Chapter V

Post Automation Problems: Data Presentation, Analysis and Findings

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POST AUTOMATION PROBLEMS: DATA PRESENTATION, ANALYSIS AND FINDINGS

This chapter contains data presentation and then analysis of those data, gathered through the case study method used as the primary method for the study. Structured interviews were carried out with the librarians of each sample institute. Along with it the observation technique was employed to collect the required data.

The researcher visited each library personally to collect the data. The structured interview schedule had been prepared and used which helped the researcher in systematically posing the questions that had to be studied for the research purpose. The observation method had also been used to understand the actual situation of each library. This became possible only through the personal visit at the onsite library.

The main reason to adopt the observation method was to get the clear picture of actual automation system being present in the sample library. Observation method also helped to understand the hidden facts of the problems under study. Sometimes, there is a vast difference between, the data presented on the paper and the actual situation. Another important advantage gathered through this observation method is that through the personal visit of each library, the researcher could observe the actual infrastructural facilities available in the library such as, the hardware and its peripherals, space in the library, number of skilled and unskilled staff etc. Further, the actual automation system being implemented in the library and practically employed could be observed by the researcher.

An analysis of data means a systematic organization and interpretation of collected data. The structured interview method helped the researcher to get all the data essential for the research purpose. While preparing the interview schedule, care had been taken to include all the minute queries needed to fulfill the data required for the study.

To begin with the study, the researcher did the pilot study of four sample libraries with the help of the structured interview schedule, by visiting the library personally, to collect the data. This helped her to edit and improving her interview schedule. After preparing the final interview schedule, she revisited those four libraries again and collected the data. Once satisfied with the pilot study, the researcher collected the data of the remaining seventeen libraries which were selected from different areas of the Gujarat state. So the total samples selected for the study are twenty one libraries of Gujarat state.

The samples selected for the study of the subject are scattered in the different regions of the Gujarat state. The prerequisite in the selection of sample was that the library should have been automated at least for last five years. The aim behind this is that, then only researcher can figure out the exact problems being faced by the library professionals and the possible solutions for the problems.

Thus, the samples selected for the study are, three libraries from South Gujarat, eight libraries from Central Gujarat , eight libraries from North Gujarat –Ahmedabad region and two libraries from Saurashtra region. The purpose behind selecting these libraries is that comparatively, academically these regions are better developed regions in the state. The libraries here are well maintained and developed with the modern technologies.

The detailed analysis of data gathered from the sample libraries of the study is given below. To begin with, a brief description of each of the twenty one libraries has been presented here. Further, a few statistical data of the sample libraries are represented in the tabular form along with graphs. Moreover, the various problems suffered by different libraries are discussed objective wise. Finally, the findings of the study have been presented.

1. A BRIEF DESCRIPTIVE PROFILE OF SAMPLE LIBRARIES

The libraries being studied are all academic libraries accept one which is a research library, i.e. Institute for Plasma Research (IPR) library. Out of these, twenty of them are academic libraries only eight are university libraries. Other twelve libraries belong to other type of institutes of higher learning. The courses being run in these academic institutes are varied. These include various courses of engineering and technology, management, pharmacy, fashion technology and advertising and communications. The railway staff

college situated in Vadodara runs training program for the railway staff, therefore this library has been considered as an academic library. The list of the twenty one libraries studied is presented below.

(A) SOUTH GUJARAT

Three libraries are selected from the southern region of Gujarat. They are ...

i. SardarVallabhbhai National Institute of Technology (SVNIT), Surat
ii. Sarvajanik College of Engineering and Technolgy (SCET), Surat
iii. Veer Narmad South Gujarat University (VNSGU), Surat

(B) CENTRAL GUJARAT

Four libraries are selected from the central Gujarat. They are ...

i. Sardar Patel University (SP), VallabhVidyanagar
ii. Sardar Vallabhbhai Institute of Technology (SVIT), Vasad
iii. Dharamshi Desai University (DDU), Nadiad
iv. Charotar Institute of Technology Changa (CITC), Changa
v. Smt.Hansa Mehta Library of M.S.University of Baroda (HM), Vadodara
vi. ParulArogyaSevaMandal (PASM), Waghodia, Vadodara
vii. Babaria Institute of Technology and Pharmacy(BITP), Vadodara
viii. Baroda Railway Staff College Library (BRSCL), Vadodara

(C) NORTH GUJARAT- AHMEDABAD

Eight libraries are selected from the North Gujrat - Ahmedabad region. They are ...

i. Dhirubhai Ambani Institute of Information and Communication Technology (DAIICT) ,Gandhinagar
ii. Indian Institute of Manangement Ahmedabad (IIMA), Ahmedabad
iii. Centre for Environment and Pollution Technology(CEPT), Ahmedabad
iv. Entrepreneurship Development Institute of India (EDI), Gandhinagar

v. Institute for Plasma Research (IPR), Gandhinagar
vi. National Institute of Fashion Technology (NIFT), Gandhinagar
vii. Institute of Technology, Nirma University (NU), Ahmedabad
viii. Mudra Institute of Communications (MICA), Ahmedabad

(D) SAURASHTRA REGION

Two libraries are selected from the Saurashtra region. They are ...

i. Saurashtra University (SU), Rajkot
ii. Atmiya Institute of Technolgy and Science (AITS), Rajkot

To get the basic view of each library mentioned above, region wise the description of each of these 21 libraries has been presented underneath.

(A) SOUTH GUJARAT

The major cities of this southern region are Surat, Vapi, Bharuch and Navsari. These cities are now witnessing the growing trend of establishment of new self financed academic institutions. Out of these four cities three libraries of Surat are selected as samples for the present study. The libraries of other cities have not been taken as sample for the studies as they were not fulfilling the basic criteria of the study. There are no libraries which are working in the automated library system for five years. They are either in the process of automation or just completed the automation. The description of these three sample libraries are presented below.

(A.1) SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY (SVNIT),SURAT

Sardar Vallabhbhai Regional College of Engineering and Technology (SVNIT), Surat[1] was established in the year 1961 with three branches of Engineering, i.e., Civil,

[1] Information taken from website of the institute

Mechanical and Electrical. It is located at Piplod area of Surat. It is Grant-in-aid institute. It gets the grant from MHRD department. In 2004, the institute was converted to National Institute of Technology. It consists of 7 Undergraduate and 18 Post graduate branches. All major branches are conducting Ph.D. studies. In addition to teaching, the institute has been providing consultancy services and undertaking research projects from time to time.

Library Automation Process

The library management software LIBSYS was selected for the automation process by the Librarian after doing the market survey of some of the well-known software available at that time such as LIBRIS, LIBSYS, Granthalaya (of Insdoc, now NISCAIR).

The first attempt to computerize the library was made in the year 1995-96 with modest set of machines including two personal computers, one dot-matrix printer and CDS/ISIS software. In the year 1997, LIBSYS software was installed and the library had started the automated circulation system from the date of installation of LIBSYS software without engaging any extra manpower. Initially, books were issued by entering author, title, call number and accession number. After getting back the books from the user, the entry of the rest of the data elements was done and the books were sent to the stack putting "Entry completed" stamp on the date slip. After running this method for two semesters (i.e. one year) it was found that all the frequently used books had been entered in the database. Then one of the staff members who was responsible for manual cataloguing work was engaged to check the stack physically and pick up remaining books for data entry. Most of the data entry work was completed in December 1999. The back volumes were bulky and heavy, so it was not possible to bring those volumes to the computer terminal. In January 2000, two staff members were allotted the work of preparing worksheet and data entry for the back volumes. The entry of 6,627 back volumes of journals was completed in June 2000 and full-fledged automated library system was introduced then onwards.

Henceforth, the LIBSYS software is updated from time to time and presently Internet embedded version of LIBSYS is used. The software supports the MARC standards and Z39.50 protocol.

The librarian had completed the task successfully but, single handedly. The other library staff was hesitant to go for automation. They were not prepared for the change. They were content with the current manual system. They expressed their displeasure by not cooperating with the librarian in the beginning. At times, librarian himself had to look after the circulation desk activities along with the data entry process. They were hesitant to learn or to take necessary training required for automation process.

The annual budget of the library is Rs.1.5 Crore. They do not have any separate budget for post automation purpose. Those expenses are included into the general budget itself. They do get fund from the general budget of the Institute for the library furniture and such other expenses. The library did get the automation budget of Rs. 8 lakh from the MHRD- Computer Centre at the time of implementation. Subsequently they received grant from the institute also for automation. Till now, they have almost spent Rs. 50 lakhs on automation which includes CD–ROM/VCD, digital library, virtual library, and application of RFID along with library automation.

The website address of the organization is www.svnit.ac.in. The URL of library is www.svnit.ac.in/library.php.

(A.2) SARVAJANIK COLLEGE OF ENGINEERING AND TECHNOLGY (SCET), SURAT

Sarvajanik College of Engineering and Technology (SCET), Surat[2] was established in the year 1995.The institute is located at Athwa Lines area, the heart of Surat. It is a self-financed institute. It is managed by Sarvajanik Education Society, Surat. Sarvajanik Education Society is an academic Society. It was established in the year 1912. It is 97 years old. The sole aim of the trust is to flourish academic activities in the city. It runs 35 academic institutes in the city which provides education of nursery school to higher education like Management, Engineering, Commerce, Science, Arts and Law etc.

[2] Information taken from website of the institute

The Engineering College consists of ten Undergraduate branches such as Architecture, Chemical, Civil, Computer, Electrical, Electronics, Information & Technology (IT), Instrumentation, Processing and Textile-Technology and one Post graduate branch of Architecture.

Library Automation Process

The library management software SOUL was selected for the automation process by the Chairman and the Librarian after doing the market survey of some of the well-known software available in the market. They selected SOUL software mainly due to user-friendly characteristic of it. The librarian was aware of the features of the software. The other reasons were its brand name and also they found it economical.

The first attempt to computerize the in-house functions of library was carried out with the help of CDS/ISIS database software in the year 1997. In the year 2002, SOUL software was installed. As the data were entered into the CDS/ISIS database software, they were very easily converted into the SOUL software. The automation process had been very smooth. The librarian is very enthusiastic and energetic person. She is always eager to learn and implement the new IT developments in her library.

The librarian had full support from her staff. The staff is young and well versed with the computer. The most remarkable point is that all the staff members of the library, including attendants have taken the SOUL software training. In a nut shell, all the staff members are skilled both in library science and computer operation. All the modules of the software are being used very efficiently. As per their requirement, the extra utilities have been implanted by the software developer. They don't have any complaints against the software features and the developer.

The librarian and her staff had completed the task successfully. The management and the users are very happy and satisfied with the automation.

The annual budget of this library is Rs. 70 lakhs. It includes all the reading materials in both print and electronic form. They do not have any separate budget for post automation

purpose. That is included into the general budget. They do get fund from the general budget of institute for the library furniture and such other expenses. The proposed budget of Rs. 30 lakhs has been approved for the RFID system.

The website address of the organization is www.scet.ac.in. The URL of library is www.scet.ac.in/library.php.

(A.3) VEER NARMAD SOUTH GUJARAT UNIVERSITY (VNSGU), SURAT

Veer Narmad South Gujarat University(VNSGU) is located at Udhna –Magdalla road, Surat[3]. The university library is situated at the heart of the university campus. The university was established in the year 1967. The university library was functioning at a rental building at Navyug College Campus, Rander in the year 1967.After two more shiftings the library finally shifted to its own newly constructed building at the university campus in February 1976.

Library Automation Process

The total grant of Rs. 6.5 lakhs were provided by UGC through INFLIBNET for the computerization and retrospective conversion of the books. The SOUL software for the automation process had been provided by INFLIBNET for the said purpose.

