Knowledge Based Assets among the University Libraries of Haryana and Chandigarh: A Measurement Survey

Anita Chhatwal
Corresponding Author
Librarian, Sri Guru Gobind Singh College, Sector-26, Chandigarh-160019, E-Mail: c.maninder@gmail.com

Preeti Mahajan
Professor, Department of Library and Information Science, Panjab University, Chandigarh-160014.
E-Mail id: ipreeti2001@yahoo.com

Abstract

In this paper, an attempt has been made to observe the ICT infrastructure available in the university libraries of Haryana and Chandigarh. Three university libraries, viz., Maharshi Dayanand University, Kurukshetra University and Panjab University were selected to examine, compare and determine the current position concerning the ability of the university libraries to provide access to ICTs and e-resources as part of their information service delivery. The data was collected from the librarians using the structured questionnaire. It was found that although ICT infrastructure was available in all the participating libraries to access e-resources, but there was a great variation in related hardware, software, campus LAN, and Internet facilities in these libraries

Keywords

ICT; ICT infrastructure; e-resources; information communication technology; university libraries.

Electronic access

The journal is available at www.jalis.in

Journal of Advances in Library and Information Science
ISSN: 2277-2219 Vol. 4. No.3. 2015. pp.196-201

1. INTRODUCTION

The concept of Information and Communication Technology (ICT) has brought about the unparalleled transformation in the library and information science profession. The concept of ICT analogous with IT (Information Technology) denotes assemblage of computer technologies, telecommunication technologies, and other media communication technologies as elaborated by Walmiki and Ramakrishnegowda[1] (2009). Hamelink[2] (1997) defined ICT as "those technologies that enable the handling of information and facilitate different forms of communication. These include capturing technologies (e.g. camcorders), storage technologies (e.g. CD-ROMs), processing techologies (e.g.application software), communcation technologies (e.g. local area network), and display technologies (e.g.computer monitors)". The conventional libraries have been transformed into the contemporary ICT based libraries by providing e-resources, automated services, digital services etc. Paperless society, gateways, digital libraries, electronic resources, etc. are the concomitants of the ICT revolution worldwide.. Being the fragment of higher education system, the university libraries have initatiated to implement ICT in their respective libraries so as to cater to the educational and research needs of their users. The university libraries have revolutionized to such an extent that they provide access to the elctronic resources like online databases, e-books, CD-ROM / DVD databases, Internet resources, in addition to the traditional print resources, besides delivering quality based information service to its users. Thus, ICT facilitates 24X7 access to information irrespective of the barriers of time and space.

2. LITERATURE REVIEW

Walmiki, and Ramakrishnegowde[3] (2009) in their paper examined the status of ICT infrastructure in six selected university libraries of Karnataka. They found that there was insufficient computer hardware, software, lack of requisite banwidth, and Internet nodes for accesing Internet facilities by the users. The campus LAN was not extended to explore the e-resources by the users. They concluded that there is a need to strenghten ICT infratsructre in the university libraries of Karnataka in order to provide better

services to their users. Farahi, & Gandhi[4] (2011) compared the existing status of information technology in medical libraries in Karnataka, India and Iran. The results of their study revealed that the participating libraries had hardware, software, and communication facilities to some extent. They also found that only few of them were fully automated. The difficulties encountered by the Iranian librarians while implementing IT in their respective libraries were lack of institutional support, funds, trained and skilled professionals, etc., whereas none of the options were rated as important problem by Indian medical librarians.

Sivakumaren, Geetha, and Jeyaprakash[5] (2011) examined the ICT infrastructure facilities available, ICT based software implemented, and the e-resources available in the government and deemed university libraries. They studied ten university libraries of Chennai and found that government university libraries had more computers than deemed university libraries, and almost all government university libraries had scanners. Three government university libraries and 6 deemed university libraries had photocopiers ranging between 1 and 10. Library automation, digital library, and barcode technology were implemented by 90% of the libraries. All the libraries provide Internet facility to their users, subscribe to e-journals, and were members of library consortium. They recommended that the participating libraries should execute digital library software, digitize the rare collections and add to the numbers of computer available to exploit the usage of ICT-based resources and services.

