

Automation Scenario In University Libraries: A Study of Some Selected Libraries

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ABSTRACT

The paper attempts to review and audit the present scenario of library automation in nine university libraries in Punjab, Haryana and Chandigarh in the background of yesteryears and expected future. Paper points out that today complete library automation and modernization means digitisation of the every bit of information contents. Discusses the scope, objectives, and methodology adopted for collection, presentation, and analysis of data for this paper. Highlights the meaning, need, main considerations, rationale, main components, and domain of library automation in the context of university libraries. Throws light on the availability of hardware and software in respective libraries and examines types and forms of library collection. Gives a brief overview of library automation in historical perspectives in the selected libraries and focuses on house

keeping operations, i.e., acquisition, technical processing, circulation, serials management, financial management, services, library administration, CD-ROM and networking infrastructure. Also raises vital issues of concern and impediments in the way of library automation and tries to provide solutions. The paper tries to identify the impact of automation on the libraries under study and concludes that all the nine libraries are heading at a fast pace towards automated systems. These nine libraries are likely to automate house keeping operations by 2003. Since the sample of nine university libraries is representative one in all respect for all the 273 Indian university libraries. Therefore, the inferences drawn from this study can be considered for all the university libraries. Also highlights the role of INFLIBNET in acquiring, hardware, library software, training of staff, librarians during 8th and 9th plans. Paper concludes that networking of university libraries will logically be extended to digitisation of printed material in future.

KEYWORDS: Automation, University Libraries, Networking,

0. INTRODUCTION

Organisational theory and managerial wisdom advocate that for the survival of any organisation the nature of the organisation must be compatible with the environment. Library is a growing organization, which requires constant change in order to maintain a high degree of relevance to the environment. Stringency of resources, information and document explosion, increase in clientele and their demand for consistent, responsive, prompt, assured, tangible, processed, repackaged, and value added services have

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Tremendously forced the university librarians to find solutions for efficient and effective management of their libraries. Like five laws of library science, quality improvement programmes have become the talk of the day and implies exhaustive, expeditious and pin-pointed services.

Technological stage of mankind kept on influencing the information handling activities of libraries. Keeping in view the global developments in information technology (IT) library automation is in the fifth phase, i.e. digitization of information. The first phase was dominated by local systems in the 1960's. The second phase, of 1970's, was dominated by large-type and multipurpose library systems, e.g., OCLC in 1978 was a

consortium of regional libraries that shared an automated system of bibliographic databases. The third phase in 1980's was again dominated by local systems. CD's came in the libraries in late 1980's as a new information management technology as well as a viable and cost effective alternative to books, paper, micro-images, magnetic disks, videos and audios for storage and distribution. CD-ROM networks provided multiple accesses to many large databases. CD-ROM is still one of the best technologies for developing countries like India but at global level CD-ROM technology is being viewed as an intermediary technology and Web and other online sources have become more compatible. The fourth phase of library automation of 1990's was dominated by library modernization and networking. Present phase is dominated by electronic and digitization of the learning resources for sharing at global level.

During the last one decade, many university libraries in India have automated some of their functions and activities and are providing different range of computer-based services. In order to have a bird eye view of automation scenario in Indian university libraries, a sort investigation and audit was carried out in nine-university libraries of Punjab, Haryana, and Chandigarh.

1. NEED AND IMPORTANCE OF LIBRARY AUTOMATION

Today, the single most important issue for university libraries is managing change without losing their identity. Change is nothing but a transformation of today's requirements to tomorrow's performance. It is the only thing that has made possible the journey of libraries from storehouses to the stage of information centres. Today technology, marketing, quality, and costs are the major change elements. These change agents disturb and upset all balances and equilibrium in the market. It requires complete reengineering of the library management systems to reset the balances between requirements to performances [1].

Out of the four elements, quality, which is easy to recognize, but difficult to define is very dynamic. IT plays key role in achieving total quality (i.e., satisfaction of users, staff, librarian, and institution) in the libraries. In TQM framework the user (king) is at the top of the organizational pyramid, staff is next to serve the user and management is there to support the staff. To please the king (user) libraries are expected to arrange all their activities and processes around the needs and expectations of him and also desired to remain ahead of the users in all aspects.