The automation process of library began with the help of SOUL software in the year 2002. It is partially automated. The data were entered through accession register. It took approximately 18 months for the data entry of 1, 20,000 books. The serial module has not been touched upon till now. The circulation and the cataloguing modules are being used successfully. The whole process of data entry was out sourced through a contract agency. The permanent staff was not involved in the process of automation. The staff is not skilled in computer operation. Till now none of them have attended the SOUL training programme.

There are two main funding agencies, i.e. UGC and State Government of India which provides fund to the library. Under the 11th plan the grant for the library was provided

[3] Information taken from website of the institute

by the UGC for 5 years. Annually, Rs.1 lakh for books and Rs.1.25 lakhs for reference books are being allocated from the general fund. The library reading materials are procured through the above mentioned funds.

The website address of the university is www.sgu.ernet.in. The URL of library is www.vnsgulibrary.org

(B) CENTRAL GUJARAT

There are some good academic institutions in the central region of Gujarat. Realising the importance of academics, some far sighted people had established good academic institutions or deemed university years back. The result is very much visible with the growth, development and popularity of these universities.

The city of Baroda which comes in the central region is well known for its culture, education, art etc. It used to be a hub of the academics of the state. It has one of the most ancient universities of the country. This university has one of the oldest and very well maintained libraries. The library has rich collection of resources along with very good infrastructure. The libraries of these institutions or universities have been studied as the sample for the present work.

Altogether, eight libraries of this region have been studied. The brief description of each of them has been presented below.

(B.1) SARDAR PATEL UNIVERSITY (SP), VALLABHVIDYANAGAR

Sardar Patel University (SP), Vallabh Vidyanagar[4] was established by an Act of the Legislative Assembly of the then Bombay Province in December 1955 and was recognised under 2f of the UGC Act in October 1968. The university has completed 53 golden years of a fruitful existence that has brought it to the forefront in terms of its academic excellence. Sardar Patel University is situated in VallabhVidyanagar. The educational township of VallabhVidyanagar is close to the Milk City of India (Anand) in terms of its strategic geographical location. Anand is on Vadodara-Ahmedabad line of the Western Railway in the heart of Anand District of Gujarat.

[4] Information taken from website of the institute

Sardar Patel University comprises of 25 Postgraduate Departments, a constituent college, and 70 other colleges affiliated to it. There are 14 PG Centres in the affiliated colleges/institutions. The teaching programme covered at Postgraduate level under various faculties such as Science, Arts, Commerce, Management, Engineering, Pharmacy, Medicine, Homeopathy, Home Science, Law and Education includes Postgraduate Degree Courses, Postgraduate Diploma Courses, Diploma Courses, and Advanced Certificate Courses. Undergraduate Courses are taught in the colleges or institutes affiliated to the University.

The University Library called Bhaikaka Library is housed in a very large and magnificent building having spacious reading rooms that can accommodate 700 readers at a time. It caters to the information needs of all faculties, students and research scholars of S.P.university and there are 20 post graduate departmental libraries under the umbrella of Bhaikaka library.

Library Automation Process

The in-house function of library is being managed by the library management software SOUL since the year 2003. It is being partially automated as the acquisition and serials modules are not being used.

The website address of the library is www.spuni.ac.in.

(B.2) SARDAR VALLABHBHAI INSTITUTE OF TECHNOLOGY (SVIT), VASAD

Sardar Vallabhbhai Patel Institute of Technology (SVIT)[5] was established in the year 1997 with the ideals of Shri SardarVallabhbhai Patel. It is approved by AICTE, DTE (Government of Gujarat) and affiliated to Gujarat University. It is located on the banks of river Mahi, at Vasad, in a pollution- free environment, situated at 20 km from Baroda and also from VallabhVidya Nagar. The institute is being managed by New English School Trust (NEST).

[5] Information taken from website of the institute

The SVIT library consists of a central library and ten departmental libraries which collectively support the teaching, research and extension programs of the Institute. It consists of various branches of engineering viz., Aeronautical Engineering, Architecture, Civil Engineering, Computer Engineering, Electrical Engineering, Electronics and Communication Engineering, Information Technology, Instrument and Control Engineering, Mechanical engineering, MCA and Applied Sciences. All major branches are conducting Ph.D. studies. The library is using Dewey decimal classification scheme for classifying the reading materials and following AACR II rules for the cataloguing purpose.

Library Automation Process

The library began the process of automation in the year 2000 with the help of in-house software developed by the students of Master of Computer Application (MCA) of their institute. The data entries of 15000 documents had been done through this software. Later on, in the year 2004, they implemented library management software SOUL in the library. All the data were transferred into the new software program. The prime reason for implementing the SOUL software was that the SOUL software had already been implemented in more than 1500 libraries at that time, so the librarian felt that there could be a possibility of union cataloguing in the future.

The finance is not the constraint for the development of library so far. The library budget for one academic year is approximately Rs.30 lakhs but sometime it does exceed. There is no separate post automation budget.

The website address of the organization is www.svitindia.ac.in.

(B.3) · DHARAMSHI DESAI UNIVERSITY (DDU), NADIAD

Dharamshi Desai Foundation was established at Nadiad in Gujarat, 1968 as Dharamshi Desai Institute of Technology (DDIT)[6]. In the year of 2000, it was awarded a

[6] Information taken from brochure of the institute

status of 'Deemed University' by Government of India, in recognition of its commendable standards in Academia. In April 2005, the Government of Gujarat declared this Institute as a 'State University'. Established in the year of 1968 as Dharamshi Desai Institute of Technology (DDIT), it is now a State University under the name of Dharmshi Desai University with effect from 12th April 2005.The library is spread into the area of 994.88 sq.m. The library is open for 12 hours in a day. Around 200 books are being issued/returned per day. The total collection of library is approximately 32000.

Library Automation Process

The library began its automation process with the help of CDS/ISIS software in the year 1996.At that time the total collection of the library was 11000 books. Almost all the data of these 11000 books were entered through this software. In the year 2006, the library management software SOUL- network version was implemented in the library. The library is partially automated. The acquisition and serial modules are not being used.

The library is having an approximate budget of Rs. 10 lakhs per year to procure the various printed and e-resources for the library. There is no separate post automation budget.

The website address of the university is www.ddu.ac.in.

(B.4) CHAROTAR INSTITUTE OF TECHNOLOGY (CITC), CHANGA

Charotar Institute of Technology, Changa (CITC)[7] is located in a thriving campus spread over the sprawling 100 acres of beautifully landscaped area of CHARUSAT. The campus is among one of the most impressive ones in India. It is located near Changa village of Anand district of Gujarat, India. Massive educational complexes set in lush green environs provide the right ambience and atmosphere for intellectual stimulation.

The campus has world class infrastructure in the form of seminar rooms, class rooms,

[7] Information taken from website of the institute

computer laboratories, library, hostels, canteens, etc. to facilitate the teaching-learning processes.The CHARUSAT campus has twice received the Greenest Campus Award from the Government of Gujarat.

Charotar Institute of Technology - Changa is the first institute established in the year 2000 at Education Campus – Changa (now CHARUSAT). The institute is managed through a think tank of technocrats, administrators, scientists and engineers, educationalist, businessmen, stakeholders and other well-wishers from all parts of the world.

Started with 240 seats with the Bachelor's Degree in Engineering Programme in the year 2000, the institute now has total intake of 660 in Electronics & Communication Engineering, Computer Engineering, Mechanical Engineering, Electrical Engineering, Information Technology and Civil Engineering. The institute also offers a Postgraduate programme in Electronics and Communication and Mechanical Engineering with an annual intake of 18 in each of the two branches.

The central library known as Knowledge Resource Center– a proud partner in the institute's march towards its vision plays a vital role in acquisition, organization and dissemination of knowledge. It has put in place policies and procedure systems and services and the ambience that facilitate creation of new knowledge. It has an excellent collection of both print and electronic books, journals, technical reports, back volumes and other reading material.

Library Automation Process

The library has adequate infrastructure to meet its requirements for automation. It has computerized all its operation using in-house developed software, and provides access to the collection through Online Public Access Catalogue (OPAC). It uses bar code technology for circulation. They are maintaining Accession Register manually also. They are in the process of implementing SOUL, the library management software in the library.

Finance is not the constraint for the development of library. They do not have fixed amount as such for the expenses of the development of library. There is no separate post automation budget. The management is in favour of making the highly modernized library using all the latest technology required for the same.

The website address of the university is www.charusat.ac.in.

(B.5) Smt. HANSA MEHTA LIBRARY OF M.S.UNIVERSITY OF BARODA (HM), VADODARA

Shrimati Hansa Mehta Library (HM)[8], the University Library of M S University of Baroda was established on May1, 1950. It is one of the most ancient universities of the country. This university has one of the oldest and very well maintained libraries. The library has rich collection of resources along with very good infrastructure. At the time of establishment of the M. S. University of Baroda, a collection of 25,000 books belonging to the two State Libraries (Huzur Political Office and Secretariat Library) was handed over to the University Library. There were several colleges in Baroda such as Baroda College (for Arts), Science Institute, Commerce College, and Secondary Teacher's Training College etc. These colleges had libraries of their own. These libraries continued to remain as Faculty Libraries and were administered independently. Thus, the University Library System was established on 1-5-1950, which was housed in the central block of Old Residency Office Building. The library is housed in a modular structure building having different sections. The total built up area of the Library is 80,025 sq. ft. It has a single largest Reading Room of 10,600 sq. ft. which can accommodate about 1100 readers at a time and is open to readers from 8.00 am to 10.00 pm i.e. 14 hours a day throughout the year except national holidays. The Library has a rich collection of bound journals of more than one lakh, out of which some are as old as nineteenth century, are also available. Some noteworthy Indexing and Abstracting Journals are also being subscribed.

[8] Information taken from website of the institute

Library Automation Process

The library initially began its automation in the year 1998 with the help of CDS/ISIS. In the year 2000, the library management software SOUL arrived, but actual implementation took place in the year 2002. All the data were transferred from CDS/ISIS to SOUL. The library is fully automated and using all the modules of the software efficiently. All the records are managed with the help of software. This is the only library managing everything through automation. They don't do anything manually. In fact they don't even maintain manual accession register. The library budget is about Rs.1.5 crore. This includes everything. There is no separate budget for post automation management of library.

The website address of the university is www.msubaroda.ac.in. The website address of the library is www.hmlibrary.ac.in.

(B.6) PARUL AROGYA SEVA MANDAL (PASM), WAGHODIA

Parul Arogya Seva Mandal (PASM)[9] was established in the year 1989 with an aim to serve the poor and needy by providing them good education, medical facilities and employment. With these three goals in view, the mission of achieving the same spread to different parts of Gujarat by way of charitable / free OPDs, hospitals and educational institutes.

The educational campus of Parul Arogya Seva Mandal (PASM) is located at Waghodia, near Vadodara. The institute is having one central library and fourteen other college libraries in the same campus of different fourteen colleges. The central library is named as Gyanodaybhavan.

Library Automation process

The library is being automated with the library management software SOUL. This software had been implemented in the year 2005. It is partially automated. They are using Cataloging and circulation modules. The other data are being managed manually.

[9] Information taken from website of the institute

The approximate budget for the procurement of resources like books and journals is in the range of 25 to 30 lakhs. There is no separate budget for post automation issues of library.

The website address of library is www.parullibrary.ac.in

(B.7) BABARIA INSTITUTE OF TECHNOLOGY AND PHARMACY (BITP), VADODARA

The Babaria Institutes of Technology and Pharmacy (BITP)[10] campus is located towards the south of the city of Vadodara, on Vadodara- Mumbai National Highway # 8, near Varnama. The institute is fully functional since August 2005. Library is well equipped with computers and Internet facility.

