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## COLLECTION DEVELOPMENT IN THE ELECTRONIC ENVIRONMENT: CHALLENGES BEFORE LIBRARY PROFESSIONALS

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### Abstract

*Economic forces and technological advances have combined together to create a new environment, which is popularly known as 'Electronic' environment. Where access to collective scholarly resources that no library could ever afford, supersedes the historic quest for the great comprehensive collection. This article describes briefly the impact of Electronic publishing on collection development in libraries. Discusses about the selection criteria, pricing issues and models for different electronic formats and enlist the challenges before library professionals in the changed context.*

**Keywords:** Electronic Publishing, Collection Development, Collection Development Policy, Electronic Information Resources and Pricing Models.

### 1. INTRODUCTION

The recent advances in Communication Technology, Networking, use of Internet and Electronic Products have brought about a revolutionary change profoundly affecting the library's landscape. It has affected the selection, acquisition and information transfer process. The Technology is mainly being used for communication, database searching, bibliographic and full text searching. It has also changed the concept of archiving.

The organization of information, its storage, access, preservation and retrieval has become both – simplified as well as complicated. It is believed that information has become more garmented, piecemeal and disembodied, resulting into changing its face completely. According to Swan (1992), "we are no longer accessing the whole fabric of information, rather bits of data, sound bites and images torn from it". Currently "Economic forces and technological advances have combined together to create a new environment, where access to collective scholarly resources that no library could be ever afford, supersedes the historic quest for the great comprehensive collection" (Harloe and Budd, 1994).

IT has provided several new media, new modes of studies, organizing retrieving and communicating information to users of the same. This ability to communicate has opened up the emergence of new modes of publication from authorship to digital system for information access which is easily movable and transferable to any point on the globe.

The developments that are emerged during the present century have brought many opportunities and challenges for the libraries in general and library professionals in particular. The most important issues or realities are electronic publishing and networking of libraries, changing concept from ownership to access, and commercial availability of databases, etc. These realities have a direct impact on libraries. Hence, library professionals must cope up with these realities to meet the challenges.

In the context of new developments in information technology mere collection of books is meaningless since information can be accessed through various networks. In the current electronic information environment emphasis is towards excellent collection development than large collection and developing effective means of getting access to remote databases.

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## 2. IMPACT OF ELECTRONIC PUBLISHING ON LIBRARY COLLECTION

Electronic publishing refers to the use of computer technology in publishing or distributing information. The impact of electronic publishing (e-publishing) on library collections, services and administration is complex. There are no simple solutions to the problems of managing the collection, archiving and access to e-publications, as well as their use in library services.

Problems in managing e-publications for libraries and their users include:

- Providing access that matches the technological capabilities of both library professionals and users.
- Providing access that satisfies the profit motive of commercial e-publications.
- Collection Development that require knowledge of the electronic delivery mechanisms, as well as the subject content of e-publications.

Some of the advantages to libraries and their users in solving these problems and using the solutions in providing library services are:

- i. Access is increased for more users to more publications than individual libraries can acquire and store.
- ii. Collection Development and co-operative collecting are simplified because libraries can share central storage and retrieval facilities.
- iii. Preservation is made easier because of the relative ease of duplication and archiving of electronic publications.
- iv. There are wonderful opportunities also for libraries to do their own e-publishing through the Internet services such as e-mail and World Wide Web. **(Kovacs, 1999).**

The products of electronic publishing are mainly reference materials, secondary sources such as abstracting and indexing sources and the primary periodicals such as full-text electronic journals, are slowly replacing the print on-paper sources.

## 3. TRADITIONAL COLLECTION DEVELOPMENT: AN OVERVIEW

Qualitative services and optimum utilization of the resources can never be performed without consistent and comprehensive collection of documents. The popularity of a library mainly depends on the kinds of materials collected and on the degree of intensity in collection. However, it is evident that the library cannot provide everything that the users need and it has become more apparent in the light of present financial constraints and unprecedented increase in the published documents.

Growth and development of collection is one of the most challenging and imaginative processes of the library profession, whereby, the library staff acquires variety of reading materials to meet the demands of its users. It focuses on the building of library collection, ideally following the guidelines that are already established and articulated in the library's written collection development policy.

Collection development is the systematic building of a library collection based on meaningful data rather than subjective choice. It is the process of assessing the strength and weakness in a collection and then creating plan to correct the weakness and maintain the strength. The process of collection building includes selection of current as well as retrospective material and the evaluation of the existing collection.

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The basic steps involved in traditional collection development can be outlined as follows.

- Formulating a collection development policy (including a needs analysis).
- Establishing a budget and maintaining a record of funds.
- Receiving notification of the resources.
- Evaluation of the publications.
- Prioritization of the publications.
- Purchasing or subscribing to the publications (current/back files).
- Delivery of the publication to the readers.
- Monitoring usage of the publications.
- Subscription renewal or cancellations.

