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Emerging Trends in Information Resource and its Infrastructure Development in Engineering and Technology Institute Libraries: A Case Study

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ABSTRACT

This paper discuss the development of library resources and IT infrastructure of selected engineering and technology libraries of University of Delhi and GGSIP University Delhi. Analyzed the collection of print and digital resources for the period of 2004-05 to 2008-2009. Assessed the expenditure incurred on reading resources and IT infrastructure. Further, the author presents the status of library automation, development of digital library and internet based or website services. The paper also reflect the trends in development and growth with comparative statement of selected libraries during the period

Keywords: Trends in LIS, Library Automation, Digital Library, E-resources, ICT.

INTRODUCTION

The ultimate objective of a library is to extend the quality service to its clientele. It is necessary to develop the quality information resources and compatible IT infrastructure to provide the library services. Due to the emerging trends and changing scenario, library considered its users as a consumer and it is widely accepted that quality in service can only help the libraries to retain current consumers and attract new ones. The high quality of resources ensures the high quality in library service. The other factors are also considerably improves the quality in service but the quality of resources and infrastructure can never be ignored. Therefore, the libraries under study will be examined especially focused on development of information resources and IT infrastructure. This paper is the part of research study of author and he discussed about the growth and development of information resources and IT infrastructure.

METHODOLOGY

Survey method using: questionnaire, and personal interview technique

The research study is a survey of selected libraries. The methodology adopted for the study consisted of four stages i.e. selection of libraries, designing of questionnaires, collection of data, analysis of data, finding and preparing of report.

Designing questionnaires

The two questionnaires meant for librarians were designed and distributed for collecting the relevant data. The first questionnaire was to know the initial information about the infrastructure required for conducting the study i.e number of computer systems, library automation, OPAC, multimedia section, and digital resources.

etc. The study has been restricted to two major universities i.e. University of Delhi (DU) and GGSIP University. The second structured questionnaire was for selected libraries only, to collect detailed data on library resources and IT infrastructure.

Selection of libraries

After analysing the response of first questionnaire, the following eight libraries have been selected for further study.

Table-1 - Name of the selected libraries.

Year of Estd.	Status	Acronyms	Affiliation	Name of the Institute
2000	Private	BVCE	GGSIP	Bharati Vidyapeeth's College of Engineering
1933	Govt	DCE	DU	Delhi College of Engineering Now Delhi Technological University
1999	Private	GTBIT	GGSIP	Guru Tegh Bahadur Institutes of Technology
2003	Private	HMRIT	GGSIP	H M R Institute of Technology and Management
1998	Govt	IGIT	GGSIP	Indira Gandhi Institute of Technology
2000	Private	MAIT	GGSIP	Maharaja Agrasen Institute of Technology
1972	Private	MSIT	GGSIP	Maharaja Surajmal Institute of Technology
1983	Govt	NSIT	DU	Netaji Subhas Institute of Technology.

ANALYSIS AND INTERPRETATION OF DATA

After receiving the response of second questionnaire, the data have been presented in tabular form, and further supplemented by graphs wherever necessary. The data

have been analyzed, using excel statistical techniques viz. for calculating average, percentage averages, and ranked them in increasing or decreasing order and comparative statements were prepared wherever required.

Table-2 – Library staff Strength.

Category	BVCE	DCE	GTBIT	HMRIT	IGIT	MAIT	MSIT	NSIT	Sum	%
Library professionals	1	7	7	5	4	13	3	5	45	63
IT professionals	0	0	0	0	0	0	0	0	0	0
Non- professionals	4	4	2	2	1	4	2	7	26	36.62
Total	5	11	9	7	5	17	5	12	71	100

As regards to the organizational study of these libraries and particularly the staff strength and staffing category the table have been prepared. The Table 2 indicates the various staff categories existing in the library. The analysis reveals that no IT staff has been recruited in these libraries. These libraries have total library

professionals 45 (63.38%), non professionals 26 (36.62%) and both 71. The BVCE has lowest number of library professionals (1) and MAIT has the highest number of library professionals (13). The IGIT has lowest number of non professionals (1) and NSIT has the highest number of library professionals (7).

Table 3- Users strength

Category	BVCE	DCE	GTBIT	HMRIT	IGIT	MAIT	MSIT	NSIT	Total	%
Faculty	115	250	78	80	32	95	62	150	862	4.73
Students	2350	3400	1800	1800	700	2500	1650	2000	16200	88.87
Other members	125	350	91	104	25	152	120	200	1167	6.40
Total	2590	4000	1969	1984	757	2747	1832	2350	18227	100

The above table reveals the strength of library users i.e. faculty, students and other staff members. As overall, the IGIT has the lowest number of users and DCE has

the highest number of users. The overall percentage of users group i.e. faculty is 4.73%, students is 88.87% and other staff members are 6.40%.

