the University Grants Commission (UGC) of India. It is a major National Programme initiated by the UGC in 1991 with its Head Quarters at Gujarat University Campus, Ahmedabad. Initially started as a project under the IUCAA, it became an independent Inter-University Centre in 1996.

INFLIBNET is involved in modernizing university libraries in India and connecting them as well as information centres in the country through a nationwide high speed data network using the state-of-art technologies for the optimum utilization of information. INFLIBNET is set out to be a major player in promoting scholarly communication among academicians and researchers in India.

All information societies, ancient, medieval or modern, have functioned and prospered on the basis of proper utilization of information and knowledge
in their various stages of development. To play their role extensively and effectively, the extension users require to continuously learning the technologies that are beneficial in their area of operation. They can play a still better role in transfer of knowledge to their communities if they are continuously apprised of the latest developments. Continuing education and training of users of library is thus another major challenge. It would provide information/knowledge users in both governmental and NGO sectors on value added products from their fields. Another challenge for putting knowledge to work information literacy level, urge to learn and learning facilities available to them. Development of public libraries network can play an immense role in providing adequate learning environment, imparting information literacy to rural communities and even in transfer of agricultural technologies to farmers. To play an effective role in knowledge transfer public libraries are required to be modernized and networked.

**Objectives**

Every organization has a much cherished goal or an object behind its setting up and functioning of services. The primary objectives of INFLIBNET as envisaged in Memorandum of Association are:

- To promote and establish communication facilities to improve capability in information transfer and access, which provide support to scholarship, learning, research and academic pursuit through cooperation and involvement of agencies concerned.
- To establish INFLIBNET: Information and Library Network a computer communication network for linking libraries and information centres in universities, deemed to be universities, colleges, UGC information centres, institutions of national importance and R & D institutions, etc. avoiding duplication of efforts.
  i. to promote and implement computerization of operations and services in the libraries and information centres of the country, following a uniform standard;
ii. to evolve standards and uniform guidelines in techniques, methods, procedures, computer hardware and software, services and promote their adoption in actual practice by all libraries, in order to facilitate pooling, sharing and exchange of information towards optimal use of resources and facilities:

iii. to evolve a national network interconnecting various libraries and information centres in the country and to improve capability in information handling and service;

iv. to provide reliable access to document collection of libraries by creating on-line union catalogue of serials, theses/ dissertations, books, monographs and non-book materials (manuscripts, audio-visuals, computer data, multimedia, etc.) in various libraries in India:

v. to provide access to bibliographic information sources with citations, abstracts, etc. through indigenously created databases of the Sectoral Information Centres of NISSAT, UGC Information Centres, City Networks and such others and by establishing gateways for on-line accessing of national and international databases held by national and international information networks and centres respectively;

vi. to develop new methods and techniques for archival of valuable information available as manuscripts and information documents in different Indian languages, in the form of digital images using high density storage media;

vii. to optimize information resource utilization through shared cataloguing, inter-library loan service, catalogue production, collection development and thus avoiding duplication in acquisition to the extent possible;

viii. to enable the users dispersed all over the country, irrespective of location and distance, to have access to information regarding serials, theses/dissertation, books, monographic and non-book materials by locating the sources wherefrom available and to obtain it through the facilities of INFLIBNET and union catalogue of documents;
ix. to create databases of projects, institutions, specialists, etc. for providing on-line information service;

x. to encourage co-operation among libraries, documentation centres and information centres in the country, so that the resources can be pooled for the benefit of helping the weaker resource centres by stronger ones; and

xi. to train and develop human resources in the field of computerized library operations and networking to establish, manage and sustain INFLIBNET.

