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A Study on the Impact of Technology on Quality of Services in University Libraries

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ABSTRACT:-

Traditionally, the library is a physical place where collection of information resources in various formats (books, journals, videos, CD-ROMs etc.) is organized in a specific manner to meet the needs of a specific user or group of users. It is a service organization with both tangible and intangible assets. The tangible assets constitute physical documents and the human resources. The intangible assets comprise the invaluable services rendered by the library staff. The library plays an important role in the academic world by providing access to world class information resources and services, and stimulates academic research in the country.

Access to information is not a new phenomenon but it exists through ages. Libraries being the centre for information storage and retrieval did exist from ancient times in one form or the other. The libraries have transformed from museums to digital libraries over the time due to intervention of various technologies. The invention of ink, paper, printing technology and information and information communication technologies (ICT) are the major technological milestones in the history of library transformation. The

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printing technology helped the mass production of books and other printed materials and brought them to the portal of library as primary storage media. As science and technology advanced, the print media was augmented by non print media such as microforms, audio-visual aids, magnetic tapes and CD-ROMs as the medium of information storage and retrieval. Since 1950s the developments in ICT induced traditional libraries to transform to digital libraries incorporating documents available in electronic formats. The library transformation can be represented as MUSEUMS: Media-Clay, Brick etc: Access-Physical visit; to TRDITIONAL LIBRARIES: Media- Print: Access-Physical visit; to DIGITAL LIBRARY: Media: Digital: Access-Online, Remote.

INTRODUCTION:

From ancient times, library is the laboratory for testing or experimenting one or the other technology related to knowledge production, storage and processing. Invention of the computers is the greatest contribution to the libraries and its introduction was traced back in early 80s in the libraries. It has transformed almost every aspect of how the library provides its services and performs its work behind the scenes. This resulted in automation of library in house operations, open public access catalogue (OPAC), remote access, digitization, and creation of digital libraries. The issues related to current technology discussed or addressed by the present day libraries are:

- Digitization of special collection, establishing institutional depositories, use of integrated library management software;
- Implementation of wireless and mobile technologies for all time remote/ campus access;
- Bar-coded library transactions;
- CD mirror servers and accessing CDs available on network;
- Application of RFID in libraries;
- Web-site development, web-programming and management of the same, integration of web-OPAC and integration of multi language on single platform;
- Production and use e-books and e-journals;
- Services for distance learning students, disabled/handicapped;

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- Technology education, training and instructional/education technology to support teaching and learning; and
- Development of technology centers and promotion of information literacy.

Many factors are responsible for a change in the landscape of libraries. Libraries have changed from time to time and they have to change in the future too. Some of the important factors that helped the libraries to change are information explosion, growth in publications, users' expectations, rising expenditure and shrinking resources, rise of competitors, information technologies and digital based resources.

In academic environment, library is a place of intellectual stimulation and knowledge centre. Until 1980s, the information seekers were greatly dependent on print resources and libraries were unique places for provision of such information. The past two decades have seen a great deal of change due to ICT resulting in a demand for new pattern of scholarly information. These technological advancements have made significant impact on the growth of knowledge and unlocking of human potential. In library environment, the impact is clearly visible on information PRODUCTS such as changing document collection, the storage media, and format; PROCESS/FUNCTIONS such as automation of library in-house operations, resource sharing, reprography, communication, internet technology, search engines and instant message, and quality of service; PEOPLE-USERS AND STAFF such as choice of sources, death of distance, diminishing time zone, remote access, basic skills, on-line search, and duties and responsibilities of the library professionals.

Quality is a critical factor for achieving success in any organization. The concept of quality is not a new phenomenon for library professionals as it is rooted in library principles and activities. Though explicitly not stated, Ranganathan's Five Laws of Library Science, particularly the fourth law (save the time of reader) implies the importance of quality in library services. The law emphasizes that library administration be simple and efficient to save time of user. Knowledgeable staff provides seamless access to information regardless of format, whether the user is in the library or at a remote location.

Historically, the quality of library has been measured in terms of size- its collection, budget and manpower. Many librarians believe that quality is directly related to the size of the budget. In recent past, this concept has been changed towards the nature of the service rendered by the libraries and not

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merely on the collection and size. However, in the present day context, listening to the voice of the user is very important and the reliance on the library from users' perspective.