Table – 4 - IT Hardware and Software items added.

Items	2004-05	2005-06	2006-07	2007-08	2008-09	Total
Computers	14	37	83	47	45	226
Printers	6	5	13	3	5	32
Scanners	1	5	3	1	1	11
Fax	0	1	0	0	0	1
CD/DVD writer	3	31	40	25	15	114
Servers	2	3	4	1	0	10
DVR	0	0	1	1	0	2
CCTV Cameras	0	0	23	12	0	35
Software	0	0	0	0	0	0

Table - 5 – IT:- Hardware and Software items added.

Items	BVCE	DCE	GTBIT	HMRIT	IGIT	MAIT	MSIT	NSIT	Total
Computers	7	104	15	25	8	28	11	28	226
Printers	7	6	4	1	3	2	2	7	32
Scanners	2	2	4	1	1	0	0	1	11
Fax	0	1	0	0	0	0	0	0	1
CD/DVD writer	3	75	6	0	0	28	1	1	114
Servers	1	3	1	1	1	1	1	1	10
DVR	0	1	0	0	0	1	0	0	2
CCTV Cameras	0	23	0	0	0	12	0	0	35
Software	0	0	0	0	0	0	0	0	0

The table number 4 and 5 reveals the IT Hardware and Software items added during the above period. The computer (83) was the highest item procured during 2006-07 and fax (1) was the lowest item procured during 2005-06. The highest item added was computer (226) and lowest item added was fax (1). The trend reflects that in 2004-05 and 2005-06, the procurement of IT

items was increasing, 2006-07 was the peak period and after that it started decreasing.

The highest and lowest item procured was computer (104) and fax (1) by DCE. The software was never procured during the period. It shows that all libraries have installed the software before the study period.

Table -6 -Libraries procured IT Hardware and Software items.

Items	Number of libraries procured items				
	2004-05	2005-06	2006-07	2007-08	2008-09
Computers	7	7	6	7	7
Printers	5	3	7	2	4
Scanners	1	4	2	1	1
Fax	0	1	0	0	0
CD/DVD writer	2	2	3	2	2
Servers	2	2	4	1	0
Security System (DVR)	0	0	1	1	0
CCTV Cameras	0	0	1	1	0

The table number 6 reveals the number of libraries purchased the IT items during the period. The highest number of libraries was seven which procured highest item i.e. computers during the period except 2006-07.

Another highest procured item was printer by seven libraries during 2006-07. The lowest number of libraries was one which had procured item i.e. fax during the above period.

Table - 7 – Expenditure* on IT Hardware and Software items added.

Items	2004-05	2005-06	2006-07	2007-08	2008-09	Total
Computers	776000	1823000	4163000	2228000	2008000	10998000
Printers	332500	232500	595500	107000	166000	1433500
Scanners	12000	35000	16000	15000	5000	83000
Fax	0	8000	0	0	0	8000
CD/DVD writer	65000	215500	337500	182000	185000	985000
Servers	388000	570000	450000	200000	0	1608000
DVR	0	0	230000	68000	0	298000
CCTV Cameras	0	0	120000	84000	0	204000
Software	0	0	0	0	0	0
Total	1573500 (10.07%)	2884000 (18.46%)	5912000 (37.85%)	2884000 (18.46%)	2364000 (15.33%)	15617500

The table number 7 reveals the expenditure on IT Hardware and Software items added during the above period. The highest expenditure was 4163000 incurred on computers during 2006-07 and lowest expenditure was ₹5000 incurred on scanners during 2008-09. The total expenditure was ₹10998000 incurred on computers and lowest expenditure was 8000 incurred during the period. The highest figure of expenditure was ₹5912000 during 2006-07 and the lowest figure was ₹1573500 during 2004-05. The overall expenditure was

₹15617500 on all items during the period.

A definite trend reflects that in 2004-05 and 2005-06, the expenditure on IT items was increasing and it was on peak during 2006-07. Further trend shows that expenditure start decreasing during 2007-08 and 2008-09. The expenditure on software was never incurred during the period. However each library have procured / developed / customized open source software to automate its functions.

Table - 8 - Internet connection subscribed by the number of libraries.

