

Availability of Electronic Resources at NIT Libraries in India : A Study

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Abstract

Library is a repository of resources that create a fundamental change in education. Adequate electronic resource facilities empower and enrich the higher education system in meeting the best academic needs. Users are able to access e-resources either by local or remote locations. In this paper, we consider only electronic resources available at National Institutes of Technology (NITs) libraries across the country. The electronic resources consist of online journals databases, CD-ROM material and audio/video course materials. The survey finds majority of libraries use 11 to 15 number of online journals databases, whereas 25 per cent libraries have the facility of more than 16 number of online journals databases. Very few libraries (20%) indicate that they have less than 10 online journals databases at their end. Eighty five percent of libraries have the facilities e-resources on CD-ROMs/DVDs form. About 90 per cent of libraries obtain audio/video course materials. This study also reveals the zone-wise performance among NIT libraries in India with respect to electronic resources availability. The South zone (75%) libraries have better-off in comparing to the other zones libraries.

Keywords: *Electronic Resources, Academic Library System; National Institutes of Technology.*

Introduction

Academic system largely relies on teaching, learning and research. Eternally, education depends on information resources. These resources are the driving forces for making an educated society. The educated society can exist only when information is stored, shared and utilised properly. In an academic arrangement, both 'education' and 'library' are inseparable – indivisible concepts, working for the promotion and evolution of teaching, learning and research for greater use of academia.

Library is a repository of resources. It is an integral part of the educational system whose primary function is to serve users (students, faculty, researchers and staff). Computers and related electronic resources

have come to play a central role in education (Lang,2008). Electronic resources are the prime ingredients and they become a common part of the suite of most academic library resources today. AACR2 Rule 9.0A1 states "electronic resources consist of data (information representing numbers, text, graphics, images, maps, moving images, music, sounds, etc.), programs (instructions, etc., that process the data for use), or combinations of data and programs." (Brinkley, et al. 1999). In early 70s, most of the electronic sources were available on magnetic tapes and some of these were online (Ravichandra Rao,2000). Various kinds of resources that are available and accessed today are intranet (locally produced e-resources), internet also called online (remotely stored e-resources) and physical media (stored data on CD-ROM, audio, video cassettes etc) based. The third one is much like the traditional paper based publications with the exception that they require computer hardware and software for their utilisation(Jodelis,2003). Building electronic collections is largely influenced by a set of library policies and user (faculty and students) preferences in the academic environment (Clarke, 2004).

The proliferation of electronic resources has had a significant impact on the way the academic community uses, stores, and preserves information (Heterick, 2002). These e-resources are added value to the academic libraries to offer better services to users. These e-resources are accessible from many different approaches. Users are able to access e-resources either by local or remote locations (Clarke, 2004).

The electronic resources empower and enrich the academic system. But, the increase in information generation at an estimated rate of 13 per cent per annum has made the task of collection, organization and retrieval of information very difficult (Subba Rao, 2001). Alternatively, the academic libraries often prefer electronic resources to substitute print collections for

optimum use. Many reasons including physical space, escalation in journals' prices, digital literacy, discovery system, and skilled manpower force the academic libraries to opt for electronic resources in meeting needs of the large community of users. Scarcity of physical library space – Lee proposed an alternative attempt such as remote storage and weeding for solving the space problem in the library (Lee, 1993). Escalating journal prices – Suber and Arunachalam indicate that, "the average price of a science journal has risen four times faster than inflation for the past two decades (Suber and Arunachalam, 2005).." Paul Gilster pointed out that, "digital literacy is the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers (Schrock, 1999)." Cataloguing, indexing, searching, retrieving print resource are tedious and time-consuming jobs, therefore, expertise in creating an effective indexing and resources discovery system is required for search and retrieval services – Lawrence experienced that without efficient and comprehensive search services the content may not improve access greatly (Lawrence, 2001). Manpower is the most essential component for the library system. Brinberg highlighted the handicap of new recruit is a challenge for library (Brinberg, and Bearan, Eds, 1987).. Professional expertise and experiences make efficient use of e-resources. Moreover, the use of electronic tools in the academic environment makes classes more efficient; lectures more compelling, informative, and varied; reading assignments more extensive, interesting, and accessible (Montgomery, and King, 2002).

