

**PRESENT STATUS OF E-RESOURCES AVAILABLE IN THE ENGINEERING
COLLEGE LIBRARIES OF WEST BENGAL: PROBLEMS TOWARDS
SUSTAINABLE COLLECTION DEVELOPMENT**

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Introduction

Library users increasingly demand resources in Electronic format because of its associated advantages (such as their simultaneous presence, faster search ability, easy manipulability and accessibility). As far as engineering students are concerned, they are much techno-savvy and are more used to electronic resources. So it has become almost mandatory for the libraries of engineering institutions to subscribe and provide access to these resources to satisfy its user needs and demands. Many studies have identified that both students and teachers are much preferring online journals and databases than their print counter-parts.

Back ground of the Study

The aim of any country’s higher education system is sustainable development and achieving higher growth rates. It is enabled through creation, transmission and dissemination

of knowledge. The All India Council for Technical Education (AICTE) has been in existence since November 1945 as a national level Apex Advisory Body with its mission of developing and promoting quality technical education in the country in a coordinated and integrated manner.

As far as engineering education is concerned, the country has around 3650 Engineering Colleges (EC) established throughout the country under government, semi-government, aided and private self-financing sectors. To ensure the quality of education and resources in these institutions, the national apex body for technical education, the All India Committee for Technical Education (AICTE) has put forth certain norms and regulations. It is necessary for each institution to satisfy the norms regarding infrastructure, library facilities, faculty and staff positions, etc. to get an approval from the AICTE, for running courses. In the academic year 2014-2015, the AICTE has provided a list of databases to the engineering institutions and made it mandatory to purchase 8 to 10 databases according to the number and type of courses offered by each college. Hence it has become necessary for each EC, be it in government, private or aided sector to set apart about 10 to 12 lakh rupees for the purchase of these databases for the year 2015. If this is to be continued, then each college will have to find such a large amount in each coming years. At this point, the present study attempts to analyse the availability of such resources in the ECs in West Bengal and identify the problems faced by these colleges in building a sustainable collection of electronic resources.

Growth of Technical Institutions in the Country

Table: 1 Growth of Degree Level Engineering Institutions in India (1947 to 1990)

Year	No. of Institutions	Students Intake	Intake per Institution
1950	50	3700	74
1960	110	16000	145
1970	145	18200	125
1980	158	28500	180
1990	337	66600	198

**Table: 2 Growth of Degree Level Engineering Institutions in India
(post - liberalization era 2000 onwards)**

Year	No. of Institutions	Students Intake	Intake per Institution
2000	776	185758	240
2003	1208	359721	298
2004	1265	404800	320
2005	1346	452260	336
2006	1511	550986	364
2007	1668	653290	392
2008	2388	841018	352
2009	2972	1071896	361
2010	3222	1314594	408
2011	3393	1485894	438
2012	3495	1761976	504

Engineering Colleges in West Bengal

West Bengal has a glorious tradition of education through the establishment of Calcutta University 1857, Bengal Engineering College (Indian Institute of Engineering Science and Technology ,Bengal Engineering and Science University, Shibpur) in 1856 and subsequently Jadavpur University in 1955. The Government of West Bengal maintained a good standard of technical education since pre-independence era. West Bengal University was established in 2001.

The West Bengal University of Technology being a Centre of Excellence seamlessly engaged in National Building Exercise. The basic objective of the University is to organize undergraduate and post graduate courses of study in Engineering, Technology & Management, also in emerging areas with a positive outlook to produce young scientists, technologists and manager of high caliber, capable of contributing towards development of the country. The University which began its journey only with 30 colleges mostly undergraduate, now has strength of around 217 colleges with significant presence of postgraduate courses

Library Facilities in the ECs in West Bengal

The survey of the ECs in West Bengal provides a clear picture of the library facilities in these colleges. Most of the colleges have an average collection of textbooks, reference books and periodicals with qualified staff to manage the day to day library services. The libraries are set up on the basis of the standards and norms put forward by the West Bengal University of Technology (WBUT) and AICTE. Regarding electronic collection and

services, as prescribed by the AICTE , inspite of having financial constraints most of the colleges have put their best efforts to satisfy the AICTE norms.