Syed Noor Mohd and Esmail[6] (2013) in their study assessed the availability of ICT infrastructure facilities to access e-resources among the Engineering college libraries of North Maharashtra. They found that the participating libraries were having computers with DVD/CD ROM reader and writer facilities. They were having library software, networking and Internet facilities for accessing e-resources. Majority of them were having DELNET and INFLIBNET network services and had subscribed to various bibliographic databases such as IEEE, ASME, ACM, ELSEVER, J-GATE, etc. They concluded that all the participating libraries had requisite ICT infrastructure facilities to access the e-resources.

Tiwari, & Sahoo[7] (2013) in their paper studied the infrastructure and usage of ICT in the university librraies of Rajasthan. They studied the hardware, software, networking infrastructure, housekeeping operations, user's services, besides the available staff, status of collection and financial sources of the said selected universities. The results of their study revealed that ICT was still at a nascent stage in the participating university libraries. They found that lack of ICT trained staff, lack of training facilities, delay in retrospective conversion of documents, delay in bar coding of documents, frequent change in ICT used in libraries etc., were some of the difficulties encountered by the participating libraries while implementing ICT. They also found that 87.5% participant libraries faced the problem of inadequate hardware, whereas 75% libraries faced the problem of financial crunch.

3. Brief Profile of the Participating Universities

3.1 Maharshi Dayanand University (MDU) (Rohtak)

Maharshi Dayanand University (http://www.mdurohtak.ac.in/info/univ_university.html) came into being in 1975 as per Act No. 25 of the Haryana Legislative Assembly in 1976. In 1977, it was given the name of Maharshi Dayanand University after Maharshi Dayanand who was an idealistic and social reformer. It became an affiliating university in November 1978. With an aim to encourage research in the subjects of ecological, environmental and life sciences, the university has established 36 departments for inter-disciplinary education. There are 10 teaching blocks, a Vivekananda Library with its 6 branches. Campus wide network with wi-fi technology is being provided to all the departments/offices/hostels for students as well as staff members. Besides, some programmes of the university function through Indira Gandhi P.G. Regional Centre (Meerpur, Rewari) which offers nine post graduate programmes. The University Institute of Law and Management Studies (ULIMS) (Gurgaon) offers two post graduate programms. The university has granted affiliation to more than 490 institutions / colleges located in 10 districts of the

State belonging to the subjects of Engineering, Computer Science, General Education, Technology and Management Science.

3.1.1 Vivekananda Library

Central library known as Vivekananda Library (http://www.mdurohtak.ac.in/library/lib_libraryprofile.html), housed in a magnificent three storeyed building is centrally air-conditioned and has a seating capacity of 800 readers. All the operations of the library are automated, be it check-in, check-out, serials system, catalogue or acquisition system. The library has 3,34,160 books, 50,000 bound volumes of journals, 7,076 theses and 480 Indian and foreign journals in print form. The library has considerable recurring plus non-recurring budget for upgradation of the library facilities. Moreover, it spends beyond Rs.200 lakh per annum for the enhancement of its collection. Besides, it also provides support to maintain website of the university, networking, etc.To provide access to e-resources, Internet laboratory with bandwidth connectivity of 1 Gbps is being provided to the users. As member of INFLIBNET, the library provides online access to 5,300 e-journals subscribed through UGC-INFONET plus 200 e-open access journals, Sage, SCOPUS, Indian Citation Index, e-Emerald Plus and Manupatra- a full text law database. E-books, e-conference alerts, e-theses, e-reference sources such as encyclopaedias, dictionaries, yearbooks, standards and patents, etc. are also being provided by the library. The multimedia library provides facilities audio/video CDs for upgrading the communication skills in an array of subjects.

3.2 Kurukshetra University

The foundation stone of Kurukshetra University (http://www.kuk.ac.in/), an institute of higher education was laid on 11 January 1957 by the first President of the Indian Republic and Bharatratna, Dr.Rajendra Prasad. The aim of this university is to persuade teaching and research in social sciences, humanities, sciences, performing arts, technology and sports. There are 445 faculty members in this university. More than 457 colleges and institutes are affiliated to Kurukshetra university belonging to the districts of Ambala, Panipat, Kaithal, Yamuna Nagar,Hisar, Fatehabad, Jind, Karnal, Sirsa, Kurukshetra and Panchkula.

