

# Changing Dimensions of Libraries in the Electronic Environment: A Study with Reference to Academic College Libraries of Mumbai

Vidya V. Hanchinal<sup>1</sup> and Veeresh B. Hanchinal<sup>2</sup>

<sup>1</sup> Librarian, J. M. Patel College of Commerce  
Goregaon (W), Mumbai-400 090.  
E-mail: [vdyavh@gmail.com](mailto:vdyavh@gmail.com)

<sup>2</sup> Librarian, G. J. Advani Law College  
Bandra (W), Mumbai – 400 050.  
E-mail: [vreshb@yahoo.co.in](mailto:vreshb@yahoo.co.in)

## ABSTRACT

*Information and Communication Technology has revolutionized the whole world in the 21<sup>st</sup> century. Speed, accuracy, timeliness are the hall marks of ICT. It is the opinion of the professionals that without modern ICT tools and gadgets, it is difficult to provide service and satisfy the growing needs of information user. The rapid growth of mobile computing and wireless network has taken the educational institutions to the forefront. Induction of such technologies is now considered as more essential and inevitable rather than a luxury. This paper presents the state of the art report of the application of IT in the selected College libraries of Mumbai metropolis. The study revealed that the college libraries of Mumbai are making visible progress in developing the integrated information system by accepting and adopting the emerging technologies. It is also observed that the NAAC mandate has greatly influenced the reorganization of college libraries in tune with the changing demands of the users using the appropriate IT tools.*

**Keywords:** Academic Library, Emerging and Enabling Technologies, Use of Internet Services, Mumbai, India.

**Electronic Information Resources:** ZA 3150-3159, ZA4050-4480

## 1. INTRODUCTION

The revolution brought by computer technology is global in nature and the impact is more visible than print technology because of the rapid developments. The information milieu is changing because of the advent of new technology as a result users are demanding more effective and better result oriented information. The demands of academic users are more challenging hence, the academic libraries need to strengthen their resources and services with the help of the technology. Availability of information in various forms and formats could well be helpful for the libraries to meet the ever growing needs of the modern tech savvy users. The academic libraries are in a position to provide quicker and more effective services to the users by adopting the technology in their day-to-day activities. Large numbers of publishers are providing information about their products by e-mails, through their websites etc. These changes in service by publishers would certainly enable libraries to discharge their services effectively.

The process of collection building and information dissemination has undergone a metamorphosis change due to impact of ICT on libraries particularly academic libraries. ICT helps libraries to strengthen its print collection by acquiring digital and electronic collection such as e-books, e-journals, offline & online databases etc. However, the major hurdles in subscribing e-journals, online databases etc., are price and stringent copyright laws. Today, with a whole range of general search engines available, users have the opportunity to use catalogues and portals of various libraries. Library users have been "empowered" by Google-like search engines to make their own choice about a search tool and to approach the world of information with ease (Lossau, 2004). Hence, the present study is conducted to know the state-of-the-art technology applications in academic college libraries.

## **2. LITERATURE REVIEW**

### **2.1 Changing Information Environment and Library System**

In earlier days human interactions were taking place entirely in a face-to-face situation. The invention of writing allowed it to be done over distance of time and place. Now information and communication technologies have created an electronic environment, which enables to carry out many human activities of living and working in a different way. Libraries are no exceptions in adopting information and communication technologies successfully. Lynch and Brownring (1986) opined that 'if libraries are to survive as viable services, they must not only understand current computing and telecommunications technologies, but they must develop and execute effective plans to implement these technologies. Viswanathan (1991) states that computer and communication technology itself is passing through a period of extreme evolution and development.

Therefore, libraries and information centers will have to employ more and more of modern information technologies to cope with the rapidly multiplying literature and its demand all over the world. Thornton (2000) describes, Electronic Journal Centre (EJC) which is the most exciting development in Ohio LINK program now contains complete electronic journal collection of seven publishers and these are used heavily, he states that in January 1999, 12,500 articles were downloaded by Ohio LINK users in only one week. Veeranjanyulu (2004) describes that the digital libraries offer solutions to traditional libraries which are facing three most fearsome challenges to day, namely, economical survival, shortage of space and management of materials.

During 2008 and 2009 the Library of Congress added approximately 100 TB of data to its digital collections, transferred from universities, publishers, web archivists and other organizations, over the Internet rather than by hardware media, records Michael Ashenfelder (2009). Academic library in future is likely to expand its horizon to take initiative in supporting, strengthening and promoting the e-learning on a significant scale is another expectation, opines Patkar, (2009). There is a growing interest in online journals among the users at IIT Roorkee Library and e-re sources have become substitute for print materials, reports Tyagi (2011).

