

## E-Resources and its Management in Libraries

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### Abstract

The Libraries and Knowledge Resource Centers are the ultimate sources in providing the required information. In the present era, the libraries are well equipped with e-resources fulfilling the required needs of the readers published through electronic media. To fulfill these requirements the libraries acquire reading materials such as printed books, journals, encyclopedias and others through electronic media and also provide access to these electronic forms. The paper discusses the required information concerned with e-resources, their characteristics, purpose and advantages, disadvantages, and management of e-resources.

**KEYWORDS:** Electronic Resources, Digital Resources, Information Technology, Management, Library, Knowledge Resource Centers.

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### 1.1 Introduction

E-resources or the Electronic resources are the electronic documents that bring together the classical book structure or the concept of a book which can be provided in the electronic environment. Many times it is also referred to as an online database. It is an interactive document which can be created and read on the computer. However, some of these are available on the internet. The internet has emerged as the most powerful medium for storage and retrieval of information. The online information sources of the library include e-books, e-journals, e-databases, e-theses, e-dissertations, etc. The traditional library systems are going to transform into the digital library system. The internet and CD-Rom are the most frequently used IT based sources and facilities. The World Wide Web has rapidly become the most useful means of providing information sources. The library provides a wide range of services to the academic and research activities of the institutions both qualitatively and quantitatively.

Management of electronic resources is a time-consuming as well as a difficult process. Basically, it requires a computer access or any electronic product that delivers a collection of data on CD-ROM, on tape, via the internet and so on.

### 1.2 What is E-Resources

“Digital resource” is used interchangeably with “electronic resource”. Singh and Sharma (2016) defined electronic resources or e-resources as “An e-resource is an electronic information resource that you can access through the website, on or off campus. We can get the information we want, when we need it, 24 hours a day, seven days a week. Material consisting of data and/ or computer, program(s) encoded for reading and manipulation by a computer, by the use of a peripheral device directly connected to the computer, such as a CD-ROM drive, or remotely via a network, such as the Internet (AACR2). Electronic resources not publicly available free of charge usually require licensing and authentication. E-resources include electronic journals,

online databases and electronic books etc. There are many thousands of articles and books available – and the numbers keep growing as new resources are added to our collections. Abbreviated e-resource”(p.155).

Electronic Resource is the material that requires computer mediator in order to access their content and make it useful. Articles from journals, magazines, encyclopedias, professional publications accessible from the internet connected to computers, smart phones, tablets on CD-ROM are known as the E-resources. These e-resources provide information on texts, graphics, images, maps, music, sound, images and in a number of other forms. The electronic materials are obtained through subscription or purchase or sometimes freely available from the original source. E-resources are the parts of invisible Web. They provide the information accessible through the internet which is normally found on Google.

### **1.3 Characteristics of E-Resources**

Electronic resources have following characteristics:

Electronic resources can be accessed, borrowed, extracted and integrated very quickly at a very high speed. They can store and preserve the information for a very long time in a very compact form. The same information can be accessed by n – number of users at a time. E-resources have different search options such as simple, quick, advance and Boolean logic search in comparison with the documentary resources. E-resources are very economical as far as the maintenance is concerned although they have high infrastructural expenditure.

E-resources are of two types; (I) Online resources or Web resources are available on the internet in electronic form or sources located remotely which can be accessed through interactive communication with the help of computer and communicational channel. E-books, E-journals, Websites, bibliographical databases, full-text databases are the online resources. (II) Offline resources are available in electronic format but not available through internet and modem. CD/DVD, floppy discs, pen drives and others are the offline resources.

### **1.4 Purpose and use of E-Resources**

Improvement in the efficiency of the library, to provide quick services to the users and to provide the effective information services to the faculty, research students in achieving their desired results, the research publications, books, journals, are the main themes of using the e-resources. In the digital library, e-resources have become one of the most important aspects that changed the format of the document from typed manuscripts to an electronic printout. Thus, E-resources play an indispensable role in the dissemination and creation of information. The libraries are the main source for providing the material for preparation of lectures, research needs and acquiring latest knowledge in the specialized line of research through the e-resources. E-resources have proliferated the database to overpower the information available on the internet in a relatively very short period.