Service provider	Number of internet connections subscribed by libraries					Total
	2004-05	2005-06	2006-07	2007-08	2008-09	
Airtel	0	0	1	2	2	5
BSNL	1	0	0	0	0	1
ERNET	0	1	1	1	1	4
MTNL	2	2	3	4	4	15
Reliance	1	1	1	0	0	3
Sify	1	1	1	1	1	5
Tata Indicom	0	0	1	2	2	5
Radio Link	0	0	1	2	1	4
Number of connection	5	5	9	12	11	42

The table number 8 reveals the number of libraries subscribed the internet connection during the period. The highest number of internet connection (4 each year) subscribed by the libraries from MTNL during the period

of 2008-09 and 2009-10. MTNL has the highest number (15) of subscription and BSNL has the lowest (1). The total number of internet connections was 42 during the period.

Table – 9 - Internet Service Provider and Bandwidth of connectivity year wise.

Institute	2004-05	2005-06	2006-07	2007-08	2008-09
BVCE	-	-	-	MTNL -2 MB	MTNL -2 MB
DCE	MTNL - 1 MB, Reliance - 512 KB	ERNET - 6 MB, MTNL - 1 MB, Reliance - 512 KB	ERNET - 6 MB, MTNL - 1 MB, Reliance - 512 KB	Airtel - 4 MB, ERNET - 6MB, MTNL - 1 MB, Tata Indicom - 2 MB	Airtel - 4 MB, ERNET - 6 MB, MTNL - 1 MB, Tata Indicom - 2 MB
GTBIT	Radiolink-4 MB	Radiolink - 4 MB	Radiolink -4 MB	Radiolink-4 MB	Radiolink - 4 MB
HMRIT	MTNL - 264 KB, Sify - 264 KB	MTNL - 264 KB, Sify - 264 KB	MTNL - 264 KB, Sify - 264 KB	MTNL - 264 KB, Sify - 264 KB	MTNL - 264 KB, Sify - 264 KB
IGIT	-	-	MTNL -10 MB	MTNL -10 MB	MTNL -10 MB
MAIT	-	-	Tata Indicom-125 KB	Tata Indicom - 125 KB	Tata Indicom - 125 KB
MSIT	-	-	Airtel - 4 MB	Airtel - 4 MB	Airtel - 4 MB
NSIT	BSNL - 1 GB	-	-	Radiolink - 4 MB	Radiolink - 4 MB

The table number 9 reveals the names of Internet Service Provider and bandwidth of connectivity subscribed by the libraries. The highest bandwidth of connectivity was (13 MB) by DCE during 2007-08 and 2008-09 and the lowest bandwidth of connectivity was (125 KB) by MAIT from 2006-07 to 2008-09. No connection was

subscribed by i.e. BVCE from 2004-05 to 2006-07, GTBIT from 2004-05 to 2005-06 and 2008-09, IGIT, MAIT and MSIT from 2004-05 to 2005-06 and NSIT from 2005-06 to 2006-07. Only two libraries DCE and HMRIT had continuity of internet subscription from 2004-05 to 2008-09.

Table – 10 – Expenditure* incurred on internet connectivity.

Institute	2004-05	2005-06	2006-07	2007-08	2008-09	Total
BVCE	0	0	0	1200000	1200000	2400000
DCE	45000	2052000	2060000	3530000	3045000	10732000
GTBIT	500000	475000	450000	450000	450000	2325000
HMRIT	60000	66000	81000	86000	95000	388000
IGIT	0	0	2300000	2300000	2300000	6900000
MAIT	0	0	230000	360000	450000	1040000
MSIT	0	0	950000	950000	950000	2850000
NSIT	3200000	0	0	450000	450000	4100000
Total	3805000	2593000	6071000	9326000	8940000	30735000

The table number 10 reveals the expenditure incurred on subscription of internet connection during the period. The highest amount incurred by DCE (10732000) and lowest amount incurred by HMRIT (₹388000). No expenditure was made by i.e. BVCE during 2004-05 to 2006-07, GTBIT during 2004-05, 2005-06 and 2008-

09, IGIT, MAIT and MSIT during 2004-05 and 2005-06, NSIT during 2005-06 and 2006-07. The highest amount (₹8940000) incurred during 2008-09 and the lowest amount (₹2593000) incurred during 2005-06. The total amount (₹30735000) incurred during the above period.

Table - 11 – Addition in print resources.

Institute	2004-05	2005-06	2006-07	2007-08	2008-09	Total Added
BVCE	1580	1800	2100	2350	2600	10430
DCE	5300	6950	9353	11544	6625	39772
GTBIT	1200	1350	1420	1530	1680	7180
HMRIT	560	640	690	750	870	3510
IGIT	2400	1900	1500	1890	2650	10340
MAIT	1200	1400	1470	1560	1890	7520
MSIT	510	540	679	530	500	2759
NSIT	2000	2400	2900	3200	3050	13550
Average	1843.75	2122.5	2514	2919.25	2483.13	11882.63
Total	14750	16980	20112	23354	19865	95061

The table shows annual growth of print documents in library. There is a definite increasing trend in print collection. The addition of documents varies year to year and related to the library budget. The highest document added was 23354 during 2007-08 and lowest added was 14750 during 2004-05. The highest

documents added by DCE (11544) during 2007-08 and lowest added by MSIT (500) during 2008-09. The average addition during the period is 11883 resources. The overall highest documents added by DCE (39772) and the lowest added by MSIT (2759). The total document added during the period was 95061 by all the libraries.

