E-Resources Tools and Their Access: An Appraisal of the Central Libraries of the Central Universities of North India

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Abstract

The impact of Information and Communication Technology (ICT) on university libraries has been significant. It has affected the way collections are managed, technical works are carried out, and information is accessed and communicated. University libraries today rely heavily on E-Resources (Electronic Resources) tools to facilitate their services. These tools have changed the attitude of library professionals towards enhancing and providing better services to their users. E-Resources are easily accessible within and outside the library, making it more convenient for users to access information. This study discusses the concept and meaning of e-resources, purpose of study, research methodology, nomenclature of e-resources, information access and appraisal of e-resources tools provided by the Central Libraries of General Central Universities of North India. The study concludes that university libraries need to manage e-resource tools to access e-resources globally, along with an updated In-House Database.

Keywords: University Library, Information and Communication Technology, Electronic Resources, Information Access

1.   Introduction

1.   Introduction

Information and Communication Technology (ICT) is a modern tool that provides access to information available in electronic format, in specific terms, electronic resources. **Vickery and Vickery (1987)** assumed that the development of new ICT will improve the availability and accessibility of information   in different organisations including the universities. They asserted that access to all kinds of information available in electronic format such as bibliographic references, online databases, factual and numeric data, theses/dissertations, abstracts and full text will relatively improve the quality of research carried out in the universities. The World Bank (2002: 3) defined, ICT consist of "hardware, software, networks, and media for collection, storage, processing, transmission, dissemination, and presentation of information". In fact, ICTs are the platforms that provide access to electronic resources for the purpose, and are therefore very essential in research process in the universities.

The computer networks that provide access to e-resources in the universities are typically the LAN, the Intranet or the Internet. As such, computer networks assist in promoting the accessibility and utilization of e-resources effectively. In this regards, Johnson and Tahan (2002)

counselled that universities should provide all academic staff access to relevant electronic networks, Intranet and the Internet to enhance their research activities.

Librarian's task has, however, become more challenging due to information explosion, democratization of knowledge, more demanding attitude of the users and revolution in ICTs. Librarian has to play comparatively a more dynamic role in performing their basic task of developing and making available the information resources at right time to right users in a form most conveniently usable expending the minimum economic resources in a library of university education systems.

The academic community in the university education environment is mainly depending up on the library resources for their academic progress and teaching. The Internet, World Wide Web (WWW), e-mail, electronic data interchange (EDI) and the online data access are very much useful for electronic resources.

2. Purpose of Study

The main purpose of this study is to examine methodically the use of E-Resources in Central Library of the General Central Universities of North India, impacting the access to electronic information sources and services.

3. Research Methodology

Research methodology allows researcher to develop a research design. The research design is the conceptual structure within which research work is carried out. It constitutes the outline for the collection, measurement and analysis of data (Websters 20th Century dictionary, 1981). A design which is flexible, appropriate, efficient, and economical, minimizes bias and maximizes the reliability of data collected is considered a good design (Aggarwal and Diwan, 1997). Following research methodology and methods has been used for conducting this study:

• Literature survey has been viewed for development of thought.
• Web sites of university libraries have been evaluated.
• The questionnaire method has been used for collection of data and relevant information of University Libraries.
• Statistical methods will be used for analysis and interpretation of data to enrich the findings of the study after collection of latest information of the universities.

4. E-Resources: Concept and Meaning

The invention of written languages and paper led to the development of the printing press in Germany in the mid-1400s. Since that period, printed information sources have been in use for centuries till the advent of ICT and in present days also (Rubin (2000: 6). Thus, print materials have been the major sources of information available, accessible and used for research in universities. Since the advent of Information and Communication Technology (ICT), Internet, WWW, and electronic publishing, information that was available only in print materials (books, journals, theses/dissertations, newspapers etc.) are now available in electronic format. The university library purchase subscriptions to many electronic information resources in order to provide user with access to them free of charge. E-Resources include lots of things: full-text journals, newspapers, company information, e-books, dictionaries, encyclopaedias, economic data, digital images, industry profiles, market research, career information, etc. (Ask a Librarian). Today is the world of globalization and we live in an age of digital era and everybody would relish to getting concrete information on tips through e-resources.

