Information Explosion and Digital Preservation Technologies for Library and Information Centers: A Study

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Abstract

Information is significantly changing everywhere the world. Present rapid development in digital technology is witnessed as information explosion and changing the role of library and information science. New technologies have further Conversion of knowledge into digital format. Digital Preservation provides the digitized resources of library and information centers, more and easily accessible to the remote users in any of the surroundings of hardware and software. Along with this it also takes care of rare, fragile and such other formats of digitized contents for future use. Preservation of digitized documents in desired format also reduces the storage volume and cost productiveness and overall process of maintenance of the library materials. Preservation also benefited the library and information centers in terms of their position, functioning and services. Fulfillment of Research and development area and their actives restrictions and problem related to the manpower, to overcome like such problems emerges the concepts of digital library and preservation technology.
Keyword: Information Technologies, Information Explosion, Digital Preservation

1. INTRODUCTION:

Digital technology is the best method for reducing paper usage which plays havoc with environment. Environmentalists are putting all efforts to make the common man aware of the benefits extended by digital technology for preservation of our nature. In 1980s, Lancaster stated that 25 percent of the reference books will be in electronic form and he also predicted that 50 percent of the existing secondary sources like abstracting and indexing services will be available in electronic form by the end of this century. Now it has become true. After this Information explosion, it is a Library, which has all the information in electronic form with electronic devices to access the digitized information. In digital Libraries, it will become necessary to limit access to some portions, charge for access and delivery of information, and manage content which may be even gigabytes or even terabyte. Scalability for future growth also will become necessary. All these activities are performed by the Library staff. Hence, there is a need for developing skills within the staff responsible for information services.

Digital preservation is a formal endeavor to ensure that digital information of continuing value remains accessible and usable. It involves planning, resource allocation, and application of preservation methods and technologies, and it combines policies, strategies and actions to ensure access to reformatted and "born digital" content, regardless of the challenges of media failure and technological change. The goal of digital preservation is the accurate rendering of authenticated content over time.

According to the Harrod's Librarian Glossary, digital preservation is the method of keeping digital material alive so that they remain usable as

technological advances render original hardware and software specification obsolete.

Digital preservation combines policies, strategies and actions to ensure the accurate rendering of authenticated content over time, regardless of the challenges of media failure and technological change. Digital preservation applies to both born digital and reformatted content. Digital preservation policies document an organization's commitment to preserve digital content for future use; specify file formats to be preserved and the level of preservation to be provided; and ensure compliance with standards and best practices for responsible stewardship of digital information. Digital preservation strategies and actions address content creation, integrity and maintenance.

2. DEFINITION:

1) The term "digital preservation" refers to preservation of materials that are created originally in digital form and never existed in print or analogue form (also called "born digital")

2) "Digital preservation refers to a series of managed activities designed to ensure continuing access to all kinds of records in digital formats for as long as necessary and to protect them from media failure, physical loss and obsolescence"

Cornell University Library, 2005

3. OBJECTIVES:

This study examines the problem of library and information centers to serve in current digital technology environment and preservation of digitized documents in desired format also reduces the storage volume and cost productiveness and overall process of maintenance of the library materials. It will aware to the professionals with new technologies in order to serve their services efficiently and timely.

4. INFORMATION EXPLOSION:

The information explosion is the rapid increase in the amount of published information or data and the effects of this abundance. As the amount of available data grows, the problem of managing the information becomes more difficult, which can lead to information overload.

According to International Data Corporation study, the world generated 161 billion gigabytes digital data in 2006. International Data Corporation added, that it represents three times of information in all the books ever written, or 12 stacks of books that reach from the Earth to the Sun. The report took into account photos, videos, e mail. Web pages, instant messages, phone calls, and other digital content used today.

It is said that Newton was the last scholar who had all the Information of physics of his time. After that, it became simply too much, no man could read all. An increased information supply does result in an increased information load for

library users. It may produce an overload effect in users, with resultant confusion, tuning out of some information, decreased quantity and quality of output.

5. DIGITAL LIBRARY:

Digital library is a global virtual library-the library of thousands of networked electronic libraries".

Roland Edwin Larson

A digital library is a library in which collection are stored in digital format likes microforms, CD-ROM, audio-visual cassettes, DVD, online on web and accessible by computer. The cost of information in various formats varies, though the content is the same. The digital media is comparatively economical provided the individuals or the institutions possess the needed infrastructure. Digital sources are preferred in many instances because they occupy virtually no space and are quite economical too.

6. PRESERVATION OF DIGITAL MATERIALS:

Digital material life is unpredictable due to problem of format obsolescence of software and hardware. Software of different firms sometimes do not support formats used by other software and hardware become obsolete with the passage of time and digital material preserved on old storage devices may not be accessible with new hardware. Data stored on such storage devices become useless until converted to latest devices well in time.

7. WHY DIGITAL PRESERVATION?

Traditional libraries are increasingly getting transformed into digital libraries, at least partially. The availability of web-based digital information products are exerting ever-increasing pressure on the traditional libraries, which, in turn, are committing larger portions of their budgetary allocation for either procuring or accessing web-based online or full-text search 109 services, CD ROM products, online databases, multi-media products, etc. The availability of digital information products and services, in turn, has triggered a major shift in the traditional practices and policies from buying and storing information services to accessing them. Besides, acquiring and buying access to digital collections, libraries are exerting efforts on initiating digital library projects in their respective institutions to build their own digital collections (Arora, 2002).

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Digital preservation strategies and actions address content creation, integrity and maintenance.

- ***Content Creation Includes:***
  - ✓ Clear and complete technical specifications
  - ✓ Production of reliable master files
  - ✓ Sufficient descriptive, administrative and structural metadata to ensure future access
  - ✓ Detailed quality control of processes
- ***Content Integrity Includes:***
  - ✓ Documentation of all policies, strategies and procedures
  - ✓ Use of persistent identifiers • Recorded provenance and change history for all objects
  - ✓ Verification mechanisms • Attention to security requirements
  - ✓ Routine audits
- ***Content Maintenance Includes:***
  - ✓ Arobust computing and networking infrastructure
  - ✓ Storage and synchronization of files at multiple sites
  - ✓ Continuous monitoring and management of files
  - ✓ Programs for refreshing, migration and emulation
  - ✓ Creation and testing of disaster prevention and recovery plans
  - ✓ Periodic review and updating of policies and procedure

9. CONCLUSION:

Analysis this paper, we can say that Learning Resource Centre (Library) in India are facing challenges regarding library services in the digital age. However, at the same time, there are a lot of opportunities available to overcome these challenges. Digital Technology has made access to information easier, in the sense that all digital information, such as databases, full-text journal articles etc., can be accessed through computers on the network, any time - anywhere. It is the time to gradually switch to Digital Library. E-Collections building is one of the initial tasks. Preservation in the digital world is a challenging task for librarians and archivists. However, protocols, strategies and technologies involved in digital preservation have now been well defined and understood. The necessary financial and technological commitments to maintain digital contents and to migrate it to future generations must be an organizational commitment.

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