Objectives of the Study

- (a) To ascertain the availability of electronic resources in the ECs in West Bengal with respect to the latest AICTE norms
- (b) To analyse the budgetary allocation for e-resources by these colleges
- (c) To identify the problems encountered by these libraries in maintaining a sustainable collection of e-resources

Methodology

The instrument used for collecting data was undertaken through structured questionnaire method followed by interview. Most of the libraries were visited personally by the author for collection of data. A few of questionnaire was received through e-mail. A total of 20 colleges are covered in this study.

The AICTE Norms Regarding the Subscription of Online Databases

Before getting on to the analysis part, it is pertinent to have a look at the AICTE norms regarding the subscription of e-journal packages by the ECs for getting approval in 2015-16. In page 125-126 of the AICTE handbook 2015-16, the AICTE has appended a list of e-journal packages along with its annual subscription rates and instructed the colleges to

purchase 2-6 packages mandatorily and some more packages on different subjects depending on the courses offered by each college. A number of colleges and associations opposed this and as a result of a lot of complaints and petitions filed at different courts in the country, the AICTE revised the list and instructed the colleges to purchase a minimum of 3 mandatory packages and other optional packages depending on the nature and number of courses offered. The list of the databases communicated to the colleges by AICTE is given in the table (Table 3) below.

Table 3: Mandatory subscription of e-journal packages for all engineering institutions conducting UG/PG courses:

Sr. No	Publisher	Subject Areas	E-Content	Annual subscription Price (Rs.) Approx.
1.	IEEE	Computer Engineering + Computer Science + Electrical and Electronics Engineering + Telecommunications and related disciplines	145 e-Journals)(2011) (Backfile Access – since 2000)	3,87,230.00
2.	Springer	Electrical and Electronics and Computer Science Engineering	[(134 e-Journals) (2011) (Backfile Access – since 1997)	2.08000.00
OR				
	Wiley-Blackwell	Computer Science + Data System+ Telecommunication and related Discipline	30 Journals (Backfile Access – since 2000)	1,34,998.50
3.	ASME	Mechanical Engineering	ASME's Transaction Journals from 1960 to the present.ASME's Conference Proceedings from 2002 to the present.ASME Press	1,44,452.00

			eBooks selected from 1993 to the present.	
		OR		
	Springer	Mechanical Engineering	[(46 e-Journals) (2011) (Back file Access – since 1997	1,04000.00
		OR		
	Wiley-Blackwell	Mechanical, Electrical and Electronics Engineering	14 Journals (back file access since- 2000)	1,20,464.50
4.	ASCE	Civil Engineering	(33 e-Journals) (2011) (Backfile Access – since 1983)	1,68,840.00
		OR		
	Wiley-Blackwell	Civil Engineering	18 journals (Back file Access – since 2000)	1,21,862.00
5.	McGraw Hill	General Engineering and Reference	Covers Renowned engineering handbooks, Faculty-made, nstruotional videos,Downloadable calculators,Time-saving curriculum maps,Powerful search tools,Interactive tables and graphs,Student study guides,Global engineering news	1,31,923.00
6.	J-GATE	J-GATE Engineering and Technology (JET)	Covers around 12000 indexed with 5000 free full text	67,416.00
7.	ELSEVIER Science Direct	Engineering + Computer Science (Electrical + Electronics + Mechanical + Civil and Structural + Aerospece + Biomedical + Industrial and Manufacturing + Ocean Engineering +	275 Journals (Back File Access from 2000 onwards	3,81,517.00

		Computational Mechanics and Safety Risk, Reliability and Quality + Computer Network and Communications, Artificial Intelligence, Computer Science, Computational Theory and Mathematics, Computer Graphics and Computer – Aided Design, Information Systems, Control and System Engineering and Software		
8.	ASTM DIGITAL LIBRARY (DL) ONLINE VERSION	Online dictionary of Engineering Science and Technology Electrical & Electronics Engineering Mechanical Engineering, Civil, Metallurgical, Petroleum, Instrumentation	Covers 1700 e-books and 13000 journal articles	71,170.00

Status and Availability of E-Resources

A list of different databases pertaining to the field of engineering were presented before the respondents and asked to mention the items subscribed by their colleges. It was generally found that 85% (17) colleges provide access to electronic databases to its users and the remaining 15% (3) colleges do not have any electronic resource. It was also observed that out of the 17 colleges mentioned above 16 colleges subscribes to the databases proposed by the AICTE, where as 1 college subscribe a database which is out of the list provided by the AICTE. In other words, 94 (16) of the colleges under study subscribe to the different e-journal packages mentioned in the AICTE handbook. The current status of availability of electronic databases in these colleges with respect to the number of packages being subscribed is depicted in the following diagram (Table 4 & Fig. 1).