### **1.5 Types of E-Resources**

Digital resources refer to any resource, which is in digitized form, which can be read and scanned by means of electronic media. Digital resources do not require separate

space in a library as these can be stored in a computer locally or remotely. Digital collections must be selected, acquired, organized, and made accessible and preserved.

Digital resources include a wide range of materials such as Collections/ reading materials in which complete contents of documents are created or converted into electronic form or machine readable form for online access. e.g. Scanned images, images of photographic or printed texts, etc. Online databases and CD-ROM products, particularly those with multimedia and interactive video components, Scientific data sets such as protein sequence or nucleic acid sequences, etc., Databases or articles accessible through internet and other networks, Computer storage devices such as Optical disc, Jukeboxes, CDROM/ DVD-ROM, Meta-documents, Digital Audio, Video clips or full length movies.

Once the material is selected for acquiring, following checklist should be considered, keeping in view the benefits offered to the library. 1. **Form** - CD-ROM, DVD-ROM, Online Databases, Electronic Journals etc., 2. **Cost** - Digital resources should offer cost benefit in comparison to the print resources, 3. **Hardware Setup** - Hardware required for installation of digital resources, 4. **Software Setup** - Software required for viewing the digital resources, viz. Acrobat Reader for PDF files, Operating Systems, 5. **User Interface** - Should be user-friendly, 6. **Training** – Training to the Library staff and users in case of online Database searching and CD-ROM Searching, etc.

E-resources are categorized according to the type of format (E-Journals, E- Books, E-Magazines, E-Thesis, WWW, E-Newspapers, E-Mail, E-Research Report, Bibliographic Databases, E-Database, etc., a distribution medium (CD-ROM/ DVD, the Web) or by content (Bibliographic, Full text) (Egberongbe, 2011).

**E-Book** is an electronic version of the print book that can be read on a personal computer or with the help of an E-book reader. It can be purchased on diskette or CD or download file of the e-book from a website.

**E-Journal** is the most widely used digital resource. E-journals are made available by the commercial agencies, academic institutions, and the agencies promoting open access initiatives. The entire content of the journal with backfiles can be searched for any topic. They are instantly available and can be browsed. The subscription of the journals is very high. Library managers have to negotiate with the publishers and aggregators intelligently on the licensing terms and conditions and select the price models economical and suitable to them.

**E-database**- a number of databases either free of cost or with charges available on the network. E-database is an organized collection of information of a particular subject or multidisciplinary subject areas. Information sources within e-database can be searched and retrieved electronically.

**E-Thesis and Dissertation**- A thesis or dissertation is a primary document available in limited copies to the university or research institution where the researcher has carried out the research work. However, these documents are now made available by the institutions like Vidyanidhi and INFLIBNET through the digital technology over the internet to the further researches.

**CD ROM/DVD ROM** - These devices are used to store the large amount of data like bibliographic information, structural data, full-text information, and images. DVD stores the enormous quantity of data due to which the multimedia elements like video, sound, and n-number of sources are compactly stored on a single disc. The CD-ROM format is used in indexing and abstracting services, encyclopedias, dictionaries, back volumes of journals, yearbooks and in many other references works.

**E-Content Pages**- They provides access to digitalized content pages of journals, conference proceedings, books, etc.

**Multimedia Digital Sources**- These are the combination of two or more media, such as text, image, and animation, audio and videos.

### **1.6 Management of E-resources**

Now a day, all the libraries and Knowledge Resource Centers, in general, make use of different information technologies and hence, the management of these electronic resources has become comparatively easier. The libraries adopt a number of methods to the management of their book collection, their organizations, and services to the users. While doing so, they have to face a number of problems related to the financial budget, quality of the product, technological obsolescence, license agreement, copyright, human resources, trial access, vendors roll, user feedback, authorized users and monitoring and evaluation.

