Chapter V
CHAPTER -V

UNIVERSITY LIBRARY SERVICES IN INTERNET ERA

A) University Education in the 21st Century:

challenges and visions.

On the occasion of the Golden Jubilee celebrations of the University of Pune (10th February 1999), a volume of papers by eminent educationalists in our country has been published under the title "Higher Education: Challenges and Visions". Section one of this volume of papers contains the visions of higher education in the 21st century by Dr. Ram Takwale, Ex Vice-Chancellor of Pune University, by Dr. Vasant Govariker, eminent Space Scientist and educationist of our country, by Jayant Narlikar, world famous astrophysist and Pramod Talgeri, Eminent Professor at the Jawaharlal Nehru University and former Vice-Chancellor of CIEFL, Hyderabad.

It will be appropriate to present a summary of these papers in order to present a picture of years to come and the environment in which the librarians of Maharashtra will have to prove their metal.

A.1 Visions of Dr. Takwale

Dr. Ram Takwale (1) has stated in his paper "University education in the 21st century" that the key elements in the process of change is the electronic revolution.
He has also mentioned about the paradigm shift due to revolution in communications technology. While considering the educational paradigm shift, the Report of Task Force of ICDE (1996) identifies four major factors as drivers of educational change.

1. Explosion of information
2. Emergence of Information Technology
3. Changing Nature of work
4. Changing students population

Further he states that the Information Technology will be able to offer the following educational facilities.

a) **Classroom** for delivering lectures, seminars, tutorials, etc. where the teacher is at a presentation site (either home or TV studio) and learners are in the receiving-end classrooms or at home.

b) **Small group interactions** (tutorial groups, special interest groups) with all types of communication.

c) **Library and information access** to electronically stored information anywhere in the world.

d) **Personalized communication** between teachers and students.

e) **Information dissemination** and various personalized services.

f) The Information Technology enables us to develop networks of different types.
He further predicts that the post industrial or information society will essentially be a networked society. In the field of education, following basic changes are obvious.

Education will change:

1. From teaching to learning. Self-learning skills will be a basic part of education.
2. From teacher/institution autonomy to learner autonomy.
3. From almost synchronous teaching learning process to asynchronous and separate teaching/tele-teaching and learning.
4. From on-campus classroom to home, work place and community based education.

The educational network or knowledge network of the 21st century will obviously have the customer, the students and his learning at the centre stage. One of the major task of the universities of the 21st century would be to develop learning environments for the learning society.

A.2 Visions of Dr. Gowariker

Dr. Vasant Gowariker (2) in his paper “Higher Education in the 21st Century” had reviewed the developments taken place in Information Technology and states that globalization is one single factor that has turned the world upside down and, India’s thinking too. Further this has laid to changes in approach to higher education in advanced countries. Firstly, people now look largely for education that is not confined to
single faculty. They look for courses from different faculties in a "Cafeteria" mode. Secondly, one-time education gets obsolete and needs constant updating by continuing education. The latter is a common feature of educational systems abroad. The courses carry credits and sometimes enrollments for such courses even exceed those in regular programmes. The same will happen in India. Higher education in India will make people realize that "learning" is a life-long process. This is not just a philosophy. In the 21st century, most employees of an organization would be busy learning all the time, making it a "learning organization". In a "learning organization", each individual will not only learn to improve his knowledge, skills, personality and whatever but he will also learn to work along with others to find collective solutions to the problems and sort out interpersonal tensions. It is a "system" learning. The organization as a system learns and grows and thereby keeps itself ahead in a competitive environment. If individuals or organizations do not stay at learning constantly, they will jeopardize their survival.

Further, he states that in the knowledge economy of tomorrow, the learning organization alone will survive, quoting George Scaria. He further predicts the following:

a) Since the scope of the subject content is increasing day by day, it should be ensured that only the state-of-the-art knowledge is imparted to the student and the teacher is competent to teach.

b) Interdisciplinary schools in the subjects and faculties must be recognized. Artificial barricades of division of the gamut of the subjects into faculties is absurd.
c) The forces of education will change from teaching to learning, from contents to skills, from teaching organisation to learning organisation.

d) Cafeteria mode teaching/education will be encouraged.

A.3. Predictions of Dr. Naralikar

Dr. Jayant Naralikar (3) in his paper “Higher education in the 21st century” points out that a single major constructive achievement of this century is in the field of communication. The modes of communications have enormously expanded in efficacy and power. The internet has already shown us how information transfer can proceed fast, painlessly and at relatively low cost. Keeping these aspects in mind the following scenarios emerge for the future of higher education.

1. In an extension of the open-university system, one can have an interactive classroom where pupils singly or in groups, scattered in different places listen to lectures, lecture demonstrations, and panel discussions while interacting with the resource persons.

2. In the era of shrinking library budgets and escalating prices of books and journals, the networking of resource libraries with electronic transfer of information can supply the needed browsing facility to the student and the teacher as well as the facility to access the book or journal remotely.