A Collection Development Policy (CDP) will boost the library staff for better performance and also facilitates for a continuous, consistent and balanced growth of library collection. A collection development policy has a great impact on all the activities of the library.

A collection development policy should clearly define as to:

- What forms of material are to be emphasized? e.g. films, recorded or printed material only.
- What subject fields are to be emphasized?
- What are the levels of materials to be considered? e.g. scholarly, specialized or popular.
- Who will select the material?
- Who will decide the distribution of fund for each discipline?

The policy statement should be under fairly constant review and should certainly be reviewed frequently. In recent years, information technology has advanced to such an extent that its impact on libraries is significant, particularly developments in the field of;

- Electronic Mail
- Electronic Publications
- Internet
- CD-ROMs
- Multimedia and Personal Digital Assistant (PDA)
- Digital Libraries, Virtual Libraries and Data Banks

These factors have forced the librarians to change the way they are now functioning. In this context, Librarians are giving more importance to accessing the other library's collection (resource sharing) rather than possessing almost all documents on a given subject. In the electronic environment a publication need to be owned to be readily accessible. An electronic collection can be more flexible and dynamic, leaving wider variety.

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## 4. COLLECTION DEVELOPMENT POLICY

Before the electronic revolution, Richard Gardner (1981) published a book on library collections, in that book he has mentioned four basic criteria for selection viz. quality, library relevancy, aesthetic and technical aspects, and cost. But over time the meanings of some of these concepts have changed and the context in which they operate has also changed drastically.

Format selection is a complex process. Ultimately, selection decisions will vary depending on a library's specific needs as outlined by its mission statement and collection development policy. Thus, library professionals should determine some of these following options while selecting the formats.

### 4.1 Format Selection Analysis

In determining the optional format for a particular resource, librarians should first consult their organizations collection development policies for selection guidelines. A collection development policy is a fluid document, it must evolve as new formats are introduced as well as reflect the changing needs of its users. A Collection Development Policy provides general and specific format selection criteria (e.g. print, microforms, Internet resources, online databases, CD-ROMs, floppy disks, and e-books). A well written Collection Development Policy typically identifies subject areas in which it may be preferable to have one format over another (Lee and Wu, 2002).

The opinion in *The New York Times vs. Jonathan Tasini* (United States Supreme Court, 2001) set forth the rule that publishers owning the rights to a print publication are not automatically entitled to the electronic rights to the same article. An online database may exclude information that is readily available in its equivalent print resource (Carlson, 2002).

### 4.2 Functionality and Formats

One of the primary reasons libraries subscribe to an electronic resources is functionality. Web databases can provide support in ways that print and microform cannot duplicate.

Online resources are also generally easier to navigate; users can jump from one page to another or one section to other with a simple click of the mouse instead of underlying the more labour intensive method of searching through various print volumes to arrive at a section number (Hogan, 1998).

### 4.3 Longevity

An important and unavoidable factor in evaluating formats is determining longevity. Libraries must balance the needs of current users with those of future generations. They have the responsibility of preserving information so that articles will still be available after a publisher is out of business or an article is out of print. Longevity is judged by several factors like the ability of the product to withstand ordinary use within a library setting, the continuing availability of the article in the foreseeable future, and the needs of primary users.

### 4.4 The Essential Issue: Cost

Price is both simplest and trickiest factor. It is simple because, for most libraries, their budget will determine whether or not to go for purchase. However, with online products, the analysis is less straight forward. Not only do publishers have different pricing structures based on the type of license, but they can also have different pricing schemes based on the type or size of library. Publishers can offer discounts if

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a library purchases titles in multiple formats, or if it purchases a certain cluster/bundle of products. Although these types of deals are also offered with print products, especially volume discounts for large purchases, electronic pricing varies more widely than print pricing (Kevil, 1997).

The policy document should be very clear and suggestive for the information professionals either to select or reject the print or non-print media.

## **5. SELECTION CRITERIA FOR OFFLINE E-RESOURCES**

In the changed environment the library professionals working in different types of libraries are actually in dilemma, regarding the type of guidelines to be followed for the selection and acquisition of electronic resources. LaGuardia and Huber (1992) suggest that librarians look for offline products that offer easy installation, reasonable pricing, good technical support and reasonable licensing restrictions. Chowdhury (1999), Mambretti (1998) and Rowley and Stack (1997) suggest evaluations based on

- The necessary amount of staff time to provide access, training and assistance.
- The long term viability of resources for preservation purposes.
- The long term usability of a resource's data (for a specific period of time).
- The broad accessibility of the resource under present copyright laws and licensing agreements.
- The compatibility of hardware.
- The availability and adequacy of documentation.
- The currency of the resource's information, if deemed necessary for subject matter.
- The user friendliness of the resource.
- Network Capability.
- The replacement policy of the publisher in the event of damage.