The institute is well organized with the basic facilities as per the norms and standards of AICTE and is affiliated to Gujarat University, Ahmedabad and also with Gujarat Technological University, Gandhinagar from 2008 onwards.

The Library houses over 16,000 Books on various subjects ranging from Technology, Pharmacy and Management to Knowledge Resources and Personality Development.

The 300 Chairs placed in the Library is outcome of smallest detailing worked out in selecting ergonomic chairs for the students. Also the whole Library Management System is made fully automated where in the RFID (Radio Frequency Identification System) is used for various functioning like book search, issue and return. They claim to be the first in the State of Gujarat to launch this RFID System for various modules of Campus Management.

Library Automation Process

Babaria Institute of Technology (BIT) was established on 19th May 2004 and Babaria Institute of Pharmacy (BIP) in 2005 (affiliated to Gujarat University, Ahmedabad) along with a library of modest size. The Institute is fully computerized with high quality

[10] Information taken from website of the institute

technology of RFID system with Internet facility since its inception. The library has two segments, one for Technological Sciences and the other for Pharmaceutical Sciences. Both units are well equipped with recent books and reputed periodicals. The house keeping operations of the library are catered through the RFID system, i-TEK RFID based library management suite has been used in the data entry operation of the entire library stock.

The library is having around 14,529 books. Out of the total collection of the library, approximately 9560 books fall under the category of Engineering (computer, mechanical, civil and electronics, electrical etc.) and the remaining 4929 books under Pharmacy (pharmaceutical chemistry, pharmacology, pharmacognosy, pharmaceutics etc.). The number of national and international journals and magazines covering all the disciplines subscribed to by the Library is around 122. Out of these some 41 national and 46 international journals are subscribed to for BIT Library, and 30 national & 5 international journals for BIP library.

The Library is a member of "Indian National Digital Library in Engineering Science and Technology" (INDEST-AICTE Consortium). Hence, students and faculties have unlimited access to E-Journals, Back Files of Journals, White Papers and Conference proceedings through Science Direct of ELSEVIER Publisher. The library budget is not fixed, but it generally exceeds to Rs. 10 lakhs. There is no separate budget for post automation issues.

The website address of an institute is www.bitcampus.org.in.

(B.8) BARODA RAILWAY STAFF COLLEGE LIBRARY (BRSCL), VADODARA

The Railway Staff College is the alma mater for the officers of the Indian Railways. It is situated in a sprawling campus of 55 acres of the Pratap Vilas Palace at Lalbaug, Vadodara. It provides training to all levels of Indian Railway officers, from probationers to General Managers.

The Railway Staff College Library, Vadodara (BRSCL)[11], is one of the richest management libraries in western India. It was established in 1952. It houses the books on various subjects mainly transport economics, rail transport, psychology, management, public finance and Indian literature. Foundation Course Material, Project Reports, Books and many other documents are preserved in the library by keeping in mind its activities related to Management studies and computerization of the functioning of Indian Railways. Library is stocked with over 50,000 books, 15000 Journals & Reports and 8,650 Hindi language books. Over 103 periodicals/magazines are procured. Computerized referral facility is available for choosing the book, besides scanning facility is also provided in the library. There is a self learning audiovisual section equipped with TV/VCRs, and Multimedia PCs. The College has now stock of audio and audiovisual tapes, and also switched over to user friendly Windows 2000 software and matching hardware in the computers. All the computers have Hindi fonts encouraging the use of Rajbhasha. The College has computer facilities for surfing the Internet, through its 2 MBPs VSNL Link.

Library Automation Process

The library automation work was initiated in the year 1989 with a program developed in dBase. Later on in the year 1998 they implemented the Trans Library Management Software (TLMS). In the year 2004, they shifted to LIBSUITE software.

The URL for the same is http://203.176.113.182/RSCB.

(C) NORTH GUJRAT – AHMEDABAD REGION

The northern region of the state comprises two major cities, Ahmedabad and Gandhinagar – the capital of the state. These two adjoining cities have many numbers of well known academic institutions and universities. This includes IIM – Ahmedabad, DAIICT – Gandhinagar etc. The latest developments are IIT – Gandhinagar and Central University at Gandhinagar.

[11] Information taken from brochure of the institute

As the researcher has mentioned earlier, there are many good academic institutions in this region, out of which eight well known libraries have been selected for the present study. That does not mean that others are not popular or good libraries, but due to the non availability of either the permission for the study by the highest authority or non availability of the librarian in few of them those libraries have not been studied.

The brief descriptions of the libraries which have been studied are presented below.

(C.1) DHIRUBHAI AMBANI INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY(DAIICT), GANDHINAGAR

The Dhirubhai Ambani Institute of Information and Communication Technology (DAIICT)[12] was established in Gandhinagar, Gujarat in the year 2001. It is the only advanced institute in the country named after the Late DhirubhaiAmbani, the founder of Reliance Group. The institute is a non-affiliating university and does not receive any aid or other financial assistance from the Central or State Government.

The Resource Centre (Library) is the home for library and information services at DA-IICT. The Resource Centre is in an independent and spacious building. It can accommodate more than 450 readers at a time. A separate Digital Resources Unit, Institutional Digital Repository and Individual & Group viewing facility through number of computers to access the resources have been setup.

Library Automation Process

The operations and services of the Resource Centre are fully computerized using the library management software SLIM (Software for Library Information Management). A catalogue of the holdings is available 24X7, for online access on the campus network. The entire collection of books is bar-coded based on Library Security System (3M). Through a central CD-mirroring system, access to over 2000 CDs received with books and other

[12] Information taken from website and brochure of the institute

reading materials is provided on the campus network. The Wi-Fi technology is implemented in the campus, to enable user to have a seamless access to Internet and World Wide Web (www). The resource centre is open till midnight on all working days and till 2.00 a.m. during examinations. It is closed only on three national holidays.

The website address of the institute is www.daiict.ac.in and that of library is http://resourcecentre.daiict.ac.in/. To serve as platform for increasing the interaction with user community, the centre has set up a blog accessible at http://rcblog.daiict.ac.in/

(C.2) INDIAN INSTITUTE OF MANAGEMENT (IIMA), AHMEDABAD

The Indian Institute of Management, Ahmedabad (IIMA)[13] is situated at the heart of the city of Ahmedabad. The library of the institute is known as Vikram Sarabhai Library. It is an invaluable resource centre for students, researchers and faculties of business and management. The library has over the years built a robust collection of over 1,70,365 books, 42,004 bound volumes, 527 current subscription to journals and newspapers, 2191 working papers, and many other resources like theses (260), student's project reports (1709), CDs (1687) and videos (128).

The library, spread over 20,120 sq. ft., also provides access to the best of business and management related digital resources through its subscription to various databases consisting of scholarly and industry relevant content. The library has set up 3i (Information Infrastructure for Institution) network to provide business, industry, and environment, agricultural and economic information to the users. Library working hours are 24*7. Vikram Sarabhai Library members include all faculty, students and staff of IIM-A. External membership is provided to IIM-A's Alumni, outside Ph.D. students/corporate executives/professionals/faculty in other educational institutions on payment basis in addition to institution members.

[13] Information taken from website of the institute

Library Automation Process

In the year of 1995, the library began its automation process with the help of CDS/ISIS software. In the year 1998, they implemented the library management software, LIBSYS. Now, they are in the process of implementing open source software KOHA. They are trying to transfer all the data from LIBSYS to KOHA. The reasons behind this have been discussed later on in the chapter.

The website address of the institute is www.iimahd.ernet.in

(C.3) CENTRE FOR ENVIRONMENT AND POLLUTION TECHNOLOGY (CEPT), AHMEDABAD

The Ahmedabad Education Society (AES), a premier voluntary non-profit organization, with the support from the Government of Gujarat, established the Centre for Environmental Planning and Technology (CEPT)[14] at Ahmedabad in 1962 with the inception of the School of Architecture. In 1994, CEPT was registered as a separate Society and a Public Trust. Centre for Environmental Planning and Technology (CEPT) have been accorded the status of a university by an Act of 2005 passed by the Gujarat State Legislative Assembly and is now called CEPT University.

Centre for Environmental Planning and Technology (CEPT) is a leading institution offering undergraduate and postgraduate programmes in the areas of Natural and Built Environment and related disciplines.

CEPT library houses more than 40,000 resources which include 29000 books, 4000 bound volumes of journals and 3000 theses and students' reports etc. The library collection covers subjects like Architecture, Art, History & Civilization, Urban design, Landscape design, Interior design, Furniture design, Graphics, Textile design, Computer aided design, Building Science, Structural design, Earthquake Engineering, Construction planning and

[14] Information taken from website of the institute

management, Urban and regional planning, Housing, Environmental planning, Transportation, Remote sensing, GIS, Economics, Sociology, Economic planning etc. About 110 national and international periodicals are subscribed to keep the users updated with the trends in the field. CEPT library has a unique collection of drawings, prepared by students during their academic programmes. More than 4500 drawings are available in the library. This collection attracts national and international visitors. Apart from this, library has Audio Visual Resources on CDs, DVDs, and Slides etc.

The library is open for fourteen hours a day. During academic session, library is open for 82 hours per week.

Library Automation process

The library is partially automated with the help of the library management software, Alice for Windows (ALICE) since 1997. This internationally popular software facilitates automated circulation (issue & return) of the books and speedy access to bibliographies, locations and availability information of the books stocked in the library. They do maintain accession register manually.

The website address is www.cept.ac.in.

(C.4) ENTREPRENEURSHIP DEVELOPMENT INSTITUTE OF INDIA (EDI), GANDHINAGAR

The Entrepreneurship Development Institute of India (EDI)[15], an autonomous body and not-for-profit institution, set up in 1983, is sponsored by apex financial institutions, namely the IDBI Bank Ltd, IFCI Ltd. ICICI Ltd and State Bank of India (SBI). The Government of Gujarat pledged twenty-three acres of land on which stands the majestic and sprawling EDI campus.

[15] Information taken from website of the institute

To serve the diverse needs of EDI faculty, staff, students and participants of various short & long term programmes, The EDI Library and Information Centre (EDILIC) was set up way back in 1983. Enriched with updated information resources on entrepreneurship and related subjects, it is an information resource centre of national and international repute. An air-conditioned and Wi-Fi enabled library is situated in a separate building of the Institute. It consists of basement and ground floor. The reading materials (books, current journals, etc.) are placed in the ground floor while basement contains back-volumes of journals. Three Pentium machines equipped with DVD/CD-ROM drive, printer, Internet and in-house audio-video facilities constitute important part of library infrastructure.

EDILIC has been fully automated through the library management software LIBSYS. All the library holdings are accessible through Institute's Intranet facility. EDILIC uses Bar Code Technology for its housekeeping and lending services. EDILIC spends thirty six lakhs per year for the purchase of books, subscription of journals, periodicals & magazines, newspapers, videocassettes, CD-ROMs, etc. EDILIC is subscribing 120 national and international journals in the field of entrepreneurship and related subjects. EDILIC also subscribes to 20 Newspapers published from Ahmedabad, Mumbai, Delhi and Chennai. EDILIC has a collection of 200 videocassettes and more than 1200 CDs/VCDs. The EDILIC has in-house viewing facility for videocassettes and CDs.