Finally he makes the following concluding remarks.
a) The common fallacy of dissociating research from higher education has led to a deterioration of academic standards in our universities as well as to starving of our national research institutes of research human-power. Research and development should go hand in hand with teaching. Unless the students see research and scholarship in action around them they will not be motivated towards academic pursuits. Unless the research institutes have an interface at least with post-graduate students, they will remain starved of new blood.

b) Likewise it is a fallacy that like primary education, everybody must go in for a degree to succeed in life. Society has to recognize that successful careers can be made without a bachelor's degree and opportunities for vocational training should be created to take the pressure of numbers off the universities.

c) It is also necessary to introduce serious monitoring of funds given by the various agencies to universities, side by side with an assessment and accreditation carried out by the NAAC.

d) With financial support being limited, it is necessary to use merit as the criterion for fund allocation. It is also necessary to review the present reservation policy to make it more effective and tuned to the aim for which it was introduced.

e) With limited funds and more and more expensive research facilities, the university sector has to get used to the shared mode in which one major
centralised facility is used by several universities. In this direction the IUC-experiment should be watched for future emulation.

Finally new technologies are here to offer hitherto unimagined facilities for disseminating higher education. With powerful tools of communication now available, higher education can take off in a different mode with interactive classroom teaching spread over remote areas and with electronic access to distant libraries and databases. We need to use such resources imaginatively as we march into the twenty first century.

A.4 Visions of Prof. Talgeri

Professor Promod Talgeri (4) in his paper “Globalisation and Farewell to a Classical University” bring to the notice the important factors of globalisation and its impact on higher education as follows:

1. Marketing university education in other countries.
2. In the present globalised economy the University will have to perform different tasks. First of all the close relationship between higher education and economic performance cannot be ignored. A university has to be embedded in the context of globalisation, information age, rapid digital economy and political developments. Non participation in these global process would also mean a loss of unlimited future opportunity. Interestingly the role of future university is also seen in the context of macro-economic importance of higher education. The
future universities are looked upon as key players in the economy of their regions, in attracting investment to the area, generating total economic activities and employment. They are now seen as an instrument of economic growth. Where does higher education fit into this scenario? Rapid technological waves of change, the advent of the Internet and globalisation have propelled us from an industrial economy to an information driven Digital Economy. This development is giving rise to a new class of knowledge worker. The Universities which produce these knowledge workers, can logically contribute to higher GDP and to the balance of trade. In a globally competitive world with an increasing emphasis on high level skills and innovation, universities will play a pivotal role in the economic growth of their country.

3. The rapid development in Information Technology have brought about some drastic changes in our spatial perspection. The development of digital network all around the globe over the last 20 years has promoted communication at a mind-boggling speed. This information revolution is changing our very perception and judgements of value, our loyalties and relationships. The development is so significant that its effect has been called “the death of distance”.

4. Globalisation has also a profound impact on education as graduates need to acquire the necessary skills to work in multi-disciplinary, multicultural often located in different countries. They also need to acquire an international business acumen tailored to the needs of the global economy. And Universities have to
evolve in this international context creating accreditation programmes with universities in other countries and establishing bilateral international education and training programmes reflecting the needs of our global community.

A.5. Views of Dr. Nigavekar

Prof. Arun Nigavekar, (5) former Director of NAAC and present Vice-Chancellor of Pune University has stressed the role of quality in higher education in this context. He explains the concept of accreditation and discusses its operation. He states that it has to be a process that encourages more of self-appraisal to know the weaknesses and strengths of the institutions. The entire stress is on doing better, doing it efficiently to achieve quality that should ultimately lead to excellence.

A.6 Summary / Main points emerged out of the above discussion.

From these discussions following points emerge.

1. Significant changes are to be emerged due to revolutions in Electronics and Communication Technologies. These advances will make far reaching impact on higher education in the 21st century. The future information society will essentially be a Networked Society (Takwale)

2. This will have impact on education making basic changes in education. (Takwale)
3. From teaching to learning self learning skills a basic part of education, autonomy to learner from on campus classroom to home, work place and community based education. (Takwale)

4. State-of-the-art knowledge will have to be given. (Gowariker)

5. Courses from different faculties in a Cafeteria mode is to be given. Education will not be limited to a single faculty. (Gowariker)

6. Higher educational institution will be learning organisations. Inter-disciplinary mode of teaching will be emerged. (Gowariker)

7. Importance will be given to learning to master skills.

8. Interactive classroom will be encouraged. (Naralikar)

9. Research must be associated with higher education (Naralikar)

10. With limited funds and more and more expensive research facilities the university sector has to get use to the shared mode. (Resources sharing in which one major facility e.g. Inter University Centre is used by several universities)

11. Globalised economy will make the university to perform different tasks. These will be close relationship between higher education and economic performance. (Talgeri)

A.7. Role of libraries

Regarding the role of libraries, following predictions have been made.

1. Information Technology will be able to offer the following educational facilities.
a) Library and information access to electronically stored information anywhere in the world.
b) Personalized communication between teachers and students.
c) Information dissemination and various personalized services. (Takwale)

In the era of shrinking library budgets and escalating prices of books and journals, the networking of resource libraries with electronic transfer of internet can supply the needed browsing facility to the student and the teacher as well as the facility to access the book or journal remotely.