## **6. SELECTION CRITERIA FOR WEB SITES**

Wyatt (1997), Spiller (2000), Sweetland (2000), Chapman (2001) and Singh (2003), offer criteria for evaluating websites. When evaluating web sites librarians/users must examine each site's with:

Credibility, conflicts of interest

- i. Web site owner or sponsor, conflicts of interest
- ii. Web site author, credentials

Structure and content of web site

- i. References to sources
- ii. Coverage, accuracy of information content
- iii. Currency and Timeliness of content material
- iv. Readability of material
- v. Quality of links to other sites
- vi. Media used to communicate information.

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Functions of web site

- i. Accessibility of site via search engines
- ii. Use of site, profile of users
- iii. Navigation through material

Archiving

Arrangement or design of the title and its content.

## **7. SELECTION CRITERIA FOR WEB RESOURCES**

The same criteria are applied to the selection process for electronic resources as are applied to print. In addition to standard selection criteria, the following criteria specific to electronic resources should be considered.

- Wider access and greater flexibility in searching
- Availability in a multiplicity of formats (e.g. ASCII, PDF, HTML, SGML, etc.).
- Electronic resources should be available before or not later than the publications of the article in its print format.
- User friendliness.
- Publisher/aggregators reliability and customer support.
- Increased functionality.
- Enhanced access to remote users.
- Time availability
- Hardware and software requirements should be taken into consideration.
- A trial period is potentially available for examining the utility and the value of the resource before a final commitment or order is made with the publisher/vendor.
- Service Implications (Collection Management Team, 1998).

## **8. PRICING ISSUES AND MODELS FOR ELECTRONIC RESOURCES**

PEAK (Pricing Electronic Access to knowledge) is exploring several pricing dimensions, including different product bundle as well as nonlinear pricing opportunities offered by electronic access. While traditional journals have familiar bundling conventions, electronic access allows us to conceive of new types of bundles and pricing options for those bundles.

Experts have suggested the three product and pricing options are as follows;

- Per article – unlimited access by individual users to specific articles purchased at a fixed price.
- Subscription – unlimited access by individuals and institutions to articles that relate to printed titles.
- Generalized subscription – unlimited access by institutions to bundles of 120 articles used subsequently by users.

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One interesting aspect of the first and third options is that access to articles is for the life of the project. In other words once an article is purchased it is available at no extra charge to all authorized users within the institution.

According to Mackie-Mason and Jankovich (1997), Elsevier science intends to consider the following differentials in future electronic pricing models.

- Value of Functionality
- Number of Users
- Frequency of use

Mackie-Mason and Riveros (1997) concluded that electronic access provides considerable 'space' for product bundling and pricing structures. New pricing structures with greater flexibility for different market sectors should result. Otherwise publishers are at risk of starving themselves out of business, as evidential by the continued stream of paper journal cancellations that have taken place across the world in recent years.

## **8. ISSUES RELATING TO LICENSE AGREEMENTS**

Providers of electronic information resources (i.e. licensor) are employing licenses as a legal means of controlling the use of their products. In the electronic environment where the traditional print practice of ownership through purchase is being replaced by access through license, libraries need to be aware that licensing agreements may restrict their legal rights and those of their users.

- a) Authorized users: persons who are authorized to use library's facilities and/or are affiliated with library as students, faculty or employees, or are physically present in the library.
- b) Fair Use: use of the product for non-commercial educational, instructional and research purposes by authorized users including viewing, downloading, copying, printing and emailing.
- c) Access: permanent use of the resource or access rights only for a defined period of time. Access provided through IP address or other mutually acceptable authentication and authorization methods.
- d) Use: searching, displaying, copying, saving data, reformatting data, interlibrary loan, course packs and electronic reserves by authorized users simultaneously as well as remotely.
- e) Intellectual property: Any trademarks, issued patents and patent applications, copyrights and copyright registrations and applications, rights in ideas, designs, works of authorship, derivative works, and all other intellectual property rights relating to the licensed resource.
- f) Network: a group of computers linked together to share information. Networks can consist of a number of linked computers in a single physical location, a Local Area Network (LAN) or they may consist of computers located at different physical sites linked together by means of phone lines and modems or other forms of long distance communications. (<http://www.arl.org/scomm/licensing/licbooklet.html>).

## **9. COMPARISON BETWEEN TRADITIONAL ENVIRONMENT AND ELECTRONIC ENVIRONMENT**

The ways of accessing information and library operations have undergone metamorphic changes. A paradigm shift is observed in the overall information environment which may be highlighted as follows.