Service quality is one of the most talked about topics in the business as well as service sector. In services marketing literature, service quality is viewed as the comparison of what the customer expected prior to the use of services and the perceived level of services received. The foremost principle of quality management is customer focus, which means meeting and exceeding customer requirements and expectations. Although the concept of quality is not new, measuring service quality as a management technique has gained importance over the last few decades in service industries. The concept of service quality in the field of library science in Indian scenario is still in its infancy and very few studies of similar nature have been conducted in Indian library environment.

NEED FOR THE STUDY

Availability of new facilities in libraries may increase the transactions and demand for services, which in turn require additional staffing, computing facility and larger collection. Meeting future demands for library services will require careful planning. Thus an in-depth study of IT based facilities and services provided by university libraries in Haryana would indicate the status of IT and serve as model for conducting similar studies in other states as well. This proposal is an attempt to undertake an in-depth study of technology-aided services and their impact on quality of services in university libraries. However, such a study would also be beneficial to know:

1. awareness or otherwise of the librarians of the information technology will help policy/decision makers to take necessary decisions/ steps for coping up with the digital/ virtual libraries;

2. the current status and level of training and reorientation needed for the library staff in using the electronic media and IT products;

3. the study will be useful for such libraries who are in transition and are taking steps to switch over from their traditional roles and routines into modern libraries embracing new technologies;

4. the expectations and perceptions of the customers for appropriate services.

REVIEW OF LITERATURE:

The review of literature was carried out to understand the recent developments of IT in LIS environment. The technology remains one of the primary drivers of the change in the ways that people work, seek

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information, communicate, and entertain themselves. In an academic environment, no unit has been transformed by technology than library. The libraries need to reorganize their physical space to make technology-enabled resources both more readily available and widely used. The penetration of technology in libraries is more visible since the invention of computers.

Sun Microsystems in its white paper on *Information Technology Advances in Libraries* traces the evolution of library automation. According to paper, the automation process started its journey in 1970s with the introduction of computing machines in the libraries for scientific calculations. The next phase was development of integrated library systems (ILS) to perform library functions. This trend required re-education of the library staff, significant cost, more powerful technologies and networking configurations that were no longer developed in-house.

As the 1980s ended, libraries and computing centers were tackling communications, relational databases, and information distribution challenges. It became essential for universities to provide their campuses with communication technologies that wired libraries and classrooms. With the Internet becoming as defining technology, the 1990s saw greater use of campus communication infrastructures and commercial communication systems to create and store information and then to deliver it from libraries to end users. Large databases from periodicals became increasingly available in digital format-at first on CD-ROM; later via on-line services. During the period 1998-2002 the Internet, the web, computer languages and tools have matured to enable creation of rapidly increasing number of digital resources that need to be controlled, served and preserved by libraries. Open archives initiatives (OAI), meta-data, Unicode etc. are the trends during that period. So, a well arranged collection of e-resources is very essential.

The traditional ILS capabilities have been improved, at the same time entirely new technology tools have been created in response to the growth of electronic library resources. Digitization and digital media management (DMM),expanded (OPAC), virtual reference linking and personalized portals are some of the enhancement of the technology.

Frey traced ten key trends that are affecting the development of the next generation libraries:

Communication systems are continually changing the way people access information;

1. All technology ends. All technologies commonly used today will be replaced by something new;

2. We have not yet reached the ultimate small particle for storage. But soon;

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3. Search technology will become increasingly more complicated;

4. Time compression is changing the lifestyle of library patrons;

5. Over time we will be transitioning to a verbal society;

6. The demand for global information is growing exponentially;

7. The stage is being set for a new era of Global Systems;

8. We are transitioning from a product- based economy to an experience based economy;

9. Libraries will transit from a center of information to a center of culture: It will not only serve as an information resource, but much more, with the exact mission and goals evolving and changing over time.

Davis and Stephenson highlights that 'technological connectivity will transform the way people live and interact' and 'ubiquitous access to information is changing the economics of knowledge'. **Whit latch** in his paper reference futures depicts 'outsourcing, the web and knowledge counseling as future scenario for library reference services'.

National Assessment and Accreditation Council (NAAC), a body constituted by AICTE for accreditation of the institutions of higher education has published a manual in **2006** containing case studies of best practices in use of IT in library and information services practiced in leading libraries in India. The best practices reported in the manual are:

Internet access; Broadband Internet Center; Dynamic library web-site; 24/7/365 access to e-resources; Free Internet browsing /cyber café; Library homepage; Access to digital depository through library web site; Access to internal digital documents; LAN and campus wide network; Integration of multilingual documents on web; Membership to local industry/entrepreneurs; Use of standards in database creation; CD mirror server; Digitization of manuscripts; Electronic surveillance; User feedback via library homepage; Web OPAC; Concession membership for outsiders; Digital repositories; CD NET server; Complete library automation; RFID.