2. The university sector has to get used to the shared mode. (Naralikar)
3. New technologies are here to offer hitherto unimaginable facilities for disseminating higher education. (Naralikar)
4. There will be end to distance or death of distance. (Takwale)
5. The internet has already shown us how information transfer can proceed fast, painlessly and at relatively low cost. (Naralikar)
6. Globalization has also a profound impact on education as graduates need to acquire the necessary skills to work in multidisciplinary, multicultural often located in different countries. (Talgeri)
7. Accreditation is essential to achieve excellence to do better and this should be at every activity in higher education. (Nigavekar)
B) Academic libraries in internet era

In the earlier discussion the scholars have referred to the emergence of Internet and its use to scholars all over the world. Internet has facilitated to weave a networked society. Internet has also pressed the universities to resort to the shared mode of operations. Internet has also marked the death of distance. Internet has also facilitated self-learning at home, and converted universities into the learning organisations.

B.1. CALIBER 99

Realising the importance of Internet, the Information and Library Network (Inflibnet) of UGC at Ahmedabad had organised a National Convention at Nagpur on 18-20 February 1999, where majority of university Libraries in India participated. It is a great event and milestone in the university library movement in India.

B.2. The papers have been presented in five sessions.

1. Academic Libraries and Access to Internet and Intranet.
2. Information Sources on the Internet for higher Education and Research.
3. Internet and Web Search Engines.
4. Developing Library Web Sites.
5. Education and Training for Internet Use.

There were lead papers in each section, contributed by specialists in our country followed by papers contributed by different participants from academic libraries, research institutions and the industries.
B.3. Conclusions

Following conclusions were arrived at;

1. Internet connections be taken in all academic libraries in India. The Libraries be equipped with necessary hardware and software for this purpose.

2. The Libraries should try to explore the internet resources made available on internet and disseminate this information to the users of the library.

3. Every Library should compile a directory of web sites of internet in their areas of interests and subject interest of the users. Every library will have to modify or amend its collection development policy instead of purchasing the hard print copies. The libraries will have to acquire or subscribe to databases useful to readers at comparatively low costs.

4. Importance have to be given to access rather than to possess the information sources.

5. Facilities for accessing the internet resources be developed in university libraries. (Computer terminals with internet access to students.)

6. The librarians will have to master the skills for locating information on internet resources and therefore he should be conversant with search engines possessing voluminous information.

7. The university libraries should develop their own Web Sites to inform the reader about the facilities and services extended by the libraries and to advertise / publisize its resources.
8. Professional library staff members be trained in the skills necessary or accessing internet resources.

9. Library is a system with varieties of components interacting with each component. It is necessary to make changes in our attitudes, objectives, rules and procedures in managing the libraries in the Internet era.

We have to encourage networking & resources sharing. We have to inculcate values for sharing the resources. This requires a different mind-set i.e. to be inculcated for success of university library system in our country.

C) Computerization of university libraries in Maharashtra:

Progress made and library services started.

In the earlier paragraphs we have taken into account the recent developments in Information Technology in the world and its impact on university education in the 21st century. It is evident from the predictions made by eminent educationists like Dr. Ram Takawale, Dr. Jayant Naralikar, Dr. Vasant Gowariker and others that the future society will be Networked Society and shared mode of resources sharing which emphasis an access to information than possession of information sources will take priority over a traditional working of university libraries. Similarly from the papers presented at Caliber 1999 convention of INFLIBNET, it is evident that:

1. Libraries should be computersied.
2. Varieties of databases should be created.
3. International standards be adopted for inputting data.

4. Connectivity and informaty in practices should be adopted.

5. Librarian be trained in the use of Internet resources as well as to create websites for Internet.

With this future scenario, it will be worthwhile to take a survey of these progress made by university libraries in Maharashtra towards computerization of libraries, creation of databases and extending facilities for access to databases from remote places and lastly making this available to the readers in shortest possible time.

C.1 INFLIBNET Programme

Development of fast computers requiring small space to store large data and revolution in telecommunications have made great impact on all walks of life all over the world during the 1980’s. Libraries and Information Centres have also adopted to this new environment. At the same time, the libraries all over the world had faced the problem of inadequate budgetary provision for meeting the increase in subscriptions of periodicals as well as increase in the number of research periodicals. This situation forced the libraries and information centres all over the world to adhere to practices of resources sharing. Documents not possessed by the libraries are being accessed through national and international library networks and databases. Realising this need to share the resources, Prof. Yashpal, the then Chairman of the University Grants Commission launched an
ambitious programme of networking of University, College and research institute’s libraries with the name ‘Information and Library Network’ better known as

INFLIBNET

According to this report (6) INFLIBNET is a co-operative network and will contribute to pooling, sharing and optimization of resources, facilities and services of libraries and information centres in the R & D complexes. It will offer catalogue based services, database services, document supply services, collection development and communication based services.

It will enable users to have access to holdings of each other library, the total national resources could be utilized optimally by every one. The report has also given a table of the services which can be started by this network, such as Document delivery, Electronic mail, Bulletin Board, Bibliographic database search, SDI and CAS, and Inter library loan.

In the words of Prof. Yashpal, the following services can be started.(7)

"It should be possible through such a system to search for a book no matter where it exists in the country and ask for an inter-library loan - irrespective of whether you belong to a newly set-up university or laboratory and irrespective of your location. Whether you are in an isolate institution in the foot-hills of Himalayas, middle of a forest, sparsely populated regions of the North-East, Western edges of the Rajasthan desert, Islands in the
sea, or in a large metropolitan city, you should be able to search and get copies of the abstracts of the latest papers published in any major journal through the INFLIBNET facsimile service.