Table - 12 – Expenditure* on print resources.

Institute	2004-05	2005-06	2006-07	2007-08	2008-09	Total
BVCE	780000	1000000	1200000	1500000	2000000	6480000
DCE	5589530	7482700	10389817	5963000	8028400	37453447
GTBIT	569900	623190	1926000	1440760	1591900	6151750
HMRIT	1050000	1170000	1230000	1350000	1570000	6370000
IGIT	750000	500000	1050000	600000	650000	3550000
MAIT	360000	495000	580000	800000	2350000	4585000
MSIT	408000	432000	543200	424000	400000	2207200
NSIT	700000	800000	7500000	9000000	9000000	27000000
Total	10207430	12502890	24419017	21077760	25590300	93797397

The table shows expenditure incurred on print resources during the period. There is a definite increasing trend in expenditure. The highest expenditure incurred was ₹10389817 by DCE during 2006-07 and lowest expenditure incurred was ₹3600000 by MAIT during 2004-05. During the study period, the highest

expenditure incurred was ₹37453447 by DCE and lowest expenditure incurred was ₹2207200 by MSIT. The highest expenditure incurred by all libraries was 25590300 during 2008-09 and lowest incurred was ₹10207430 during 2004-05. The overall total expenditure incurred was ₹93797397 by all libraries during the period.

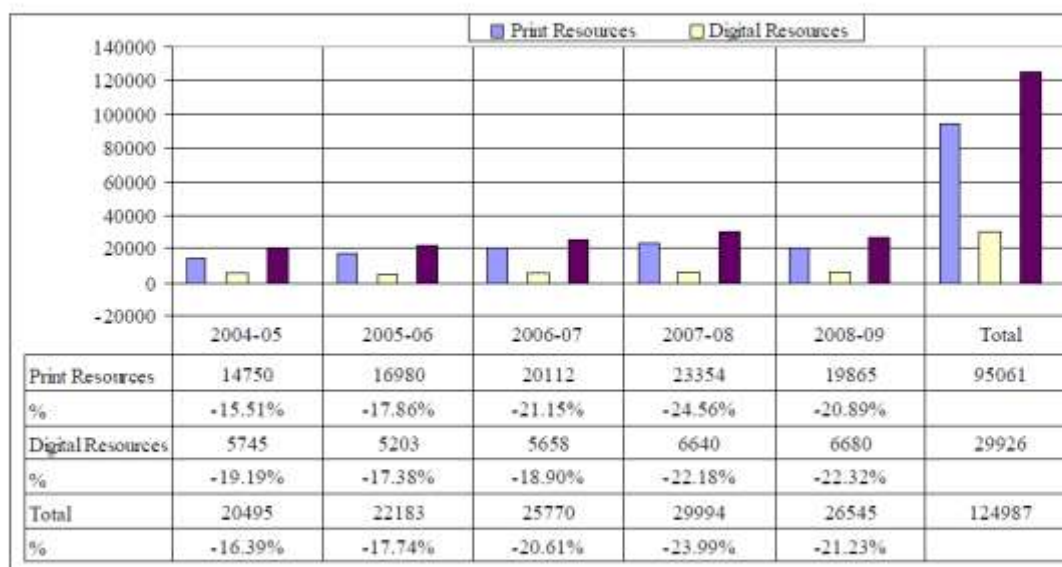
Table - 13 - Addition in digital resources.

Institute	2004-05	2005-06	2006-07	2007-08	2008-09	Total Added
BVCE	450	495	530	580	630	2685
DCE	3200	2300	1800	2150	2250	11700
GTBIT	350	460	560	590	650	2610
HMRIT	430	455	478	510	530	2403
IGIT	120	180	560	780	850	2490
MAIT	145	230	460	690	750	2275
MSIT	540	568	680	700	720	3208
NSIT	510	515	590	640	300	2555
Average	718.13	650.38	707.25	830	835	3740.75
Total	5745	5203	5658	6640	6680	29926
	(19.19%)	(17.38%)	(18.90%)	(22.18%)	(22.32%)	

The table shows annual growth of e-resources during the period. There is a definite increasing trend in development is seen. The highest resources added was 6680 during 2008-09 and lowest added was 5203 during 2005-06. The highest documents added by DCE (3200) during 2005-06 and lowest added by IGIT (120) during 2004-05.