Table 4 The availability of different electronic databases is shown in the following table

Name of the Databases	ASME	ASTM	DIGITAL ELSEVIER(S	CIENCE	IEEE (CSE & EEE)	J-GATE	MC-GRAWHIL	SPRINGER (EEE ,MECH&	WILEY-BLACKWEL
No of colleges Subscribin	2	2	5		14	8	2	5	1

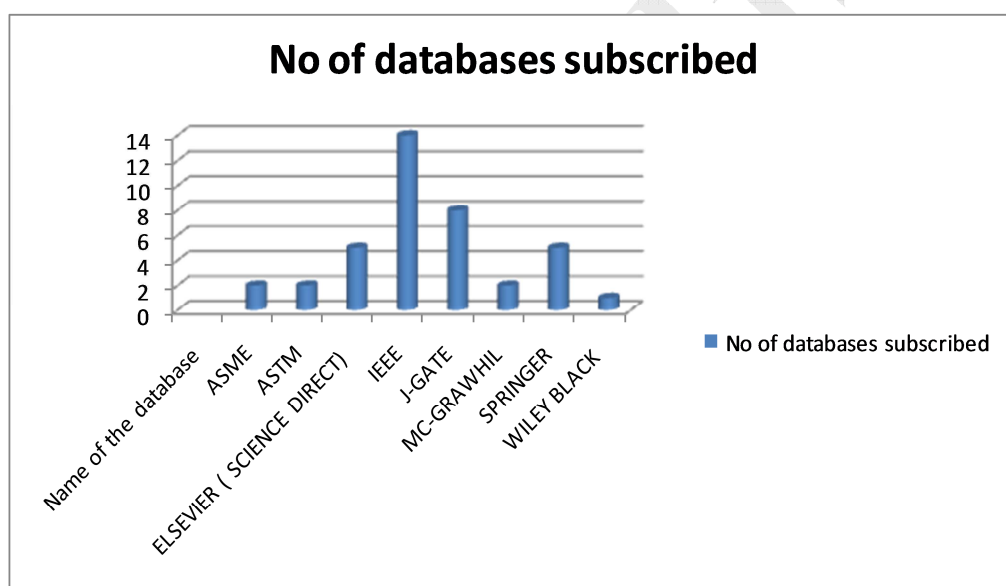


Fig.1

It is evident from the diagram that 70 % of the colleges subscribes to IEEE, 40% of colleges subscribes to J-GATE , 25 % colleges subscribes to Science Direct & Springer link and 10 % of colleges prefer ASME,ASTM & Mc-Grawhil. Only 5% college subscribes to Wiley Blackwell. 3 colleges do not subscribes any databases as prescribed by the AICTE. They prefer other databases.

Budgetary allocation for E-resources

It is evident from the figure 2 that out of 20 colleges only 25%(5) colleges have more than 30 lakhs as library budget, 10% (2) have 25 to 30 lakhs as library budget , 10% (2) have 20 to 25 lakhs as library budget , 20%(4) have 15 to 20 lakhs as library budget , 20%(4) have 10 to 15 lakhs as library budget . Only 5%(1) have 5 to 20 lakhs as library budget . Total library budget is not specified for 2 colleges.

