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## **Digital Libraries, Digital Repositories, Digital Copyright**

Overview, Challenges and Solutions in Technology Era

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### **Abstract**

Library generally means a place where several types of resources are stored in an organised way and made accessible to the community for reference or borrowing. A library can store resources in various formats like the earliest form which used clay tablets in the Sumerian civilisation at 2600 B.C. or as written books in the classical Greece period in the 5<sup>th</sup> century. After Gutenberg it changed to printed form like books, periodicals, newspapers,

maps, prints, documents, manuscripts etc. to modern formats which includes microforms, cassettes, videotapes, films, CDs, DVDs, Blu-ray discs, e-books, audiobooks, databases and much more. Nowadays all library resources are available totally in the electronic mechanism called digital content. Here we are going to discuss the creation, store, handle, and use the digital contents/objects.

**Keywords-** Digital Content, Digital Library, Copyright, Digital Management

## **Introduction**

The word digital basically comes from the computer background. It simply means something is presented in using digits, particularly binary digits. That means any content that has a physical existence can be turned into a machine readable object by using binary digits i.e. 0 & 1. Nowadays we have become accustomed to various technologies around us. The internet opened the doors towards anything or to reach anybody with just a single click. Likewise in the library, we are going towards the digital environment. Technology has affected all the housekeeping works in libraries, from procurement of documents, technical processing to providing services to the users', everything is going automated through the same mechanism.

As the digital content became increasingly more accessible and available, computer facilitated the creation, discovery, and retrieval of new information in every field of human knowledge. In the past, the digital contents were mainly distributed through computers and sometimes through the internet, but now methods are rapidly changing and the revolution brings new channels such as tabs, mobile apps etc. While new technologies have made digital content available to large audiences, again managing copyright and limiting content movement is an issue that digital content creators continually going to face in the future.

## **Concept of Digital Mechanism**

A library is basically run by three main parts- first is resource, that is some information in a container or format; the second one is the user, who uses the resources; and

the third one is the intermediaries, who's job is to meet the users' to the right resources. Similarly in the digital mechanism, digital items are the resources, audiences are the creators as well as users' of the resources and the maintainers of both the systems are the intermediaries.

### **Types of Digital Contents**

In general, we can divide the digital contents into three types in terms of availability- first, is free digital contents which are freely available to the public. The second one is paid digital contents which are available by paying some amount, and the third one is non-purchasable content. You can't purchase these items. Various types of materials are available like documents, images, audio, video, software, artefacts, painting, three-dimensional properties and much more. Some of these are paid some are free and, news, advertisement, web mapping etc. are some non-purchasable materials.

### **Need of Digital Contents**

There are various reasons to go for digital contents. While procuring materials for a particular library we have to check many things like, types of library, types of users, for whom we purchase, type of materials and most important the budget distribution etc. (Candela, Castelli, & Pagano, 2011). Likewise going for digital materials we should know well why we need these type of materials where traditional printed materials are available. Though need of digital materials varies from organisation to organisation, the followings are some reasons (Alhaji, 2009):

- Keep up-to-date with modern technology.
- To improve access from inside the library as well as outside the library anytime.
- More sharing and use of materials.
- Cost saving.
- Easy to preserve and reproduce.
- Freely available to wide masses.

- Can create hyperlinks for more similar materials

### **Digital Libraries and Its Various Aspects**

Digital library holds some collections of digital content/objects and fulfil the library objectives. A proper definition can express its meaning more clearly that is, “Digital libraries are the logical extensions and augmentations of physical libraries in the electronic information society” (Marchionini, 1998) where extension indicates the existing resources and services and augmentations enable new kinds of human problem solving and expression. The item types of resources have changed to materials like e-books, e-journals, e-newspapers, thesis, dissertations, CD-ROM, DVD-ROM, databases and so on (Marchionini, 2002).