The ability of a computer to put items rapidly in order and to do so in a variety of sequences or by a number of different access points all derived from a single record, is undoubtedly one of its alluring attributes to a librarian. Besides time saving benefits, it helps in library automation in many ways. It increases productivity, reduces unit cost, and ensures consistency and reliability. Library automation helps in managing diverse library resources and provides better and wider access to resources [2].

The Internet has been established as an important tool in the world of information. None ever denied the utility of Internet in the university libraries. The fundamental concept of classroom learning is changing to e-learning and tele-learning. In this media of learning renowned subject specialists are available on the net and various

universities have started conducting courses through the Internet. Interactive learning is also possible through the 'chat' facility. Users can visit any virtual library available on the net to acquire anything, anywhere, and at any time. In accordance with the emerging educational scenario, the role of university libraries and its professional must change otherwise both are destined to live in the background [3].

The staff shortage has become a universal phenomenon in university libraries. Therefore, complete automation in university libraries has become the need of the hour because shortage of staff will not adversely affect the services and functions of the libraries in automated environment.

2. LIBRARY AUTOMATION

The term library automation was generally used in the past for house keeping operations of the library. Today it has expended its scope and includes all those technologies which libraries and information centres use for collection, processing, storage, retrieval, dissemination, and transmission of all types of information at local, regional, national, and international level. Library automation not only improves the image of the library and staff but also provides additional services to the users with the existing staff. It provides equal opportunities to all staff members for organizational learning, reengineering, and benchmarking [4].

Automation in university libraries in India was initiated by INFLIBNET programme of UGC. Digitisation of the information contents is the ultimate solution of library automation. Complete library automation of university libraries is divided in five phases: 1) preparation of bibliographic databases, 2) computerization of house keeping operations, 3) networking and acquisition of materials in digital forms, 4) digitisation of theses, dissertations, manuscripts, and rare books, and 5) digitisation of books, and journals. However, there are many challenges before libraries for digitization such as 1) Intellectual property right, 2) Security, 3) Technological change, 4) Lack of expertise, 5) Inadequate finance and other infrastructure, 6) Compatibility to Indian community, and 7) Information explosion in Internet.

2.1 Networks and Networking

Networking reveals a large number of publications through accessibility of catalogue databases using OPAC interfaces. The concept of electronic library offering direct access to users from their desktop is a reality. Library OPACs have had a great impact in networking. It is essentially a gateway to a universe of information resources, electronic as well as printed. A network facilitates distribution and publication of electronic journals and other electronic documents at provides end user access to other databases, such as those available on the online hosts and CD-ROMs and provide value added services, e.g. e-mail, directory services, FTP, exchange of bibliographic records.

As per phrase of Alvin Tofler IT has proved the "the ultimate technology" even after 35years [5]. Perhaps no other profession has gained by the computer technology as that of the academic librarianship. Now experts

believe that the shift from page to screen which was once a fantasy is approaching reality. In future if the existing textbooks are transformed into digital media, the potential of benefits will be multiplied. Such a change will promote their use at global level simultaneously. University libraries will not require large buildings. With further expansion of Internet facilities, the largest libraries of the world will be available at their desk.

3. SCOPE OF THE STUDY

The scope of the study entitled “Automation Scenario in University Libraries” is limited to the university libraries in Punjab, Haryana and Chandigarh. The study includes all the nine university libraries in Punjab, Haryana and Chandigarh, namely: Guru Nanak Dev University Library, Amritsar (GNDUL); Punjab Agricultural University Library, Ludhiana (PAUL); Punjabi University Library, Patiala (PULP); Thapar Institute of Engineering and Technology, Patiala (TIETL); Kurukshetra University Library, Kurukshetra (KULK); Maharshi Dayanand University Library, Rohtak (MDUL); Chaudhary Charan Singh Haryana Agricultural University Library, Hisar (HAUL); Guru Jambheshwar University Library, Hisar (GJUL); and Panjab University Library, Chandigarh (PULC).

