DIGITAL PRESERVATION IN LIBRARIES

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Abstract-

This paper mainly discussed about the several digital preservation strategies need of digital preservation and also explained that the benefits and challenges of digital preservation in libraries.

Keyword- Digital Preservation, Bit-Stream copying, Refreshing, Migration, Emulation.

Introduction

Presenting and archiving digital content is one of the most important concerns of libraries, whether they have acquired it through subscription, purchased it as digital media or covered it internally.

Preserving digital materials is an essential component of ensuring their accessibility for as long as possible. Digital preservation involves ensuring the permanence, usability, and intellectual integrity of the information it contains by preserving it digitally. Unlike printed publications, digital preservation is more complex as one has to take care of many aspects of the documents such as presentation, content, authenticity, functionality etc.

Definition

According to the American Library Association, digital preservation refers to strategies, actions, and policies that ensure the accessibility of digital content over time. Harrods Library Glossary defines digital preservation as keeping electronic resources alive even after technological advances make the original software and hardware specifications obsolete (Wikipedia).

A digital preservation facility is defined as one that preserves digital information long-term, error-free and easily retrievable and interpretable for the entire time period for which the data is required. Defining long term means taking into consideration the impact of changing technologies, including supporting new formats of media and data or accommodating a changing user base.

Strategy for digital preservation

a)   **Bit stream copy**- Bit stream is commonly known as 'data backup'. It is not a method of long term archiving. Bit stream stores the binary code of digital resources. An original and duplicate are typically stored together in remote storage to prevent loss in the event of a catastrophe.

b)   **Refreshing**- Refreshing is the process of transferring digital information from one long term storage device to another. So that no changes or alterations to the data occur. This addresses the problem of degradation of the physical storage media.

c)   **Permanent or durable media-** This permanent or durable media reduces the need for refreshing and helps with losses due to media deterioration, which requires careful handling, temperature and humidity control and proper storage. For example- gold CD.

d)   **Migration**- Migration is a time consuming and costly process. It is the process of moving digital objects from one type of hardware or software to another or from one generation of computer to another. e.g. conversion from windows to Linux.

e)   **Replication -** This term refers to several digital preservation techniques. Bit stream is one form of replication. Emulation is the replication of the functionality of an old system.

f)   **Emulation**- Emulation is an opposite form of migration. Van der Hoeven explains that emulation is not focused on the digital resources, but rather on the software and hardware environment in which the object is reproduced. Emulation is a technology based strategy that requires a deep understanding of hardware and software.

g)   **Technology preservation**- Technology preservation is also referred to as "computer museum". Technology preservation is very expensive, so small institutions cannot afford it.

Needs of digital preservation

a)   In the digital age, there are rapid technological changes that impact ongoing digital materials.

b)   Physical deterioration.

c)   It is essential that digital data is permanently accessible, usable, and intellectually intact.

d)   Huge amount of digital information, especially in the field of science and technology.

e)   Abundance of formats and standards.

Benefits of digital preservation

a)   Maintaining digital materials for long time.

b)   Migration of information.

c)   Restoration of documents to their original form.

d)   Connecting people worldwide through free online access.

e)   Making digital resources available for present and future use.

Challenges of digital preservation

Digital preservation refers to the process of actively preserving data that has been stored digitally. The formalization of library and archival science includes the development of digital preservation techniques for preserving information in the event of medium failures and hardware and software obsolescence.

Librarians and archivists must face many challenges when it comes to preserving digital resources. Content can be easily created and kept up-to-date using digital media, but preserving such content is both economically and technologically challenging.

In contrast to linear objects such as photographs or books, in which the user has direct access to the content, digital objects always require a software environment to operate. It is difficult to keep up with the rapid changes that occur in these environments, making continuity of access to content difficult. Storage media, hardware, software, and data formats become obsolete over time, posing a significant threat to content's survival. Digital obsolescence is the result of this process.

Digital preservation efforts face significant challenges due to the vast and growing amount of content created digitally. It is possible for outdated machinery or technology to hinder digital preservation working technologies because of rapidly changing technology. Digital archivists are constantly concerned about how to prepare for the future, which has become an everyday problem.

Conclusion

Digital preservation presents itself as an enormous challenge in the digital age. A legal environment that enables the preservation of digital information is essential if digital information is to be preserved. Furthermore, it means that organizations must take responsibility for preserving knowledge by developing new strategies and creating economic resources.

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