

# ACQUISITION AND PRESERVATION OF DIGITAL RESOURCES

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## ABSTRACT

*The article deals with various aspects of digital resources such as selection, acquisition, legal aspects of purchasing, such as licensing agreements, archiving or preservation. Today the availability of digital resources is growing faster which have made significant impact not only on the traditional acquisition policy but also on the preservation and weeding out policy. Due to proliferation of digital resources, it is important that they should be preserved for long-term access. The article points out necessity of sound acquisition policy and the preservation aspects.*

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## **0. Introduction**

Acquisition is one of the most important functions of a library as the worth of a library can well be judged by the materials it acquires. Hence a sound acquisition policy is must for a library. All the activities involving acquisition are of utmost importance and coherently they can form a major departmental function in a library or information centre. In the present technocratic set-up the acquisition function of library involves not only traditional documents such as books, periodicals etc., they also have to deal with electronic documents and the problems associated with their acquisition.

## **1. Types of Digital Resources**

In its simple connotation, digital resources refer to any resource, which is in digitized form. i.e. which can be read and scanned by means of electronic media. Unlike conventional form, 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, made accessible and preserved. Digital resources include wide range of materials such as:

- i. Collections in which complete contents of documents are created or converted into machine readable form for online access.
- ii. Scanned images, images of photographic or printed texts, etc.
- iii. Scientific data sets such as protein sequences or nucleic acid sequences etc.,

- iv. Online databases and CD-ROM information products, particularly those with multimedia and interactive video components,
- v. Computer storage devices such as optical disc, juke boxes, CD-ROM/DVD-ROM,
- vi. Databases accessible through internet and other networks,
- vii. Digital audio, video clips or full length movies; and
- viii. Meta documents

## 2. Moving Towards Digital Acquisition

There are several reasons that contribute for the changing scenario of acquisition process, which are as follows:

- 1. Evolution and proliferation of information technology.
- 2. Changes in publishing trend- publishers are inclined towards electronic publishing.
- 3. Information explosion- through improving digital technology, attempts can be made to achieve bibliographic control over important and useful conventional information sources in science and technology and even social sciences.
- 4. Financial constraints on the part of all kinds of libraries,
- 5. Improving infrastructure for accessing material which advances almost daily,
- 6. Growing popularity of World Wide Web and overall realization of utility of electronic technology in every sphere of knowledge,
- 7. Tremendous growth of CD-ROM products etc.

In the present age of information technology, academic and research libraries have no other option but to resort to digital resources as most of the scientific and technical resource journals are now switching over to digital formats. The following table shows the growth of academic electronic journals and newsletters<sup>1</sup>:

	1991	1992	1993	1994	1995	1996	1997
<b>E. Journals</b>	27	36	45	181	306	1093	2459
<b>E. Newsletters</b>	83	97	195	262	369	596	955
<b>Total</b>	110	133	240	443	675	1689	3414

**Table: Growth of Academic Electronic Journals and Newsletters (ARL, 1997)**

All these above factors make it inevitable for a present day research library to acquire digital resources.

In making of acquisition strategy, the principal considerations include:

- 1. It is advisable that conventional collection development criteria should be paramount and should be applied consistently across formats including digital resources , which include
  - a. establishing a coherent rationale for the acquisition of each resource
  - b. meeting faculty and student information needs, and providing orderly access

- c. preparing guidelines to the digital resources, and integrating them into library service programmes
  - d. ensuring that the advantages of the digital resources are significant enough to justify its selection in digital format<sup>2</sup>.
2. Priority should be given to digital format acquisition of those resources, which offer economies of scale i.e. benefit to the most faculty and students (locally and/or systemwide).
  3. Priority should be given to digital resources when they offer significant added value over print equivalent in such ways as: more timely availability, more extensive content, greater functionality such as the ability to invoke linkages to local and/or related resources, greater access because they can be delivered rapidly, remotely, at any time, improved resource sharing due to the ubiquity of digital resources, ease of archiving, replacing, preserving.
  4. A digital collection must contain a sufficient critical mass to evaluate its utility and to justify its selection.

### **3. Selection Criteria for Acquisition of Digital Resources**

In the digital library, criteria should be formulated to determine the contents of the digital collections. For a specific digital library, specific criteria must be established for deciding what contents are collected and which of them belong to the core and to the fringe area. Selection criteria for digital resources comprises following levels of review<sup>3</sup>:

- ? Is the content appropriate to the library mission?
- ? Are the format and information delivery medium appropriate to the content and with the rationale for resources acquiring?
- ? Is the acquisition practicable within the existing budgetary, technical, legal and other constraints?
- ? Is the resource compatible with the library's overall strategic digital library vision and current infrastructure?