Similarly, you should be able to get synopses of any of the ten thousand Ph.D. theses written in the country every year. You should be able to reach and get information from specialised data banks put together by different agencies, including NISSAT, UGC and, I hope, the Planning Commission.

If one makes specific arrangements, it should also be possible to reach foreign data banks from anywhere in the country.”

In the report “Development of an Information and Library Network, 1988” submitted to the University Grants Commission, it is proposed to computerize university and college libraries in India during the 8th and 9th five year plans of the Government of India. It is gratifying to note that the University libraries in Maharashtra, namely Bombay (Mumbai) University, S.N.D.T. Women’s University, Mumbai, University of Pune, Nagpur University have been identified for computerization and networking of universities and received comprehensive grants.(3) Similarly in addition some of the university libraries including Deemed universities have received a grant of Rs.1 lakh for establishing core facilities for information access e.g. Shivaji University Library, Kolhapur, Dr.Babasaheb Ambedkar Marathwada University Library, Aurangaabad, North Maharashtra University, Jalgaon, Amravati University Library, Amravati, Tilak
Maharashtra Vidyapeeth, Pune (Deemed University). An additional amount of Rs 6.5 lakh has been sanctioned to North Maharashtra University, Jalgaon for computerization. Besides these grants, some of the universities on their own initiative, started building the infrastructure for automation of their libraries. In the Caliber 1999 Convention in the review meeting chaired by Prof. Yashpal, it was informed that an amount of Rs.6.5 lakhs was sanctioned to all the university libraries in Maharashtra.

The major problem faced by these university libraries was regarding development of trained and skilled manpower for handling computers. It is noteworthy feature of NISSAT that NISSAT encouraged conduct of training courses for computerization of libraries with liberal financial assistance since 1986. NISSAT also helped development of library software. As library software development is a longterm and costly affair, it propagated the use of CDS/ISIS software package, throughout India, with arrangements from UNESCO. In the initial stages, NISSAT offered this software package free of charge and later on charged a minimum fee of Rs.1500/- to suit the pockets of Indian libraries. A number of libraries used this package for creation of databases of unpublished Theses and Dissertations, articles in periodicals and compilation of bibliographies or starting Current Awareness service.

In the 1990's, we observe establishment of local area networks with the funding from Department of Scientific and Industrial Research. New Delhi and networks such as Pune Library Network, Bombay Library Network, Delhi Library Network have been established.
In the following paragraphs, we will see how University Libraries in Maharashtra have responded to this situation and attempted to computerize their libraries. We will also study the problems faced and ways found to meet the new environment, and the advantages gained by these university libraries by automating their libraries.

C.2. **Mumbai University Library** (Jawaharlal Nehru library)

(Information collected from personal visit)

The University Grants Commission has sanctioned a comprehensive grant of Rs.50 lakhs to Mumbai University for computerization of library and updating library services under INFLIBNET Programme in 1994-95. From this grant, INFLIBNET provided Rs. 1.70 lakhs per year to Mumbai University library for maintenance. The university library purchased the following infrastructure required for library computerization.

1. Pentium with 1.2 GB HDD, 32 MB RAM. One
   1.2 and 1.44 FDD, 8 port card.
   as main server.
2. PC/AT/486, 32 bit EISA, 380 MB HDD Three
   1.2 & 1.44 FDD.
3. PC/AT/386, 40 MB HDD, 1.2 FDD Three
4. VT Terminals Three
5. Printer One
6. Unix Operating system
7. Gist Card

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The Network

Local Area Network (LAN) was established in the library building providing nodes to different sections of the library.

Software

A Multiuser system software Sco-Unix was purchased to run the software DELMS developed by INFLIBNET is used to create database of library books. Now this software is replaced by latest Window based version called SOUL.

Databases

The library has created a database of books about 25,000 records. A database of periodicals holdings about one lakh records are completed. A separate database of theses and dissertations submitted to the university for Ph.D. and other degrees about 20,000 records inputted.

E-Mail and Internet facilities

E-mail and Internet facilities are available in the library for the use of the students, teachers and the library staff. One library staff member carries out the searches. A register is maintained of the searches made on Internet and also for e-mail. Both the services are available on payment basis. Rs.25/- is charged for searches of information on Internet for half an hour. The following is the e-mail address of the university library.(9)

Email : mvjnlib@giabsm01.vsnl.net.in
C.3. NAGPUR UNIVERSITY LIBRARY, NAGPUR

University Grants Commission has sanctioned a comprehensive grant of Rs.50 lakhs to Nagpur University for computerization of libraries under INFLIBNET programme in 1995. From this grant and as per the guidelines provided by the UGC, the Librarian purchased the following infrastructure required for library computerization (10):