EDILIC is an institutional member of Indian Institute of Management-Ahmedabad, Indian Library Association (ILA), Indian Association of Special Libraries and Information Centres (IASLIC), Management Libraries Network (MANLIBNET) and The British Library, Ahmedabad. Apart from this, EDILIC is regularly using services of Ahmedabad Library Network (ADINET) and Information and Library Network Centre (INFLIBNET).

Library Automation Process

The library began its automation process with the help of CDS/ISIS software in the year 1990.All the data were entered through this software. Later on in the year 1998 LIBSYS software had been purchased and implemented in the library. They are managing all the library functions through this. Nothing has been maintained manually. The annual

budget of the library is Rs. 36 lakhs. There is no separate budget for post automation issues of library.

The website address of the institute is www.ediindia.org.

(D.5) INSTITUTE FOR PLASMA RESEARCH (IPR),GANDHINAGAR

Institute for Plasma Research (IPR)[16] is an autonomous Physics Research institute, involved in research in various aspects of plasma science including basic plasma physics, research on magnetically confined hot plasmas and plasma technologies for industrial applications.IPR Library was founded in the year 1982. It was housed in Physical Research Library (PRL) until 1986. After April 1986 it has been shifted to its present location at Gandhinagar. IPR Library plays a vital role in meeting the present and anticipated future needs of its scientific community by selecting, acquiring and disseminating appropriate scientific and technical information through different channels of communication. A separate branch library is also functioning at Facilitation Centre for Industrial Plasma Technologies (FCIPT) at Gandhinagar. The main function of this branch library is to provide easy and timely access to some specific documents needed by the user group at the centre.

In view of the ongoing research activities of the Institute, the Library has a collection of the following specific subjects: Plasma Physics; Fusion Technology; Cryogenics; Pulse Power; Nonlinear Science; Coatings Technology; Material Science, and few branches of Engineering like: Computers; Electrical; Electronics; Instrumentation; Mechanical; RF Communication etc.

Library Automation Process

The Library is fully automated and almost all the services are computerized. It is using LIBSYS software for all its housekeeping operations. Library is well equipped with 10

[16] Information taken from website of the institute

PCs, with all the PCs having capability to access the Internet, 1 Scanner, 1 CD Writer and 1 CD Mirror Server. There is no separate budget for post automation issues of library.

The website address of the institute is www.plasma.ernet.in. The URL of library is http://www.ipr.res.in/~library/LIBRARY.html

(D.6) NATIONAL INSTITUTE OF FASHION TECHNOLOGY (NIFT), GANDHINAGAR

National Institute of Fashion Technology, Gandhinagar (NIFT)[17] was set up in 1986 under the aegis of the Ministry of Textiles, Government of India. It has emerged as the premier Institute of Design Management and Technology. The existing campus of NIFT which was inaugurated in 2004 is designed to meet the demands of imparting creative education.

The library consists of varied books covering information regarding garments, fashion and technology. The wing also subscribes to fashion journals and fashion forecast.. Videotapes, Slides and CD-ROM are a part of this wing from where visual information can be collected. It provides various publications (Fashion periodical Index, Bibliographies on request, Subject/Picture files) to the members.

Library Automation Process

The library got automated with the help of Alice software in the year 1997. There is no separate budget for post automation issues of library.

The website address of the institute is www.nift.ac.in/gandhinagar/ and that of library is http://www.nift.ac.in/gandhinagar/rc.html.

[17] Information taken from website of the institute

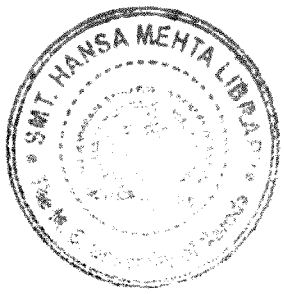
(D.7) INSTITUTE OF TECHNOLOGY, NIRMA UNIVERSITY (NU), AHMEDABAD

Institute of Technology, Nirma University (NU)[18] is a leading institute offering multi-disciplinary postgraduate & undergraduate programmes in engineering. The institute was affiliated to Gujarat University till April 2003. Thereafter, it has become a constituent of the Nirma University.The institute shares the Nirma University campus with four other institutions viz Management, Pharmacy, Science and Diploma Studies.

The library resource center is fully automated and for this they have specialized user-friendly library software called SLIM++. The center has adopted latest information technologies like CD, DVD, Multimedia Kits, Bar-code Scanners, Text and Graphic Scanners. The user community has access to the entire collection through CD, DVD, Hard Disk, and Internet based access. The campus spread over 100 acres of land including hostel rooms is fully wired with more than 1200 desktop computers through the fiber optic network.

The library has an excellent digital library system in place with access to 5 world-class electronic databases, which include more than 781 e-journals like ASCE (American Society of Civil Engineers) online journals, ASME (American Society of Mechanical Engineers) journals, ACM (Association of Computing Machinery) Digital Library and IEL (IEEE/IEE Electronic Library) journals, 33,452 books, 227 print periodicals and a user friendly automation system in place. The library is an institutional member of The British Library Ahmedabad, TATA Energy Research Institute [TERI], Institute of Engineers (Kolkata), Indian Society for Earthquake Technology (ISET), DELNET, Institute for Steel Development and Growth (INSDAG), INDEST Membership, Indian Geotechnical Society.

[18] Information taken from website of the institute



Library Automation Process

The library got automated with the help of library management software SLIM ++, in the year of 1998. There is no separate budget for post automation issues of library.

The website address of the institute is www.nirmauni.ac.in.

(D.8) MUDRA INSTITUTE OF COMMUNICATIONS (MICA), AHMEDABD

Mudra Institute of Communications (MICA)[19] is the most dynamic, vibrant and academically exciting Communications Management School in India. In its eighteen-year history it has produced great leaders who are now in senior positions within the communications and other industry sectors in many parts of the globe. Dedicated to producing global communication executives of the 21st century, MICA has been in existence since 1991. Emphasis is put on student initiatives combined with expert faculty insights.

Located at a stone's throw from the city of Ahmedabad, MICA's beautiful campus has all the modern facilities and amenities of any institution of international repute. Students are encouraged to pursue varied interests, both cultural and academic. Students can also access cultural institutions from other countries, like the British Council Library, in Ahmedabad city.

MICA Knowledge Exchange and Information Centre (KEIC) is an exclusive centre for advertising, media, marketing, and related information. It extends total information support to marketers, ad agencies, media houses, management institutes and researchers. MICA-KEIC can be proud of its hi-tech library. It has books (on about 35 subjects), video cassettes, 57 guard books of print ads and audio cassettes and CD-ROMS. They subscribe to 141 periodicals and 15 dailies. It also has TV, Scanner, VCR and multimedia facilities. The ranges of databases covered are books, newspapers, dissertations, television commercials, non-book materials, case studies, print ads and periodicals. The KEIC's databases helps in decision making, defining future strategies, making new business presentations, and

[19] Information taken from website of the institute

understanding the market. This saves time, money and efforts that go into collecting information from diverse sources.

Also available at the MICA KEIC are valuable reference tools like upmarket surveys, NRS, IRS, Census, CMIE and others available for study. They also subscribe to ABC database, Questia online library, MAGIndia online databases, Indiastat.com, VANS Electronic Library (1999 to 2003), EBSCO Business Source Premier online database of 7662 core journals, Communication Studies (Sage Publication), ISI Emerging Markets, ECCH and World Advertising Research Centre (WARC). The reference section has more than 20,062 Television commercials digitised and available online and more than 1,13,500 newspaper clipping on areas ranging from advertising, mass media and Internet to marketing and over 894 student dissertations and summer reports.

Information is an important tool for decision making, research, and education. The MICA KEIC has completed ten years; it can effectively retrieve information through its well organized information management. It has already started serving academic institutions and the advertising/marketing industry.

The KEIC follows an open access system. The KEIC will operate 24X7 except Saturday and Sunday nights. (Open Monday 9.00 A.M. to Close Saturday 10.00 P.M. --- Sunday 9.00 A.M. to 6.00 P.M.). KEIC observes holidays as per the list of Holidays announced by the Institute.

Library Automation Process

The library is automated with the help of WINISIS software since the year 1994. For maintaining digital library they are using Greenstone digital library software. There is no separate budget for post automation issues of library.

The website address of the institute is www.mica-india.net.

The website address of the university is www.saurashtrauniveristy.edu and the URL of its library is www.saurashtrauniveristy.edu/library.html.

(D.2) ATMIYA INSTITUTE OF TECHNOLGY AND SCIENCE (AITS), RAJKOT

Sarvodaya Kelavani Samaj,Rajkot was established in 1998. These 17 years from then have been a period of development of SKS. They have invested millions of rupees in creating and strengthening infrastructural facilities in the schools, colleges & institutes. Yogidham, the campus, located on 23 acres of land, provides educational facilities from KG to PG. The Central Library of Atmiya Institute of Technology and Science (AITS)[21], called as the LIBRARY AND LEARNING CENTRE is situated in the Center of the whole setup. It is a two storied building having elegant, welcoming ambience and is totally air conditioned. It has a collection of more than 20,000 volumes of books across the subjects that the institute offers; it also has an online subscription to IEEE, IET and ASME Journals through the INDEST-AICTE consortium and also to 140 odd other periodicals across the subjects.

Library Automation Process

The library has implemented the web based system with the help of library management software NEW GEN LIB, in the year 2005. Everything is being managed and operated through this software.

The annual budget of the library is Rs. 25 lakhs. There is no separate budget for the maintenance of the post automation system of library. But finance is not the constraint for the implementation of the latest technology in the library and of its maintenance thereafter.

The website address of the institute is www.atmiya.net.

[21] Information taken from website of the institute

2. A BRIEF STATISTICAL PROFILE OF SAMPLE LIBRARIES

A brief description of sample libraries provided above given an overview of these libraries. To understand them more deeply, a brief statistical profile of them have been presented below. This includes year of establishment of libraries, infrastructure and networking of libraries such as area of libraries, seating capacity in libraries, library management software used in the libraries, year of implementation of automation system in the libraries, total collection of libraries, number of students and faculties as users of the libraries. These data have been presented in tabular form along with the graphical presentation.

(I) YEAR OF ESTABLISHMENT OF SAMPLE LIBRARIES

An attempt was made to find out the year of establishment of the libraries. This was needed to find out how many years after establishment of the library, an attempt towards the automation of library system was made. The table below presents the number of libraries established in a 20 year interval of categorization.

Table 5.1 - YEAR OF ESTABLISHMENT OF SAMPLE LIBRARIES

Sr.No.	Year of establishment	Number of libraries
1	1950-1970	09
2	1971-1990	02
3	1991-2010	10

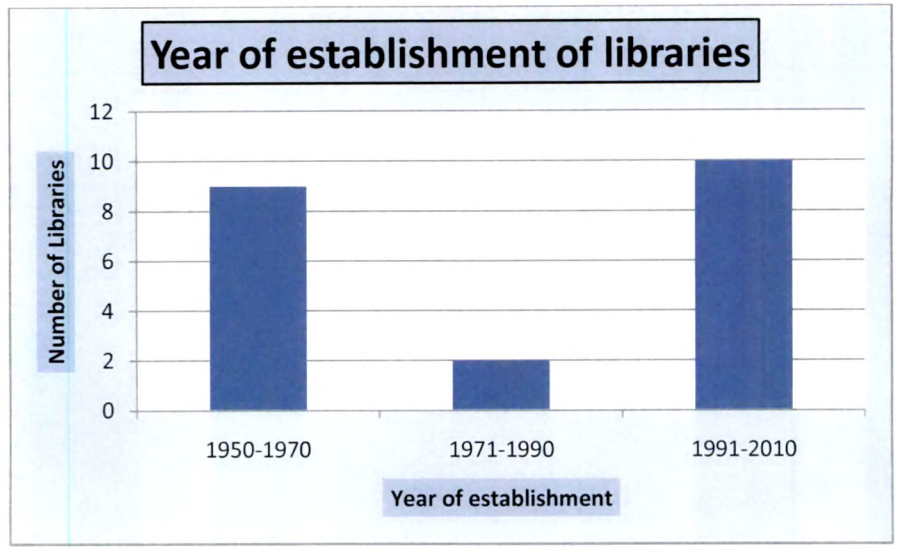


Figure 5.1- YEAR OF ESTABLISHMENT OF SAMPLE LIBRARIES

The data presented in Table 5.1 is displayed graphically in Figure 5.1. From the above figure, it is apparent that the libraries selected for study are established between 1950 to 2004. Out of 21 libraries, only one library, i.e. Hansa Mehta library of Vadodara was established in 1950.Other 8 libraries were established between 1950 to 1970. Remaining 12 libraries were established between 1980 to 2004. This indicates that the earliest library was established as early as in 1950 where as the latest one in 2004. It covers a range of 45 years.