This study is limited to the National Institute of Technology (NITs) erstwhile *Regional Engineering Colleges* (RECs) libraries in India concerning the availability of electronic resource facilities. These NITs are prime institutions, established across the country state-wise to produce qualitative trained manpower to meet the need and expectations of the country and promote high quality teaching, learning and research in the field of engineering, science and technology. Presently, twenty NITs are functional in India. They offer degree courses at various Bachelors, Masters and Doctorate levels in diverse branches of engineering, science and technology.

These are "institutions of national importance" established on the lines of the prestigious Indian Institutes of Technology (IITs) in terms of student quality, research and placements. These are fully funded by the Central Government. The NIT Act – 2007 has come into force with effect from August 15, 2007 as per Notification S.O.1384 (E) dated 9th August, 2007 of the MHRD (Dept. of Higher Education), New Delhi. As per the provision of the said Act, these institutions run on non-profit basis. All institutions have autonomy to draft curriculum and functioning policies. Greater infrastructure facilities have been given to these

institutions for development in teaching, learning, research and dissemination of information. These institutions are not only for inducting qualitative teaching, learning and research but also for inviting funds to create central facilities to support them and also to help neighbour technical institutions.

In India, especially where NIT libraries are concerned, the electronic resources are examined in order to ascertain their conditions. Electronic resources referred here are "information packages made available in digital format." These electronic resources consist of online journals databases, CD-ROM/DVD and audio/video course materials. Mostly, the online journals databases cover full text journals databases such as ACM (Association for Computing Machinery) Digital Library, American Society of Civil Engineers (ASCE), American Society of Mechanical Engineers, (ASME), ASTM (American Society for Testing and Materials) journals and standards, IEEE Online, Nature, Proquest, Springer link, ScienceDirect etc), and abstract databases (Engineering village2 (*Compendex and INSPEC*) Web of sciences, Chemical Abstracts etc) and standards etc. In this present study, the main objectives are as follows:

- To examine the strength of online journals' database at NIT libraries in India.
- To study the physical form of electronic resources (CD-ROM databases and audio/video cassettes) among NIT libraries in India.
- To evaluate zone-wise performance with respect to electronic resource facilities.

Methodology

A methodology used for collecting data was questionnaire based. The choice of selecting questionnaire method was survey-based. A questionnaire was designed in structural form and framed into different sections representing specific facets. The sample size was twenty, due to a small number of NITs in India. The questionnaire was served to administrators of the library of the all NITs (Table 1). A reminder was sent to those librarians who failed to respond in time. Finally, all responses were received. As part of research, the data (Annexure) that are considered important for this study were quantified using 1 to 5 numerical scales for the purpose of analysis.

Scope and Limitations

The present study is confined to twenty NIT libraries in India, concerning only the library electronic resources. In this study, data received from the respondents are authenticated and assumed to be factual. User interview/opinions and their degree of satisfaction through user survey would have added value to the present study.

Table 1: Number of Institutions in Zone Wise

Sl. No.	Zones	Name of the Institutions
1.	North	MNNIT Allahabad
2.		NIT Hamirpur
3.		NIT Jalandhar
4.		NIT Kurukshetra
5.		NIT Srinagar
6.	East	NIT Durgapur
7.		NIT Jamshedpur
8.		NIT Patna
9.		NIT Rourkela
10.	North East	NIT Agartala
11.		NIT Silchar
12.	South	NIT Calicut
13.		NIT Surathkal
14.		NIT Tiruchirapalli
15.		NIT Warangal
16.	West	MNIT Jaipur
17.		VNIT Nagpur
18.		SVNIT Surat
19.	Central	MANIT Bhopal
20.		NIT Raipur

Findings

The data considered for this study were described and analysed on the basis of given objectives. The electronic resources encompass mainly online journal databases, CD-ROM databases and audio/video cassettes. Additionally, the institutions were ranked in zone wise. These zones are North, East, North East (NE), South, West and Central.

Online Journal Database

Online journals databases refer to journals in electronic form either by abstracting or full-text database. These databases reside from remote locations and accessed from the desktop terminal. Table 2 shows that, about 20 per cent of respondents report that they have less than 10 online databases. Half the libraries (50%) obtain 11-15 online journals databases. Two libraries have the facility of 16-20 online journals databases, three (15%) libraries have more than 20 online journals

databases.