### **Digital libraries: The Past and The Present**

The concept came when a famous scientist Vannevar Bush describes new technology for knowledge disseminating (Bush, 1945), then Licklider observed about the computerised automated library systems (Licklider, 1965). In the 1990s with the grown of the internet, digital libraries started to research and development activities. In 1991 ‘eprint archive’ presently known ‘arXiv’ started scientific communication more effectively and economically. Later a pilot project on electronic Thesis and Dissertation started in 1996. CogPrints, present name EPrints is available open from 2000 and holds more than 3000 facts. The Digital Library Initiatives of US and eLib of UK were funding various research projects for their national archive. Except these, DELOS, ECHO, ARTISTE, COLLATE, NCSTRL, ETRDL, ERCIM, DLMS (Candela, Castelli, & Pagano, 2011) were some well-known digital library archives.

### **Digital Repositories and Its Various Aspects**

Digital repository is a container or place or better said an archive, where digital contents or writing of authors/academicians are stored in an organised way and make freely available to the users. The OAI movement starts in the 1990s with access to various e-journal and databases. It is run through Open Archive Initiative Protocol for Metadata Harvesting (OAIPMH) (Pappalardo & Fitzgerald, 2007) mechanism which allows users to harvest the metadata from the archive. Digital contents are stored in these archive in mainly two ways i.e. by born digital- in this process contents are made in electronic formats, and the second one is scan and turn the physical contents into digital contents. According to 'Wikipedia' five types of repositories are there i.e. Institutional Repository- made and maintain by an institute/college/university; Departmental Repository- made and maintain by a particular department; Subject Repository- made on a particular subject; National Repository- made for use by the generals of a nation; Material Repository- made and maintain for a particular type of material.

### **Digital Repositories: Why and How**

An institute having its repository benefits it in a various way like-

- Keep up-to-date as other modern institutes.
- Having one archive for scholarly writings.
- Fewer chances of duplicating.
- Resource sharing and more use of documents.
- Guide for future works.

Various digital library software are out there to archive digital holdings. Some of them are very popular as well as open source like DSpace, EPrints, Greenstone, Fedora Common etc. Through these software, institutes can make available their publication open. Anybody belongs to an institute whose writing can be stored in the IR, they may be faculty, staff, student or institute itself. In the other side digital contents can be submitted in any format or file like- books, journals, magazines, newspapers, conference papers, thesis, dissertations, reports, patents, programmes, multimedia objects with any type of file extension like- doc, docx, pdf, jpg, png, gif, mp3, mp4, ra, mkv and many more.

## **Digital Copyright and Its Various Aspects**

Copyright is a given right to the creator for creating some matter or material which is never been created before and prevent others to recreate it or presenting it as own. In the past, when photocopying machines and video cassette recorders, made a threat to creative works, various laws were implemented to prevent those activities. Now, in the digital era files are copied and distributed very easily to the wide masses through the internet. So maintaining these issues is going very difficult day by day.

## **Stay Safe with These Modern Copyright Acts**

In modern days copyright laws are changing according to modern transformation of materials. In 1998 the Digital Millennium Copyright Act (Office, 2004) revised the copyright law by setting up the royalty for internet materials and specifying exemptions for library and archival copying by establishing two major provisions- one is the anti-circumvention provisions and the second one is the safe-harbor requirements for Internet Service Providers. These rights enhanced the ability of the copyright owner to protect their creation. You can take help from others but, up to the certain limit and at the end you must acknowledge him/them as a reference. You can take help from various reference management tool to create proper reference like- Mendeley, EndNote, Zotero, RefWorks and much more. You can also check yourself if your work becomes like with someone else? If so, how much is matching? Correction can be made in this way. Many software is available for this job like- Grammarly, Plagiarismcheck, Duplichecker, Plagscan, Plagium etc. Some are totally free, and you can also check both online and offline.

## **Digital Archive: Challenges and Solutions**

In modern technology era, it is a challenge to decide, should we go for a digital library in such developing country like India. There are various issues like access problem, material problem, budget problem, staff problem and especially license and problem of using

(Cleveland, 1998). The answer should be yes. We are overcoming these problems very fast by taking action like various pilot projects various digital library initiatives by a group of library and associations, building National Digital Library, National Virtual Library by the nation various orientation programmes for the staffs as well as for the users etc. In the conclusion, we should take part actively to build own repository by our self and provide more access to the mass users.

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