(II) AREA OF LIBRARIES

An effort was made to find out the physical space available with each library. This has been presented in sq.m. unit. The purpose is to understand whether the area available in the library has breathing space to accommodate computer system along with the resources and reading room for the users. The table below presents the total area of sample libraries in 1000 sq.m. interval of categorization.

Table 5.2 – AREA OF SAMPLE LIBRARIES

(in sq.m.)

Sr.No.	Total area of library (in sq.m.)	%
1	0-1000	52.3
2	1001-2000	28.5
3	2001-3000	9.5
4	More than 3000	9.5

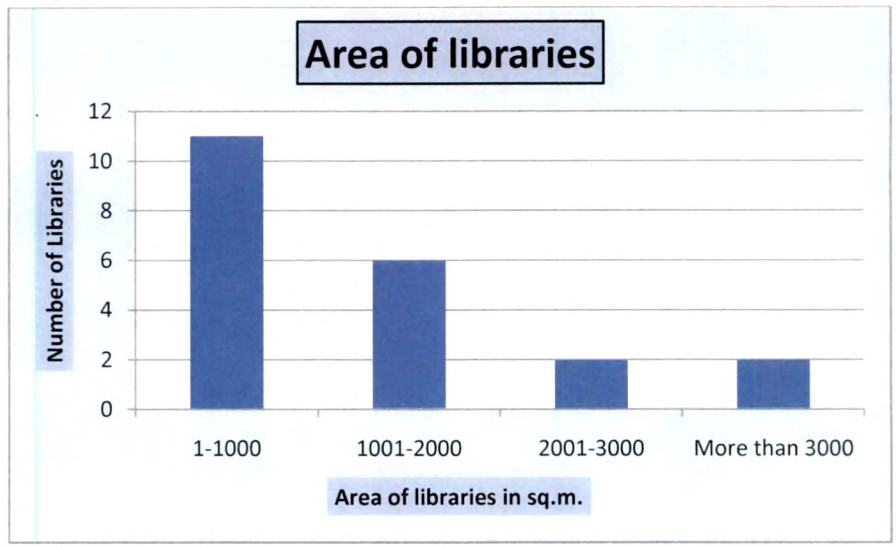


Figure 5.2-AREA OF SAMPLE LIBRARIES

The data presented in Table 5.2 is displayed graphically in Figure 5.2. From the above figure, it is apparent that the area of libraries selected for study are in the range of 1 – 20000 sq.m. Out of 21 libraries, more than 50% of libraries are having the area in the range of 1-1000 sq.m., area of 28.5% of libraries are in the range of 1001 – 2000 sq.m., area of 9.5% oflibraries are in the range of 2001-3000 sq.m. and area of 9.5% libraries are in the range of more than 3000 sq.m. The study reflects that the physical area of more than 50% of libraries is below 1000 sq.m.

(III) SEATING CAPACITY IN SAMPLE LIBRARIES

An attempt was made to find out the seating capacity for the users in the reading room of the sample libraries. This data may reflect the usage of library for reading purpose. The table below presents the seating capacity in libraries. The categorization has an interval of 100 seats.

Table 5.3 - SEATING CAPACITY IN SAMPLE LIBRARIES

Sr.No.	Seating capacity in library	Number of libraries
1	1-100	8
2	101-200	1
3	201-300	5
4	301-400	2
5	401-500	2
6	More than 500	3

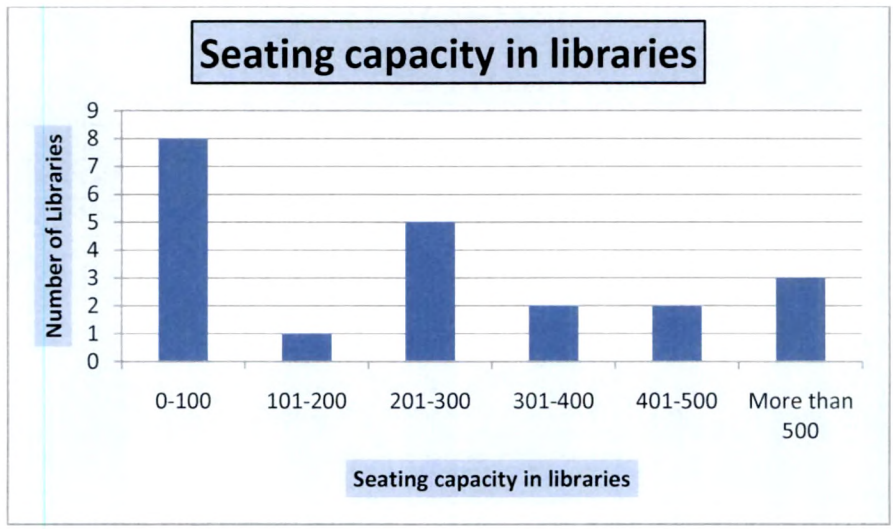


Figure 5.3 - SEATING CAPACITY IN SAMPLE LIBRARIES

The data presented in Table 5.3 is displayed graphically in Figure 5.3. From the above figure, it is apparent that the seating capacity in the 21 sample libraries are in the range of 50 – 1100. Out of these 21 libraries, 8 libraries are having seating capacity in their reading room in the range of 1-100. One library in the range of 101 – 200. Next 5 libraries are having seating capacity in their reading room in the range of 201-300. Two libraries are having the seating capacity in the range of 301-400. The other two libraries have seating capacity in the range of 401-500. The only library i.e.HM library is having the seating capacity for 1100 users at a time in their reading room.

The study reveals that almost 40% of sample libraries have seating capacities for less than 100 users in their library.

(IV) INTEGRATED LIBRARY MANAGEMENT SOFTWARE

The most important aspect of automated library system is the integrated library management software which is being used for the said purpose. The success of the automation system largely depends on the performance of the software. The table below presents names of seven different commercial library management software used by the sample libraries for the automated system of library.

Table 5.4 – INTEGRATED LIBRARY MANAGEMENT SOFTWARE

Sr.No.	Name of the Software	Number of libraries
1	SOUL	8
2	LIBSYS	4
3	SLIM++	2
4	ALICE	2
5	WINISIS	1
6	New Gen Lib	1
7	In-house	1
8	I-Tek	1
9	LIBSUITE	1

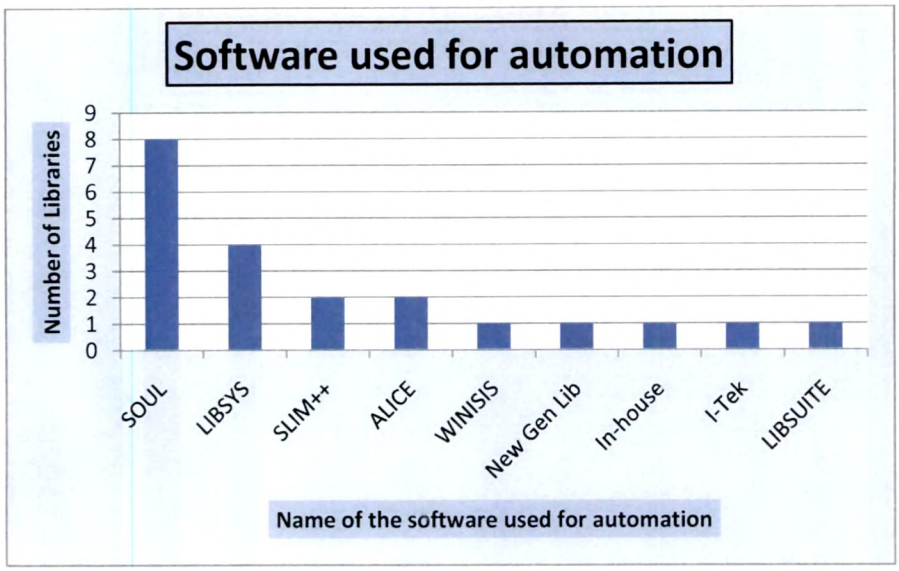


Figure 5.4 - INTEGRATED LIBRARY MANAGEMENT SOFTWARE

The data presented in Table 5.4 is displayed graphically in Figure 5.4. From the above figure, it is apparent that out of 21 libraries, 8 libraries are using SOUL software, 4 libraries are using LIBSYS, 2 libraries are using Alice, 2 libraries are using SLIM++, 1 library is using New Gen Lib, 1 library is using i-Tek, 1 library is using LIBSUITE, 1 library is using in-house software and 1 library is using WINISIS software.

The data reveals that except one library all the others are using well known commercial library management software for the automation system.

(V) YEARS OF LIBRARY AUTOMATION IN SAMPLE LIBRARIES

An attempt was made to find out the year of implementation of automation system in sample libraries. This was needed to find out since how many years the library system was automated. The table below presents the number of libraries automated in a 5 year interval of categorization.

Table 5.5 - YEARS OF LIBRARY AUTOMATION

Sr.No.	Number of years of library automation	Number of libraries
1	1-5 years	04
2	6-10 years	08
3	11-15 years	07
3	More than 16 years	02

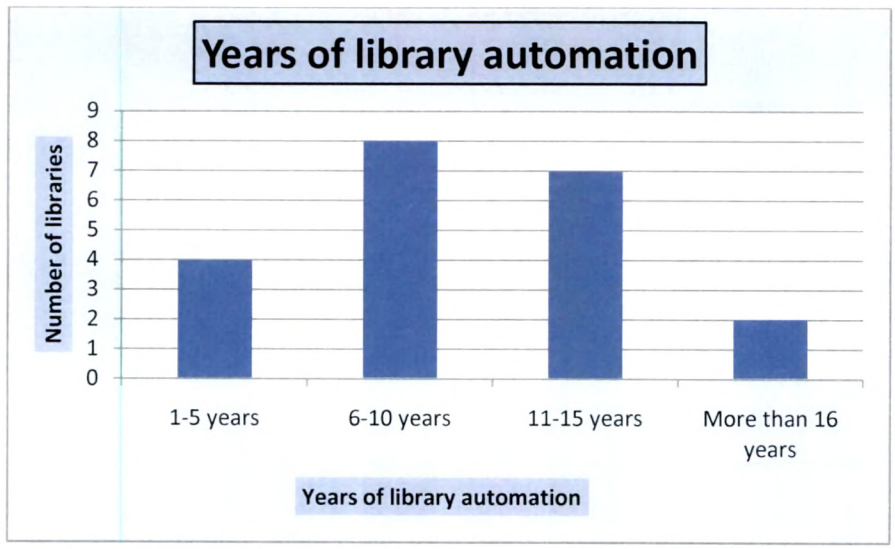


Figure 5.5 - YEARS OF LIBRARY AUTOMATION

The data presented in Table 5.5 is displayed graphically in Figure 5.5. From the above figure, it is apparent that four libraries have automated their library system for more than five years. Eight libraries are managing automated libraries in the range of 6-10 years, seven libraries are managing automated libraries in the range of 11-15 years and the remaining two libraries have been functioning in an automated library for more than 16

years. The data reflects that 17 libraries are working in the automated system for more than 10 years.