The average addition during the period is 3741 resources. The overall highest documents added by DCE (11700) and the lowest added by MAIT (2275). The total document added during the period was 29926 by all the libraries.

Table and Graph - 14 – Comparative statement on print and digital resources addition.



The table and graph number 14 shows that the number of print and digital resources has increased from (15.51%) to (20.89%) and (19.19%) to (22.32%) respectively. Overall figure shows a definite increasing

trend in resources collection. The overall growth in both resources have been observed from (16.39%) to (21.23%) during the period.

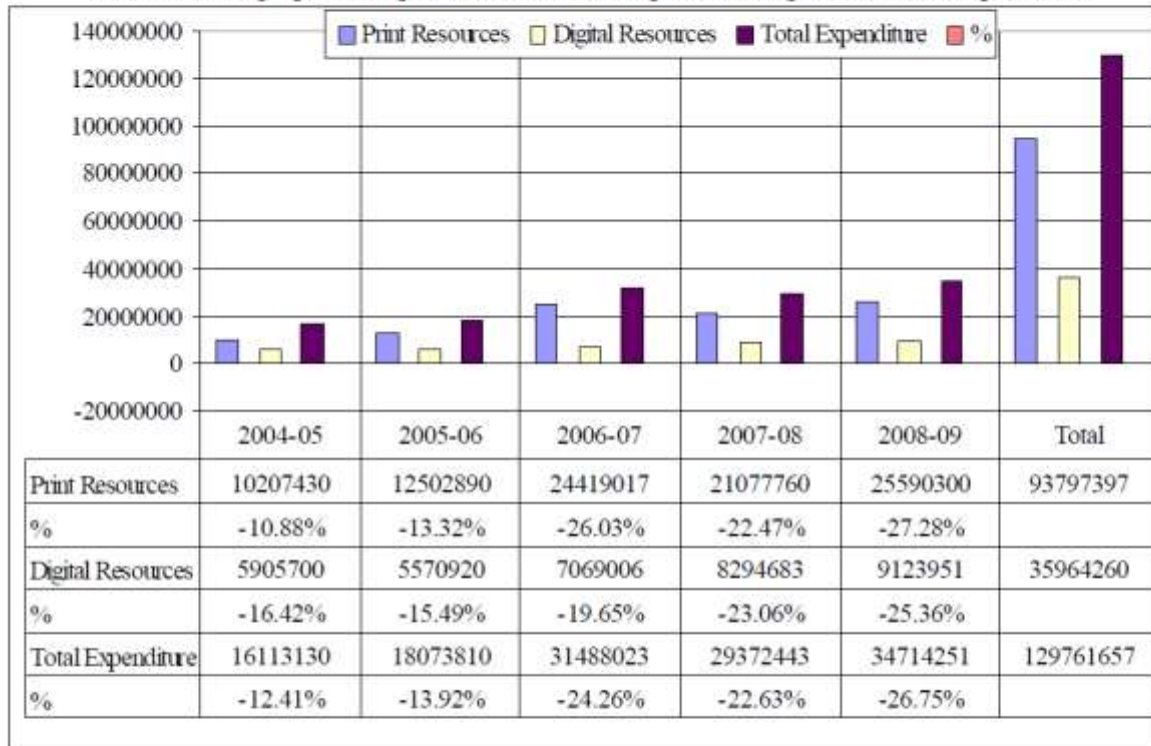
Table - 15 – Expenditure* on digital resources.

Institute	2004-05	2005-06	2006-07	2007-08	2008-09	Total
BVCE	7500	9000	15000	25000	33000	89500
DCE	4789200	3792420	4627006	4785451	5175392	23169469
GTBIT	24000	17000	16000	16500	17500	91000
HMRIT	270000	490000	785000	1450000	1660000	4655000
IGIT	758000	805000	1085000	1145132	1145059	4938191
MAIT	15000	18000	21000	240000	350000	644000
MSIT	37000	430500	505000	607600	710000	2290100
NSIT	5000	9000	15000	25000	33000	87000
Total	5905700	5570920	7069006	8294683	9123951	35964260

The table number 15 shows expenditure incurred on e-resources during the period. There is a definite increasing trend seen in expenditure. The highest expenditure incurred was ₹9123951 during 2008-09 and lowest incurred was ₹5570920 during 2005-06. The highest expenditure incurred was ₹5175392 by DCE

during 2008-09 and lowest expenditure incurred was ₹5000 by NSIT during 2004-05. The overall highest expenditure incurred was ₹23169469 by DCE and lowest expenditure incurred was ₹87000 by NSIT. The total expenditure incurred was ₹35964260 during the period by all libraries.