xii. To facilitate academic communication amongst scientist, engineers, social scientists, academics, faculties, researchers and students through electronic mail, file transfer, computer/audio/video conferencing, etc

xiii. To undertake system design and studies in the field of communications, computer networking, information handling and data management;

xiv. To establish appropriate control and monitoring system for the communication network and organize maintenance;

xv. To collaborate with institutions, libraries, information centres and other organizations in India and abroad in the field relevant to the objectives of the Centre;

xvi. To promote R&D and develop necessary facilities and create technical positions for realizing the objectives of the Centre;

xvii. To generate revenue by providing consultancies and information services

**Mission and Vision**

For-profit businesses and non-profit organizations have long had mission and vision statements that identify their direction, their purpose, the basic goals, characteristics, and philosophies that shape their businesses and organizations. The determination of these entities forms the backbone of the corporate mission and forms the culture that will guide the management and employees in their daily work and in their interaction with customers. As situations and focus change, it may become necessary to redefine the mission and/or vision statement. The revised or updated mission statement will most
likely reflect the same elements and values as the original. The mission statement will still define the executive philosophy of the business, the self-concept of the business and even the desired public image.

For libraries the mission statement should convey the purpose and the means by which that purpose will be accomplished. The mission statement should also include the ultimate aims of the library within the confines of the parent organization, and thus, provide a unity of direction for managers, the shared expectations of employees, and convey to patrons and clients exactly what the library provides and represents.

- Leveraging on the latest technology, create a virtual network of people and resources in academic institutions with an aim to provide effective and efficient access to knowledge through perseverance, innovation and collaboration.
- Provide seamless, reliable and ubiquitous access to scholarly, peer-reviewed electronic resources to the academic community in all educational institutions with a focus on services and tools, processes and practices that support its effective use and increase value of this information.
- Build and strengthen ICT infrastructure in educational institutions with value-added services.
- Develop tools, techniques and procedures for secure and convenient access management enabling users to access information in electronic format from anywhere, anytime.
- Develop resource selection guides and online tutorials for effective delivery and usage of e-resources.
- Facilitate creation of open access digital repositories in every educational institution for hosting educational and research contents created by these institutions.
Goals

- Achieve complete automation of libraries in educational institutions
- Create union catalogues of documents available in libraries in online and real-time environment.
- Provide seamless and ubiquitous access to scholarly, peer-reviewed electronic resources to the universities.
- Promote digitization of legacy documents and creation of content in e-format (including electronic theses and dissertations, electronic version of research articles, working papers, technical reports, concept papers, technical reports, annual reports, statistical data, etc.) in universities.
- Promote setting-up of open access digital repositories in universities for hosting content created in the process.
- Develop expertise in Digital content creation; Process of digitization; and managing digital depositories.
- Impart training in applications on various aspects of new technology to achieve goals

Functions

In order to fulfill the broad objectives, INFLIBNET will do the following:

- Promote and implement computerisation of operations and services in the libraries and information centres of the country, following a uniform standard.
- Evolve standards and uniform guidelines in techniques, methods, procedures, computer hardware and software, services and promote their adoption in actual practice by all libraries, in order to facilitate pooling, sharing and exchange of information towards optimal use of resources and facilities.
- Evolve a national network interconnecting various libraries and information centres in the country and to improve capability in information handling and service.
- Provide reliable access to document collection of libraries by creating on-line union catalogue of serials, theses/dissertations, books, monographs and non-book materials in various libraries in India.
- Provide access to bibliographic information sources with citations, abstracts etc. through indigenously created databases of the Sectoral Information Centres of NISSAT, UGC Information Centres, City Networks and such others and by establishing gateways for on-line accessing of national and international databases held by national and international information networks and centres respectively.
- Develop new methods and techniques for archival of valuable information available as manuscripts and information documents in different Indian Languages, in the form of digital images using high density storage media.
- Optimise information resource utilization through shared cataloguing, inter-library loan service, catalogue production, collection development and thus avoiding duplication in acquisition to the extent possible.
- Enable the users dispersed all over the country, irrespective of location and distance, to have access to information regarding serials, theses/dissertations, books, monographs and non-book materials by locating the sources wherefrom available and to obtain it through the facilities of INFLIBNET and union catalogue of documents.
- Create databases of projects, institutions, specialists, etc. for providing on-line information service.
- Encourage co-operation among libraries, documentation centres and information centres in the country, so that the resources can be pooled for the benefit of helping the weaker resource centres by stronger ones.
- Train and develop human resources in the field of computerised library operations and networking to establish, manage and sustain INFLIBNET.
Facilitate academic communication amongst scientists, engineers, social scientists, academics, faculties, researchers and students through electronic mail, file transfer, computer/audio/video conferencing, etc.