The decision regarding the selection of nine university libraries for this study is based on some logic and justifications. All these nine universities form part of the North Zone, which is an important region of India for all purposes. All these universities have well established libraries and are recognised by the University Grants Commission (UGC), India. All the nine university libraries were established during the period 1947 to 1995 hence some are very old and a few are in developing stage. These nine libraries form a representative sample for all the 273 university libraries of India [6].

4. OBJECTIVES

IT has brought drastic and dramatic changes in the functioning of the libraries and the services they provide. Automation in university libraries of Punjab, Haryana, and Chandigarh was started in early 1990's. During the last one decade, these libraries have automated some of their functions, and have started providing some of the computer-based services. Since quality has become the trademark in all spheres of human activities, and therefore, libraries are no exceptions. In the context of libraries, the ultimate objective of Total Quality Management (TQM) is also to access local and global information on the same terminal instantly. This is what users want and libraries are striving for. However, automation level of libraries has not reached the desired and expected level of user community despite best efforts made over the last decade.

Therefore, the main objective of this study is to measure the level and status of library automation in university libraries of Punjab, Haryana and Chandigarh. It is a short of audit and investigation of the existing scenario of library automation. The second objective is to find reasons for lower level of automation than the desired level and suggest corrective measures.

5. METHODS OF DATA COLLECTION [7]

Since the problem under investigation was very complex and of comprehensive nature, therefore, questionnaire and observation techniques were used for data collection from nine libraries settings. The original research data collected for the purpose of exploring TQM application in university libraries was updated in the month of October, 2002. The paper draws heavily on library survey and is complemented and supplemented by the study and synthesis of the existing literature on library automation in retrospect and prospect. However, qualitative data (views, opinions, and attitudes) measured and observed during TQM study has influenced the results of this study up to a little extent.

6. DATA ANALYSIS

The data have been presented, compared, and analysed by using tables.

6.1 Library Collection

Library collection is a sum of total library materials. It makes up the holdings of a library. Table 1 shows that only a limited collection (0.307%) of all the nine university libraries is available in Audio, video, microforms and CD-ROM (non print) form, and remaining 99.693% reading material of all the libraries is in print form.

Table 1

Form Of Reading Material Available In The Libraries

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC	Total
Books	299730	259574	283053	39940	239094	186802	196693	21538	477879	2004303
Theses	5300	15000	8056	3300	5250	7550	5000	1910	40000	91066
Journals(C)	545	495	767	250	450	1135	500	136	620	4698
Journals (backsets)	71947	93419	74564	5663	48670	84504	40100	1400	110724	530991
Electronic	823	1483	936	335	236	1377	208	128	2490	8106
Documents	(0.217)	(0.401)	(0.255)	(0.68)	(0.08)	(0.491)	(0.085)	(0.512)	(0.394)	(0.307)
Total	377800	369476	366609	49238	293250	280233	242001	24976	631093	2634676

* Percentage are provided in parenthesis

6.2 Forms Of Periodicals

Table 2 depicts that 99.68% of the total periodicals are in print form, while only 0.32% periodicals are in electronic form. However, it is clear from the table 1 that non print material is available in all libraries.

Table 2
Availability Of Different Forms Of Periodicals

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC	Total
Total periodicals	545	495	767	250	450	1135	500	136	620	4698
	(98.87)	(98.78)	(100)	(99.26)	(100)	(99.85)	(100)	(100)	(100)	(99.68)
Print Media	537	489	767	248	450	1133	500	136	620	4680
Electronic Media	8	6	-	2	-	2	-	-	-	18
	(1.13)	(1.22)		(0.74)		(0.15)				(0.32)

* Percentage are provided in parenthesis.

6.3 Hardware Facilities

Computer facilities are of two types: Hardware and Software. Table 3 shows that all the libraries under study have installed Micro Computers, Printers, UPS, CD-ROM drives, and Network facilities. PULC, PUAL, PULP, HAUL and TIETL have installed LAN facility, whereas GNDUL, PULC, and TIETL have started online public access for books. It further shows that KULK has the largest number of micro computers (42) and GJUL has the smallest number (6).