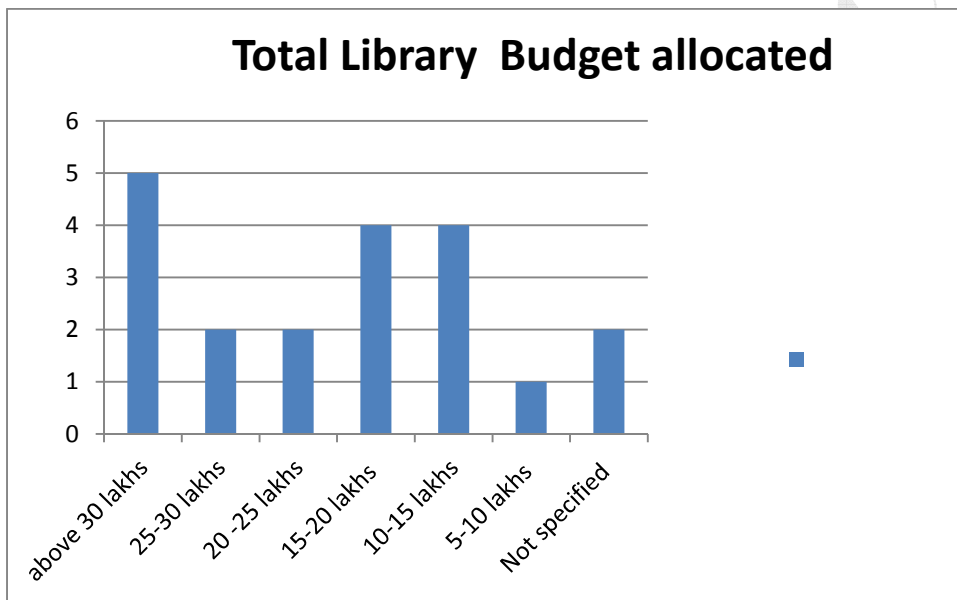


Fig.2

Table: 5 List of Engineering Colleges and their total library budget.

Sl.No	Name of the Institution	Government/ Private /	Total Budget	Provision of separate budget allocated for procurement of E-Resources
1.	Academy of Technology	Private	30 lakhs	No
2.	Adamas Institute of Technology	Private	14 lakhs	No
3.	B.C. Roy Engineering College	Private	40 lakhs	No
4.	B.P. Poddar Institute of Technology	Private	15 lakhs	No
5.	Batanagar Institute of Technology	Private	8 lakhs	No
6.	Birbhum Institute of Technology	Private	31 lakhs	Yes , 15 lakhs
7.	Brainware College of Engineering	Private	35 lakhs	No
8.	Budge Budge Institute of Technology	Private	10 lakhs	No
9.	Future Institute of Technology	Private	Not specified	Not specified
10.	Govt. College of Engineering & Ceramic Technology, Kolkata	Government	29 lakhs	No
11.	Heritage Institute of	Private	35 lakhs	Yes , 15 lakhs

	Technology			
12.	Institute of Engineeirn & Management	Private	15 lakhs	Yes, 5lakhs
13.	<i>Jalpaiguri Govt. Engineering College</i>	<i>Government</i>	<i>18lakhs</i>	<i>No</i>
14.	<i>Kalyani Govt. College</i>	<i>Government</i>	<i>16 lakhs</i>	<i>No</i>
15.	<i>Govt. College of Engineering & Leather Technology, Kolkata</i>	<i>Government</i>	<i>Not specified</i>	<i>Yes, 13 lakhs</i>
16.	M.C.Kv Institute of Technology	Private	12 lakhs	No
17.	Narula Institute of Technology	Private	Not specified	Yes, 18 lakhs allocated
18.	Netaji Subhas Engineering College	Private	22 lakhs	Yes, 8 lakhs
19.	Pailan College of Enginnering	Private	Not specified	Not specified
20.	R.C.C Institute of Technology	Private	20 lakhs	No

It comes out from figure 3 that out of theses 20 colleges only 6 colleges have separate budget for procurement of electronic resources. In other words only 30% of colleges are able to procure theses resources from their separate budget. So remaining 70% of colleges have no separate budget regarding this matter. Among these 6 colleges , Narula Institute of Technology has maximum of 18 lakhs where as Institute of Engineering & Management has the lowest of 5 lakhs for this purpose. Heritage Institute of Technology , Kolkata,