3.2.1 Jawahar Lal Nehru (JLN) Library

The university library is a three storeyed air conditioned building, centrally located having a seating facility for 470 users. It has a collection of 3,39,817 books in the subjects of Social Sciences, Humanities, Sciences, Management and Commerce. There are 150 computers in the library ERNET Centre for the users with an Internet connectivity of 10 mbps leased line. Being a part of UGC Infonet Consortium, an access to 8453 e-journals is being provided by the library (http://www.kuk.ac.in/). All the in-house operations of the library are automated such as issue-return of books, library membership, procesing of periodicals, Online Public Access Catalogue (OPAC), etc.

3.3 Panjab University (PU) (Chandigarh)[8].

After partition, the Panjab University was inhibited to function for almost a decade without having a campus of its own. It was only in 1956 that the university was relocated at Chandigarh. The jurisdiction of the university extends over the districts of Ferozpur, Hoshiarpur, Ludhiana, Muktsar, Moga in the state of Punjab and the Union Territory of Chandigarh. It has 75 teaching and research departments besides 15 Centres / Chairs, more than 188 affiliated colleges spread over Punjab and Chandigarh and Regional Centres.

3.3.1 A.C.Joshi Library

The main library of the university, called 'A.C.Joshi Library', has a rich collection of more than 7 lakh including 1.25 lakh bound periodicals and rare books pertaining to 19th century. Besides this, it also has rare books, reports, government documents, back files of newspapers, theses and 1490 manuscripts[9]. As far as e-resources are concerned, the library has access to 225 online full text journals as part of print journals subscription. It provides approximately 5000 online full text journals through UGC-INFONET, Sage and INDEST-Consortium along with subscription to full-text databases of Science Direct, Web of Science, Proquest Dissertations and Theses Databases, DELNET, Westlaw International and Citation databases like SCOPUS online, India State Database[10], etc.

4. OBJECTIVES OF THE STUDY

The following are the objectives of the study:

1. To identify hardware facilities available in the selected university libraries of Haryana and Chandigarh.
2. To identify software facilities available in the selected university libraries of Haryana and Chandigarh.
3. To identify the status of the campus LAN in the selected university libraries of Haryana and Chandigarh.
4. To identify the availability of Internet facilities in the selected university libraries of Haryana and Chandigarh.

5. METHODOLOGY

For the present study, a structured questionnaire was designed to obtain the primary data from the university librarians regarding ICT infrastructure facilities available in the participating libraries to access e-resources for the benefit of their users. The three universities have been selected as a sample for the present study viz. Maharshi Dayanad University (MDU) (Rohtak), Kurukshetra University (KU) (Kurukshetra) and Pnajab University (Chandigarh). The data thus received was tabulated and simple table analysis was done to draw conclusions.

Table 1: Hardware facilities available in the participating university libraries.

Sl. No	Hardware	PU Library	MDU Library	KU Library
1.	Computers *(Server systems, desktop computers,etc.)*	57	101	140
2.	Printers	15	23	15
3.	Scanner for Digitization	--	3	5
4.	Barcode Scanner	1	10	1
5.	Barcode Printer	--	--	--
6.	LCD / OHP Projector	1	3	1
7.	Fax	1	--	--
8.	Web Camera	1	2	1
9.	UPS	20	20	8
10.	Identity Card Printer	--	--	--
11.	Photocopy machine	1	3	--
12.	CCTV Camera	25	45	50
13.	Televisions	2	1	3
14.	Any other	--	--	--