Table 3
Hardware Facilities Available In The University Libraries

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC

Computer Systems	-	-	-	-	13	1	10	-	-
i) Pentium iv	3	-	4	2	8	-	-	6	8
ii) Pentium iii	6	1	8	2	1	21	6	-	9
iii) Pentium ii	13	16	9	6	9	-	2	-	7
iv) Pentium 1	No	4	3	2	7	1	1	6	12
v) 486	1	2	2	No	6	1	1	1	No
vi) 386	5	No	No	No	No	No	1	-	6
vii) 286									
Total Computers	27	23	26	12	42	24	20	6	40
2. Printers	7	6	7	4	7	8	4	3	9
3. UPS	Yes	Yes	Yes	No	Yes	2	Yes	No	Yes
4. LAN facility	No	Yes	Yes	Yes	No	Yes	No	No	Yes
5. Network facility	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6. On-line facility	Yes	No	No	No	No	No	No	No	Yes
7. CD-ROM Drives	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8. Barcod reader	2	2	1	1	1	2	1	1	2
9. CD Net	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes

6.4 Software Facilities

Software helps to bring hardware establishment into activation and real use. The software facilities available in nine libraries are presented in self explanatory Table 4. It displays that all the university libraries have acquired CDS/ISIS as the first library package free of cost in early 1990's and against a nominal price of Rs. 1500/- after mid-1990's. ILS and SOUL are the upgraded software by INFLIBNET. All the libraries started automation by creating bibliographic databases. This software was based on DOS and UNIX platforms and also has Network and DOS communication software. However, lack of trained manpower was the major problem before all the libraries for the proper use of available software. Keeping in view the difficulties being faced in library automation using CDS/ISIS all the nine libraries switched over to LIBSYS. LIBSYS supports various platforms / options and encourages the users to change the platforms / options as beneficial to them. Still all the nine libraries are facing problems for creating database of books in other than English language. Therefore, multilingual facility in the library software is most important for university libraries.

Table 4

Software Facilities Available In The University Libraries

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC
a) Operating Systems									
i. DOS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ii. UNIX	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
iii. Any other	Win 98	Win 98	Win 98	Win 98	Win 98	Win 98	Win 98	Win 98	Win 98
b) Software package									
i. LIBSYS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ii. CDS/ISIS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
iii. Any other	Locally Developed	No	Yes	No	No	Libsys	No	ILMS	Techlib +
c) Communication									
Software	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
i. DOS PROCOM	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
ii. UUCP	Yes	No	No	No	Yes	No	No	No	No
iii. Any other									
d) LAN Scanner									
i. Netscape	Yes	No	Yes	No	Yes	No	No	Yes	Yes
ii. Netware	No	No	No	No	No	No	No	No	No
iii. Any other	No	No	No	No	No	Yes	No	No	No

6.5 Initiation of Computerisation

INFLIBNET's computerisation programme covered all the seven university libraries (except HAUL and PAUL) during 8th and 9th plan. The libraries initiated computerisation work at different times which is revealed in Table 5. While PULC and PULP have one Programmer each, whereas GNDUL has both programmer as well as Information Scientist in addition to 4 Professional Assistants and one data entry operator. Improvement in quality, minimization of repetitive tasks and introduction of new services were considered as three main reasons for automation by all the nine libraries. In the beginning it was also realized that finance, suitable library software, and motivation of staff are the most important determinants of a successful accomplishment of library automation, in addition to working environment, support from the university authority, faculty, and willingness to succeed.

Table 5

Initiation Of Computerization Work.

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC
Library Establishment	1970	1962	1963	1956	1956	1970	1975	1995	1947
Year of Initiation	1993	1995	1994	1996	1989-90	1992	1995	1997	1988-89
Staff involved In computerization									
Programmer	1	No	1	No	No	No	No	No	1
Information Scientist	1	No	No	No	1	No	No	No	No
Professional	4 P.A.s	1 Asstt. Libn	No	No	1 Dy. Libn.	1Asstt. Libn	1Asstt.Libn	No	No
Data Entry Operator	1	2	2	2 clerk	2	2	1	2	4

6.6 Housekeeping Operations

Computer application in nine libraries can be divided into three types of functions: Housekeeping operation, Retrieval services, and Administration/ management Table 6 reveals that except TIETL and PULC no other library in Punjab and Haryana has fully computerised house keeping operations. TIETL has completed computerised records of all the books, whereas PULC has completed more than 80% of the records of books. GNDUL has not only completed the records of books acquired after 1993 but also retro converted more than 90% of English language books. The problem with regard to current as well as retro conversion of books of other than English language books is there in all the nine university libraries.

