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Conclusion

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"If we can recognize the change and uncertainty are basic principles, we can greet the future and the transformation we are undergoing with the understanding that we do not know enough to be pessimistic"

- Hazel Henderson
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6.1 Introduction

Academic libraries in India have long desired one-stop shopping for their customers and in this electronic age their customers are demanding it to search from a single point at any physical location, and retrieve information from the library catalogue, citations from journal indexes and full text information from electronic resources.

The driving force in advancing the creation and use of information in the current millennium will be the integration of Internet / World Wide Web and standards of all computer applications operating in the networked environment. The rapid enrichment of resources available in electronic form combined with immediacy of access will make the electronic medium an essential component in the work environment of students and scholars in all disciplines at all levels. Academic libraries are facing increasing pressures from multiple sources. Libraries can no longer be expected to support research and development from their own resources due to the information explosion, increasing cost of library materials, shrinking library budgets etc. The level of collection development is declining at a faster rate and is restricted to core collection to serve the immediate needs of the users community.

This situation calls for cooperation in developing collections to make maximum user of their existing resources. The libraries have to come together and move towards resource sharing to reduce the common costs and will
continue to be a dynamic provider of all types of information by establishing an
Integrated university library and information system to offer users an extended
services.

It is essential to take into consideration all the components that the integrated
facets and system components built into the ideal electronic library interface
taking into account the information needs of everyone and their expectations
with regard to access, functionality and personalization.

6.2 Findings of the Study:

The study reveals that the large numbers of libraries have library science
professionals heading the library but it is also true that many universities do
not have full-fledged librarians to head the library. Many of them are at the
Assistant Librarian level which affects the decision making process in the
university library system. It is noted from the study that 50% of the libraries
have qualified librarians having Ph.D in Library and Information Science.

Manpower

Paucity of technical manpower and government ban on recruitment is a matter
of great concern for many universities, which are run with very limited staff.
However the findings of the study depicts that the application of information
technology smoothens the activities of information handling.
Computer Science professionals have been given an opportunity to work in many libraries for the purpose of introduction of IT. Many respondents do feel that assistance from computer person is essential, however few librarians have expressed that, library science background with marginal computer application knowledge goes a long way in speeding up the library automation work.

Users Population

Generally the number of users in the university including the students and teaching staff ranges from 100 to 500.

Budget

Drastic budget cut for books and serials is observed everywhere and majority of libraries have very limited budget for Journal subscriptions.

IT infrastructure - Hardware

The data with regard to availability infrastructure shows that many universities have procured the computer systems from time to time but does not have a provision to update the computer configuration. It is opined that the infrastructure created becomes obsolete in less than 5 years and libraries need additional support.
It is interesting to note from the study that the Universities introduced IT recently have got all the sophisticated computer systems as compared to other universities who implemented the computers early.

Almost all the universities have procured the printers including the Laser and Desk-Jet printers. Few universities use Barcode scanners, GIST cards and ISM packages to deal with multilingual collection.

Software
Many universities have Windows NT operating system with MS-SQL database management systems. There are few universities who use Unix and Linux operating systems.

Network tools
Libraries have network connectivity using the available data networks viz. NICNET, VSNL, ERNET, Private ISP's etc. But most of the libraries have dial up access very few having leased line connectivity.

Membership
Majority of the libraries are connected to INFLIBNET are availing the services of the Centre and found it useful. However they felt that, there is a need for a strong network connecting all libraries. It is opined that though
INFLIBNET is providing access to various databases, but the databases are not as comprehensive as it should be. There were few universities having connectivity to local, regional networks and getting fee-based services.

**Database development**

The development of the databases in the university libraries is very poor with only small portion of the data is created in Machine Readable form. The database of technical reports, standards, patents, manuscripts etc is lacking though in many universities these collections are in good number.

**Standards**

Many universities have used CCF standards to input the data. Most of the libraries follow AACR2 format for rendering the entries.

**Software for Database creation and in-house operations**

Many libraries have using CDS/ISIS for data creation. Libraries use the same software for both data entry and in-house operations. Findings of the study shows that the software is being used in many libraries for housekeeping functions viz. SOUL, LIBSYS, LIBRIS, SLIM, ALICE etc.
Factors that have influenced the computerization

Desire to increase efficiency and new services has got highest score, however all other factors listed have also scored well viz. Library wanted to be part of the worldwide trend in computerization. Vice Chancellor / Directors of the institution have shown interest in this regard. Availability of grants from UGC / INFLIBNET, desire to be part of INFLIBNET and other networks, interest evinced by the management and subsequent increase in funds followed by the users demand for computerization and Library Committees keen desire are some of the things that clearly visible.

Services

Many universities have not completely computerized their activities but they desire to provide automation-based services, services based on external resources and services based on Internet.

Implications - Financial

Findings of the study show that universities have 10-20% of the collections available in electronic format. It is also observed that most of the respondents avoided answering the data related to electronic collection. It was also found that automation has helped to manage the library with limited manpower to provide better services and saves lot of time.
Human Resource Development

Many university libraries have the provision for training the manpower to handle the information technology tools.

Service Implications

There is overall improvement in the library services with the introduction of IT applications. Libraries also avail services through INFLINBET to serve their users.

Preparedness and future plans

Preparedness of universities is encouraging as they have shown willingness and feel that with the existing staff also they can introduce new IT tools in the libraries. Libraries need a person with basic degree in computer science to look after the technical activities.