Table 1 indicates the number and variety of hardware available in the selected university libraries. From the table, it is clear that KU library has maximum number of computer systems (140), followed by MDU library (101), whereas PU library has 57 computer systems. MDU library has 23 printers, followed by PU library and KU library (15 each). Except PU library, other participating university libraries have scanners for digitization purpose ranging from 3 to 5. Barcode scanners are available at all participating libraries. MDU library has the maximum number of barcode scanners as compared to other libraries. Of the three university libraries, none of them have barcode printers. The MDU library has 3 LCD / OHP projectors, whereas KU library and PU library have one each. Of the three selected participating university libraries, only PU library has the fax machine. The web camera facility is available at the three selected particiting libraries ranging from 1 to 2. Maximum number of web cameras are available at MDU library (2), whereas PU library and KU library have one each. The participating libraries have the facility of UPS available at their respective libraries ranging from 8-20. None of the participating libraries have the identity card printer. Excluding KU library, the rest of the university libraries have the facility of photocopy machine. Higher number of CCTV cameras are installed in KU library (50) with 3 televisions, followed by MDU library (45) with 1 television, whereas PU library has 25 cameras installed with 2 televisions each for surveillance purpose.

Table2: Software facilities available in the participating university libraries.

Sl. No.	Software	PU Library	MDU Library	KU Library
1.	House-Keeping Operations	SLIM-21	Libsys	Libsys
2.	Digital Library	--	--	--
3.	Anti Virus	AVG	Semantic	--
4.	Research Data Analysis if any	SPSS	SPSS	--

Table 2 above reveals the softwares available in the participating university libraries selected under the

present study. The data reveals that the library at PU is using SLIM-21 for dual purpose of automation integrated with RFID technology. The libraries at MDU and KU is using Libsys software for automation purpose. For the purpose of digital library, none of the participating libraries is using any digital library software. All participating university libraries are using licensed antivirus in their libraries except KU library. It is further revealed that only PU Library has purchased SPSS for research data analysis, whereas other participating university libraries are not having any such software facility for research data analysis.

Table - 3: Campus LAN of the participating university libraries.

Sl. No.	Campus LAN	PU Library	MDU Library	KU Library
1.	**Established Campus LAN**	Yes	Yes	Yes
2.	**Levels of Extension**			
	i) Only Computer Centre	--	--	--
	ii) Computer Centre and Library	--	--	--
	iii) Number of connections in Deptt.'s / Centres / Labs. / Units	--	--	--
	iv) Deptt.'s / Centres / Labs. / Units are well connected	Yes	Yes	Yes
	iv) Reaches to Hostels and Residence also	--	---	Yes
3.	**Maintenance of Campus LAN**	Computer Centre	AMC	HCL Company

Table 3 above shows the networking of campus through local area network (LAN) of the participating university libraries. From the analysis of above mentioned table, it is clear that all the participating universities have established their campus LAN. PbiU has set up an extensively spread out campus LAN which reaches out from library to university computer centre, various departments, centres, laboratories, hostels and residences of the staff also. The campus LAN of PU and KU is restricted to the library, departments, centres, laboratories and hostels, whereas in MDU the campus LAN is restricted to the library, departments, centres and laboratories only. The responsibility of maintenance of Campus LAN rests with the computer centres of their respective universities at PU, whereas at MDU, the facility of annual maintenance (AMC) by the company exists and at KU, the HCL Company directly maintains the campus LAN.

Table - 4: Internet facilities available in the participating university libraries.

Sl. No.	Internet Facilities	PU Library	MDU Library	KU Library
1.	Type of Connection	Leased Line	Leased Line	Leased Line
2.	Service Provider	Tata, VSNL, BSNL, NKN	BSNL	BSNL
3.	Bandwidth	2.90 GBPS	1 GBPS	10 MBPS
4.	Number of Internet Nodes	Unlimited	50	200
5.	Browsing Section for Faculty	Yes	Yes	Yes
6.	Browsing Section for Students	Yes	Yes	Yes
7.	Browsing Section for Library Staff	Yes	Yes	Yes
8.	Library website, if any	Yes	Yes	Yes

Table 4 above clearly indicates that the participating libraries have leased line for Internet connection from BSNL, VSNL, NKN. The Internet bandwidth varies from 10 MBPS to 3 GBPS. The library at PU has the maximum bandwidth of 2.90 GBPS as compared to the other participating libraries. The Internet nodes created in the respective libraries vary from unlimited in PU to 200 in KU. All the participating libraries have their own library websites and Internet browsing section for faculty, students as well as library staff. From the analysis, it is apparent that the libraries at PU and KU have better Internet facilities as compared to the other university libraries.