To describe the concept of electronic resources, there are some views stated by the authors like this. Bavakenthy, Veeran, and Salih (2003) define electronic resources as information resources that are stored electronically in various formats. They can be accessed through electronic systems and networks. The term 'e-resource' covers a range of publishing tools, such as Online Public Access Catalogues (OPACs), online databases, e-journals, e-books, internet resources, Print-on-demand (POD), CD-ROMs, e-mail publishing, wireless publishing, electronic link and web publishing, among others. Essentially, it refers to any electronic product that delivers data, whether it is in text, numerical, graphical or time-based form, as a commercially available resource. Similarly, Mansur (2012) describes electronic resources as electronic products that deliver a collection of data, such as full-text databases, e-journals, e-books, image collections, multimedia products, numerical, graphical or time-based data, which are published for commercial purposes and information dissemination. These resources can be delivered on an optical media or via the internet.

E-resources can be categorized into three major categories (Tripathi & Jeevan, 2013): (i) e-journals, which are electronic versions of print journals or journals that only appear in electronic format, (ii) e-books, which are monographs accessible through electronic means like e-journals, and (iii) e-databases, which are full-text, bibliographic, numeric, and other databases that hold a wide variety of information in one product/platform.Electronic Information Resources or simply Electronic Resources (E-Resources) has been defined by concerned experts.

According to Lee and Boyle (2004), "an electronic resource or e-resource is any digital cohesive publication that is being marketed. It refers to any electronic product that delivers a collection of data, whether it's text, numerical, graphical, or time-based, and available commercially. Examples of e-resources include electronic journals, full-text databases,, image collections, multimedia products, and collections of numerical data. According to Reitz (2004), electronic resources are materials that consist of data and/or computer programs encoded for manipulation and reading by a computer. These resources can be accessed through a peripheral device such as a CD-ROM drive or a network like the Internet. Examples of electronic resources include electronic texts, bibliographic databases, software applications, institutional repositories, websites, e-books, and collections of e-journals. To access electronic resources that are not available to the public free of charge, licensing and authentication are usually required. As per AACR2 (2005) guidelines, electronic resources are materials that are encoded for use by a computerized device. Such materials may require the use of a peripheral device like a CD ROM drive or a connection to a computer network like the Internet. E-resources are electronic information resources and services that can be accessed by users electronically via a computing network inside or outside the library Haridasan and Khan (2009: 118) have defined electronic information resources as "resources where information is stored electronically and accessible through electronic systems and networks." Shukla and Mishra (2011) describe electronic information collection as the collection that can only be accessed through the use of electronic gadgets. Electronic resources, according to IFLA, are materials that are computer-controlled, including those requiring the use of a peripheral device such as a CD-ROM player. These resources can be used interactively or not, and they come in two types: data, which refers to information in the form of numbers, letters, graphics, images, and sound, and programs, which are sets of instructions used to perform certain tasks, including data processing and online services, interactive multimedia, among others (IFLA, 2012).

Electronic resources are now subsidiary printed information sources in the university libraries. The electronic resources can be access remotely by users in their offices/laboratories or at homes without physical visit to the library. Thus, electronic resources promote efficiency in dissemination of information for research purposes in the universities. Thus, electronic resources promote efficiency in dissemination of information for research purposes in the universities (Thanuskodi, 2012).40 E-resources are more easily updated than the print resources. Ellis and Oldman (2005: 35) opined that electronic information resource "is more of a tool to assist in conducting research, a way of scanning a lot of materials quickly". This can be so called Electronic Information Service.