#### **3.1 Acquisition: How can digital collection be acquired?**

1. One option of acquisition of digital resources is digitizing existing important and useful print material. It also helps in preserving rare and fragile objects without denying access to those who wish to study them.
2. Links and pointers to resources, which are freely available on the internet and are of significant scholarly value, can be added to the library's catalogues, databases and networked resources.
3. Purchased or licensed material such as electronic journals or databases. In many cases this material is not "physically owned" by the library in the same sense that printed book or journal may be owned, but instead the library has acquired specific access rights to the material on behalf of library's clientele.

Once the material is selected for acquiring, following checklist should be considered,

keeping in view benefits offered to the library.

Sr. No.	Feature	Remarks
1.	Form	CD-ROM, DVD-ROM, Online Databases, Electronic journals etc.
2.	Cost	Digital resources should offer cost benefit in comparison to the print media.
3.	Hardware setup	Hardware required for installation of digital resources
4.	Software setup	Software required for viewing the digital resources viz. Operating Systems, Acrobat Reader for PDF files.
5.	User Interface	Should be user friendly.
6.	Training	Training : i. Library staff in case of online Database searching, etc. ii. User training e.g. CD-ROM Searching
7.	System support	For both Hardware and Software: either through: 1. Appointing staff personnel for the same, or 2. outsourcing
8.	Standardisation	Standards used for User interface, terminology, format such as MARC, CCF in case of databases etc., data exchange such as Z39.50.
9.	Upgradation	Upgradation of data from the respective agencies e.g. CD-ROMs upgradation
10.	User restrictions	According to the parent Organisations needs. -Single/Multi user

### 3.2 Purchasing

Libraries can individually or as a member of the Consortium can acquire the digital resources by either purchasing or by entering into license agreements with the publishers or distributors. Both options have their own pros and cons.

Individually, libraries can:

- ? Follow parent organization's objectives, avoiding any obligations, which they may have to accept as a part of the Consortium.
- ? Assure better utilization of funds, but may have limited resources as compared to the member of the consortium.
- ? Take care of the rights of the organization and its clientele in an effective manner.

### 3.3 Consortia Purchase

The best way for coping with this changing scenario, where the availability of digital resources is growing fast, is through Consortium. The libraries have already recognized the need of cooperation long back due to information explosion, continuous increase in the cost of the publications, devaluation of currency etc. In today's context, Consortia have become important due to need of using funds most effectively and the changes taking place in the publishing industry. Due to proliferation of electronic journals, publishers can offer licensing agreements at favorable terms to consortia, which in turn, provide the opportunity to libraries in providing access to a wider range of titles to their clientele.

Thus, Consortia can play important role in acquiring licenses and sharing electronic resources by:

1. Acting as a platform for promoting activities and programmes in the area of electronic resource sharing.
2. Negotiating with major publishers for distribution of electronic journals and online bibliographic services on the basis of needs expressed by the libraries in the consortium. As a group, it can get benefits while negotiating the price. The price of digital resources acquired through consortium may vary from consortia to consortia as it mainly depends on the negotiations between the two parties.
3. Keeping watch on upcoming latest technological changes in publishing industry, and the associated legislations, which can affect the libraries directly or indirectly.

**The benefits of the consortia purchase are:**

1. It offers libraries low-cost access to information.
2. Expands the readership of journals by allowing more users access to journals and databases.
3. Digital collections in the different digital libraries can complement each other for enhanced access.
4. The cost of establishing the digital library can be decreased. During Consortia purchases following precautions should be taken<sup>4</sup>:
  - a. Providers should not preclude libraries from working through consortia to seek advantageous pricing or other special arrangements by writing contracts only with individual institutions and not with consortia.
  - b. All terms and conditions should be negotiated and clearly stated in the contract. Hidden charges, after-the-fact retroactive charges, changes in the content, or any other changes in commitment are not acceptable without re-negotiation.
  - c. Non-disclosure language, if necessary, should not preclude library consortia from sharing pricing and other significant terms and conditions with other consortia.

#### **4. Licensing**

A license is a formal authority to do something that would otherwise be unlawful. In the

digital environment, the resources are acquired via licenses for accessing the electronic copy for a specific period of time and usage. The degree of access to and use permitted of an electronic journal depends heavily on the terms and conditions negotiated in the license for that specific product.

There are some areas where there is potential for serious conflict between the licensor and the library licensing an information product. These are<sup>5</sup>:

1. Disagreements about authorized users. This is particularly an issue for commercial research databases whose publishers have significant sales outside of the traditional college and university community. There is certainly a potential for legal conflict if a company believes a library is ignoring authorized user definition and thereby costing the publisher significant revenue loss.
2. Third party rights. Databases licensed by one company often contain material that is copyrighted by others. In such cases, it is necessary to ensure right use lest the librarian faces case of copyright violation.
3. Third party liability. While it seems unlikely, it is conceivable that a user could sue a library or it's parent institution because of damages resulting from inaccurate data in database. Such lawsuits do occur over errors in software.