Undertake system design and studies in the field of communications, computer networking, information handling and data management.

Establish appropriate control and monitoring system for the communication network and organise maintenance.

Collaborate with institutions, libraries, information centres and other organisations in India and abroad in the field relevant to the objectives of the Centre.

Create and promote R&D and other facilities and technical positions for realising the objectives of the Centre.

Generate revenue by providing consultancies and information services.

CALIBER

CALIBER, the Convention on Automation of Libraries, Education and Research institutions is an annual event of INFLIBNET initiated in 1994. It is held in different parts of the country in collaboration with different universities. The main purpose of holding this convention is to provide a unique forum to the library professionals, information providers and user involved in automation and networking of libraries to come together and interact on subject of mutual interest. This convention has not only become popular among the library professionals, but has also made a place for itself as an important event in the library and information field.

PLANNER

Planner stands for Promotion of Library Automation and Networking in North Eastern Region (PLANNER) INFLIBNET has made an attempt to organize this event in collaboration with universities and other academic institutions located in North East. This convention will provide a unique to the library professionals, information providers and users involved in
automation and networking of libraries to come together and interact on the subjects of mutual interest in the region. First PLANNER is being organized for the professionals in the North Eastern region at North Eastern Hill University, Shillong, Meghalaya during November 6-7, 2003. This special event would regularly be held at other parts of the North Eastern universities/institutions on rotation basis. The Convention provides unique opportunity to Academicians and researchers looking for information access facilities to enhance academic pursuits in North Eastern Region. (14)

**Band width**

Connectivity is one of the crucial infrastructural requirements for providing access to e-resources to universities. The UGC-Infonet Internet Connectivity Programme was launched in 2002 by the Hon'ble Prime Minister of India for bringing qualitative changes in academic infrastructure of higher education. 157 universities were provided Internet bandwidth ranging from 256 Kbps to 2 Mbps using Broadband LLI SCPC I DAMAI FTDMAI RF Open Network Architecture by signing a quadripartite agreement with UGC, INFLIBNET, ERNET India and universities.

With an aim to provide higher and scalable Internet bandwidth to universities even in remote locations, the UGC-Infonet was switched over to BSNL backbone w.e.f 1st April 2010 and renamed as UGC Infonet 2.0. In the new scheme 10 Mbps (1:1) fiber-optic leased line is being established for more than 180 universities to provide Internet services. UGC Infonet 2.0 is laid on Fiber backbone of BSNL network which covers almost 614,755 Rkm of OFC Cable and BSNL's Points of Presence (PoP) Centres and Network Architecture across the Country. The BSNL is using network infrastructure of MTNL in Mumbai and Delhi. Any university covered under 12 (B) and 2 (F) Section of UGC Act, is eligible to join UGC Infonet 2.0 by requesting INFLIBNET Centre in prescribed format available at the UGC-Infonet website.

The entire project is funded by the UGC with 90% on capital investment and 100% of recurring bandwidth charges. The INFLIBNET plays an important role of monitoring and liasioning between the BSNL and the
universities. Since UGC Infonet 2.0 is using Fiber backbone, this will pave way for establishing National Knowledge Network (NKN) infrastructure with 1 Gbps connectivity. The UGC Infonet 2.0 will ultimately subsume into National Knowledge Network and the project will adopt new format for better utilization of NKN.

**Databases**

The development of union databases of various library resources i.e. books, journals and theses has been one of the most important activities of the Centre since its inception. In the beginning, the Centre funded potential universities of the country for creating bibliographic records of their library collections. The union databases named "IndCat: Online Union Catalogue of Indian Universities" created by the Centre is an outcome of the financial and logistic support offered to the universities by the UGC on recommendation of the Centre. The IndCat is searchable through in-house developed search interface at http://indcatinfibnet.ac.in.