CD-ROM/DVD materials

CD-ROM/DVD materials refer to electronic resources available in magnetic media. These resources can be accessed either by standalone or network-based computer system. Figure 1 shows that, about 45 per cent of libraries reported that they have more than 900 CD-ROMs/DVDs whereas, 20 per cent of libraries have less than 300 CD-ROMs/DVDs. Another 20 per cent libraries have between 301-900 CD-ROMs/DVDs materials.

Audio/Video Courses

Audio/Video Courses refer here course materials available in electronic form. Table 3 presents four (20%) libraries are reported that, they have more than 1200 audio/video course materials. Five (25%) of the libraries have less than 300 and whereas nine libraries have between 301-900 audio/video courses.

Table 2: Online Journals Databases

No. of Online Journals Databases		North	East	NE	South	West	Central	Total NITs	%
Available (Abstract, Full-text and other Open Access Journals)	<5	0	1	0	0	0	1	2	10
	6-10	1	0	0	0	1	0	2	10
	11-15	4	2	1	2	0	1	10	50
	16-20	0	1	0	0	1	0	2	10
	21 and above	0	0	0	2	1	0	3	15
Not Available		0	1	0	0	0	1	5	

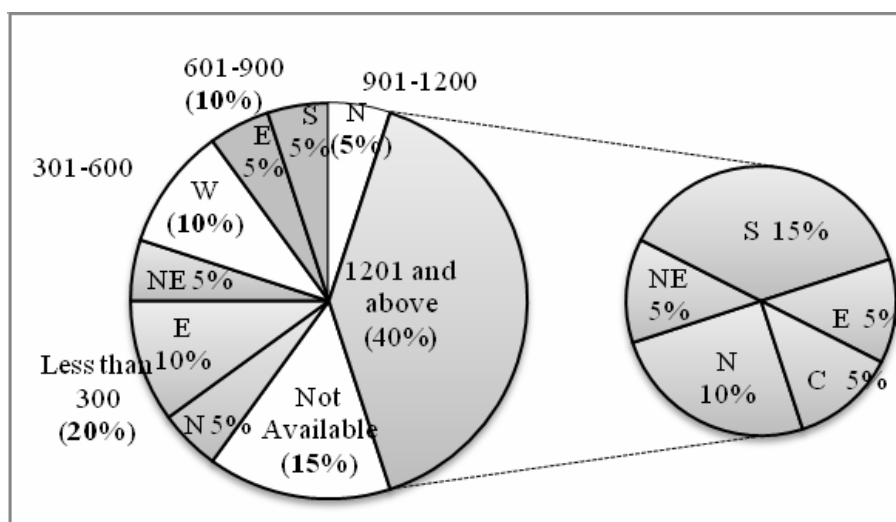


Figure 1: CD-ROMs/DVDs Materials

Table 3: Audio/Video Cassettes

No. of Audio/Video Cassettes		North	East	NE	South	West	Central	Total NITs	%
Available (Electronic Educational Materials of both Audio/Video)	<300	1	2	1	1	0	0	5	25
	301-600	0	0	0	1	1	1	3	15
	601-900	1	1	0	1	0	0	3	15
	901-1200	0	0	1	0	2	0	3	15
	1200 and above	3	0	0	1	0	0	4	20
Not Available	0	1	0	0	0	1	2	10	

Electronic Resources – Zone Wise

In the present Indian scenario, geographically located NIT libraries have started to become resourceful and equipped enough. They work towards the development of teaching learning and research. Here, the strength of electronic resources consist of online journals databases, CD-ROM materials and audio and video course materials available at NIT libraries are presented zone wise. From the below Table 4, it can be seen that, South zone is leading with a 75 per

cent followed by West (67%) and North (64%) whereas, North East, Central and East zones with the figure of 47 per cent, 37 per cent and 35 per cent respectively. The percentages are shown in Figure 2.