With regard to Circulation TIETL and PULC have fully computerized the process and PAUL, HAUL, GNDUL, and KULK have made partial efforts in this direction, whereas remaining three libraries have not done any thing in this direction. Out of nine libraries, GNDUL is partially handling Serial Control, whereas TIETL, KULK, HAUL, MDUL, and PULC have prepared computerised list of serials, whereas PAUL, PULP and GJUL have not initiated serial control so far. Regarding stock taking no library except GNDUL and TIETL have done any thing in this connection.

Table 6**Status Of Housekeeping Operations In The Libraries**

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC
Acquisition	Partial	Partial	Partial	Complete	Partial	No	No	Yes	Complete
Cataloguing	Complete	Complete	Complete	Complete	Complete	Complete	Complete	50%	Complete
Circulation	Membership records complete	Members records complet	partial	Complete	No	No	No	No	Complete
Serial Control	Partial, complete after 1993	No	partial	Complete	Partial	Partial	Partial	No	Complete
Stock taking	Partial	No	No	Complete	No	No	No	No	No

6.7 Retrieval Services

Information retrieval system can be grouped in several ways: External search services, Compact disk read only memory (CD-ROM), Search system in which the databases are stored locally such as on line public access catalogues (OPAC), Videotext / teletext systems. While acknowledging the powers of the OPACs' one tends to agree with Lancaster (1991) who feels that OPACs could do even much better if they include periodical articles in their database.

Table 7 shows that TIETL, GNDUL and PULC have started online public access catalogue for books. It is clear from table that no university library except GNDUL and PULC is providing computerised documentation service.

Table 7**Retrieval Services In The University Libraries**

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC
OPAC	Current books acquired after 1993 and more than 80% of English Language books	No	No	Yes	No	No	No	No	More than 80% of English language Books
Documentation services	Seven databases have been created	No	No	No	No	No	No	No	Yes

6.8 Library Administration Including Financial Management

Computers are required for day to day functions such as account statistics, official correspondence, employees' records, internal telephone directory, inventory list, absentee statements, etc. It requires library office automation. Office automation systems known as business software parallel to library management systems. In the library environment word processing, spreadsheet, graphics, desktop publishing, database and communications are most popular for correspondences, reports, forms, lists, manuals, graphic presentation, preparation of personnel records and manipulation and storage of numerical data.

Management Information System (MIS) provides all types of data for annual report, planning, decision making, budget allocation and control. Table 8 displays that all libraries are now using computers for administration. HAUL, PULC, PULC, and TIETL are using computer for financial management.

Table 8

Computer Applications In Library Administration

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC
Computers in Library Administration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management Information System (MIS)	Budget provisions	No	No	No	No	No	No	No	No

6.9 In-House Databases

Table 9 denotes the relative position of all the nine libraries with regard to the preparation of in-house databases. It can be noted from table that except PULC and TIETL no other library could switch over to complete automated systems, despite their vigorous efforts.

Table 9

Preparation Of In House Databases In The University Libraries

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC
Current Periodicals	545	495	767	250	450	1135	500	-	620
Back Volumes	20,000	15,000	25,000	5663	38,670	84504	5000	-	56,000
Theses and Dissertation	5300	3000	6500	3300	2040	7550	2500	-	40,000
Books	2,50,000	1,00,000	195,000	39000	2,36,000	1,28,100	1,60,000	11000	4,00,567

6.10 Network Access

A computer network is a data communication network where two or more computers and peripheral devices are linked together. Networking and multi-user environment have been an important development in the life of the end user. Table 10 provides the names of Networks at the national and international level to which the libraries have access and connectivity. All the nine libraries have local area network with fast Ethernet Card (10/100 mbps) using UTP Cat-5 cable. KULK, MDUL, GNDUL, TIETL and GJUL have 16 Ports on HUB. Whereas HAUL, PAUL, PULC, and PULP have network switch and can have any number of network points. These libraries have LAN with Fiber Optics backbone. All these four libraries are going to make their databases accessible through campus network shortly. At international level all the nine university libraries are connected with INTERNET but no library is connected with other international networks.