(VI) LIBRARY COLLECTION OF SAMPLE LIBRARIES

An attempt was made to find out the collection of library. Collection of reading material reflects the strength of any library. The table below presents the collection of libraries in the interval of 1 lakh numbers of categorization.

Table 5.6 – TOTAL COLLECTION OF SAMPLE LIBRARIES

Sr.No.	Collections in library	Number of libraries
1	1-100000	15
2	100001-200000	4
3	200001-300000	1
4	300001-400000	0
5	400001-500000	1

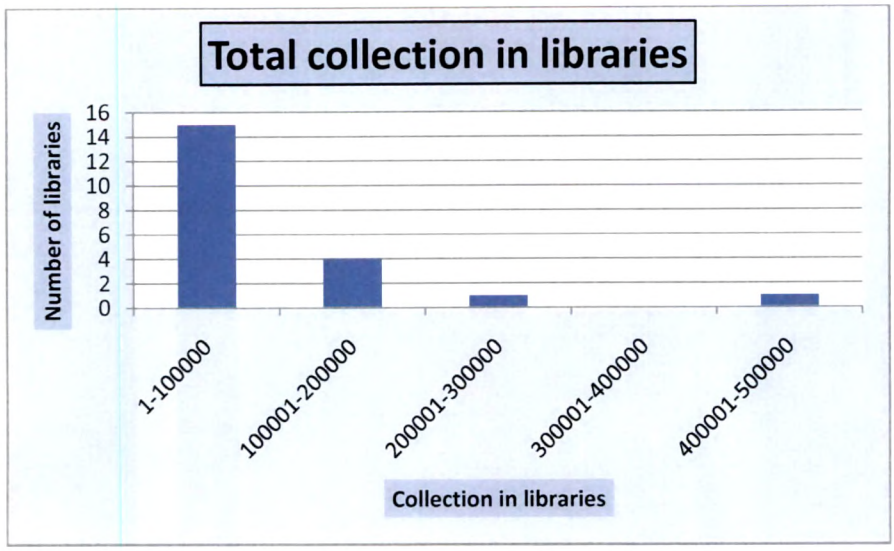


Figure 5.6 - TOTAL COLLECTION OF SAMPLE LIBRARIES

The data presented in Table 5.6 is displayed graphically in Figure 5.6. From the above figure, it is apparent that out of 21 libraries, the total collection of books in 15 libraries is in the range of 1-100000, the collection of 4 libraries is in the range of 100001 – 200000, one library has more than 200000 books and one library has collection of more than 4.5 lakhs.

(VII) LIBRARY USERS–STUDENTS IN SAMPLE LIBRARIES

The user is the heart of the library. The services of the libraries are being catered to these users. In an academic library these users may be bifurcated in two categories, i.e., students and teachers. An attempt was made to find out the number of users as students in each sample library. The table below presents number of students as users in the gap of 1000 in numbers.

Table 5.7 – TOTAL NUMBER OF USERS- STUDENTS

Sr.No.	Numbers of Users - Students	Number of libraries
1	1-1000	5
2	1001-2000	6
3	2001-3000	4
4	3001-4000	2
5	4001-5000	1
4	5001-6000	1
5	More than 15000	1
6	Not fixed	1

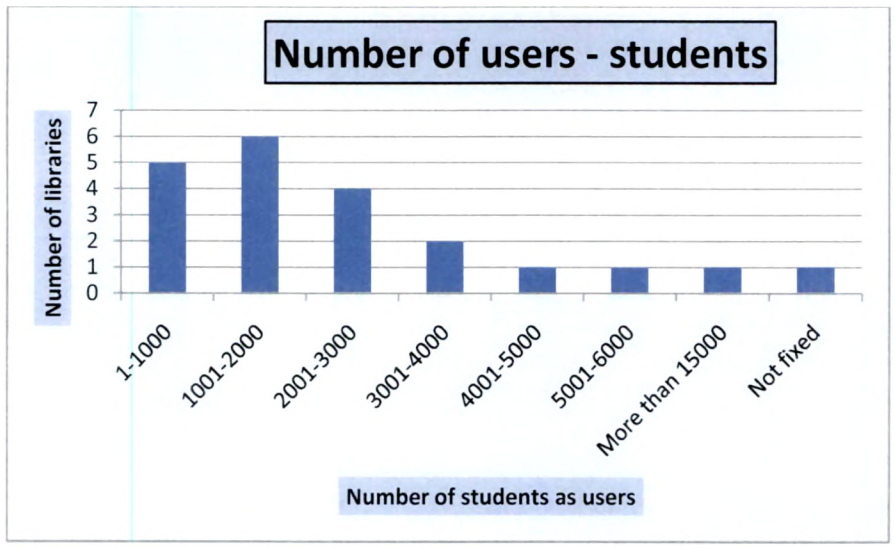


Figure 5.7 - TOTAL NUMBERS OF USERS – STUDENTS

The data presented in Table 5.7 is displayed graphically in Figure 5.7. From the above figure,it is apparent that the total number of users as students is in the range of 1 - 1000 in 5 libraries, 1001-2000 in 6 libraries, 2001 – 3000 in 4 libraries, 3001- 4000 in 2 libraries, 5000 in 1 library, one library in the range of 5001-6000 and more than 10000 in 1 library. One library i.e. BRSCL do not have students as users. This is a railway staff college library. The college organises several training programmes for the railway staff of the entire country. The durations of these courses are varied. The trainees who come to attend the courses are the users of this library. The number is not permanent. It varies course wise from time to time.

(VIII) LIBRARY USERS-TEACHERS IN SAMPLE LIBRARIES

With continuation of the above, an effort was made to find out number of users as teachers in each sample library. The table below presents number of teachers as users in the interval of 100 in numbers.

Table 5.8 – TOTAL NUMBER OF USERS–TEACHERS

Sr.No.	Numbers of Users - Teachers	Number of libraries
1	1-100	8
2	101-200	5
3	201-300	5
4	301-400	1
5	More than 500	1
6	More than 1000	1

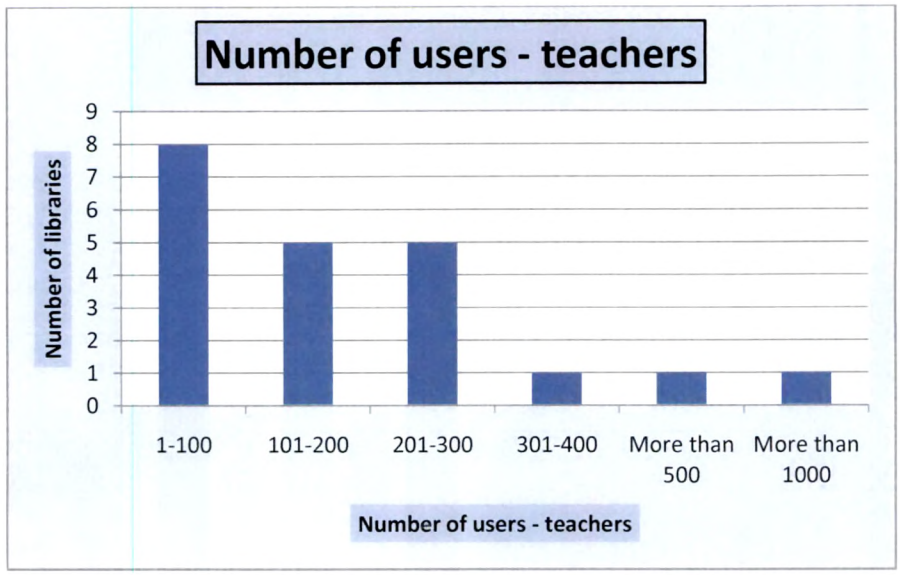


Figure 5.8 - TOTAL NUMBER OF USERS- TEACHERS

The data presented in Table 5.8 is displayed graphically in Figure 5.8. From the above figure, it is apparent that the total number of users as faculties are in the range of 1-100 in 8 libraries, 101-200 in 5 libraries, 201-300 in 5 libraries, 301-400 in 1 library, more than 500 in 1 library and more than 1000 in 1 library.

The brief description and statistical profiles presented above reflects the image of the sample libraries under study. It gives an idea about the available resources with the library. Further, it highlights their working environment. Moreover, it draws attention towards their library automation system.

3. ISSUES RELATED TO POST AUTOMATION PROBLEMS IN LIBRARIES

Librarians of the twenty one sample libraries narrated a number of problems which they came across while working in the automated library system. The data related to these different post automation problems were gathered during the personal visit to the libraries. The long interviews with the librarians and the observation techniques were applied to collect the data. These problems are related to library management software, the hardware

system on which they are working, technical and technological issues, financial matters, data security problems, human resource affairs and such others. For better understanding of these problems, they have been classified into different categories. Moreover, the data gathered are analysed objective wise one by one, as given in chapter 1.

- **Objective:** *DO THE AUTOMATED LIBRARIES FACE FINANCIAL PROBLEMS DUE TO AUTOMATION?*

It can be said from the data gathered, that the major financial constraint is the lack of Post Automation Budget in the library. The study discloses that except one library no other library has allocated a separate head for the post automation budget. As we notice, technology is changing very fast. Today's invention becomes outdated tomorrow. To keep one updated in such situation, it is very important to regularly upgrade the automation technology as well as the peripherals of library system like its hardware. This necessitates a definite budget for the smooth functioning of library system, post automation maintenance and operations. The general observation of the study reveals that all the libraries are facing financial crisis in one or the other form. This has been discussed below case wise.

As mentioned by **BITP,** there is no post automation budget for the maintenance and up gradation of library automation system. The hardware has not been updated since long. This ultimately, has an adverse effect on the overall efficiency of the system. The librarian is unable to improve upon the system. This results in igniting the frustration, in the librarian as she is not able to cater the library services efficiently to the users.

According to the librarian at **NIFT,** library professionals do not have the sound technical knowledge of computer and its peripherals. So there is a need of either regular appointment of computer professional or giving annual maintenance contract (AMC) to some consultant to solve problems related to hardware. But due to financial constraint this need is not being satisfied/ approved by the management.

As it has been discussed in the earlier in chapter 2, library automation does not only mean the implementation of library management software for the house keeping operations.

The scope further broadens with the procurement of other advanced technologies in the library to cater the speedy and better services to the user. The **SCET** library, is trying since two years to convince the authority for the implementation of RFID technology in the library. Till date they have not succeeded in influencing the management body for the same due to the large fund which has to be spent for the execution of the system.

In the case of **BRSCL,** originally the library was automated with the help of library management software TLMS. This got crashed off due to some technical problems. Then they implemented the new library management software LIBSUITE. The process of transfer from one software to other software needed very lengthy, tiresome process of getting approval of budget from the management. This whole process took almost three years before they could get back to a fully functional automated system once again.

In the case of university libraries like **VNSGU, HM, SU** and **SP,** the hardware system gets updated if and when they get the grant for the same from UGC. The software SOUL has been provided by INFLIBNET centre, so whenever the centre comes out with the modification in the software, it gets implemented in to the library system. This indicates that the library professionals of these libraries are completely dependent on the UGC and INFLIBNET centre for the development of their library.