A number of records available in the IndCat database are as follows:

1. Books: 11.8 Million bibliographic records from 123 university libraries with around 58.3lakhs unique records
2. Theses: 2,14,898 doctoral theses submitted to 238 Indian universities and institutions
3. Serials: 50,164 holding information of the serials of the participating university libraries including 16,843 unique records
4. Current Serials: 22,471 journal titles currently subscribed by the participating university libraries including journals from the UGC-Infonet Digital Library Consortium
5. Experts: 16,100 records with profiles of the subject experts serving the universities
6. NISSAT Project: 24,137 profiles of the experts in the field of the science & technology. The project was Funded by the NISSAT, New Delhi from 2001 to 2002
The Union database of books provides for downloading of selected bibliographic records in MARC21 format and porting them to the MARC21-compliant integrated library software. The new user's interface of IndCat allows users to conduct search for a document in a single university, a group of universities or universities in a geographical region or state. As such, in addition to being a Union Catalogue of resources available in university libraries, IndCat serve as a virtual catalogue for each participating university libraries. GujCat and NERCat, are sub-sects of IndCat that are designed to restrict searching of bibliographic records to 33 libraries of the Gujarat state and 8 university libraries in North-Eastern region, respectively.

**Shodhganga: a reservoir of Indian theses**

Electronic Theses and Dissertations (ETO) are known to be the rich and unique source of information, often the only source for research work that does not find its way into various publication channels. However, theses and dissertations remain an un-tapped and under-utilized asset, leading to unnecessary duplication and repetition that, in effect, is the antitheses of research and wastage of huge resources, both human and financial. The "Shodhganga" is a digital repository set-up for submission of electronic version of theses and dissertations by students / research scholars in universities in India for making them available in open access to the world-wide academic community. The Repository was set-up in response to the UGC Regulation (Minimum Standards & Procedure for Award of M.Phil. / Ph.D. Degree, 2009) where-in the responsibility of maintaining the digital repository of Electronic Theses and Dissertations (ETDs) is assigned to INFLIBNET Centre, Ahmedabad. Based on the recommendation of the National Committee for Implementation of Submission and Access Electronic Theses and Dissertations in Universities in India, constituted by the INFLIBNET Centre, work-flow, structure, data format, submission process, etc. were finalized. The Centre has modified ingestion interface of open source institutional repository software for meeting the specific requirement of Shodhganga.
The Shodhganga Website provides all information relevant to the students, research supervisors and university authorities with regard to ETDs including their responsibilities, access policies, submission process, metadata structure, etc. An MoU to be signed between universities and INFLIBNET Centre is being sent to the universities for granting non-exclusive rights to host the content in the Shodhganga Repository as well as for getting financial assistance towards digitization of back files of theses and dissertations in universities.

Students from different universities have started submitting electronic version of their theses into the repository on voluntarily basis. So far, five universities have submitted their theses without formal request. MG University is the first University to sign the MoU with INFLIBNET Centre. The MG University has already given electronic version of their 550 theses for hosting them into the Shodhganga. (15)

Software Development

Keeping in view the requirements of libraries of the universities and colleges for library automation, the SOUL (Software for Universities Libraries), state-of-the-art library management software, was designed and developed based on the experience gained by the Centre over the years. The first version of the SOUL Software was released in Chennai at the CALIBER 2000. The 2nd version of SOUL Software named "SOUL 2.0" was released in 2009.