- Two Pentium Server (Sco unix based) installed in Central Library and another in Campus Library.
- 9 Terminals connected to the Main Server in Central Library. All terminals are intelligent one.
- 6 Intelligent Terminals connected to the server of the Campus Library. (Five terminals are 486 machines and remaining are 386 machines)
- 1 Generator Set.
- 4 Two KVA online UPS (Deolin make)
- One Laser printer and dot matrix printers (3).
- Bar code scanners.
- One Laser printer to generate Bar code Labels.
- CD Server of 10 CD Drives (Extendable 4 more slots)
- Fax machine (Panasonic plain paper fax machine)
- Thin Ethernet LAN and optical Fibre cable and other related equipments required for LAN within the Campus libraries and Central Library.
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NETWORK

Two LAN (Local Area Networks) were established in the University Library, one is in the Central Library and another is in the Campus Library. Two servers one each in the central library and campus library were installed. One CD Net server containing ten CD drives was also installed in the campus library for access of CD databases available in the library. A campus-wide Computer Network was successfully completed in December 1996 with the help of Pertech Computer Limited (PCL). This enable the user of various university departments to access the library services sitting on the node kept in their respective university department itself. These services includes OPAC, access to multiple CD-ROM databases. The departments which are connected to the Network are Pharmacy, Psychology, Economics, Political science, Statistics, Zoology, Physics, Botany, Home science, Chemistry, Mathematics and RSIC. These departments are connected by underground fibre optic ethernet cable. Detailed plan of the connections, lines laid down and nodes is enclosed for ready reference.

The university has appointed Smt. Veena Sharma, Information Scientist with Master’s Degree in Computer Science for library computerization from the UGC INFLIBNET programme funds.

SOFTWARE

To run the system, a multiuser system software Sco-Unix was purchased and DOS for stand alone terminals. MS Windows were installed on four terminals. MS Office 4.2 was installed on the computer for office automation.
LIBSYS, a library software was purchased from Libsys Corporation, New Delhi for library automation and management of library activities. Communication software ILINK and Procomm were purchased.

DATABASE OF LIBRARY BOOKS

Under the able guidance of Dr. P.S.G.Kumar, University Librarian and Head of the Department of Library and Information Science, Nagpur University Library has started creation of the database of books available in Campus library and books available in departmental libraries on the campus. There are about 50,000 books available in the campus library.

The work of creating database of books available in the central library is in progress. The library has taken the help of Bachelor of Library Science students for preparing the data sheets of books. Every student from the Library science department has to undergo internship for one month duration in the university library. The data entry sheets prepared by these students are checked by the Assistant Librarian and he provides subject headings for each title according to Sear's list of subject headings. The information contained in the data sheets is inputted by the library staff and the B.Lib.I.Sc students who have a good knowledge of data entry in the computer. The training has been given to the library staff as well as to these students for doing this work accurately and speedily.
DATABASE OF HOLDINGS, OF PERIODICALS.

The library has started inputting the information of current periodicals subscribed by the library in Libsys software and also started creating database of holdings of periodicals. The work of periodicals section is operated on the campus library. Central library has maintained back volumes of periodicals. Current periodicals received in the library are directly inputted in the computer in the campus library and thereafter these issues are displayed on the shelves. Reminders and list of additions of current periodicals are generated from this input. Accounting and Budgeting work about the periodicals is done with the help of the computer.

BAR CODING

The work of pasting bar code labels to the books already inputted in the database of books in the campus library has been completed and the same work is in progress in the Central library. From the academic year 1998-99 (i.e. July 98 to June 99) books will be issued using bar code technology. It is hoped that this system will help the circulation work with speed, avoiding queues at the issue counter. Reminders will also be sent automatically for books not returned in time.

E-MAIL AND FAX FACILITIES

E-mail and fax facilities are available in the Central library. E-mail facility is available both at Central library as well as campus library. Fax facility is available in the
Central library. Library has purchased Panasonic plain paper fax machine. University departments are welcome to use fax facility on payment basis.

The fax Number is (0721) 520420

E-mail : nagpurul@shakti.ncst.ernet.in

C.4. JAYAKAR LIBRARY, UNIVERSITY OF PUNE

Jayakar Library has thought of its computerization in 1987. During the period 1987 to 1997, Library has undergone several experiences. At the beginning computerization activity was started with a PC/XT. The software programmes used for creation of database of books were dBase III plus, Foxpro, CDS/ISIS etc. Later on in 1989 the software developed by IIT, Kanpur was used to create database of books but while using this software many problems were arisen and nobody was able to solve these problems from the library. Again the software CDS/ISIS developed by UNESCO was used to create database of books, theses. PC/AT 386 SX (Wipro) computer was purchased in the year 1990. Dr.S.G.Mahajan, Librarian surveyed and studied the available Library softwares and finally he selected LIBSYS software, developed by Libsys Corporation, New Delhi. It was realised that this is a good software which can be used for library activities. In May 1992 Jayakar Library, from the university funds, purchased LIBSYS software on UNIX platform and it was installed on Wipro 386 SX computer using wipro Unix operating system called as WINIX. Later on PC/AT 386 was upgraded by PC/AT 486 computer. The workstation DEC ALPHA was purchased in October 1995 as a main server.
BASIC EQUIPMENT PURCHASED

At present Jayakar Library possesses the following equipment required for computerization.

1. DEC ALPHA 2000 as main server.
   1.2 GB Hard Disk, 1.2 GB SCSI Disk
   64 MB RAM, 2.88 MB FDD, 150 MHz clock speed.
   525 MB CTD, 101 Keys keyboard.