### **2.2 Emerging Enabling Technologies**

Advances made in technologies have thrown infinite possibilities to increase speed, accuracy, efficiency and effectiveness of services in library and information centers. Bhattacharyya (1982) reported that, technological developments relate to three distinct areas; developments in the microprocessor technology, new developments in communication technology and evolution of new audio-visual materials and techniques. Sinha (1992) forecasts that new developments in communication technology such as fibre optics, packet switching and direct/live telecast of satellite

transmission are bound to stimulate greater use of communication technology in library and information centers. Gopalakrishnan (1995) describes that multimedia is the emerging technology and is a need of tomorrow's libraries. Ramesh and Hussain (1997) said that the application of barcode technology in libraries is a new concept in practice.

The World Wide Web is perhaps the most notable example of a far-reaching element that librarians neither predicted nor planned for. Not available before the early 1990s, but not impossible to ignore by the late 1990s, cautioned Miller (2000). Library consortium is one of the emerging tool kits for libraries to overcome from many problems, opine Choli and Karisiddappa (2002). The most important developments of recent years are the establishment of open archives and institutional repositories, observed Goldschmitt (2004). Touch screen identification of library visitors, Electronic security systems like Smart Cards, RFID etc. Storage Technologies like ORC, high end optical storage technology, Communication technologies like Wi-Fi, Bluetooth, Multimedia technologies with latest developments like computer animation, video conferencing, desktop publishing, 3D exchange of information etc. MAID (Massive Array of Idle Disks) which supports new concept 'Green IT', reports Maitland Jo. (2008), whereas in the coming decades more advanced versions of the existing ICT are expected to arrive on the scene and they are called as 'knowledge technology', envisioned Patkar (2011).

### 3. OBJECTIVES

The main objectives of the study are:

- I) to provide the state-of-art of IT vis-à-vis current scenario of Academic Libraries of Mumbai
- II) to identify and examine different aspects of Information Technology, and the problems associated with its application.
- III) to know the impact of Information Technology on the practice of Academic Libraries in the context of changing role of professionals and their preparedness to cope with the situation.
- IV) to evaluate the suitability of emerging enabling technologies in libraries.
- V) to assess the awareness and acceptability of resource sharing, networking, creation of and access to databases using IT facilities.

### 4. HYPOTHESIS

- a) Information Technology has positive impact on library profession
- b) The pattern of collection development has changed over the years in Academic Libraries
- c) Librarians are convinced of possible services through Information Technology.

### 5. SCOPE AND LIMITATION

The study is limited to the academic colleges of Mumbai, affiliated to University of Mumbai, offering traditional courses in Arts, Commerce and Science. The impact of emerging enabling technologies is studied in the context of enhancing the value of library resources and services.

**6. METHODOLOGY**

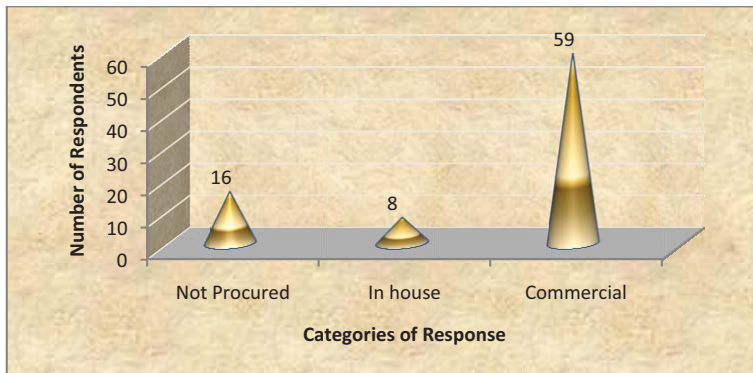
The combination of historical analysis, literature survey, questionnaire and personal interview has been used for the purpose of collecting and consolidating the information and data.

**7. DATA ANALYSIS AND INTERPRETATION**

The data collected from the respondents through questionnaire is analyzed using the appropriate statistical methods. Then the findings were synthesized and presented in figures, tables, charts and narrative form. The findings of the study are presented in the following paragraphs.

**7.1 Use of Library Management Software**

The result of the study reveals that the large numbers of libraries (i.e. 71.08%) are using commercial library software's. Whereas, 9.64 percentage of libraries have developed In-house library software by using MS-Excel or MS Access and are up to date.



**Figure 1: Library Management Software**

This indicates that the demand for readymade software is more from these libraries as there are a number of commercial software's available in the market with quite affordable price with better technical service.

**7.2 Library Automation**

The data from table 1 indicates that 67.80 percentage of libraries are up-to-date in automating their library housekeeping activities, 27.12 percentage of libraries are in the process of automating the libraries, however, 5.08 percentage of libraries are yet to start the automation process.