**Allocation of Budget**- Electronic resources are very costly and therefore there should be a provision of sufficient fund for their purchase along with their accessories. In addition, these electronic resources are to be updated periodically.

**The Quality of E- Resources**- The library should have a continuing and effective system to evaluate the electronic resources both qualitatively and quantitatively. The e-resources relevant to the research needs and the teaching curricula only should be purchased as they are very costly.

**Technological obsolescence**- The hardware and software configurations and their specifications are constantly changing along with their operating systems and hence utmost care is needed to be taken while selecting the hardware and software as they include readability, upgradeability, maintenance, compatibility with the peripherals, flexibility for networking and security from theft and tampering.

**License Agreement**- The e-resources have restrictions on the use of the data. These restrictions are regarding the copying, printing or downloading from the database. These restrictions are well-defined in the document known as License Agreement. These agreements need to be reviewed in depth by the concerned library staff before purchasing the product.

**Copyright**- E-resources should be purchased without violating the legal rights of the producer of the product.

**Human Resources**- The electronic technologies are constantly changing for the better and quick uses of the data compiled in different e-resources. The library staff handling this data for the betterment of the academic and research innovative need to constantly upgrade skills and knowledge to acquire new technologies.

**Trial Access** – It is limited for a certain period. The aggregators and vendors come out with innovative techniques like providing trial access of resources free of cost or with minimum charges for a certain limited period.

**Vendors Role-** Many times the libraries share management of e-resources with the vendors especially for managing the print resources. The vendors are required to acquire detailed knowledge base for e-resources.

**Authorized users-** It should be well defined in order to avoid the misuse of the e-resources. E-resources are generally subscribed and made available on the campus network or IP- enabled network area.

**User Feedback-** It is a vital input in the decision making the process as e-resources are made for the use. Usefulness of the e-resources and user satisfactions are highly important as far as users are concerned.

**Monitoring and Evaluation-** The utility of e-resources should be evaluated periodically by obtaining the feedback from the concerned faculty members, research scholars and also from the usage statistics of the e-resources.

Some of the issues involved in developing the collection of electronic resources are as: How the access can be provided, Infrastructure, Cost analysis, Developing selection criteria, etc. (Kumar, 2016).

Skills/Knowledge required for operating electronic resources are Knowledge of Hardware, Knowledge of Software, Knowledge of Searching, Printing Skills, Emerging Technology Skills, Minimum Technology Repair Skills, Internet Surfing Skills, etc. (Deshpande, Rahangdale and Bhoskar, 2015).

### 1.7 Advantages of E-Resources

The reasons for the purchasing of electronic resources are the ease of usability, readability, affordability and accessibility. The following are the advantages of e-resources over the print media.

**a) Multi-access:** A networked product can provide multiple points of access. It can be used by many users at a time. The same resources can be used simultaneously by the number of users.

**b) No physical range or boundary:** The readers of electronic resources need not go to the library physically. Hence, users can access the same information from all over the world, as long as an Internet connection is available.

**c) Speed:** Latest information can be accessed speedily.

**d) Round the clock availability and accessibility:** The major advantage of electronic resources is that user can gain access 24/7 to the information.

**e) Functionality:** E- resources will allow the user to approach the publications to analyze its content in new ways by clicking the mouse on search mode.

**f) Content:** The e-resources can contain a vast amount of information, but more important is the material can consist of mixed media i.e. images, video, audio

animation, etc, which could not be replaced in print. It has the ability to implement multimedia elements.

**g) Mobility:** Electronic resources can be easily moved.

**h) Cost saving:** It eliminates printing and postage cost. It avoids cost for physical processing.

**i) Saving of physical space -** It reduces the storage space and updates more easily. Electronic resources have the potential to store more information because information in electronic form requires very little physical space.

**j) Information retrieval:** The reader is able to use any search term like keyword, title, phrase, subject, author, etc. to search the required information from the collection.

**k) Convenience -** It links different resources. It makes downloading to any device. It is easily accessible (Sahu, 2016).