Table 10

Networks To Which The Libraries Have Access

Description	GNDUL	PAUL	PULP	TIETL	KULK	HAUL	MDUL	GJUL	PULC

National Level									
i. INFLIBNET	No	No	No	No	No	No	No	No	Yes
ii. ERNET	No	No	No	No	Yes	No	Yes	No	No
iii. NICNET	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes
iv. I-NET	No	No	No	No	No	No	No	No	No
v. INDONET	No	No	No	No	No	No	No	No	No
vi. GISTNIC	No	No	No	No	No	No	No	No	Yes
International Level									
i. INTERNET	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ii. DIALOG	No	No	No	No	No	No	No	No	No
iii. JANET	No	No	No	No	No	No	No	No	No
iv. Chemical Abstracts	No	No	No	No	No	No	No	No	No
v. Physical Abstracts	No	No	No	No	No	No	No	No	No
vi. BIOSIS	No	No	No	No	No	No	No	No	No

7. OBSTRUCTIONS IN LIBRARY AUTOMATION

Human resources are the most primary and most crucial factors in determining quality level of a library. The most of the libraries are still under the influence of scientific management, which gives more importance to management than employees for all purposes. Quality gurus like Deming and Juran also felt that Taylor's methods were degrading to human spirit and moves employees away from the basic responsibility for the quality of the work [8]. Moreover lack of staff developments programmes and resistance to change in library staff are the by products of hierarchical, bureaucratic, rigid, static, and seniority based system of university libraries. Amidst cost conscious and cost effective slogans and regime, universities can not bear one time and increasing operation cost of automation. Due to insufficient funds, routine work and collection development of libraries are being affected adversely. In the presence of many information providers' library's place of prominence in the university's scheme of things is decreasing day by day. With the result, four libraries i.e., GNDUL, MDUL, TIETL, and GJUL out of nine university libraries are running without librarians in the most prosperous north region of India.

8. IMPACT OF AUTOMATION

Introduction of new IT based services and improvement in the existing services, facilities, and programmes is

a right step forward toward qualitative and value added services. Marketing efforts made by libraries and their staff through services and home pages are proving moral booster and image building. More cooperation and reduction in a little bit work load will be major impact on short staffed libraries [9].

9. CORRECTIVE MEASURES

All the nine libraries are moving fast ahead and are at different stages of library automation. Their mutual cooperation which is negligible now will be the major booster in this direction. Except two agricultural university libraries all the seven libraries have almost common heritage in the matter of collection, staff, services, users, building, facilities, and socio-economic- politico, and geographical environment [10].

The libraries should start charging nominal fees for their services and should extend their membership to the corporate world [11]. For vigorous marketing and support libraries should give more importance to circulation services which is still a neglected area in all the libraries except PULC and TIETL.

Section and departmental barriers are the major impediments in the way of speedy automation. More mutual cooperation, team work, and interaction will speed up the automation process.

Dynamic management approaches such as TQM, reengineering, organizational learning, and benchmarking will be most appropriate than scientific management amidst drastic and dramatic changes in information environment [12].

Among nine libraries five libraries are being fully supported by university authorities in the matter of finance and infrastructure even than progress in these libraries is not to the mark because of lack of culture and values. Therefore, libraries have to first develop culture for quality and then quality culture will emerge automatically and will streamline every aspect of library automation and total quality [13].

10. CONCLUSION

All the nine libraries under study have been using IT for managing their functions and services. But their priorities in the IT applications differ from library to library. In respect of IT application level in libraries it can be inferred both from comparing the data presented in the tables 1- 10 and observing the same at actual settings, that PULC and GNDUL emerged as the leader in the list, HAUL and PAUL come next, closely followed by, TIETL, KULK, and PULP. The level of IT applications at MDUL, GJUL is on lower side[14].