5.   Nomenclature of E-Resources

Different types of electronic resources include: e-journals, ebooks, online databases, e-theses/e-dissertations, electronic conference proceedings, electronic technical reports, electronic reference documents, CD-ROM databases (Appleton, 2006; Costa & Meadows, 2000; Dadzie, 2005; Lee, 2002; Parameshwar & Patil, 2009; Swain, 2010). Basically, e-resources that are accessible on the Internet are described as Internet resources. Appleton (2006: 620) classified Internet resources into "freely available web-based resources" and "scholarly web-based resources such as electronic journals". The scholarly web-based resources – electronic journals, electronic books and online databases are relatively invaluable e-resources that brought great innovations in research process in universities.

The e-resources are basically divided into two major types are (Deshpande,):

(i)   Online e-resources, which may include:
•   E-journal (Full text & bibliographic): E-journals are plenary text journal that are accessible via internet.
•   E-books: E-books made available in the form of html & PDF.
•   Online databases; Online database is withal available on different Subjects.
•   Web sites
•   Indexing and abstracting databases
•   Numeric and statistical databases
(ii)   Other electronic resources (Offline) may include:
•   CD ROM
•   Diskettes
•   Other portable computer databases.
•   E-audio/visual databases
•   E-images

Typically, a journal is a primary source of information and scholarly communication among academic staff in the universities. According to Meera and Ummer (2010) stated that the shift from print-on-paper journals to electronic journals is one of the most interesting advancements in the field of information. With the emerging electronic information environment, electronic journals have brought a new paradigm in research in the universities (Kumar & Ansari, 2012; Ungern-Sternberg & Lindquist, 1995). There are two types of e-journals: fee-based and open access. There are two types of e-journals: fee-based and open access. Open access journals are a type of electronic journal that is freely available on the Internet for research purposes.

Online databases are collections of e-journals and e-books that provide cost-effective access to these electronic resources for academic staff and other end users. The contents of each database vary from discipline to discipline. Examples are MEDLINE, Science Direct, AGORA, HINARI, Lex is-Nexis, EBSCHO HOST among others. However, online database cannot be access and retrieve without the connectivity of Internet with the searching key words, Web address and Web browser.

6.   Information Access

Knowledge is an organized body of information that can be utilized for the benefit of society in various forms. Libraries and information dispensing agencies play a critical role in identifying, collecting, organizing, and disseminating this information. Everyone needs information for a specific purpose, and therefore, access to information is essential. Seibert, Kraimer, and Liden argued that individuals seek information to enhance their competency and skills, and greater access to information resources would lead to higher levels of motivation. Benjamin Disraeli, the late British Prime Minister, once said, "As a general rule, the most successful man in life is the man with the best information." Libraries should assist in providing access to information by adopting various methods. Information access refers to the means or modes through which information is made available, and it encompasses an entire range of possibilities for making information and information services available to users. The level of access to information or an information resource is significant and positively correlated to a user's career success and satisfaction (Seibert, Kraimer, and Liden, 2001).

Access to information is a significant aspect of the broader research domain of information ethics, as suggested by several scholars (Mathiesen, 2004; Vaagan, 2005; Carbo & Smith, 2008). Mathiesen (2004) defined information ethics as being fundamentally about who should have access to information and under what conditions. Similarly, Carbo and Smith (2008) define information ethics as being concerned with the moral dilemmas and ethical conflicts that arise in interactions between humans and information, information and communication technologies, and information systems. Both definitions demonstrate that information access is an essential part of information ethics, answering questions regarding the creation, organization, dissemination, and use of information.

The American Library Association's (ALA) Code of Ethics (2009) also highlights the significant relationship between information access and information ethics. As per the preamble, professionals in the field of Library and Information Science are devoted to protecting intellectual freedom and the right to access information. They have a responsibility to ensure that information and ideas continue to flow freely in the present and the future. The Code of Ethics prioritizes "Equitable Access" as its first primary principle.

The terminology used to describe this concept varies. "Access to information" is more commonly used in LIS research, whereas some authors use "information access" interchangeably with "access to information." According to Jaeger and Burnett (2005), access is defined as "the presence of a robust system through which information is made available to citizens and others." Such a system has physical, intellectual, and social components, and information access is a combination of these elements that affect the availability of information to individuals.