Besides, the following are a few of the technologies emerged in Library management systems:

1. Interlibrary loan module integrated into circulation system;

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2. E-checking of serials using an Electronic Packing Slip (EPS);

3. Computer integrated telephony for sending reminders and information on reservation to users;

4. RFID for security, circulation and inventory management systems;

5. Access to OPAC via mobile devices such as wireless PDA's; and

6. CD server to access virtual CDs on network.

RESEARCH METHOLOGY:

The main objective of this study is to understand the status of technology, resources, facilities and services provided in university libraries in Haryana and users' perceptions of service quality in those libraries. The universities/ institutes included for the current study are those approved by UGC/ AICTE, New Delhi. The respondents include faculty members and senior research scholars. The criteria to be used to select the libraries for this study will be:

-The university should have PG courses for the past 10 years and Ph.D. courses for 5 years so that the library would have the experience of handling customer demands in a postgraduate and research environment;

-The faculty members and researchers are well acquainted with the pre and post technology period and well versed with the use of library services and facilities.

The study will be carried out in three phases:

PHASE1.collection of data relating to the status of technology based resources, facilities and services provided by the libraries under study;

PHASE2.collection of data regarding customers/users' assessment of service quality provided by the libraries under study; and

PHASE3. will be relating to data analysis, presentation of research findings.

The concept of quality is not a new phenomenon in library and information science field (LIS). The quality concepts are implicitly stated through Ranganathan's five laws of library science **(Ranganathan, 1988: 287). McNicol (1997) and Coogan (1998)** also supported Ranganathan's views by stressing on saving the reader's time. The central theme of the viewpoints expressed by Ranganathan and Coogan

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focuses on saving user's time while searching/ accessing information resources. Performance-evaluation as an important management activity serves as an assessment of how the information service is performing service is performing and as an accountability factor to the stakeholders **(Bryson, 1997: 401). Herbert (1994)** expresses her concern that meeting internally set standards does not imply that the library is performing well in the eyes of the customers. **McNicol (1997:1)** presents the concept in the form of equation: 'bigger budget= more comprehensive collection + more well trained staff= quality of service'. The traditional measures of library performance have ignored the customers perspective and do not assess how well user needs or expectations are met **(Herbert,1993; Franklin and Nitecki,1999).**

There is no dearth of references on quality in LIS literature. However, it is difficult to arrive at a common definition on service quality. The quality as a management technique focuses on user's comfort and satisfaction. The management of quality in academic libraries, as a management method that allows the improvement of performance, has been the object of interest for the managers of these services **(Vergueiro and de Carvalho, 2001:1). According to Clair (1997:49)** the quality in library and information service environment is related to ' knowing what the library customers want and providing it in a manner that meets their perceptions and expectations'. This definition perfectly matches the definitions of many service marketing and LIS researchers who have defined the service quality in terms of the gap model of service designed by the **Parasuraman, Zeithaml and Berry (Cook,2000).** Since the conceptualization of SERVQUAL by Paasurama's team, many researchs have used SERVQUAL instrument to measure customers' perceptions of service quality in a wide range of service industries including library and information services. Service quality in library environment encompasses the relationship between library and its users. The challenge lies in understanding what customers want and applying that knowledge to improve the service performance The application of SERVQUAL and LibQUAL + developed by ARL are being increasingly used in academic, public and special libraries in developed countries as it is easy to administer and convenient to evaluate the responses. Though SERVQUAL and LibQUAL+ appear to be promising tools, they need to be adjusted with minor modifications to suit in total library environment.

OPERATIONAL TERMS:

Impact:

The Webster's Dictionary (1976) defines it as a concentrated force producing change (V.2, p.1131)

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The Random House Dictionary (1987) defines it as influence, effect or the force exerted by a new concept or technology (p.958).

In general Impact can be defined as the effect, impression or influence caused by a new concept, idea or technology.

Digital library: "It is one in which all the information exists in digital electronic format. They do not contain any conventional document. The information can be accessed simultaneously by many (geographically distributed) users at a low cost".