2. PC/AT 486 3 Machines
   4 MB RAM, 33 MHz clock speed.
   1.2 MB and 1.44 MB FDD, Colour Monitor,
   101 keys keyboard.

3. PC/AT Pentium 7 machines
   1.2 GB HDD, 16 MB RAM,
   1.44 FDD, Colour monitor
   with pre loaded Windows 95.

4. PC/AT 386 one machine
   4 MB RAM, 33 MHz clock speed.
   1.2 MB FDD, Mono Monitor

5. Gist Terminals 4 terminals

6. Dumb terminal one

7. Printers – Two.
   132 Column-
   Ink Jet 200 printer - one

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LIBRARY SOFTWARE

LIBSYS software is used for creating the databases of books, periodical holdings, databases of articles etc. The work of inputting the data of books in the libsys started in 1992 and library discontinued to prepare catalogue cards manually in English language. For books produced in devanagri script the catalogue cards are still prepared manually. Library acquired Gist terminals, developed by C-DAC (Center for Development of Advanced Computing), Pune. The major problem faced by the library is that the data entry inputted in devanagri script in Libsys software is not searched by various angles because the software is not in a position to maintain index files in devanagri script. Hence it is difficult to search the books in devanagri script by authors, titles etc. The work of designing such programmes is in the hands of Libsys Corporation, New Delhi and it is in progress. It is hoped that this problem may be sorted out very soon.

Work done upto 1998

The database of 35000 books added in the library collection has been created in computer and can be access online Public Access Catalogue (OPAC). The work of converting the catalogue of the collection is in progress. A separate database about 500 books of Rajanish Collection has been created. A database of theses and dissertations available in the Jayakar Library (about 1050) has been created in CDS/ISIS and available for the users. The information about the Jayakar Library has been put on Internet with the university web site. (http://www.unipune.ernet.in) This has facilitated
the users not only from Pune but also from outside Pune to know the timing, rules of the
library and the services given by the library. The Jayakar library is using libsys software
for acquisition of reading material, ordering process, catalogue of documents etc. Library
also sent list of additions to the various post graduate departments of the university.
Library is maintaining accession register in computer but for the purpose of audit, we
take print out as hard copy.

Pune University Computing Network Centre

The Pune University established a Computing Network Centre on the Pune
University Campus in 1994 with a connectivity to Internet. In order to cover the entire
campus 18 fiber segments have been laid. A 6-core (3 pair) Belden fiber 62.5/125 micron
heavy duty, high performance fiber is used. This network is planned on FDDI (Fiber
Distributed Data Interface) aware concept. (11) Mostly all the academic departments are
connected with this network. All the departments are having Internet connection through
fiber network. The Internet search facility is available in the library for the use of student
and staff.

E-mail and Internet facility

E-Mail facility is available in the Jayakar library for the use of students, teachers
and staff of the library. The E-mail address of the library is unipune@lib.ernet.in
C.5. S.N.D.T.WOMEN'S UNIVERSITY LIBRARY

The library set up a LAN in the central library and stand alone systems at its Branch libraries, partly with the assistance received under UGC’s INFLIBNET project in 1995-96. In the first phase, the system has nodes in the technical section, the reference section, the office and the Librarian’s office. To optimise the use of the system, the computer laboratory in the library science classroom is also linked to the library network. Capability to access internal electronic information in CD-ROMs and to external data sources has now been established. Several CD-ROMs are made available at the Central Library, Branch Library, Juhu and the National Information Centre, Mumbai.

Databases

SULOC - S.N.D.T. Women’s University Library Online Catalogue has been initiated. By March 1997 SULOC contained about 25,000 records. This catalogue which will record the combined resources of the entire university library system will help members optimally utilise the collection.

In addition to this other databases are available, such as SUCHAK, SANSTHA, PUCAT, There are external databases are also available in the library such as AGRIS (Food and human nutrition), Social Science source, Current Contents on diskette etc. Besides this the following CD-ROMs are available in the library and its branch libraries.

(12)
1. Aidsline (HIV/AIDS)
2. CINAL (Cumulative Index to Nursing and Allied Literature)
3. ERIC (Educational Resources Information)
4. LISA
5. NUCSSI
6. DAI (Developmental Activity Information)
7. Medline (Medicine and Health)
8. Micromedex (Drug Reactions)

In addition to this a collection of useful digital materials produced by faculty members and download from Internet is available in the library for the use of readers.

E-Mail and Internet

The Central Library has e-mail facility available for students and staff of the university. This service is available on payment basis. The charges are Rs.15/- per message sent and Rs. 5/- per message received for faculty members and students of SNDT university.

Internet searching facility is also available in Central Library on payment basis. The charges for searching information on Internet are Rs.50/- for maximum one hour to students and faculty members. Rs. 60/- for visitors and Rs.100/- for commercial purposes.
Amravati University Library has started library automation and made significant progress during the last 3 years. From the grant received from Inflignet and from the funds provided by the university, Amravati university library purchased the following infrastructure required for computerization of the university library system.