As **SVNIT** is the National Institute of Technology, they get the grant from the MHRD too, for the development of library. This makes the task comparatively smooth for them for the implementation of new technology in the library. May be that is the reason they were the first in the state to implement the RFID system in the library.

It is also being observed that management body, i.e. the higher authority, of some of the newly developed libraries of the self-managed universities, understands the importance of libraries in an academic institute. The finance is not much of a constraint for the development of these libraries. The researcher has observed in the cases of **SVIT, CITC, AITS, DAIICT** that though there is no separate head for the implementation of new technologies in their libraries, but the finance is being generated as and when the need arises for the maintenance as well as for the up gradation of the library system.

The **CEPT** library has separate budget allocation for computers and its peripherals. They do have AMC contract with the vendor. The problem is that if the budget allocated exceeds due to unforeseen reason, they have to wait till the next year's budget approval. This is the major financial constraint they find to manage the automation system.

In the cases of **NIRMA** and **EDI** libraries, they do not have separate budget allocation for maintenance and up-gradation of automation system. But, both the librarians have good support of management, so whenever the need arises it gets fulfilled.

NIRMA library have AMC contract with the software vendor whereas **EDI** do not have that. With regard to software vendor, **EDI** said though the software is very costly, the after sale service is not at all satisfactory, it is very poor. **NIRMA** librarian said they had to pay large amount per head training of the staff member, for the software operations. This is not the one-time expense, whenever there is up gradation in the software, again there is training charge for the same. This is an extra financial burden, which is difficult to manage.

IIMA is shifting from the library management software LIBSYS to open source software KOHA, this is again an additional expense. The point that is to be noted here is that, at the time of implementing automation system with the LIBSYS software, they must have spent huge amount. At that time they might have not envisaged the problem that they are facing in the current situation in LIBSYS. The researcher felt that because it is the Indian Institute of Management **IIMA,** it could bear this expense, for any other library it could have been literally impossible. It seems even the IIMA librarian had to put substantial efforts to convince the library committee for the change of the software and to approve the budget for the same.

PASM and **DDU** library has good support from the management for approving the finance requirement. They have shown their dissatisfaction for the poor after sale service of the software vendor. After spending huge amount, still the problems are not rectified on time.

IPR and **MICA** are associated with slightly different kind of academic institutes than the general academic institutes. The reading materials/resources that are being acquired in the library are comparatively expensive. They have good support from the management

but they also feel the financial constraint, since getting approval for the unforeseen expenses is a very cumbersome process.

MICA librarian also opines that library automation is an ongoing process of implementing one after the other technology in the library. This requires continuous financial flow.

- **Objective:** *DO THE AUTOMATED LIBRARIES FACE PERSONNEL ADMINISTRATION PROBLEMS?*

At **VNSGU** there is no permanent librarian. Here, the major problem is that none of the permanent staff member has taken any interest in learning automation system. They have not attended a single training programme of the software. They are managing everything manually too.

The data entry has been done through the young employers appointed on a contractual basis. They are using only circulation module. In the circulation section, the issue return counter maintains records both manually as well as in the computer through SOUL software. So, the major problem at their library is the technically unskilled library staff. The hesitation of the permanent library staff to undergo extensive training of the automated system is the major problem. The in charge librarian showed his dissatisfaction by quoting that the library is automated only for the namesake.

Similarly, in the case of **SP**, only partial automation has been done. They are not using Acquisition and Serial modules. They have the staff of 28 people in the library. But due to lack of enthusiasm towards automation system, only 4 staff members are operating the SOUL software. The records like accession register etc. are being maintained manually.

In the case of **SVNIT,** they feel that automation has brought easy and speedy retrieval of the resources available in the library. The attitude of staff has changed after automation. They have slowly adapted themselves to the new environment. In fact they are now happy with the latest system. Previously they were hesitant due to lack of awareness

about the computer. They had fear that it would be very difficult for them to learn operating these machines. The chief librarian had faced severe problems due to non-cooperation of the staff. The librarian had completed the task successfully but single handedly. The other library staff was hesitant to go for automation. They were not prepared for the change. They were content with the current manual system. They expressed their displeasure by not cooperating with the librarian in the beginning. At times, librarian himself had to look after the circulation desk activities along with the data entry process. They were hesitant to learn or to take necessary training required for automation process.

With regard to personnel issue, the **IIMA** librarian opines that the mindset of people is changing. The new generation is adapting to the technology very fast and is more comfortable working in the automated environment. Further he says that even the older generation people are accepting the new technology and shifting towards the new environment.

According to **EDI** librarian, at the time of recruitment of library personnel, only the library science qualification was considered enough, at that time computer knowledge was not the criteria for the selection. So he says that though the staff is cooperative but the potential to learn computer skills in all the staff members is not satisfactory.

CEPT librarian also said that due to the lack of adaptability in few staff members they were having some problems in learning in the beginning. The positive point was that the staff was keen to learn it.

According to **HM** librarian, initially few staff members were apprehensive towards the automation system, but as they moved on, the fear of computers had been reduced. And at one stage even the peons showed their excitement and interest in learning the new system. In fact majority of bar codes of the books had been generated by them.

The **AITS** librarian also shows satisfaction towards the cooperation she received from the staff. But while probing deeply, it had been found that during the peak hours of the day, like recess or break, the librarian herself and the assistant librarian used to take care of the circulation counter. The reason was that the experience in the past indicates that the staff had committed mistakes at the issue/return counter during rush hours. The librarian does not

have enough confidence in them that they will run everything error free during these hours. Indirectly this is a kind of personnel problem that she is facing.

At **NU**, they have all qualified and competent staff. Although all of them are not professionally trained but the library has the practice to provide on the job training whenever required.

At **NIFT**, librarian is happy with a very co-operative and enthusiastic library staff. Further, according to the librarian, the other staff is hard-working and always ready to take opportunities related to improvement of their Resource Centre.

In the case of **SCET**, the library is equipped with full strength of staff. All the staff members are qualified and computer literate. The librarian is content with the support that she receives from her staff members in handling and managing the automated system. The Information Technology staff of the institute is also very cordial, they help her in solving any of the technical problem.

At **BITP**, there are two separate librarians for Pharmacy and Technology libraries. The libraries are located in the same building, with the virtual partition of resources of each library. They share everything with each other including reading room. So, at times there are conflicts between them with regard to application of technology in the system. Both the librarians do not have any problem with regard to their subordinates but as they are having same position, sometimes there are ideological clashes between them.

At **SVIT**, the librarian is satisfied with the support of his staff members. Though the staff is not computer literate but they were very supportive while implementing the automated system. They had always shown their eagerness to learn the new system.

Similarly at **DDU**, the library staff being young and energetic, learnt the automated system swiftly and co-operated with the librarian in successfully implementing the system.

Whereas, at **CITC** and **DAIICT,** from the very beginning they had implemented the automation system so they did not face any major problems. The staff with lesser knowledge of computers learnt by practicing at the job site itself.

The **SU** librarian appreciating his other library staff members said that except for a class IV employee all the staff members of the library can access the computers and operate the automated system. He took great interest in providing software training to all the staff members from top to bottom.

The librarian at **MICA** has very good team of people who had always been supportive in developing the library. They are very cooperative in introducing any new technology in the library.

At **IPR,** the librarian is a very senior professional and it was really good to see that she and her staff member without having any professional degree in computer learnt everything about it and managed and implemented the automated system many years back. It was really inspiring to see the enthusiasm that librarian possess to implement all the latest technology in the library.

At **BRSCL,** one or two staff members were hesitant to learn in the beginning. They had the fear of making mistakes, but with training and working on computer regularly they got acquainted with the system

In **PASM,** the librarian did not face much problem with the staff. The computer illiterate staff was little hesitant but they were ready to take the necessary training. After the training they were all confident to run the automated system.

➢ **Objectives:** *DO THE AUTOMATED LIBRARIES FACE ANY TECHNICAL AND TECHNOLOGICAL PROBLEMS?*

New technology, despite offering wonderful opportunities, changes quicker than the seasons and frequently fails to perform as well as its hype. The library professionals should regard this situation as an exciting challenge, rather than a threat. Another important aspect is the infrastructural problems posed by web. Though web development solves acute space problem with regard to books and journals – yet information technology creates its own space problems, with increased requirements for floor space simply to provide workstations.

Library automation also includes web-based services provided by the library. The availability of institute's website, importance and extent of library details hosted on it is very essential. Frequent Network breakdown and slow Internet access due to low bandwidth are causing major problems in successfully managing the automation system. The users may lose interest in library portal and/or website because of the inadequate and static information being made available on it.

Once, **SVNIT** came across a major technical problem. The hard disk of the server got crashed. They found it difficult to retrieve the data stored in it. With the help of technical expertise, the librarian had put his best effort for several days to solve the problem. During this period they did not close the circulation task but operated it manually. It was the major problem faced by them. To prevent it, now they are having server, running with two hard disks simultaneously. In addition to it, they are having another computer machine specifically for storing the backup data.

In **SCET,** during the entire six years of duration after the automation, twice they came across a similar type of problem. The problem was at the transaction level. First time, it was not showing the Issue/Return transaction correctly. They had closed the circulation counter for one day. Second time same problem occurred. This time the circulation counter had to be closed for five full days. There was some technical problem. The librarian could not detect it. Again here, the Information Technology faculties of the institute came to her rescue. The librarian thinks that the users did not complain about the shutdown probably due to two reasons. First, as the students were having four library issue tickets, they had enough

material and the second one is users are highly satisfied with the library system so they understood the technical problems and were very cooperative and were ready to bear the inconvenience. Further, librarian opines that there are two important aspects for the successful functioning of automation.

a) Back-up of the data of the automated library system should be very strong. For this now they are equipped with one extra external hard disk especially for the backup purpose. Again, librarian is very particular about the daily backup at the end of the day.
b) Antivirus software is a must. The whole system is working in LAN, so the librarian thinks that virus can enter the system from any corner. Antivirus software is the only remedy to get rid of it.

At **VNSGU**, as such they have not come across any major technical or technological problems due to automation. While investigating, it has been found that it may be due to their practice of doing all the work manually too. In the circulation section, the issue return counter maintains records both manually as well as in the computer through SOUL software. Once or twice they did come across the problem of data corruption. This problem had been overcome by installation of licensed anti-virus software.

The permanent computer personnel at **VNSGU** library had been appointed thereafter to solve the technical problems. According to him the most important aspects for the uninterrupted functioning of the automation system are:

- Regular Back Up
- Installation of Antivirus software &
- UPS system

The **BITP** library had implemented library management system along with RFID system in the year 2005. Now, the problems being faced by the librarian are in multiple. Like, since the time of implementation there is no upgradation in the hardware configuration in the library computers. The computers being allotted for the automation purpose are very slow in speed. There is no provision of licensed anti-virus software. This causes the virus

problems frequently. Due to that also the speed of PC decreases. And there is always a fear of corruption of data due to the unavoidable attack of viruses.

At **NIFT** library, few times they have faced the problem of corruption of data in the post automation era. This used to create disturbance in the daily routine work of library housekeeping. Henceforth, they became very regular in taking back-up of day to day transaction.

The **BRSCL** library had implemented the library software TLMS (Total Library Management System) in the year 1998. The software manufacturer was based at Pune. According to the librarian at BRSCL, it was very good software. Sometime in the year 2004, the window NT files got corrupted and the whole system got crashed. They tried to locate the vendor, but the vendor was not accessible at the address provided by them. They had vanished from that place and their shop was closed down. One can imagine the situation of a librarian at that particular moment. All the data were stored in it. He was not able to retrieve it. Luckily, back up of some database were there but not the complete data. With lot of efforts and with the help of technical expertise he could retrieve back some of the data. Then they purchased LIBSUITE software and all the retrieved data were transformed into it. The whole process took one full year. It was very difficult for the librarian to convince the management for the procurement and allotment of finance for the new library management software.