The Unicode based and MARC21 compliant SOUL 2.0 has six integrated modules, i.e. Acquisition, Cataloguing, Circulation, Serials Control, OPAC and Administration. SOUL 2.0 is windows-based software working on client-server architecture. The software is compliant to international standards such as MARC 21 to facilitate data transfer and exchange, Unicode to facilitate handling of multilingual content, SIP and NCIP for RFID compliance; FRBR to support functional requirement for bibliographic records, etc. The new version was received very well. As a gesture of goodwill, the Centre has offered free copy of the software to all its existing users. 591 copies of the
software were given to the existing users and 257 copies were sold to the new libraries till June 30, 2010. The software has more than 2026 installations across the country. (16)

**Birth of INFONET**

The UGC-Infonet Digital Library Consortium was formally launched in December, 2003 by Honourable President of India soon after providing the Internet connectivity to the universities in the year 2003 under the UGC-Infonet programme. The Consortium proved to be a recipe to university libraries which have been discontinuing subscription of scholarly journals because of "Serials Crisis". The term "serials crisis" refers to exponential and continuing increase in subscription cost of scholarly journals. The crisis is a result of rise in cost of journals much faster than the rate of inflation, increase in number of journals and the paucity of funds available to the libraries.

**N – LIST**

"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 INDESTAICTE 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 6,000 colleges. The N-LIST project facilitates access to e-resources to students, researchers and faculty from colleges through proxy server(s) installed at the INFLIBNET Centre. The authorized users from colleges can now access e-resources and download articles required by them directly from the publisher's website once they are duly authenticated as authorized users through servers deployed at the INFLIBNET Centre. As on July 1, 2010, a total number of 1248 colleges have registered themselves with the N-LIST programme including 754 Govt. / Govt.-aided colleges covered under the 12 (B) and 2 (F) Section of the UGC Act. Remaining colleges are being advised to join the initiative as N-LIST Associate. All e-resources
subscribed for colleges under the N-LIST Project, including 2,100 electronic journals, 51,000 electronic books and a bibliographic database called MathSciNet, are now accessible to all the authorized users through the NLIST website using Log-in 10 and password issued to all the authorized users of 754 colleges. (17)

**ILL Libraries & Article Delivery**

INLIBNET has initiated interlibrary loans and document delivery services from the comprehensive collection of subscribed journals under JCCC@UGC-INFONET. ILL is also known as Inter-Library Lending. INLIBNET has designated 22 libraries to fulfill ILL request from the users, affiliated to universities covered under UGC. The ILL libraries together subscribe for 2000 plus journals that is not available through consortia. Universities can request for articles from the journal holdings of those libraries wherever they find useful articles in JCCC search, that are not available in that library.

OCLC s first Search Base Package with H. W. Wilson Select Plus full text database will also be tried using consortia approach. It has an option to subscribe for simultaneous logins. The service will be more economical by subscribing to one simultaneous login for Six libraries and get access to 12 databases covered under this package including article first database covering more than 12000 journals, full text access to 1550 title from with H. W. Wilson Select Plus full text database etc. (18)

**Publications**

The INLIBNET center brings out the following publications regular intervals:

1. INLIBNET Newsletter (Quarterly)
2. Guidelines for Data Capturing: Manual
3. Proceedings of the CALIBER (Annual)
4. Proceedings of the PLANNER (Annual)
5. Information Brochures on INLIBNET, its activities and services
6. Course Materials on Various Workshops and Training Programmes
7. Annual Report
8. INFLIBNET Diary with Directory of Indian Universities accessible through INFLIBNET Website (http://www.inflibnet.ac.in/universitydirectory/)

The Shortfalls of INFLIBNET

No doubt INFLIBNET is an organization having a cherished goal of imparting education through the modern tools of ICT. Whereas there is no scope for finding solution with the poverty ridden people of India. There is a dire necessity of manpower in the agriculture and industry and viable solution in this mode of information retrieval is missing.

The natural resources well exploited shall result in development. On the other hand in the absence of protecting the natural resources or rejuvenating the environment for sustainable development. The studies, information, knowledge, etc are not going to help when the danger of natural calamities occur.

The rural folk of India are very much deprived of the basic amenities of livelihood and without providing the infrastructure required for such information accession is an attempt which is not going to support such rural brothers with no electricity and the tools of ICT.