Sl. No.	Traditional Environment	Electronic Environment
1.	Reading	Browsing
2.	Ordering, Billing, invoicing	E-commerce
3.	Writing	Web Publishing
4.	Card Catalogue	OPAC
5.	Document delivery	E-Prints, attachments, scanned images
6.	Interlibrary Loan	Consortia
7.	Literature Search	CD-ROM and the Internet Search.
8.	Resource Sharing	Networking
9.	Classification	Subject Directories, Subject Gateways
10.	Cataloguing	Meta Data
11.	Indexing Systems	Search Strategies

## 10 ADVANTAGES OF ELECTRONIC RESOURCES

Some of the generally accepted advantages of using electronic over print are:

1. **Speed:** It takes little time to browse or search, to extract information, to integrate that information into other material.
2. **Functionality:** an electronic version will allow the user to approach the publication and to analyse its content in new ways (e.g. with a dictionary one would no longer be restricted to searching under headwords).
3. **Multi-user access:** Same copy of the article or page can be accessed by more than two users sitting on their desktops.
4. **Content:** Electronic resources consist with the multimedia effect, i.e. images, video, audio, and animation, which could not be replicated in print.
5. **Storage:** It is becoming very cheap to store data with the dramatic reduction in the costs of computer hardware.
6. **Management:** Electronic resources can be managed effectively by appropriate software.
7. **Inter-operability:** With the advent of such standards as Open URL we are increasingly witnessing the linking together of systems so that one item within an electronic resource can directly link to another elsewhere.
8. **Re-Use:** Electronic resources can be repackaged and re-used in such systems as Virtual Learning Environments, or resource/reading list tools. (Lee and Boyle, 2004).

## 11. CHALLENGES BEFORE LIBRARY PROFESSIONALS

The latest developments in Information technology have great impact on every aspect of library operations and information services. Due to the advances in science and technology, there is a rapid growth of information in different formats. The print publishing is slowly shifting towards electronic publishing. The new medium has given a scope for more efficient means of storage, organize and quick access from remote places. As a result libraries need to develop electronic documents selectively, and get access to electronic information resources using network facilities to serve the users (Zink, 1991). Keeping in view all these changes the library professionals have to accept and adapt the phenomena of change. Thus, some of the challenges before library professionals can be summarized as follows:-



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- Information professionals should have expertise in total management of information.
  - Collection development librarians have to be more proactive by becoming familiar with the environmental changes so that they could adapt better as the changes unfold (Zhou, 1994).
  - Librarians need to rethink their approaches to marketing when it comes to online resources, details that were incidental to marketing print resources may be crucial to how well an online product is received by users.
  - It is important for library professionals to focus on the capabilities enabled by the networked environment rather than the complications brought forth by the complexity of network based information resources and services.
  - The information professional needs specific training to understand the implications of the new working conditions.
  - Information professionals require to become knowledge managers rather than collection managers in order to manage the intersection of the print and the electronic information systems by applying the skills of collection planning, selection, analysis and co-operation (Branin, 1994).
  - Mind-set of the library professionals has to be changed in order to enter into the electronic era by revising professional methods, techniques and tools.

Above all the budding information professionals have to concentrate more and more on such challenges and to overcome these challenges is the real problem of the professionals working in different types of library and information centers especially in the developing countries like India.

## **12. CONCLUSION**

In today's electronic environment, collection development is becoming collection management, which is much wider in scope. The librarian must act as a knowledge manager, applying the skills right from collection planning, selection, analysis and cooperation in order to manage the intersection of both print and e-resources. They need to think about the availability and accessibility of multiple electronic formats in order to deliver the best information to all users in the least possible time. The web has introduced new resources to collection managers throughout the world.

In the changed environment today, the duty of a librarian is to expand the range of resources for the benefit of users especially to include those available in electronic format, viz. web-based or web accessible information resources. The general pattern of professional activities remains recognizably similar to what it has been for the last half century and more. Librarians still evaluate information resources, connect users to the information they need, and organize information for easier access by the users. With the advent of web based resources, librarians we are finding that their role as information intermediaries demands a new sub-set of quasi technical skills and awareness. Librarians must not only identify and facilitate access to electronic information resources; but also educate library users about how to access them and when to use them.

Looking into the changes that are taking place in the developed countries like U.S.A., U.K. and Australia etc. in the field of information selection, storage, they are providing access to different types of users in an electronic environment with effective manner. The developing countries like India are lagging behind because of the poor infrastructure facilities. In order to cope up with the situation Information Professionals should go together with the technology. Information technology has drastically changed the very nature of work and functions of librarians and made to depend more on hardware, software and networking etc. This requires lot of expertise, knowledge, skills including the training for the professionals to render effective and efficient services to their clientele in a changed environment.

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