#### **4.1 Licensing Agreement:**

Generally, a license agreement consists of clauses that deal with the parties, rentals, interpretation of the agreement, definitions, choice of law, the agreement, the rights granted under the license, usage restrictions, terms of termination, delivery and access to the licensed materials, license fee, licensee's (Library) undertakings, implementation and evaluation, warranties, undertakings and indemnities, assignment, notices, dispute settlement, schedules and signatures. Instead of using the words Licensee and Licensor, we may prefer calling the Licensee 'the Library' and the Licensor 'the Publisher'<sup>6</sup>.

1. License should permit fair use of all information for non-commercial educational, instructional and research purposes by authorized users, including unlimited viewing, downloading and printing.
2. License should include permanent rights to information that has been paid for, in the event that a licensed database is subsequently cancelled or removed.
3. License should clearly describe the rights of libraries, authorized users, definition of authorized users, access to archived information, business and legal provisions.
4. Licenses should not limit the right of a library or a consortium to integrate the data into local system infrastructures and information services.
5. Licensing agreements should clearly state archival responsibility.
6. If guaranteed access to archival files housed at the vendor/publisher is not possible, the library should be permitted to make/obtain digital content for archiving and use.

Libraries must take preventive measures for avoiding misuse or abuse by individual clients. However, license of purchase agreement must not place liability on the

licensing/purchasing institution or on consortia for the misuse of content or product by individual user.

Hence, Licensing is one of the most critical issues in acquiring digital resources. The acquisition staff must study and understand legal conditions and terms of license for managing electronic information. These can have serious impact in accessing the information.

## **5. Preservation of Digital Resources:**

"Digital preservation" or "Digital archiving" means taking steps to ensure the long term access to the digital documents. Unlike the print publications, the digital preservation is more complex as one has to take care of many aspects of the documents such as content, presentation, functionality, authenticity etc. At the time of selection and acquisition only one must think of preservation of digital resources. The digital technology as well as other technologies such as Internet and Web technologies are continuously changing due to upgradations of software and hardware, proliferation of standards and protocols for file formats, network interfaces, storage media and devices etc. As a result of which there is constant danger of "techno-obsolescence". Hence preservation policy for digital resources is of prime importance and should take care of following aspects:

1. Preservation of digital resources at different levels depending on its usability, functionalities.
2. Continuous reviewing of the digital resources ensuring long term access to them.
3. Weeding out obsolete information and invalid websites.

Preservation of digital resources can be possible by three ways:

1. Technology preservation: The older technology can be preserved for viewing digital objects in their original formats but it is not feasible in long term due to cost, space and technical support requirements. e.g. Hardware.
2. Technology emulation: It refers to creating new software that copies the operations of older hardware and software thus ensuring it's originality in terms of physical presence, content and functionality. Some digital resources are highly dependent on particular hardware or software. Emulation techniques can be useful in such cases. However, emulation for preserving digital resources over the long term has not been tested.
3. Data migration: Migration covers a range of activities to periodically copy, convert or transfer digital information from a medium that is becoming obsolete or physically deteriorating to a newer one (e.g. floppy disk to CD-ROM), and/or converting from one format to another (e.g. Microsoft Word to ASCII), and/or moving documents from one platform to another (e.g. VAX to UNIX). Migration certainly preserves the physical presence and the content of the digital object. However, it may not preserve presentation, functionality and context<sup>7</sup>.

In order to avoid duplication of efforts and resources, many libraries are now working in partnerships. Examples of library consortia include the eLib (Electronic Library) project in the U.K., the Digital Library Federation and the Research Libraries Group ARCHES

(Archival Server and Test Bed) in U.S., the NEDLIB (Networked European Depository Library) etc. These groups were founded primarily to build digital libraries, in which managing preservation was a necessary component. The next important step in this regard is "Open Archival Information System Reference Model" (OAIS) developed by the Consultative Committee on Space Data for providing a conceptual framework and reference tool for defining a digital archive. It describes a specific functional model of both people and system requirements for implementing a digital archive. The NEDLIB project is implementing the OAIS model within the context of the deposit of electronic materials for archiving<sup>8</sup>.

## **6. Conclusion**

Libraries have always welcomed new changes for enhancing their services and satisfying clientele's needs. It's a high time for traditional libraries that they change their approach as the availability of the digital resources is growing day by day. In India, already many library networks such as INFLIBNET, Developing Library Network (Formerly known as DELNET), PUNENET, MALIBNET etc. are established and marching towards their respective goals. Through these networks only Consortia purchase and Preservation programmes for digital resources can be successfully implemented. For this, necessary steps such as awareness and training among professionals must be ensured and moreover essential infrastructure should be made available. Professionals should be enthusiastic in acquiring the new required skills in legal, technological, managerial matters, etc.

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