Automation in these nine university libraries, was initiated in 1990's and most of them will create bibliographic databases by Feb., 15, 2003 and are at different level of automation in house keeping operations. During retro- conversion the workload increased tremendously but now they are moving smoothly

in the direction of complete automation. Panjab university, Punjabi university, Thapar Institute, and both the agricultural university at Hissar and Ludhiana have implemented LAN. The remaining four libraries are likely to start LAN by the middle of 2003. This complete networked environment will be logically extended to digitization of university libraries in near future. The INFLIBNET is also encouraging and extending its programmes from automation and networking to digitisation of university libraries. The emerging electronic environment in university libraries will serve as a gateway to share local and global information on the same terminal. This automation scenario in these representative sample of nine libraries can also be considered for all the 273 university libraries of India. In this way implications of five laws as well as TQM will be satisfied in case of university libraries.

REFERENCE

1. PANDYA (SHWETA N). Change management in libraries. *ILA Bulletin*. 38, 2; 2002. p32-35.
2. DABAS (K.C) and DABAS (SHEELA). "Impact of automation on library management techniques" In PSG Kumar and C. P. Vashishth (eds): *Human relations in Librarianship : Seminar papers 41st All India Library Conference, Vijaywada Jan. 7-10, 1995. ILA , Delhi, pp. 313-323.*
3. DABAS (K. C) et al . "HRD Agenda for University Libraries in the Electronic Information Environment" In S K Pandey and D V Singh (Eds): *Electronic Information Environment and Library Services: A Contemporary Paradigm: ILA Seminar papers : 48th All India Library Conference of ILA, 22-25 Jan., 2003, at Bangalore. 2003. Delhi, ILA.*
4. RASHID (ABDUL). *Library Automation: An Overview. Library Science with a slant to documentation and information studies.* 33, 1; March 1996. p 45-54.
5. ALI (AMJAD). *University Libraries in the current perspective. University News.* 39, 48; Nov.26-Dec.2, 2002. p10-16.
6. ASSOCIATION OF INDIAN UNIVERSITIES, *University Handbook. 29th ed., 2002. Association of Indian Universities, New Delhi. p.1252.*
7. DABAS (K C) and SEWA SINGH. "Application of Information Technology in university libraries of Punjab, Haryana and Chandigarh: A comparative study", In J. L Sardana (ed): *Library Vision 2010: Indian Libraries and Librarianship in Retrospect and Prospect : Seminar Papers 45th All India Conference Hisar, Dec.,23-26, 1999. ILA, Delhi. pp. 343-357.*
8. DEMING (W E). *Out of crisis, 1986. Massachusetts Institute of Technology, Cambridge. 307p.*
9. DABAS (K.C) and DABAS (SHEELA). *Op cit (2).*
10. DABAS (K. C). "Punjab, Haryana, Himachal Pradesh and Chandigarh Library Network (PHHCLIBNET): A Blue Print for Qualitative Services" In *Information Services in a Networked Environment in India : Papers 7th CALIBER-2000, Chennai Feb., 15-18, 2000. Inflibnet, Ahmedabad. pp. 3.182-3.184.*
11. DABAS (K C) and SEWA SINGH. *Application of total quality management to the university libraries in Punjab : A study. IASLIC Bulletin* 45, 3; Sept. 2000.p 119-128.
12. DABAS (K C) and SEWA SINGH. "Essence of TQM for Library and Information services" In S.M.Dhawan (ed): *Quest for quality: Strategies and applications in library and information services: ILA Seminar paper 46th All India Library Conference Ahmedabad, 3-6 January, 2001. ILA, Delhi, pp135-148.*

13. DABAS (K C) and SEWA SINGH. Op cit (7).
14. Adams (Roy J). Local area networking developments at Leicester Polytechnic library PROGRAM. 21, 3; 1987. p 273- 82.
15. DABAS (K C) and SEWA SINGH. Organisational Culture and Leadership Styles in Some Selected Libraries ILA Bulletin. 38, 1; 2002. p 4-10.
16. DABAS (K C) and SEWA SINGH. "Essence of TQM for Libraries and Information System", In S.M. Dhawan et al (Eds): Quest for Quality : Strategy and Applications in Library and Information Services: ILA Seminar papers : 46th All India Library Conference of ILA, 3-6th Jan.2001 at Ahmedabad. 2001. ILA, Delhi. pp. 135-148.

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