Table – 16 and graph - Comparative statement on print and digital resources expenditure



* (The amount is in ₹ and rounded in nearest thousand)

The table 16 and graph shows that the expenditure on print and digital resources have been increased from

(10.88%) to (27.28%) and (16.42%) to (25.36%) respectively. Overall figure shows that there is a definite increasing trend on expenditure on information resources. The expenditure on both resources have been increased from (12.41%) to (26.75%) during the above period.

Table – 17 - Membership of Network and Consortium

Name of	BVCE	DCE	GTBIT	HMRIT	IGIT	MAIT	MSIT	NSIT
DELNET	√	√	√	√	√	√	√	√
AICTE-INDEST	√	√	X	√	√	√	√	√

The table number 17 reflects the membership status of networks and consortium for sharing of information resources with other libraries. The result shows that all

libraries (100%) are having membership of DELNET and seven libraries (87.5%) are having membership of AICTE-INDEST. No library is having any membership of other consortium and networks.

Table - 18 – Subscription of online resources

Online resources	Number of libraries subscribed					Total
	2004-05	2005-06	2006-07	2007-08	2008-09	
ABI-Info Complete	0	0	1	0	0	1
AccessEngineering (McGraw Hill)	0	0	1	1	1	3
ACM	0	0	2	2	2	6
ASCE	1	1	2	2	2	8
ASME	2	3	3	3	2	13
ASTM Standards and Journals	1	1	1	1	1	5
BIS Indian Standards	1	1	1	1	1	5
Emerald	0	1	1	1	1	4
IEL Online	3	5	5	7	7	27
INSPEC	1	1	1	1	0	4
Science Direct	0	1	1	1	1	4
SpringerLink	5	5	5	5	5	25

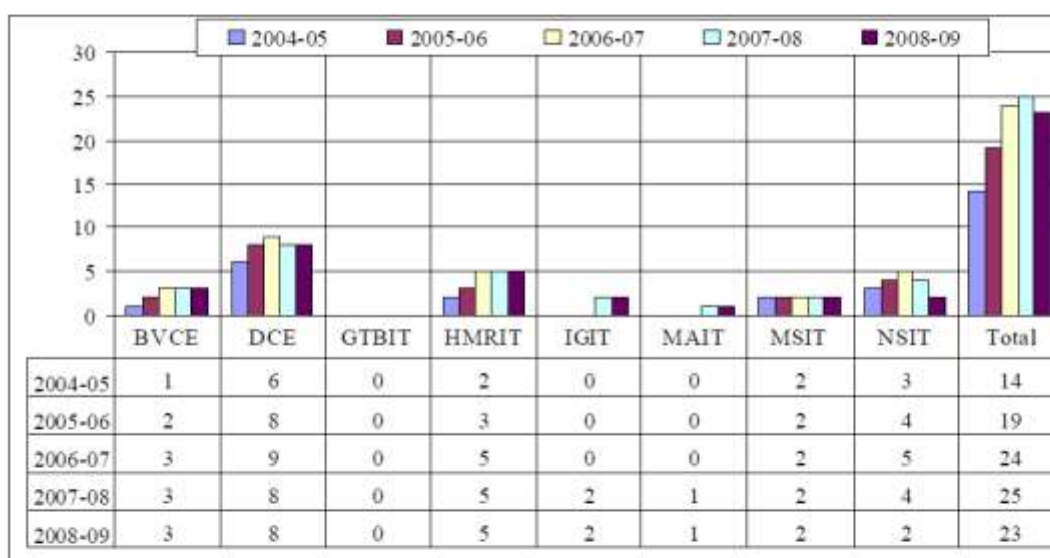
The table number 18 reveals the number of libraries has subscribed the e-resources. The IEL online was the most subscribed e-resource (7 each year) during 2007-08 to 2008-09 and ABI-Info complete was the least subscribed (1) during the period of 2006-07. The SpringerLink have maintained continue subscription (5 each year). Overall, IEL Online was most subscribed e-resource (27) and ABI-Info Complete was the least subscribed e-resource during the period.

Note: The IGIT and NSIT have been extended the access of following UGC-Info Net resources without making any payment.

- 1 American Chemical Society
- 2 J-Gate Custom Content for Consortia
- 3 American Institute of Physics
- 4 J-STOR
- 5 American Physical Society
- 6 Kluwer Online
- 7 Annual Reviews
- 8 Oxford Journals
- 9 Biotechnology Abstracts

- | | | | |
|----|----------------------------|----|-----------------------|
| 10 | Euclid, Muse | 18 | ScienceDirect |
| 11 | BIS Standards | 19 | Emerald |
| 12 | Portland Press | 20 | SciFinder Scholar |
| 13 | Blackwell Synergy, | 21 | IEL Online |
| 14 | Royal Society of Chemistry | 22 | Scitopia |
| 15 | Cambridge University Press | 23 | Institute of Physics |
| 16 | Sage journals | 24 | Wiley InterScience |
| 17 | EBSCO | 25 | ISID Online Databases |

Table - 19 and graph – E-resources subscription.