Before 1950, libraries provided information exclusively through print resources and users relied completely on them for the publications they needed. However, after 1950, the emergence of information technologies brought about a change in the scene.

University libraries play a crucial role in providing access to information in the university education system through various sources such as print, non-print /electronic, or micro format resources. Users in university libraries typically use printed, non-printed, and electronic resources to access the desired information. The current information scenario offers a variety of options for accessing different formats and types of information, including library catalogues, bibliographies, indexes, accession lists, union catalogues, indexing and abstracting journals, online databases, information networks, subject gateways, and more. Electronic resources are particularly useful for quick access, retrieval, and dissemination of information.

At the end of the 20th century, Information and Communication Technology (ICT) changed the scenario by increasing the number of print resources and voluminous research information in electronic format that are accessible to anyone online. Open access has become a permanent and unanticipated feature of the internet, offering unparalleled riches to researchers who can now learn about discoveries faster than ever before and receive information delivered electronically to their desktops.

The users of the global system and the new communicating tools, such as digital, network technologies, the Internet, and the World Wide Web, have eliminated distance and cast factor. Web access has become essential in mediating a digital world.

7.   Information Access Tools: An Appraisal

Indian universities came into being through Acts of the state legislatures. Central universities were, however, created by the central government and some other organizations were deemed to universities under section (3) of the UGC Act 1956. In North India, there are only 16 General Central Universities located in seven States of North India (UGC, India 2023). The study has covered the total 16 Central Libraries of General Central University of North India.

The printed and electronic tools for information access are available in university libraries and are of various kinds. However, there are information access tools that can be used in university libraries, such as: In- House Database, Indexes, Bibliographies, Abstracts, Library Guide to Literature, Accession, OPAC, MARC, Dublin Core, Online Database, CD-ROM etc., Subject Gateways, Internet Search Engine, Kardex Card, Computer Output, and Web OPAC.

To examine the task of organization and management of information access in Central Libraries of the General Central Universities of North India, a survey was made on the status of information access tools for e-resources made available in such universities as to their various tools for access to electronic information resources. In this regard, the data and information has been collected through the questionnaire sent to 16 central libraries but only 12 responded. Information/data provided by respondent central libraries of the General Central Universities of North India is depicted in Table-1.

Table 1 Information Access Tools for Access to Electronic Information Resources

Name of the Institute	In-House Database	Indexes	Bibliographies	Abstracts	Library Guide to Literature	Accession	OPAC	MARC	Dublin Core	Online Database	CD-ROM	Subject Gateways	Internet Search Engine	Kardex Card	Computer Output Microfilms	Web OPAC
AMU, Aligarh	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
BBAU, Lucknow	Y	NO	NO	NO	Y	NO	Y	Y	NO	Y	Y	Y	Y	NO	NO	Y
BHU, Varanasi	Y	NO	NO	NO	NO	NO	Y	NO	NO	Y	NO	NO	Y	NO	NO	NO
CUH, Hariyana	Y	Y	Y	Y	Y	Y	Y	Y	NO	Y	NO	Y	Y	NO	NO	NO
CUHP, H.P.	Y	NO	NO	NO	Y	NO	Y	NO	NO	Y	NO	NO	Y	NO	NO	N0
CUJ, Jammu,	NO	NO	NO	NO	NO	NO	Y	NO	NO	NO	NO	NO	NO	NO	NO	NO
CUK, Srinagar	NO	NO	NO	NO	NO	NO	Y	Y	NO	Y	NO	NO	Y	NO	NO	NO
CUP, Bathinda	Y	Y	NO	NO	NO	NO	Y	Y	NO	NO	Y	NO	NO	NO	NO	NO
CUR, Kishangarh,	Y	Y	Y	NO	Y	NO	Y	NO	NO	Y	NO	Y	Y	NO	NO	NO
HNBGU, Srinagar,	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
IGNOU, Delhi	NO	NO	NO	NO	NO	NO	Y	Y	Y	Y	Y	NO	Y	Y	Y	NO
JMI, Delhi	Y	NO	NO	NO	NO	NO	Y	NO	Y	Y	NO	NO	NO	NO	NO	NO
JNU, Delhi	Y	NO	NO	NO	NO	Y	Y	Y	Y	Y	Y	NO	Y	Y	NO	NO
SAU, Delhi	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
UOA, Allahabad	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	NO
UOD, New Delhi	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR=No response

Y=Yes

N=No

The data depicted in Table 1 has been manipulated after analysis in Table-II.