Electronic Library: is one in which the core processes of the library become basically electronic in nature. There is more widespread use of electronic media (both digital and analogue) for storage, retrieval and delivery of information.

Virtual Library: is one with little or no physical presence of documents, reading space or support staff, but one that disseminates selective information directly to the distributed costumers usually electronically.

Technology: is the evolution of an idea. It is the thinking of a man or women who sees before them an opportunity to improve a process, or to create a new device or object that facilitates, improves or aids something or someone else.

OBJECTIVES OF THE STUDY:

The primary objective of the study is to understand the nature of Technology- supported resources, facilities and services provided in university libraries in Haryana and assess quality of those services as perceived by customers/ users. The specific objectives of the proposed study are:

1 To find out the status of information, information technology and physical infrastructure in university libraries in Haryana for meeting the ever growing demands of users;

2. To know the impact of Technology on library functions as perceived by library professionals and users;

3. To find out the status of computerization of university libraries;

4. To find out the participation and contribution of university libraries in various networks;

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5. To assess customer expectations, perceptions of service quality and gaps in perceived service quality ;

6. To know the problems experienced by librarians during technology adoption and their future plans; and

7. To suggest ways and means for bridging the gap to improve the situation, if warranted.

HYPOTHESIS:

Although the objectives of the study are clear, there are chances that the study may deviate from them. Hence, it is necessary to have hypothesis running through the objectives. For the present study, the following hypothesis has been formulated:

H0: Technology has a positive impact on libraries and is being embraced by more and more libraries.

H1: The technology has a negative impact on the libraries and their adoption in the libraries brings major concerns.

REFERENCES:

- Boulding, William : A dynamic process model of service quality: From expectations to behavioral intentions. *Journal of Marketing Research* 30(1), February: 7-27.
- Brown, Stephen W and Swartz, Teresa AA : Gap analysis of professional service quality. *Journal of Marketing*. 53(2), April: 92-98.
- Bryson, Jo : Managing information services. Hampshire: Gower Publishing Ltd: 410-423.Cairncross, Frances : The death of distance. Boston: Harvard Business School.
- Clair, St. Guy : Total quality management in information services. London: Bowker-Saur Ltd: 49,127-135.Coogan, Elizabeth et al : Service to users Task Force Report submitted to Brown University Library in October: 1-30.
- Cook, Collen and Heath, Fred M : User perception of service quality: A LIBQUAL + Qualitative study. ARL measuring service quality symposium. Oct 20-21 Washington:2.
- Davis, Ian and Stephenson, Elizabeth : Ten trends to watch . McKinsey Quarterly. Web exclusive January: p1-5.http://www.mckinseyquartely.com/article.

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- Davis, Ian and Stephenson, Elizabeth : Ten trends to watch . McKinsey Quarterly. January; p1-5. Download from http://search.epnet.com (EBSCO Database-BSP).

- Evans, Peter ;e-linding: The next wave to hit libraries? BiblioTech Review: Information Technology for Libraries Review. January 28, 2pages. Download from http;//www.biblio-tech.com/BTR900/January_2000/e-lending.html.

- Franklin, Brinley and Danuta, Nitecki : User satisfaction White Paper. ARL new measures. April 6 : 1-7.

- Frey, Thomas (2005): The future of libraries beginning the great transformation. Colorado: The DaVinci.Institute, Inc. http://www.davinciinstitute.com/page.php?ID=120

- Herbert, Francoise :Service quality: an unobtrusive investigation of interlibrary loan in large public libraries in Canada*. Library and Information Science Research. 16 (1): 3*-21.

- Hyde, J : How soon is now? Current developments and future possibilities for libraries and librarian's view. The Australian Library Journal, 46(May):181-185.

- Hisle, Lee W : Top issues facing academic libraries: a report of the focus on the Future Task Force. C&RL News, 63(10),Nov, p1-3.

- Mfrisque : Core competencie in library technology: what IT is and where IT is going.July13, 4pages.core-competecies-in-library-technology-what-it-is-and-where-it-is-going.

- Olson, Jerry C and Dover, Phlip : Disconfirmation of consumer expectations through product trail. Journal of Applied Psychology. 64(2), April:179-89.

- Orenstein, David : Trends in the library profession and the impact of technology at the Montgomery College Libraries.

- Parasuraman, A; Zeithaml, VA and Berry, L L : Reassessment of expectations as a comparison standard in measuring service quality: Implications on future research*. Journal of Marketing. 58(1), January: 111-124*.