**Hardware purchased**

1. Pentium-II as server
   - 200 Mhz clock speed, 4 GB Hard Disk,
   - 64 MB RAM, 1.2 and 1.44 MB Floppy Drives,
   - 12x CD ROM Drive, Colour Monitor

2. Pentium Two machines

3. PC/AT 486

4. PC/AT 386

5. UPS 500 watt - 6

6. Scanner 4CA - one (A4 size)

At present five stand alone machines are connected to the server. University library also purchased 21 port intelligent hub for connecting more nodes in future expansion. Presently LAN has been completed with the computer laboratory of the library and it will be extended within the library building where library wants to put the
nodes as per the convenience as and when funds will be made available. The Library has plans to start circulation work of the library using bar code technology.

**E-Mail and Internet Services**

Due to the advance technology and computerization it has been possible to start new services in university libraries in Maharashtra. One of the service introduced by Pune University Library, Nagpur University Library and Amravati University Library is the E-Mail service and rules have been framed to extend this service to the users.

As per the rules framed by the Amravati University Library a reader is permitted to send message through e-mail on payment of Rs.15/- per mail in India and abroad. The special form has been designed by the University with the following contents.

1. Name and address of sender.

2. Name and address of receiver.

3. The message.

4. Information for administrative purpose. (such as date, time, purpose etc.)
Following are the rules for E-Mail and Internet services framed by Amravati University.

1. E-mail and Internet services shall be provided for academic purposes only.

2. These services shall be provided on priority basis as under:
   a. Members of the University Authorities.
   b. Teaching Departments of the University.
   c. Administrative sections of the University.
   d. Post-graduate Teaching Department of affiliated colleges.
   e. Affiliated colleges.
   f. Others.

3. For users the Tariff charges for E-mail services through NIC will be as follows:
   1. For sending mail Rs.15/- per mail.
   2. For receiving mail Rs.5/- per mail.

4. The Internet services shall be provided to users on payment of actual STD charges plus 10% services charges.

(Approved by Library Committee and Management Council, Amravati University, Minute No. 148 dt. 30-5-98)

C.7. Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY LIBRARY

The University Grants Commission has provided Rs.7.5 lakhs for Computerization of the library and updating the library services under the INFLIBNET.
Programme in the year 1997-98. From the grants received following equipments are purchased.

1. Pentium as server One
   32 MB RAM, 1.2 G.B.HDD
   1.2 and 1.44 FDD.
2. PC/AT/486 Three
3. PC/AT/386 Two
4. Modem Two
5. Printer one

The library has created database of theses and dissertations received in the library about 1600 records are inputted in computer in CDS/ISIS software within six month period.

Library has acquired I- net connection and dedicated telephone line for e-mail and Internet access but this unit has not yet functioning. There is a plan to establish a Local Area Network in the library to access online catalogue.

To prepare a video film of the library, university has sanctioned an amount of Rs.3000/- to the library. There is a plan to create a database of books by using SOUL software developed by the INFLIBNET.
C.8 NORTH MAHARASHTRA UNIVERSITY LIBRARY

The University Grants Commission has sanctioned an amount of Rs.1/-lakh in 1997-98 and Rs.6.5 lakhs in 1998-99 for computerization of the library and updating the library services under INFLIBNET Programme. From the grants received the library has purchased the following equipments:

1. Pentium One
   16 MB RAM, Colour Monitor
   24 X CD Drive with multimedia kit.
   133 Mhz clock speed, 1.2 GB HDD
   1.2 & 1.44 FDD

C.9 SHIVAJI UNIVERSITY LIBRARY

The University Grants Commission has sanctioned an amount of Rs.7.5 lakhs for the computerization of library and updating the library services under the INFLIBNET programme in the year 1997-98 and 1998-99.

The library has purchased following equipments for this purpose.

1. Pentium as server One
   64 MB RAM, 1.2 GB HDD
   1.2 and 1.44 HDD.
   36 X CD Drive with Multimedia kit
2. PC/AT/486 Two
3. Printer. one

The work of establishing LAN in the library is in progress.

The software SOUL developed by Inlibnet will be used to create database in future. About 500 records for the theses and dissertations have been inputted in CDS/ISIS software.

**E-Mail and Internet**

The work of establishing e-mail and Internet facilities is in progress and likely to start in near future.

**C.10 SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY LIBRARY.**

The library of the Swami Ramanand Teerth Marathwada University has received an amount of Rs.7.5 lakhs for computerization and updating library services. The work of establishing computer laboratory in the library is in progress. Computers have already been purchased from the financial assistance provided by UGC under Inlibnet grants.
D) UNIVERSITY LIBRARY SERVICES THROUGH INTERNET

D.1 The Future scenario:

After Pokhran atomic explosion in June 1998, India Government has given emphasis on use of Information Technology in all fields of life. Consequently a number of programmes have been undertaken to expedite use of IT in education field also. Government of India has also given a boost to expand the Internet services in our country by giving licenses to private sector for providing Internet services.

Thus it is necessary to have internet connection in every university library. The purpose of internet connection is two fold. First to access the databases logged on to internet the world over and to download the data and make it available to the users of the library. Immense resources are available on internet. Secondly to create a database of documents useful for your own clientele and make these documents available to users as the same information will be called for by the readers again and again.

