

Challenges Ahead in Digital Preservation and Dissemination in Academic and Research Libraries

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ABSTRACT: *Digital information is increasing at tremendous rate and the libraries shall develop new strategies to effectively archive electronic materials. This paper emphasizes the practice of Digital Rights Management – DRM and Digital Asset Management – DAM. There is also a proliferation of “born-digital” materials that have never existed in print form but still must be effectively managed to ensure their preservation. These born-digital materials are of particular concern to librarians involved in managing digital information because of their recent abundance.*

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1. Introduction

DRM – Digital Rights Management generally refers to a set of policies, techniques and tools that guide the proper use of digital content. Technological Advancement in computing, communications, consumer electronics, and their convergence have resulted in phenomenal increases in the amounts of digital content that have been generated, stored, distributed, and consumed. The term “content” generally refers to any processed and packaged digital information, such as digital audio, video, graphics, animation, images, text, or any combinations of these types. The explosive increases in the generation and consumption of digital content has raised several questions about the rights of the content creator, producer, and distributor as well as the rights and responsibilities of the consumer.

2. Definition

Digital Rights Management is a system for protecting the copyrights of data circulated via the internet or other digital media by enabling secure distribution or disabling illegal distribution of the data. DRM system protects intellectual property by either encrypting the data, so that it can only be accessed by authorized users or marking the content with a digital watermark so that the content cannot be freely distributed. According to “Techopedia” DRM protects copyrighted digital software, music, films, TV shows games and similar media.

DRM involves the description, identification, trading protection monitoring and tracking of all forms of rights usages over both in physical and digital form including management of Rights Holders relationships.

3. Major Component and Architecture system of DRM

One of the main design philosophies of a DRM system is the separation of content from the rights. This allows the content to be distributed or downloaded freely. However, it cannot be consumed without a valid license, which has a proper rights object. The rights object, or just rights, specifies the permission for the various ways the associated content can be used. The same content could be associated with different usage rights specifying different modes of content consumption. This provides flexibility, ease of management, and use of content.

4. DRM vs LIS Professionals

In recent years librarians have grown increasingly concerned that vendors of licensed scholarly resources (e.g., e-journals, e-books) will put digital rights management tools or “technological protection measures” (TPM) on the resources licensed by academic libraries. TPM are configurations of hardware and software used to control access to, or use of, a digital work by restricting particular uses such as saving or printing. Librarian concerns about TPM stem not only from the aggressive implementation of TPM by the movie, music, and popular e-book industries, but also from recent academic e-book vendor experimentation with TPM.

Within the academic library community, concerns about vendor use of TPM are complicated by already existing interface or delivery platform designs that, to some extent, determine the possible uses of their information products. These design decisions directly affect users’ satisfaction with and uses of information products. As one participant in a digital library usability study asked, “...can the user print, save, and e-mail the desired information? If the user can’t ‘take’ the information in the form that they want, it has a negative impact on them.” In college and research libraries, the use of digital resources comprises of “Soft restrictions and Hard restrictions”.

5. Soft Restrictions

Interface or server side configurations of software or hardware that may discourage certain uses such as saving, printing multiple pages, e-mailing. Importantly, the desired use may be achieved through workarounds such as multiple sessions, or operating system or browser functionalities. These workarounds may not be obvious, and they may involve inconvenience to the user.

There are six sub categories of Soft use restrictions as follows:

- Extent of use
- Restriction by Frustration Obfuscation
- Interface Omission
- Restriction by Decomposition
- Restriction by Warning

6. Hard Restrictions

Systems that strictly prevent uses such as saving, printing, or e-mailing despite operating system or browser functionalities.

There are two types of Hard Restrictions.

- No copy and pasting of text
- Secure Container Technological Protection Measures

It is unrealistic for any one library to keep track of the use restrictions present in the multitude of resources they license. A more realistic solution might be a shared knowledge base of vendor interfaces and known use restrictions. Libraries could take responsibility for tracking interface issues associated with a particular vendor or platform, and share that knowledge so that all libraries would be informed of potentially objectionable use restrictions, interface changes, or even interface improvements.

7. Digital Asset Management (DAM)

DAM is a business process for organizing, storing and retrieving rich media and managing digital rights and permissions. Rich media assets include photos, music, videos, animations, podcasts and other multimedia content. DAM involves the creation of an archive, the development of an infrastructure to preserve and manage digital assets and a search functionality that allows end users to identify, locate and retrieve an asset. In other words DAM is a set of data base records. Each database record contains metadata explaining the name of the file, its format and information about its content and usage. DAM software can be used to create and manage the database and help the company to store rich media in a cost effective manner. Archival of documents has been an important part of preserving society's historical event as well as its impact in the world. An effective and systematic archival strategies is needed to make available the historical information for ever. As digital documents are produced at increasing rates, the need for effective digital asset management methods is becoming increasingly urgent. Digital media is continuously becoming obsolete; storage media such as magnetic tapes, floppy disks, and even compact disks are already being replaced by newer forms of storage such as removable USB drives and remote server space. Lazinger (2001) wrote, "where we can read the 400 year-old books printed by Gutenberg, it is often difficult to read a 15 year-old computer disk. Digital rights management practices further complicate the issues of system interoperability because of the proprietary nature of many digital documents. These issues are therefore a major concern to librarians in the field of digital asset management. Through the process of digital asset management, librarians must develop and implement effective strategies to create and maintain an effective digital library. Materials selection, storage media, financing and access, digital rights management, and information authenticity are among the most important and difficult issues to resolve. However, as digital libraries expand at increasing rates, numerous trends have arisen. The most notable of these trends are digital library architecture, personalized search strategies based on metadata standards, and online collections and bibliography services. The implementation of these trends can be seen in practice through mass digitization projects such as the Digital Library Initiative, Glasgow Digital Library, University of Central England Electronic Library, the Networked Digital Library of Theses and Dissertations, and the Library of Congress. As digital librarians continue to find solutions to the issues relating to digital asset management, practices may become more standardized and some experts hope for greater access and reliable preservation for digital information in the future.

8. Conclusion

We the human beings are benefited greatly from the work of others like, artists, scholars and so on. With help of standardized strategies and methods the valuable as well as scholarly works can be preserved theoretically forever. The digital assets shall effectively be managed in libraries will make it possible for future generations to benefit from the efforts of those in the past. Since the information migrates from print to digital format, it becomes necessary for LIS professionals to equip themselves with standards in digital asset management.

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