Major Findings

- Invariably, almost all libraries have online journal databases. About 20 per cent of libraries respondents indicate that they have less than 10 number whereas, 50 per cent of libraries have 11

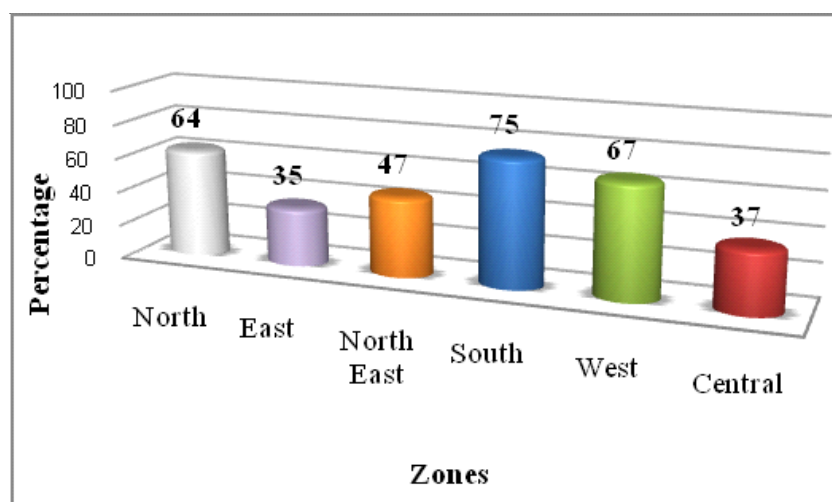


Figure 2: Electronic Resources – Zone Wise

Table 4: Strength of Electronic Resources among the NIT Libraries – Zone wise

Sl. No.	Zone	Name of the Library	Score Achieved	Total Score Achieved in Zone Wise	Total Ideal score (15) in Zone Wise	Percentage
1.	North	MNNIT Allahabad	8	48	75	64
2.		NIT Hamirpur	13			
3.		NIT Jalandhar	12			
4.		NIT Kurukshetra	11			
5.		NIT Srinagar	4			
6.	East	NIT Durgapur	7	21	60	35
7.		NIT Jamshedpur	5			
8.		NIT Patna	1			
9.		NIT Rourkela	8			
10.	North East	NIT Agartala	2	14	30	47
11.		NIT Silchar	12			
12.	South	NIT Calicut	12	45	60	75
13.		NIT Surathkal	7			
14.		NIT Tiruchirapalli	15			
15.		NIT Warangal	11			
16.	West	MNIT Jaipur	8	30	45	67
17.		VNIT Nagpur	9			
18.		SVNIT Surat	13			
19.	Central	MANIT Bhopal	10	11	30	37
20.		NIT Raipur	1			

to 15 online journal databases. Two libraries have access to 16 to 20 number of online journal databases. Very few (15%) libraries have the facility of more than 20 number of online journals databases.

- b) Eighty five per cent of libraries indicate that they have e-resources in the form of CD-ROMs/DVDs, in which nine libraries possess more than 900, 20 per cent of libraries have 301-900 and another 20 per cent of libraries have less than 300 CD-ROMs/DVDs holding.
- c) Majority of libraries (90%) obtain audio/video course materials, in which four (20%) libraries have more than 1200, ten libraries have 600-900 and five (25%) libraries have less than 300 audio/video course materials.
- d) Concerning to availability of e-resources, the South zone libraries (75%) are richer than the other zone libraries.

Conclusion

Teaching, learning and research are the main concern of higher education system. Library is a supporting organ though, it is an integral part of the higher education system whose primary function is not only to obtain resources but also to serve the academic community timely. Building electronic resources is a significant that enriches the academic library system largely. For many reasons, the academic libraries

often prefer electronic resources alternatively to substitute print collections for the optimum use. The purpose of study is mainly to insinuate the condition of electronic resources at NIT libraries in India. The survey findings show that the South zone libraries have richer e-resources, followed by the West and North libraries. The North-east, East and Central zone libraries have long a way to build their e-resources due to various probable reasons including planning, initiation and expertise behind the development of electronic resources among the NIT libraries. Moreover, distribution of e-resources subscribed by the Ministry of Human Resource Department (MHRD) for NIT libraries through INDEST (Indian Digital Library in Engineering Science and Technology) Consortium is not equally shared. For instance NIT Patna, Raipur and Agartala libraries have so far not availed equal share of e-resources facilities, whereas other NIT libraries are being availed. However, all libraries have reasonable resource facilities at their end. Future studies may be conducted in other universities on usage electronic resources in Indian context. The study can also be extended to other technical universities on financial implications of digital resources.

References

1. Brinkley, Alan et al. (1999). *The Chicago Handbook for Teachers: A Practical Guide to the College Classroom*. University of Chicago: University of Chicago Press.