Future plans

At present many libraries are in transition period, and feel that the introduction of these tools is essential. The factors relating to automation of individual libraries, membership to library networks, providing electronic document delivery services, access to electronic resources, placing library on the web, cataloguing of Internet resources, etc are some of the future plans of the libraries.
Factor for Integrated University library and information system

The university libraries have to act as one point solution to the research and academic users and look for an integrated solution to their requirements. The pre-requisites listed in the questionnaire have scored well in respect of introduction of these factors.

6.3 Suggestions - Summary

• In the light of the present study it is essential on the part of the state and central government to make an effort to ensure and appoint qualified university librarian to achieve the highest degree of success.

• Library professionals must be initiated to make an effort to equip themselves to tackle the technical difficulties to the extent possible.

• A common mechanism is devised to procure the library materials avoiding the duplication in the procurement.

• Provision be made to update the infrastructure time to time and necessary funding be allocated every year. Need for support from agencies like INFLIBNET – UGC, AICTE, etc may be made available.

• It is suggested that, uniformity in the use of operating systems, database management systems, library house keeping softwares etc should be maintained.
- Each university must have campus network facility connecting all the departments.
- Libraries must be connected to other library networks connectivity and these library networks facilitate quality information resources for the benefit of academic users and provide better access to electronic resources.
- In the absence of comprehensive union catalogue, national networks like INFLIBNET must create such catalogue. Similarly efforts are to be done by the other networks viz. ADINET, BONET, DELNET, PUNENET etc.
- The national union catalogues must be based on OCLC and LC databases giving maximum details following MARC – 21 standards.
- Access to rare collections such as manuscripts, standards, patents, technical reports, rare collections etc is essential and the task must be completed in a time bound manner.
- All libraries must use uniform standards and provide the data to national agency in a uniform format viz. MARC-21 format. Irrespective of the software being used for different activities libraries must ensure the data compatible with the MARC-21 standards for data exchange and also provide access to such collection.
- In order to take care of the multilingual collections, the study suggests that solution equivalent to UNICODE is needed. And this is very essential in the Indian context.
- University libraries have been influenced by several factors for computerization, the study suggests that there should be continuous support
from higher authorities of the universities as well as support from national and
global agencies.

- Library must exploit the possibility of introducing more and more new
  services, educating the users in the use of such service as a prime
  responsibility.

- Universities must allocate certain amount of budget every year towards the
  updating and maintenance of infrastructure facilities.

- The manpower working at universities need proper orientation from time to
  time to get accustomed to latest developments in technology.

- Due to exponential growth in the development of electronic publications, the
  libraries now have to make best use of available resources in electronic form
  to satisfy the requirements of the users and also educate the users in the use
  electronic resources.

- Library professionals should learn to be self-dependent and must completely
  depend on computer science departments, they must learn how to tackle the
  technical difficulties to the extent possible. This reminds the old Chinese
  adage "IF YOU GIVE A MAN A FISH, HE WILL HAVE A SINGLE
  MEAL IF YOU TEACH HIM HOW TO FISH, HE WILL EAT LIFE
  LONG".
6.4 Future areas of Research

Developments in the information and communication technologies resulted in easy access to information through the information superhighway. The research and academic users get access to latest available tools resulting in the continuous research and development. Hence there is tremendous increase in the growth of literature in all areas. The university as a Centre of learning must support the academic users by feeding latest information by properly using the IT tools for better access to resources.

With the developments in the electronic publishing, there is a need to study the proper mechanism for cooperative acquisition of electronic resources by libraries. A detailed study is essential to understand the pre-requisites for providing easy access to scholarly literature with consortia based solutions for e-subscriptions including the pricing model for consortia based services for the academic libraries.

More research may be necessary on the information seeking behaviour of the university faculty and research scholars to understand additional requirements not covered under the integrated university library and information system.

Further research is required to develop integrated university library system based on the pre-requisites identified in this study and makes it available to
university libraries in India for providing one point solution. There are some efforts done elsewhere, but there is no major effort to make a comprehensive solution to take care of the system studied in this research work.

6.5 Conclusion

In the new millennium the university library position is to advance as a leader among colleges and universities in using IT and library services in providing enriched learning environment. University library must make information technology and library services a pervasive and transparent part of the lives of users. Information resources are pervasive, when they are available as a matter of course to everyone. The resources are transparent when information applications and services are available without delays or limitation imposed by hardware, software, technical support or physical location. Users must experience information resources as seamlessly integrated into their activities (Paterson, 2001).

The global computer network providing access to online bibliographic information and full text delivery of requests will change the way work is performed in the libraries. The most important advantage of the information age for libraries may be that the information is not limited to the items held by library rather than user can access any modern library in the world through the World Wide Web. The university library sector in India has to develop an information technology infrastructure and create an Integrated University
Library and information System to improve the quality of collection and information services in the university library. A local area network and wide area network is a part of this integrated system and linked to regional, national and International networks to provide efficient access to resources.

University libraries must provide reliable, cost efficient access to information whether print or multimedia. And whether held locally or remotely. The need to provide information services that remove the barriers of distance and time become even more important. In earlier times libraries have always acquired and organized material so that the information is accessible more easily.

Libraries are an integral part of the academic mission of a university. Libraries can enhance a university’s reputation by providing access to World class information resources and services and can stimulate research by promoting collections and services widely.

Libraries in India are at some stage of development and the concept of one system one library will bring radical changes in the way the information is generated, stored, communicated with the use of Integrated university library and information system.