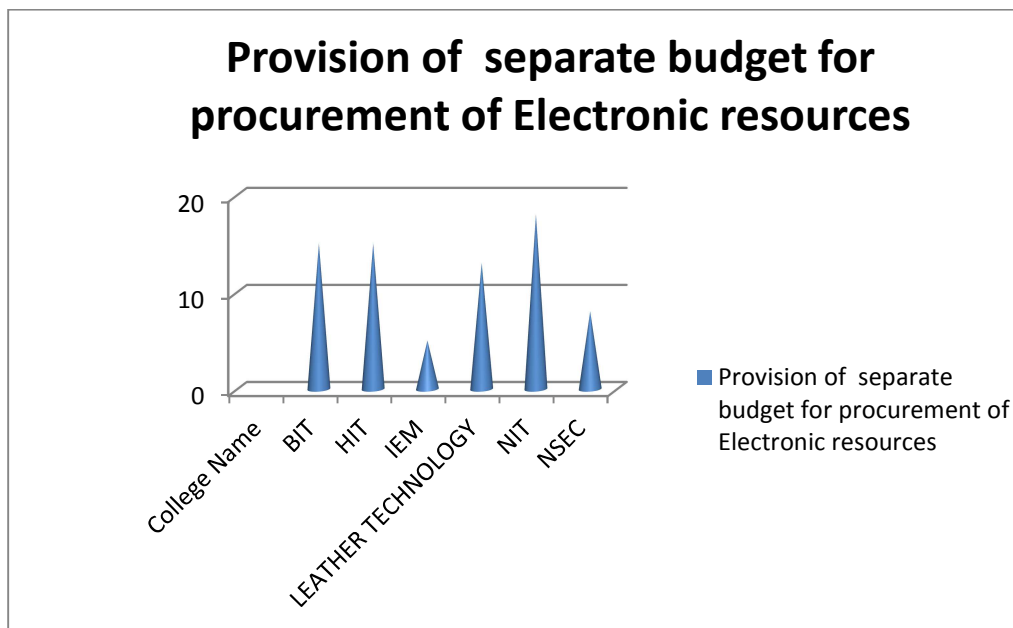


Fig.3

Birbhum Institute of Technology have a budget of 15 lakhs each where as Government College of Leather Technology has a budget of 13 lakhs for procurement of e-resources. Netaji Subhas Engineering College can afford upto 8 lakhs in this regard.

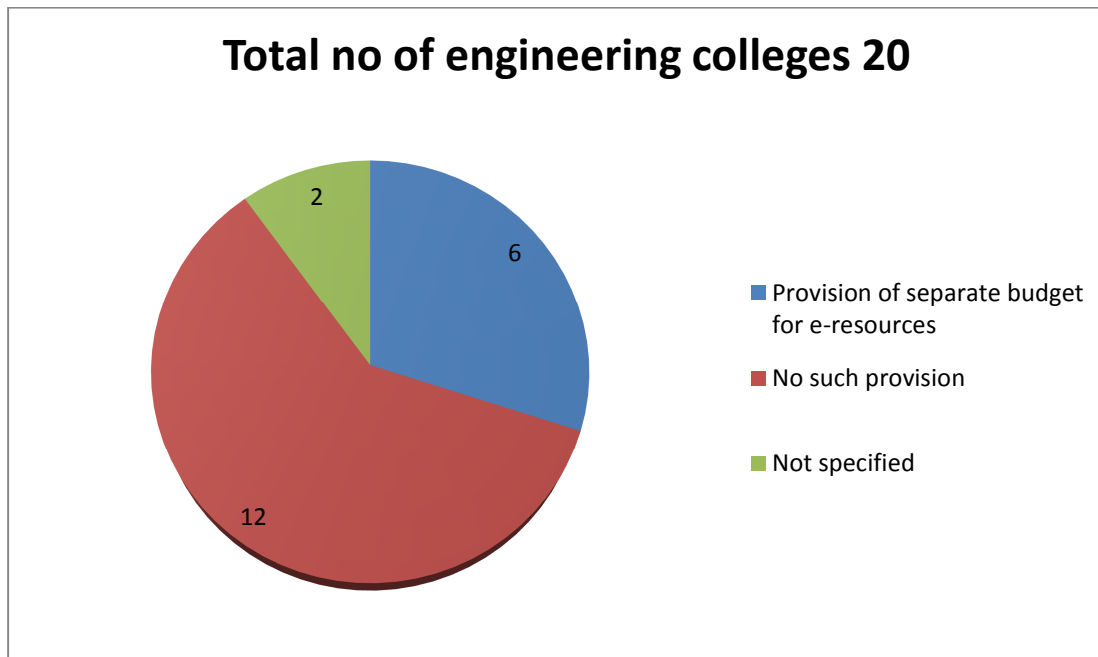


Fig.4

The above figure indicates that out of the 20 engineering colleges only 6 colleges have achieved separate budget for procurement of electronic resources where as a large number of colleges (12) did not enjoy such provisions. 2 colleges did not specified the matter in this regard