2. Lang, Jennifer (2008). Cataloging Electronic Resources. 1-12. Available at <http://library.princeton.edu/departments/tsd/katmandu/electronic/ercatpu.pdf>.
3. Ravichandra Rao, I.K. (2000) Sources of Information with Emphasis on Electronic Resources. DRTC Annual Seminar on Electronic Sources of Information. 1-3 March 2000.
4. Jodelis, Remigijus (2003). Harvesting and archiving of electronic resources in Lithuania: towards virtual library. Available at http://www.inforum.cz/archiv/inforum2003/prispevky/Jodelis_Remigijus.pdf
5. Clarke, Joshua. (2004). Global Electronic Collection Trends in Academic Libraries. Cambridge: Publishers Communication Group. Available at <http://www.pcgplus.com/Resources/GlobalEITr.pdf>.
6. Heterick, Bruce (2002). E-content: Faculty attitudes toward electronic resources. *Educause Review*, 37(4), 10-11. Available at <http://net.educause.edu/ir/library/pdf/erm0248.pdf>
7. Subba Rao, Siriginidi. (2001). Networking of Libraries and Information Centres: Challenges In India, *Library Hi Tech*, 19(2), 167-179.
8. Lee, Hur-Li. (1993). The Library Space Problem, Future Demand, and Collection Control, *Library Resources & Technical Services*, 37 (2), 147-166.
9. Suber, P and Arunachalam, S. (2005). Open Access to Science in the Developing World, World-Information City. Tunis: WSIS.
10. Schrock, Kathy (1999) in. Teaching Media Literacy in the Age of the Internet. Classroom Connect. Available at <http://school.discoveryeducation.com/schrockguide/pdf/weval.pdf>.
11. Lawrence, Steve. (2001). Free Online Availability Substantially Increases A Paper's Impact, *Nature*, 411 (6837), 521.
12. Brinberg, Herbert R., and Toni Carbo Bearan, Eds. (1987). Educating the Future Information Professional. *Library Hitech*, 5 (2), 27-40.
13. Montgomery, C. H. and D. W. King. (2002). Comparing Library and User Related Costs of Print and Electronic Journal Collections: A First Step Towards a Comprehensive Analysis, *D-Lib Magazine*, 8(10). Available at <http://www.dlib.org/dlib/october02/montgomery/10montgomery.html>

Annexure: Electronic Resources of the NIT Libraries – Zone wise

Sl. No.	Zones	Library	Online Journals Databases					CD-ROM/DVD					/
			<5	6-10	11-15	16-20	21 and above	<300	301-600	601-900	901-1200	1201 and above	
			(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	
1	North	MNNIT Allahabad	X	?	x	x	x	?	x	x	x	x	x
2		NIT Hamirpur	X	x	?	x	x	x	x	x	x	?	x
3		NIT Jalandhar	X	x	?	x	x	x	x	x	?	x	x
4		NIT Kurukshetra	X	x	?	x	x	x	x	x	x	?	x
5		NIT Srinagar	X	x	?	x	x	x	x	x	x	x	?
6	East	NIT Durgapur	X	x	?	x	x	x	x	?	x	x	?
7		NIT Jamshedpur	X	x	?	x	x	?	x	x	x	x	?
8		NIT Patna	?	x	x	x	x	x	x	x	x	x	x
9		NIT Rourkela	x	x	x	?	x	?	x	x	x	x	x
10	North	NIT Agartala	x	x	x	x	x	?	x	x	x	x	?
11	East	NIT Silchar	x	x	?	x	x	x	x	x	x	?	x
12	South	NIT Calicut	x	x	x	x	?	x	x	x	x	?	x
13		NIT Surathkal	x	x	?	x	x	x	x	?	x	x	?
14		NIT Tiruchirapalli	x	x	x	x	?	x	x	x	x	?	x
15		NIT Warangal	x	x	?	x	x	x	x	x	x	?	x
16	West	MNIT Jaipur	x	?	x	x	x	x	?	x	x	x	x
17		VNIT Nagpur	x	x	x	x	?	x	?	x	x	x	x
18		SVNIT Surat	x	x	x	?	x	x	x	x	x	?	x
19	Central	MANIT Bhopal	x	x	?	x	x	x	x	x	x	?	x
20		NIT Raipur	?	x	x	x	x	x	x	x	x	x	x