6. CONCLUSION

Keeping in view the analysis, it was found that the overall infrastructural facilities of the participating libraries are at different stages of development The analysis of the infrastructural facilities show that some of the participating libraries lack computer hardware, antivirus software, digital library software, research data analysis software, extended campus LAN and Internet facilities with necessary bandwidth. From the study, it is concluded that there is a significant difference in the ICT infrastructure facilities available in the participating university libraries and it varies to a great extent from one another.

REFERENCES

1. Ahmad, N., & Fatima, N. (2009). Usage of ICT products and services for research in social sciences at Aligarh Muslim University. *DESIDOC Journal of Library and Information Technology*, *29(2),* 25-30.
2. Chhatwal, A., & Mahajan, P. (2014). Availability of ICT infrastructure facilities to access e-resources among the university libraries of Punjab and Chandigarh - a study. *Asian Journal of Multidisciplinary Studies, 2(7),* 73-77.
3. Dhanavandan, S., Selvarasu, C., Esmail, S.M., & Nagarajan, M. (2011). Information communication technology (ICT) infrastructure facilities in self-financing engineering college libraries in Tamil Nadu. *Library Philosophy and Practice*. Retrieved 10 January 2015 from http://www.webpages.uidaho.edu/~mbolin/dhanavandan-esmail-nagarajan.pdf
4. Elmunsyah, H. (2012). Study of ICT infrastructure and access to educational information in the outskirts of Malang. *Acta Didactica Napocensia, 5(2),* 41-48.
5. Etebu, A.T. (2010). ICT availability in Niger Delta university libraries. *Library Philosophy and Practice*. Retrieved from http://unllib.unl.edu/LPP/etebu3.htm
6. Farahi, M.T., & Gandhi, R.T.D.R. (2011) IT skills among LIS professionals of medical Libraries in India and Iran: A comparative study. *Annals of Library and Information Studies*, *58*, 161-69.
7. Hamelink, C.J. (1997). *New information and communication technologies, social development and cultural change.* United Nations Research Institute for Social Development Discussion paper No.86. Geneva: UNRISD. Retrieved from http://dare.uva.nl/document/14111
8. Mostert, B.J., & Olorunfemi, D.Y. (2013). Serving Nigerian law students: e-readiness and utilization of university e-information facilities. *International Journal of Technology and Inclusive Education (IJTIE), 2(2),* 200-207.
9. Nwezeh, C.M.T. (2010). Use of ICT in Nigerian universities: a case study of Obafemi Awolowo University, Ile-Ife. *Library Philosophy and Practice*. Retrieved from: http://unllib.unl.edu/LPP/nwezeh3.htm
10. Sivakumaren, K. S., Geetha, V., & Jeyaprakash, B. (2011). ICT facilities in university libraries: a study. Library Philosophy and Practice (e-journal). Paper 628. Retrieved from http://digitalcommons.unl.edu/libphilprac/628
11. Syed Noor, M. & Esmail, S. M.(2013). Assessment on availability of ICT infrastructure facilities to access e-resources among the engineering college libraries of North Maharashtra university. *Journal of Advances in Library and Information Science, 2(1),* 35-38.
12. Tiwari, B.K., & Sahoo, K.C (2013).Infrastructure and use of ICT in university libraries of Rajasthan (India).*Library Philosophy and Practice (e-journal). Paper 883.* Retrieved from http://digitalcommons.unl.edu/libphilprac/883
13. United Nations Development Programme. (2001). *Human development report: making new technologies work for human development*. New York: Oxford University Press.
14. Walmiki, R.H., & Ramakrishnegowda, K.C. (2009). ICT infrastructure in university libraries of Karnataka. *Annals of Library and Information Studies*, *56*, 236-241.
15. Young, Heartsill (1983). *The ALA glossary of library and information science*. Chicago: American Library Association
16. http://www.puchd.ac.in
17. http://library.puchd.ac.in/index.php
18. http://library.puchd.ac.in/digital-library.php
19. http://www.mdurohtak.ac.in/info/univ_ university.html
20. http://www.mdurohtak.ac.in/ library/lib_libraryprofile.html
21. http://www.kuk.ac.in/