**Table No.1 Status of Library Automation**

Categories of Response	Up-to-date	In-Process	Not Yet Started
No. of Response	40	16	03
Percentage	67.80	27.12	05.08

The automation of library housekeeping activity is one of the significant tasks of the library. The results of the survey indicates that majority of the libraries are up-to-date in automating the house-

keeping activities of the libraries. But remaining libraries also must make an effort to automate the libraries so as to enable their users utilize the benefits of the technology.

### 7.3 Library Networking

It is evident from figure 2 that the majority of the libraries (60.24%) have established local area networking (LAN) and a considerable numbers of libraries (39.76%) said they do not have LAN facility in their libraries.

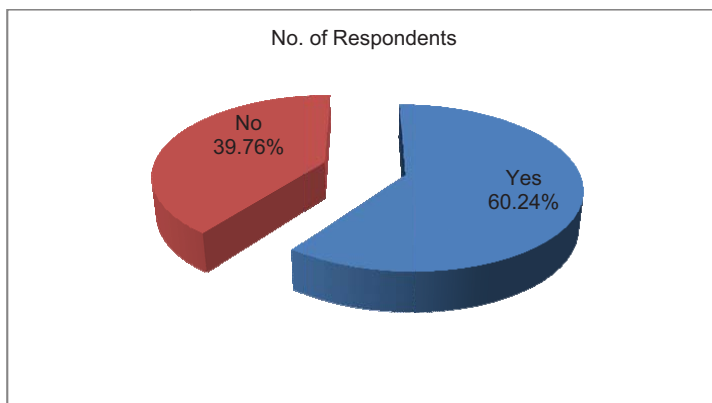


Figure No.2: Availability of LAN in Library

The establishment of LAN in majority of the libraries has enabled them to provide the OPAC service which has almost replaced the Catalogue Card Cabinets. However, those libraries who have not been able to provide OPAC service must introduce such facilities which would certainly enhance the library services.

### 7.4 Internet Facility

Figure 3 provides that 57.63 percentages respondents said they have provided with Internet facilities and 42.37 percentages of respondents said they do not have this facility.

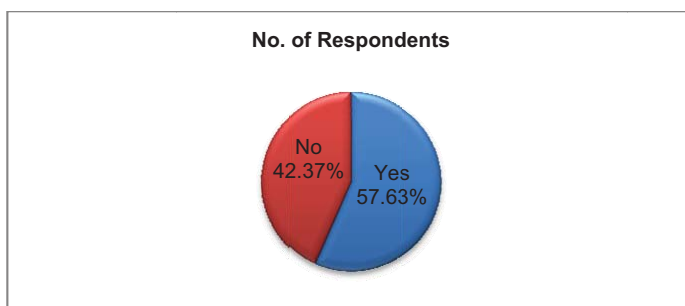


Figure No. 3: Availability of Internet in Libraries

The results of the survey unravel the real picture of the Internet facility extended by the libraries of Mumbai city. More than 50 percentages of the libraries provide Internet facility to users, and it is heartening to note that a few libraries are offering the most advanced Wi-Fi Internet facility. But it is high time that the remaining libraries that do not have Internet facility in their library must facilitate the same so as to keep pace with others and keep abreast of their subject.

### 7.5 Use of Internet Facility by Librarians

Figure 3 presents the data about the purpose of use of Internet facility by the librarians. The large number of the respondents (43) said that they use this facility for providing 'E-mail' service. Whereas, 38 respondents said they use for 'Reference Service', equal number of respondents i.e. 29 said they use Internet for 'Book Acquisition' & "Online Databases" and 19 respondents said they use for 'Web OPAC', however, a very few respondents (05) said they use it for "Interlibrary Loan" purpose.

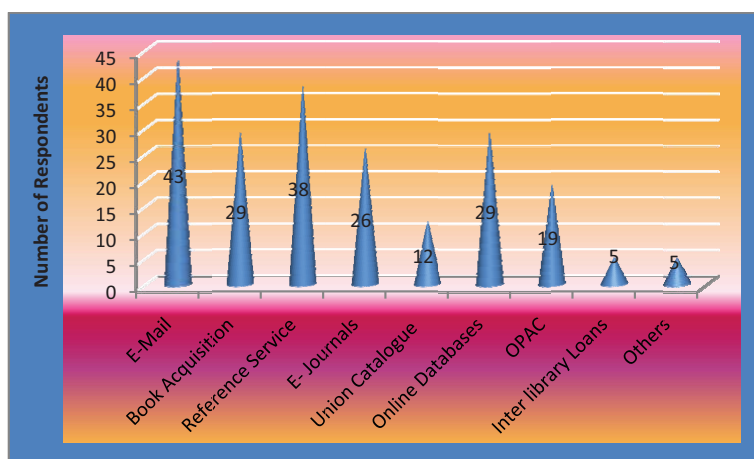


Figure No.4

It is evident from the results of the study that the library professionals need to be alert and very quick in responding to users queries as present day users are more tech savvy and require information instantly. Hence, more number of respondents use Internet for providing e-mail services followed by reference services.