The table 19 and graph reveals the number of online resources subscribed. The DCE has subscribed highest number of e-resources (9) during the period of 2006-07 and MAIT has subscribed only one online resource during the period of 2007-08 and 2008-09.

The maximum numbers of online resources subscribed were 25 during 2007-08 and minimum numbers of online resources subscribed were 14 during 2004-05. The GTBIT have not provided any record about subscription of online resources.

Table -20 - Chronological order of automation of the libraries.

Institute	MSIT	MAIT	NSIT	DCE	IGIT	BVCE	GTBIT	HMRIT
Year	1998	2000	2000	2001	2001	2002	2003	2002
LMS	Alice for Windows	Alice for Windows	NetLib	Libsys	NewGenLib	In house developed	Alice for Windows	LibGuru

The table number 20 shows that the State of Library automation in the libraries. All 8 (100%) libraries are automated. The one library i.e. BVCE is using in-house developed Library management Software (LMS). The

one library i.e. IGIT is using Open sources LMS and rest of the six libraries are using commercial software. The Alice for windows is being by maximum three libraries and rests of the software are being by single library.

Table -21 - Status of Digital Library Development

Institute	BVCE	DCE	GTBIT	HMRIT	IGIT	MAIT	MSIT	NSIT	%
Software	-	Dspace	-	-	GreenStone	-	-	-	25

Table -22 - Status of Library Website Development

Institute	BVCE	DCE	GTBIT	HMRIT	IGIT	MAIT	MSIT	NSIT	%
Status	√	√	√	√	-	-	√	-	62.5

FINDINGS, SUGGESTIONS AND CONCLUSION:

Findings

Based on analysis and results, the data revealed the following.

1. No library is having IT qualified staff.
2. The ratio of library professional and non-library professional is 63.38% and 38.62%.
3. The strength of non-library professional staff is very high. The percentage of library shows that number of non-professionals is more than required. In BVCE, ratio of library professionals and non-library professionals is 1: 4 that means library is mainly run by the non library professionals.

4. The students (88.87%) are the highest number of users than the teachers (4.73%) and other staff members (6.40%).
5. The government sponsored institute libraries are having higher number of IT equipments than the private institute libraries.
6. The highest number of equipments was purchased by all libraries during the period of 2006-07 and incurred expenditure too.
7. The MTNL is the most subscribed internet service provider by the institutions.
8. The government sponsored institute libraries has higher stock of resources and also added more number of resources than the private institute libraries.

9. The increasing trend in adding print resources and digital resources during 2005-06 to 2007-08 but decline in 2008-09 is seen.
 10. The institutions have drastically reduced the number of print journals subscriptions not only due to the budgetary constraints but also due to the versatile features of digital subscriptions.
 11. The increasing trend in incurring expenditure on print resources and digital resources is observed.
 12. Seven libraries (87.5%) are having membership of consortia INDEST-AICTE.
 13. All libraries (100%) are having membership of Network viz. DELNET.
 14. The seven libraries (87.5%) subscribing the online resources which are mandatory by AICTE. Only one library i.e. GTBIT has not provided the figure on online resources.
 15. All libraries (100%) are using library management software to automate their library functions.
 16. Only two libraries (25%) viz DCE and IGIT have installed digital library software.
 17. Five libraries (62.5%) have designed and developed their library website.
3. The libraries should ensure the quality of information resources rather than the quantity. The libraries should focus on the user's need and based upon, the library collection should be developed. Libraries should not run blindly after the digitization and digital resources. Librarian should care the expectations of modern as well as of traditional users. They should evaluate the quality of information resources with respect to authenticity of source, usage, before procurement.
 4. The engineering and technology libraries are considered as an advanced libraries, therefore, all libraries should design and develop their own websites to cater the off campus users. The present status in this regards is not encouraging. The IT infrastructure should be developed to keep in mind to extend the access of library resources i.e. campus wide network, to remote network for external users. The websites are the major gateway to connect the outer world through internet. The web 2 and web 3 technologies should be exploited.
 5. Library professionals should explore the new opportunities of open access such as OSS (open source software), CMS (content management software), LMS (library management software), DLMS (digital library management software), OJS (Open Journals Software) and build their unique library collections. The open available resources should be listed and downloaded as per the users need.
 6. The LIS professionals should work with the faculty members and have to participate in education and learning programmes of the institutions. The students should encourage designing their assignments and projects based on the information resources available with the research resource centre and librarian should act as an academic resource person.