Criticisms on INFLIBNET

Realising the need for common mechanism for access to scholarly information, UGC set the priority for the academic and research community and initiated through INFLIBNET to explore the possibility of the subscription of periodicals in the electronic format protecting the larger interest of the academic and research community in the country. The UGC has already initiated the process of computerization of university and college libraries,
providing them Internet connectivity and now through UGC-INFONET is planning to provide them facilities like E-access to journals, computer aided learning, distance education and E-governance to become a reality.

The UGC-INFONET is also exploring the possibilities to subscribe e-journals through a consortium to benefit college and university libraries in the country. Though consortia-based subscription to electronic resources can help college and university libraries in order to enhance their access capacity to large number of periodicals yet there is a need to develop a policy for consortia-based subscription to electronic resources which should clearly indicate the terms and conditions favouring and protecting the academic interest of the college and university libraries.

There is great need to further improve the access in terms of network infrastructure within the universities and the bandwidth support will further enhance over the usage over the years. The result strongly indicate that in the consortia arena the levels of information use will rise through desktop electronic access, but it is not possible to predict now how high the rise will be. The users have probably not yet fully absorbed what the E-Journals consortium can do for them, but INFLIBNET is on its mission to reach out to them and provide necessary guidance time to time in improving the access base.

**Gateway to Academic Information and Promotion of Research**

The consortia allow institutions to exchange programme ideas, best practices and curricula and identifies solutions to challenges that individual institution may be facing. It also facilitates joint programming and makes them possible for centers to share resources associated with programming. For example, a group of institutions could pursue large funding that otherwise would not be available to individual centers. Consortium based subscription to e-resources provides access to a wider number of electronic titles at substantially lower costs. Apart from these, the consortium brings:

1. Increase the cost benefit per subscription
2. Ensure continuous subscription to periodicals subscribed
3. Provide access to a wider number of electronic resources at substantially lower cost.
4. Collective purchase option attracts highly discounted rates
5. Rates offered to the consortium are lower by 50% to 90 percent depending upon the databases and full text journals.
6. Research productivity is expected to improve
7. Expected to bring remarkable change in sharing of both print and electronic resources amongst university libraries
8. Provides archival access to the collection and also backup facility for print copies of the subscription
9. Libraries participating in consortium will benefit of accessing more literature without actually worrying about space and other related problems (19)

Conclusion:

India has been able to achieve moderate success in making computer networks operational for communication, libraries and information, in spite of various inadequacies. The plans being drawn up are highly ambitious. Few networks still remain undeveloped, although existing networks have to be interconnected to achieve the desired goals. India aims to catch up with advanced countries through the application of modern technology, indigenous know-how, and reliance on local industry for hardware and software. What remains to be seen is how establishing these facilities will benefit and improve the socio-economic conditions of India's citizens, allowing the nation to emerge as an economic superpower in the next century.

Further the information diffusion has increased cost of information available in varied formats and has been showing its spontaneous effect on the limited financial resources of the library and information centers. Due to this, no single library is capable of procuring all kinds of information resources as demanded by its clientele. The library and information field has been looking for a viable solution through collective effort and mutual sharing of their resources. Here, the strength in number of approaches helps libraries to offer
more and better services than before. The digital environment also emphasizes the need to function effectively, for cooperative arrangements, distribution of service and sharing of resources. The latest trend is moving towards consortia approach to form partnership for sharing the resources. Access of information to remote user has always been a challenge and delivery of information service is not a new concept as it was before printing media was invented, but the newer technologies have helped to overcome these obstacles. In the changed environment INFLIBNET has moved to the digital environment in the delivery of information services to the academic community across the country. To achieve this UGC has initiated INFLIBNET to monitor UGC-INFONET programme. So that the existing resources can be used effectively and efficiently by the academic and research community in the Indian universities.
References

1. India (1966) Government of India, Publication Division.


4. knowledgecommission.gov.in/ accessed on 5/11/2012


6. indolibnet.blogspot.com accessed on 5/11/2012


13. http://www.inflibnet.ac.in/about/functions.html accessed on 7/10/2012

14. INFLIBNET Newsletter 1999. Vol. 5 No. 3 pp. 01


17. http://www.inflibnet.ac.in/soul/ accessed on 7/10/2012