### 7.6 Usage of Electronic Journals

The Internet has enabled the library professionals to provide enormous amount of information to its users. Internet breaks the information-distance barrier. With the help of Internet one can provide seamless access to good number of journals to several users at a time.

Table No.2 Subscription of Electronic Journals

Categories of Responses	Yes	No	Total
No. of Respondents	07	76	83
Percentage	08.43	91.57	100.00

Table 2 reveals a gloomy picture about the subscription of electronic journals. It is evident from the above data that very few libraries (8.43%) subscribe to electronic journals. The lack of fund, lack of necessary infrastructure and lack of interest of users could be the main reasons for non-subscription of e-journals in majority of the libraries. Thus, it indicates that the College libraries are in the infant stage as far as subscription of e-journals are concerned.

### 7.7 Book Selection Tools

It is evident from figure 5 that equal number of libraries (i.e. 83) said they use 'Publishers Catalogue' and 'Books Approval' tools, 70 libraries said they use 'Book Review' tool. Whereas, 32 respondents

said they use 'E-mails', and 38 respondents said they use 'Publishers Websites' to select the books for the library.



Figure 5: Book Selection Tools used in Library

It is observed from the above data that gradually library professionals are adopting the latest technologies in their collection building activity. This indicates that the information technology is making headway in the library activities in Mumbai.

### 7.8 Electronic and Print Resources

The below table exhibits the opinions of the librarians, maximum number of respondents said in favor of electronic resource procurement and use. However, still large numbers of respondents (i.e. 68.33%) feel that hard copies of Back volumes should be preserved even if library possesses them in the form of CDs.

Table 3: Comparison of Electronic and Print Resources

Sr. No.	Statement	Agree	Uncertain	Disagree
1	All the back volumes should be kept, even if the library has CD-ROM, Online version of the same.	56 (68.33)	07 (08.43)	20 (24.10)
2	Electronic resources need expensive infrastructure for information dissemination	43 (51.80)	14 (16.87)	26 (31.33)
3	Electronic resource saves space	77 (92.78)	03 (03.61)	03 (03.61)
4	Electronic sources can be consulted easily	43 (51.80)	23 (27.71)	11 (13.25)
5	Electronic resources are less costly than print versions	25 (30.12)	14 (16.87)	44 (53.01)
6	Electronic resources give Multi-User Access	78 (93.98)	03 (03.61)	02 (02.41)
7	Multiple choices of formats (PDF, RTF, DOC and HTML etc.)	77 (92.77)	05 (06.02)	01 (01.20)

(Figures in the parenthesis indicate percentage)

It is observed from the results of the survey that the introduction of IT into library plays a significant role in rendering services effectively and efficiently. It helps libraries in fulfilling the ever increasing demands of the modern day users.

## 8. CONCLUSION AND DISCUSSION

The Computer and Communication technologies have enabled to establish many library networks, which heralded a new era in the resource sharing and communication between libraries. Internet is the most important innovation that has made remarkable impact and influence on academic libraries.

The use of Internet by academic libraries has taken out the concept of ownership and it is depicted from the findings that information dissemination has become important rather than mere storing and preserving. However, use of E-journals, online databases and off line databases in academic college libraries of Mumbai is still in the formative stage. Lack of funds, lack of infrastructural facilities and lack of interest of users could be attributed as main reasons for poor collection of e-resources in these libraries.

It is significant to note that Wi-Fi is gradually entering into the academic libraries of Mumbai. As most of the libraries wish to be a part of network, INFLIBNET and Govt. of India are making efforts in respect of establishing connection among the institutes of higher learning in India. In the year 2009, Ministry of Human Resource & Development, Govt. of India, has taken a historical step to digitally connect India's educational institutes under the project 'National Mission of Education through Information Communication Technology (NME-ICT)'. About 2600 institutes of higher learning from Maharashtra are selected by GOI under this mission. The main objective of this project is building a knowledge network among and within institutions of higher learning in the country thereby enabling students to access the resources with free of cost. It also aims to spread Digital literacy for teacher empowerment.

Further, N-LIST a project being jointly executed by the UGC-INFONET Digital Library Consortium-INFLIBNET and the I NDEST-AICTE Consortium-IIT Delhi, provides access to e-resources to students, researchers and faculty from colleges and other beneficiary institutions. This enables the academic libraries of Mumbai to satisfy with greater degree of extent the needs of the modern tech savvy users with minimal cost. It is also suggested that these libraries need to subscribe other commercial databases such as Project Muse, J-stor, Emerald, Ebsco etc. which will help them to strengthen the knowledge of their users and eventually face the challenges with great vigor and zeal.

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