SUGGESTIONS

1. There has been variation in the budgetary provision of these institute libraries. Thus Uniformity in financial allocation should be stressed upon.
2. A national body must act as facilitator and coordinator enabling the funds and standards for research and development activities in such institutes. The library should be converted as

- library. The participation of faculty, student and librarian can only make the maximum utilization of money spent on subscription of resources.
7. The libraries should use the online tools to identify, select and purchase the library resources, such as library catalogues, freely available books, discussion forms, blogs, news, and many more tools can be used to build the good library collection.
 8. It has been observed that the usage of digital resources can be enhanced and users group i.e. students, faculty and other staff should be trained to use the resources. The orientation and training programmes should be organized for them on regular and periodic basis.
 9. The responses in respect of future plans for library development depicts that there is heavy demand for digital resources. It is high time to re-evaluate the users need and accordingly libraries should initiate to develop the digital information collection.
 10. Libraries should well utilize e-resources available through consortia and library networks.
 11. Due to the IT impact, the format of resources is changing with the technology, to keep in mind the compatibility sustainability with environment i.e. technology, library, users point of view. Every day, the technology is changing, but library and its infrastructure can not change, after evaluating and ensuring its various aspects, new technology should be allowed in the library.
 12. The size of the resources is also shrinking, to keep in mind the fact space in library and system (server etc.) should be managed.
 13. Libraries should also be the part of eco-environment movement and support paperless libraries, but not at the cost of users' happiness.
 14. Libraries are going through the phase of IT conversion, professionals should respond accordingly such as to re-evaluation library man power, time management library functions, improve communication efficiency, supplement variety of resources and mode of accessibility, etc.
 15. Libraries should analysis and evaluate the cost of print and e-resources to keep in mind the better library budget management.
 16. During the discussion, most of the library professionals were agreed upon that there is a impact of IT application on library function viz. automation of libraries, development of digital libraries and online libraries, development of library websites, networking and consortia for libraries etc. These ICT based functions should be considered and included in the list of library functions and based upon that restructuring of library activity i.e. performance with time schedule, staff allocation and changes in recruitment rules, etc. has become urgent requirement of libraries. It is also fact that there is no consideration among the professional associations, government authority and decision makers. There is no amendment after this office order NO.F. 52(2)-SIU/65 issued by Department of Expenditure, Ministry of Finance, Government of India, New Delhi on 25th July, 1968. To keep in mind the impact of IT application, the library functions have been have divided into six major categories.
 - A. Remain unchanged even after the ICT application?

- B. Simultaneously followed through in manual and ICT application?
- C. Partially followed in manual and ICT application?
- D. Eliminated in manual and shifted to ICT application?
- E. Eliminated in manual and not required in ICT application?
- F. Introduced new due to / based on ICT application?

CONCLUSION:

It has been observed that a massive advancement in information technology, where internet has become a powerful alternative source of information, but libraries is still the major source of information for the institute. The cost of print and digital resources is also going up and that increases the burden on library exchequer. In spite of that the institutions are investing a huge amount in procurement of print as well as digital information resources. It has been observed that there is an increasing trend in adding print and digital resources in these libraries.

REFERENCES:

1. Kothari, C R. Research methodology:methods and Techniques. New Delhi: New Age International, 2009.P-1.

- 2. Krishan Kumar. Research methods in library and information Science. 2. New Delhi: Har-Anand, 1999.P-9
- 3. Schvaneveldt. Jay R. Understanding research Methods. New York: Longman, 1985.P-103.
- 4. Singh, S P. Research methods in social sciences:a manual for designing Questionnaires. New Delhi: Kanishika publishers and distributors, 2002.P-7.
- 5. Kothari, C R. Op. cit.P-17.
- 6. Frankfort-Nachmis, Chava. Research methods in social Sciences. London: Arnold, 196.P-19.
- 7. Sjoberg, Gideon and Roger Nett. Mehtodology for social Sciences. Jaipur: Rawat publication, 1992.P-1.
- 8. Good, Carter V and Douglas F Scates. Mehtods of research. New york: Appleton, 1954.P-605.
- 9. Busha, Charles H and Stephen H Harter. Methods in librarianship;techniques and interpretations. Orlando: Academic press, 1980.P-64.
- 10. Horsh-Ccaar, Gerald and Prodepte Roy. Third world surveys; survey research in developing nations. New Delhi: Macmillan, 1976.P-49.
- 11. Bonn, G S.(1974). "Evaluation of the Collection." *Library Trends* 22 : 279.