Problems Encountered in Maintaining a Sustainable Collection of E-resources

a. Financial Burden

As it is evident from the study that the colleges were forced to find an additional fund of upto 13 lakh rupees for the current year subscription of databases as prescribed by the AICTE , most of the college librarians expressed their fear regarding this financial burden in the coming years. As far as self-financing colleges are concerned this burden will normally reflected on the increasing nature of admission fee of the students. budget allotted to most of the libraries, however remain static year after year. Even if there is no such cut, the purchasing power of the allotted money goes on dwindling due to inflation.

b. Perpetual access

It is a matter of fact that the annual subscription rate for electronic databases pertains to the access for a particular subscription period and no perpetual access will be provided to these contents if one stops the subscription. Hence even after spending such a huge amount by these institutions perpetual access is not guaranteed and hence the building of a sustainable collection of electronic resource remains a far dream.

c. IEEE-ASPP Package

Initially through the INDEST-AICTE consortium, engineering colleges were allowed to subscribed to IEL-ONLINE database. But suddenly consortium took off this facility (except for its core members) and the AICTE has insisted to purchase another package of IEEE, the IEEE-All Society Periodical Publications, whose price is comparatively lesser than that of IEL online. But for the colleges running M.Tech courses, this package proved to be insufficient. As it does not include the conference proceedings and gives access to only 150 IEEE journals (approx). The librarians of different reputed colleges received the complaints from post graduate students and faculty members, and some of the managements decided to purchase the full database (IEL). The situation is very critical and confusing also. In such cases they had to spend more than two lakh rupees in addition. for those who have not opted this, their students were forced to access the e-resources of other college/university libraries to satisfy their needs.

Other Problems

- a. A large number of the librarians even in the government engineering colleges also opined that the electronic resources are under used in their colleges and it is a waste to spend such a large amount in this regard. In few cases they have stopped the renewal of subscription of these databases.

- b. It was opined by a number of librarians that a proper usage study & statistics is needed to analyze the use of different databases so that the under used packages may be avoided in future.
- c. There are a very few reliable suppliers of digital documents in India. The lack of comprehensive and up to- date selection tools for digital documents further adds to the problems of a librarian. Who is to ensure that governments, organizations or publishers will maintain these archives for centuries in future? Hardware and software needed to preserve today’s documents and use them decades later may not work. The hardware used to gain access to digital information changes radically and quite frequently.
- d. In the recent years many libraries have relied on computer professionals to handle the purchase and other issues related to digital documents. This gives an assumption that computer professionals are taking precedence over the library professionals. It has happened so because many a time librarians have given responsibilities of selecting and handling electronic resources to computer professionals. Some complications are also there due to the advent of new resources. All these changes have happened quickly, and adapting to them is not always easy or comfortable.

Conclusion:

Undoubtedly, electronic resources have strongly established its existence in the academic libraries. There is no option for professionals except, accepting these sources in their library collection in order to meet the potential information requirements of users. The demand from users towards electronic resources is increasing and also the library professionals are accepting the challenges raised in the context of Electronic Resources. In the present study a sincere effort has been made to analyse the present status and availability of e-resources in the ECs of West Bengal along with their budgetary provisions.

The present study strongly suggest that considering the present financial condition of the ECs of engineering colleges of West Bengal , the authoritative regulatory body like AICTE should justify the matter and prescribe a little more exhaustive list of databases of electronic resources in various branches of engineering, instead of just giving a short list, and permit the institutions to choose the required items. In such a situation the prices will definitely come down and that could ensure the sustainability. Consortium approach based on cost-effective model may be initiated in this regard.

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