Thirdly to promote creation of a database of interest to the institution i.e. the universities their departments and individual research workers and keep it on the web sides created by Universities in India. For example Pune University has created a website with code no.http://www.unipune.ernet.in giving information about the Schools/Departments of the University courses organised by the University, the Faculty with their specialisations and other facilities available on the University campus.
The University Libraries in Maharashtra will also have to design and develop websites on Internet, make available catalogues of special collections developed by the library to the users the world over.

For using the Internet, it is necessary for the library staff to study the working of internet and to master the following skills:

**D.2 Guidance to the users in internet use**

- Identify the Web sites useful for their clientele.
- Compile a directory of Web sites along with the contents of databases available on these websites.
- To overall guide the users in the following operations:
  - To log on to web sites.
  - To search for information sources.
  - To select relevant information sources
  - To scan/read the sources
  - To download information required by him
  - To give printouts of required information.

**D.3 Training for Library staff**

In order to help the readers on the above lines the library staff should be trained in the following aspects.
Cooperation among University libraries in Maharashtra and exchange of information.

The use of Internet has to be paid for either by the University or by the users. This means we have to pay for use of Internet. Hence it is desirable to exchange information collected from internet by the users of the library.

D.4 Given below is a plan to exchange information.

1. The library maintains a records of use of internet, the topic searches, the addresses of websites where the information was found and details of information/texts downloaded.

2. This information be collected every day or every week by all universities and send it through e-mail to all other university libraries in Maharashtra.

3. If the information already searched at one University is required by another user of any university library in Maharashtra, the same may be made available to the university on exchange basis. In this case it will not be necessary to duplicate the efforts. It will also save time and money of other users.

Such information collected every month may be put on a floppy. The floppy disc to be distributed to other universities in Maharashtra.

Such a programme can be flexible due to the use of networks being developed in cities or through INFLIBNET. As a matter of fact a seminar may be organised to discuss
all aspects of this plan. Similarly service through internet can also be given to colleges affiliated to universities in Maharashtra. Such a service will bring the academic/research community together and will save time, energy of research worker which will be fruitfully utilized for constructive activity by the academics in Maharashtra State.

D.5 Development of Metropolitan Library Networks in Maharashtra:

a case study of PUNENET

PUNENET PROGRAMME

The Pune Library Network Project known as PUNENET is a joint venture between Pune University, the Centre for Development of Advanced Computing (C-DAC) and the National Chemical Laboratory, Pune. This project is funded by NISSAT, Department of Scientific and Industrial Research (DSIR), Government of India, New Delhi.

The objectives of the Punenet project is to interconnect all the libraries in the City of Pune and to facilitate active information exchange among the participating libraries. Thus the user gets up-to-date information at one place and can avail the information services of the libraries. The user will therefore know whether a particular document is available in any of the libraries in the city. The Punenet is also searchable over the Internet thus giving the project a world-wide accessibility. Punenet will therefore act as a gateway to the internet.

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Pune-Net Databases

Database of Books

Online books database contains 1,08,853 records from all participating libraries of Punenet.

Union catalogue of Periodicals

This database of current periodicals subscribed by the participating libraries. (Appendix) Currently data from 72 libraries are made available online. Total 6000 records are searchable. (13)

Library and Information Science Professionals Database (Pune city)

The database of Library and Information Science professionals has been created. Around 80 Library Professionals have been listed in this database. This database has been created in CDS/ISIS software and is available for searching.

Booksellers database

There are many book shops in the city. Punenet is making efforts to provide information on the books available in these shops. This will help in locating new latest books and selecting the books as per the requirements of the research worker to the participating libraries. At present Punenet have two booksellers data viz. Varma Book Depot. and Popular Book service, Pune.
**Pune-Net Services**

**E-mail and Internet connectivity**

Pune-net is not only provides e-mail facility to participating libraries but also act as a gateway to the internet. Total 36 libraries are using email and Internet facilities. Three lines are installed in Punenet thus Librarians are able to access Punenet server and data several times without any difficulty.

**CD-ROM Database service**

Punenet has subscribed to bibliographic databases on CD-ROM, such as Inside information by BLDSC. It provides table of contents service based on over 10,000 high impact current serials.

As the Pune-net is located in Bioinformatic Centre the databases subscribed by Bioinformatics centre are also being used to serve the needs of the participating libraries. These databases includes

- **Wealth Asia** (distributed by PID, New Delhi)
- **Dewey Decimal Classification (DDC) system on CD_ROM.**
- **Reference update on floppies.**

**Current Awareness Service**

Pune-Net has subscribed to a Current Awareness Service (GAS) from British Library viz. ”Inside Information“ from January 1998. It is published in two parts

1) **Inside Science**  
2) **Inside Social Sciences and Humanities.**
Inside Science provides in machine readable form details from the content pages of over 13,000 of the most frequently used journals at the BLDSC.

Inside Social Sciences and Humanities provide an integrated current awareness and document delivery service based on the extensive collection of the BLDSC. It provides the content pages of over 7000 journals of frequently used in BLDSC.

**Online Search facility**

Punenet provides links to Dialog, Datastar home pages on internet. Dialog has more than 450 databases on all subject areas. Bioline, U.K. gives access to 33 full text journals in life sciences. Further assistance is provided to download references from these vendors. These services are available on charge basis.
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