The **HM** library is part of campus network. Once in a day the whole network system gets shut down. This process takes 15-20 minutes. During this time the automated library management system also gets hanged. All the transactions of the library close down for 15-20 minutes every day.

The **SVIT** library faces regular power failure problem once in a week. The duration of it is maximum one hour. They have made the provision of two UPS in the library. One UPS system takes care of the server and another one for the other support system. This UPS system helps in preventing the problem of power failure.

At **SP** library they have faced the problems of data corruption due to the virus problem. To resolve this problem they have now installed licensed antivirus software in both

the servers, Network server and SOUL server. Another precaution they have made is taking daily back up of data.

At **PASM,** the server is on for 24 hours. They did come across minor problems like data corruption and at times the system used to get hanged for few hours. As a remedy to such problems and for the safety of data, regularly they take back up in every two hours.

The **SU** library once faced a crisis due to the virus problem. The system became ineffective for three days. They tried very hard with the help of technical experts but could not rectify it. The hard disk and the server had to be formatted completely. Henceforth, all the data are regularly saved in hard disk along with the back- up device i.e., pen drive. They regularly face the problem of power failure. To solve these problems, they have made the provision of four hours backup battery, to save the data in the situation of power failure.

It is being observed by the researcher during data collection that, comparatively new established libraries are facing fewer problems in adopting the latest technologies. As seen in the case of **CITC and AITS,** these libraries are five to six years old. The library is well planned, having good infrastructure, and are well equipped with latest technology.

To avoid the problems of power failure, the **CITC** library is well equipped with high capacity UPS system in the library. According to the librarian, it is the only library in Gujarat which is well equipped with WINCELL – campus security for database. **AITS** library is also well equipped with power back up system for the security of data.

Similarly, **DAIICT** has Wi-Fi technology in the library. It is well developed and highly equipped library. Till date they have not come across any major technical or technological problems.

The **IIMA** library was facing some technical problems related to the library management software. They had automated their library functions with the help of well-known library management software LIBSYS (old version) way back in 1994. Now they are in the process of shifting to open source software, KOHA. The librarian discussed about it elaborately. He gave more than one reasons for taking this drastic decision of swinging from this renowned commercial software to the Open Source Software. The reasons which have

been highlighted by the librarian are really remarkable and definitely make one think about the issues related to technical problems of software.

According to him, the new innovations are developing at a rapid speed; it is difficult to implement everything in the older software. So, as and when required, they used to get the modules of the software customized with the help of its vendor. As a result of it when some changes were being made in one module, it had been observed that after sometime it used to affect the working system of the other module. Due to this, almost all the modules had lost their original shape. Resultantly, the software had become PATCHED software. To overcome all these problems now they are shifting to KOHA. For this also they had to spend money. They got all the modules of the software customized as per their requirement. They got it done through one of the computer consultants of Ahmedabad. This indicates that open source software is also not free of cost if one wants to customize it.

He also commented on the Standards that are not being maintained by the software developers. According to him, the library if want to automate their library system they should do it with the help of open source software. He expressed that there are better prospects in open source software for the automated library management system.

The librarian at IIT, Kharagpur shares his experience of facing similar kind of problem. They had implemented a commercial package in their library. They were facing many technical problems and then they replaced it with the in-house built software. He believes that the commercial vendor provides only a skeleton to feed information concerning, collection, user and service data. Any commercial software for that matter developed for a general library (without any target library in consideration) has to be customized effectively for the individual library. This needs a lot of time, persuasion, and interaction from the library authorities and staff with the vendor. According to him there cannot be common software for everyone. Every individual library has its own requirement which can be satisfied only through the customized software.

The **IPR** library is very old. They had implemented automated system long back through CDS/ISIS software. Subsequently, they purchased the well known commercial library management software, LIBSYS software. They had faced the problem of data export

and at times small technical problems. Every time with the support of Information Technology experts of their institute they could rectify it without much difficulty. The librarian has a strong opinion that for the smooth functioning of an automated system, recruitment of an Information Technology expert is a must in the library.

- **Objective:** *DO THE AUTOMATED LIBRARIES FACE MANAGERIAL PROBLEMS ?*

Transforming the manual library into an automated library is a demanding task. Managing and maintaining an automated library successfully is more challenging than managing a traditional library. Managerial job involves every aspects of library like looking after the issues related to software, hardware, managing print as well as electronic documents, issues related to retrospective conversion of data, import and export of data etc. There are various problems that the librarian faces and even the responsibility increases after implementing the automation system. Along with it the library staff has to be more cautious while working with computers. Managing the library management software efficiently and fully is the most difficult task. It has been discussed elaborately below.

As per the primary data received from the respondent, the **HM** library is the only library which is using all the modules of the SOUL software. Although, while probing deeply it has been revealed that it is not true. They are facing some problems in operating the acquisition module of the SOUL software. Therefore the process of acquisition is being managed through excel worksheets.

They have pinpointed many problems in almost all the modules of the software. They have shown high discontent towards the after sales service of the software developer of SOUL, i.e. INFLIBNET. At the software developer's ends they are non- cooperative and do not quickly respond to the complaints. This has a negative impact on the overall functioning of the automated library system.

Similarly, **SVIT, SCET, VNSGU, SU, PASM and SP** libraries have shown their dissatisfaction towards the SOUL software developers. According to them, at times there is no reply to their e-mails and phone calls from INFLIBNET and that really creates problem for the librarians to contact them at the time when they need them the most. This results in a

situation of crisis. Almost all the libraries using SOUL software are facing this problem. They are highly dissatisfied with the after sale service of INFLIBNET.

The librarians of **EDI, CEPT and BRSCL** too complained about the poor after sale service of their respective software vendors.

The major problems being faced by library professionals are related to the library management software. As discussed earlier, the major problem is the after sale service provided by the software vendor.

4. FINDINGS OF THE STUDY

Change is the permanent feature of everything around us. This is the era of information technology and it has impacted the libraries and information centres in a big way. The implementation of the new information technology has definitely changed the image of libraries. So it is very important for all the library professionals to understand and learn these technologies. All the librarians of the above libraries agree upon the statement that definitely the prestige of the library has enhanced after implementation of these information technologies in their library.

The above study also brings into light certain issues related to library automation system. As discussed earlier, library automation does not mean only maintaining the housekeeping activities of library. Building digital libraries, being the next step of library automation, also require certain attention towards its management aspect.

Nowadays, libraries are procuring electronic resources along with the print resources. This has increased the work load of librarians. It requires dynamic skills towards the management of conventional printed resources like books, periodicals, journals etc. along with the online e-resources and CD-ROM collection. Handling printed books and non-book materials is very different from organizing and shelving CD-ROM or DVD collection. Then due to proliferation of information in various medium, in the coming days procuring, shelving and relocating of the resources are going to be the major issues of concern for the librarians.

A summary of the statistical data of the sample libraries of the present work investigated during the study are as follows.

- The establishment of libraries under study is in the range of 5- 60years.
- The libraries under study are using the automated library system in the range of 5-25 years.
- The area of the libraries is in the range of 200 sq.m. – 20000 sq.m.
- The seating capacity in the reading room of the libraries is in the range of 50-1100.
- In general the academic libraries are using the library management software SOUL, i.e. Software for University Libraries. The other software being used is LIBSYS, SLIM, ALICE, New Gen Lib, LibSuite, WINISIS, I-Tek and In-house built software.
- The collection of resources of the libraries is in the range of 6800 to 4,56,033.
- The students as members of the library are in the range of 40-18000.
- The faculties as members of the library are in the range of 22-2000.

The findings related to different aspects of post automation problems in libraries derived from the data analysis of the present study are described below.

(i) FINANCIAL PROBLEMS

- Information and communication technology is expensive. Lack of adequate financial resources for capital investment are the most critical hindrance in the application of information technology. It is observed that generally there is lack of funds or insufficient budget for the library automation system.
- The study also reveals that libraries with separate allocation of post automation budget for the maintenance and up gradation of automation system are comparatively in a better position.
- Inability to absorb recurring costs.
- It is also being observed that the library is still the neglected area of an academic institute. Management is still hesitant towards spending money for the development of library system.
- Hindrances in getting approval of Annual Maintenance Contract for the library.
- Difficult to get approval for the implementation of new technology in library.

- Comparatively the new libraries are facing less financial constraints.
- Getting approval for the unforeseen expenses is a very cumbersome process.
- Paucity of funds for staff training.

In a nutshell, library automation is an ongoing process of implementing one after the other technology in the library. This requires continuous generation of financial flow.

(ii) PERSONNEL ADMINISTRATION PROBLEMS

Following are the some of the related issues with regard to personnel administration in the library management which need to be examined.

- Non cooperation from the other library staff.
- Recruitment of permanent library skilled staff is needed.
- Lack of recruitment of Information and Communication technology expertise in library.
- Lack of competent staff to handle information technology is the major obstruction discovered in successful management of the system.
- Manpower development is another major matter of concern emerged out of the study.
- Hesitancy in the permanent staff in learning to use computers.
- Lack of computer training facilities.
- Computer literacy of library and information science professionals is poor.
- Regular training in the latest innovation of information technology is the need of the day which is missing.
- Fear of new technologies and unwillingness to change
- The adaptability /potential of learning computer in all the staff members are not satisfactory.
- Lack of sense of responsibility in the staff members of the library
- Lack of attitude of authority for staff training.
- Library staff not willing to go for training.

(iii) TECHNICAL & TECHNOLOGICAL PROBLEMS

It is being observed that those libraries which have recruited permanent information technology expert as a System Analyst are at ease with regard to handling of day to day/ routine technical problems in the automated library system. The major issue with automated libraries is that technology dependence has been increased and library professionals are finding it difficult to cope with the issues related to it.

- Retrospective Conversion is one of the major issues to be concerned about. It is a time consuming process. A single mistake in data entry can cause duplication of efforts. Use of standardized formats like MARC, UNIMARC or CCF in converting the library catalogue into electronic database is lacking in our libraries. This leads to problems in exchange of information/data from the old system to new one.
- State-of-the-art in information technology is not being used in information processing and retrieval activities.
- Shortage of technical expertise.
- Constraints of networking in Indian academic libraries.
- Topography also creates difficulties in information equity.
- Poor understanding of what may be expected of new technologies.

(iv) MANAGERIAL PROBLEMS

Implementing a new system in any sector requires managerial skills. Similarly application of information technology in the library necessitates certain aptitude in the librarians. He has to play a key role in pursuing the management as well as the library staff.

- The general feeling of the librarians is that, after application of automation system in the library, the workload has increased. They require more number of professionally skilled and trained staff members but the management is not approving their demand.
- Lack of management support to the modernization of libraries.
- Low prestige given to library & information work.

- The need for a well prepared yet flexible approach to project planning of automated system.
- Inadequate library infrastructure
- Shortage of qualified library managers

The problems related to software and hardware are the basic and major barriers for the automated library systems.

(v) SOFTWARE RELATED PROBLEMS

- After sales service of software supplier is highly dissatisfactory.

(vi) HARDWARE RELATED PROBLEMS

- Lack of standardization and incompatibility of hardware to software.

The most interesting findings were that

- Except one library all the libraries are maintaining manual Accession Registers along with the automated record.
- Automation system does not reduce the space problem; in fact it requires extra space to implement e-workstation.
- Similarly automation system requires more technically skilled personnel, so there is no cut-off in the total number of staff members in the library.