Table-2 Statistical Analyses of Information Access Tools for Access to Electronic Information Resources used by the Central Libraries

S. No.	Name of Information Access Tool	Number of Universities			
		YES (Y)		NO (N)	
		Number	%	Number	%
1.	In House Database	09	75	03	25
2.	Indexes	04	33.34	08	66.66
3.	Bibliographies	03	25	09	75
4.	Abstracts	02	16.67	10	83.33
5.	Library Guide to Literature	05	41.67	07	58.33
6.	Accession	03	25	09	75
7.	OPAC	12	100	00	00
8.	MARC	07	58.34	05	41.66
9.	Dublin Core Online	04	33.34	08	66.66
10.	Database	10	83.34	02	83.33
11	CD-ROM	05	41.67	07	58.33
12	Subject Gateways	04	33.34	08	66.66
13	Internet Search Engine	09	75	03	25
14	Kardex Card	03	25	09	75
15	Computer Output Microfilms	02	16.67	10	83.33
16	Web OPAC	01	8.34	11	91.66

The analysed data in Table 2 indicates that the facilities of In-House Database, Indexes, Bibliographies, Abstracts, Library Guide to Literature, Accession, OPAC, MARC, Dublin Core, Online Database, CD-ROM, Subject Gateways, Internet Search Engine, Kardex Card, Computer Output Microfilms and Web OPAC are being provided by the Central Libraries in the ratio of 09(75%), 04 (33.34%), 03 (25%), 02 (16.67%), 05 (41.67%), 03 (25%), 12   (100%), 07(58.34%), 04 (33.34%), 10 (83.34%), 05 (41.67%), 04(33.34%), 09   (75%), 03 (25%), 02(16.67%) and 01(8.34%) respectively.

8.   Conclusion

In conclusion, it can be drawn that the most commonly offered tool by all central libraries is the OPAC, with a usage rate of 12 (100%). Additionally, other tools like Databases 10 (83.34%), In-house Databases 9 (75%), Internet Search 9 (75%), and MARC 7 (58.34%) are also used by central libraries (Table 2) to a satisfactory extent. However, the remaining tools are only used by some central libraries for specific purposes. In nutshell, the OPAC, In-house Databases, Online Database, exclusively open access database must be managed and maintained by the university library.

The organisation and management of Electronic information resources tools in university libraries are very useful for users and library professionals for speed up the accessing and maintaining of electronic information resources to strengthen the information access for academic activity.

References

1.   AACR-2/acquisition-collection-development/publications/electronic-resource-guide-2012.pdf2

2.   Aggarwal, L.N. and Diwan, Parag (1997) . Research Methodology and Management Decisions. Global Business Press, Delhi.

3.   American Library Association. (2019). Professional ethics; Code of ethics. Retrieved from https://www.ala.org/tools/ethics

4.   Appleton, L.(2006). Perceptions of Electronic Library Resources in Further Education. The Electronic   Library   24   (5):   619-634.article=1268 &context=libphilprac&sei.

5.   Ask a Librarian. www.libanswers.utep.edu

6.   Bavakenthy, M., Veeran, M.C.K.& Salih, T.K.M. (2003). Information Access Management and Exchange in the Technological Age. New Delhi: Ess Publication.

7.   Carbo,T. & Smith, M.M. (2008). Global information ethics: Intercultural perspectives on past and future research. Journal of the American Society for Information Science & Research, 59(7), 111-1123.