**l) Saving time and money-** It does quick searching

The reasons for using electronic resources are – it saves time, easy to use, more informative, less expensive, easily searchable and flexible (Singh, 2016).

### **1.8 Disadvantages of E-Resources**

a) E-resource reading devices are more expensive than printed books. All devices of e-resources require electric power. There is a growing concern that the e-resources at present may not be accessible or compatible with the future e-resources software or devices

b) The fact that, e-resources require special devices or personal computers. Many e-resources are typically produced to be compatible with certain software which in turn may be not easily available. Since e-resources are dependent on other equipment, certain hardware or software failure may affect it. Unless the hardware, Internet connection or battery power that is required by an e-resource reader is readily available, then its electronic document is useless. Also, e-resources depending on hardware and software and are more easily damaged than a printed book.

c) Eyestrain is a serious concern for many potential users of e-resource technology. Reading from an e-resource reader could hurt the eyes. The display resolution of computer screens and electronic devices is considerably less than the print quality produced by a printing press.

d) Many titles that are available in traditional print books are not yet available in an electronic book format.

e) E- Resources have an unreliable life span. Paper has a much longer life span than most digital forms of storage. Because of the rapid development of new computer systems, it is difficult to judge whether the software or hardware will become outdated. As new hardware is developed, structures must be put in place to allow for the migration of existing materials to the new platforms. Methods of preserving the electronic document must also be developed.

f) New technologies always require time, experience, and money in order to take full advantage of its capabilities.

g) Scrolling of the screen requires browsing because computers can not display a full page at a time.

h) No suitable bibliographic control is available for electronic resources.

i) Regular supply of electric power is most essential.

j) Computers or electronic devices are needed for displaying the content of the document.

E-resources has these disadvantages that it requires high infrastructure and installation cost at the initial stage. (Chanda, 2016; Singh, 2013).

## 1.9 Conclusion

Libraries and the Knowledge Resource Centers in this ICT era are well equipped with electronic devices which provide the required the data in the fastest way. The libraries and the concerned information professionals get well acquainted with the electronic resources and try their best to fulfill the user demands regarding the availability, storage and access of e-resources. Use of information technology has resulted in the tremendous impact on all the services and functions catered by the professionals of Knowledge Resource Centers. Electronic resources, now a day, are the ultimate source of knowledge in all the areas of research. World Wide Web and internet provides the solid platform to display these resources throughout the world. The e-resources have become the most valuable media to the teaching and research communities in accessing the required information.

## References

Deshpande, R. M., Rahangdale, B. P. and Bhoskar, R. D. (2015). *Getting started with information technology: practice and application*. Ess Ess Publications, New Delhi, India.

Chanda, N. (2016). E-resources of PGIMER library, Chandigarh: An overview of acquisition, selection and management of e-journals. In I. V. Malhan, T. Kaur and N. Kaur (Eds.) *Transformation of LIS education, libraries and information services for knowledge society : Essays in honour of Prof. Jagtar Singh* (Vol 1 pp.188-199). Ess Ess Publications, New Delhi, India.

Egberongbe, H. S. (2011). The Use and Impact of Electronic Resources at the University of Lagos. *Library Philosophy and Practice*, 2011, pp.1-9.

Kumar, P. S. G. (2016). *Fundamentals of information science*, Vol 1, (4<sup>th</sup> ed.). B. R. Publishing Corporation, Delhi, India.

Sahu, A. K. (2016). Digital management in library and information system. In Lallaisangzuali and Sanjeev (Eds.) *Library management in 21<sup>st</sup> century: Issues and challenges* (pp.201-218). Ess Ess Publications, New Delhi, India.

Singh, G. (2013). *Information sources, services and systems*. PHI Learning Private Limited, Delhi, India.

Singh, J. (2016). Usage of e-resources from academic libraries to social media. In S. Aggarwal (Ed.) *Social media in libraries* (pp.25-31). Ess Ess Publications, New Delhi, India.

Singh, G. & Sharma, M. (Eds.) (2016). *Glossary of library science and information technology terms* (p.155). Ess Ess Publications, New Delhi, India.