8.   Costa, S. & Meadows, J. 2000. The Impact of Computer Usage on Scholarly Communication among Social Scientists. Journal of Information Science 26 (4): 255-262

9.   Dadzie, PS. 2005. Electronic Resources: Access and Usage at Ashei University College. Campus Wide Information Systems 22(5): 290-297. Also Available at: http/www: emeraldinsight.com/1065-0741.htm. (Accessed 6 May 2010)

10.   Ellis, D. & Oldman, H. 2005. The English Literature Researcher in the Age of the Internet. Journal of Information Science 3 (1): 29-36.

11.   Haridasan, S. & Khan, M. 2009. Impact of E-Resources by Social Scientists in National Science Documentation Centre (NASSDOC), India. The Electronic Library 27 (1): 117-133.

       http://www.academiaa.ed/11968640/_Eresources_Management_at_the Engineering _college_library.

12.   International Federation of Library Associations and Institutions (2012). Key Issues for e-Resource Collection Development: A Guide for Libraries. Acquisition and Collection Development Section. Retrievedfromhttps://www.ifla.org/wp-content/uploads/2019/05/assets

13.   Jaeger, P.T., & Burnett, G. (2005). Information access and exchange among small worlds in a democratic society: The role of policy in shaping information behaviour in the post-9/11 United States. Library Quarterly, 75(4), 464-495.

14.   Johnson, T. & Tahan, HA. 2002. Improving Performance of Clinical Operations. In: KS. Montgmery and JJ. Fitzpatrick (eds). Essentials of Internet Use in Nursing. New York: Springer Publishing Company. 49-61.

15.   Kumar, D. & Ansari, MM. 2012. Use of E-journals by Faculty Members of Chaudhary Charan Singh University: An Exploratory Study. In: DK. Swain (ed.). Electronic Age Librarianship New Delhi: Ane Books Pvt. Ltd. 294-305.

16.   Lee, S. (2002). Electronic Collection Development: A Practical Guide. New York: Neal-Schuman Publishers INC.

17.   Lee, S. D. and Boyle, F. (2004) Building an Electronic Resources Collection: A Practical Guide, 2nd edition, Library Association Publications, Facet, London.

18.   Mansur, S (2012). E-resources collection development in engineering college libraries: a challenge for knowledge center managers. International Journal of Digital Library Services, 2(1), 166-177.

19.   Mathiesen, K. (2004). What is information ethics? Computers & Society, 34(1).

20.   Meera, BM. & Ummer, R. 2010. Open Access Journals: Development of a Web Portal at the Indian Statistical Institute. The Electronic Library 28 (4): 540-554.

21.   Parameshwar, S. & Patil, DB. 2009. Use of the Internet by Faculty and Research Scholars at Gulbarga University Library. Library Philosophy and Practice. Available at:http://digitalcommons.unl.edu/cgi/viewcontent.cgi?

22.   Reitz, J. M. (2004). Dictionary for library and information science. London: Libraries Unlimited.

23.   Satayanarayan, P.V. (1986). Business information: great lacuna. Business world; (4)13: 15-28.

24.   Seibert, S. E., Kraimer, M.L., & Liden, R.C. (2001). A social capital theory of career success. Academy of management journal ; (44) 2: 219-237.

25.   Shukla, P. & Mishra, R. (2011). Collection development policy in the electronic era. Asia Pacific. Journal of Library and Information Science, 1 (1), 69-76.

26.   Swain, DK.(2010). Students' Keenness on Use of E-resources. The Electronic Library 28 (4): 580-591.

27.   Tripathi, M. & Jeevan, V., 2013. A selective review of research on e-resource usage in academic libraries. Library Review, 62(3), pp. 134-156.

28.   Ungern-Sternberg, S. & Lindquist, MG. (1995). The Impact of Electronic Journals on Library Functions. Journal of Information Science 21 (5): 396-401.

29.   Vickery, BC. & Vickery, A. 1987. Information Science in Theory and Practice. London: Butterworths.

30.   Websters New Twentieth Century dictionary of the English language (1981). Simon a Schuster, New York.

31.   World Bank. 2002. Information and Communication Technologies: A World Bank Group Strategy Washington, D.C.: The World Bank Group

32. www.ugc.ac.in