

ROLE OF METADATA IN DIGITAL RESOURCE MANAGEMENT

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Abstract

Metadata is data about data, Metadata serves many important purposes like data description, data browsing, data transfer, and metadata has an important role in digital resource management. Metadata means machine understandable information to identify, locate and or describe web resources. Selection and metadata issues which surround the preservation of digital information are discussed, in particular the role of metadata in all aspects of the system design and describing how the notion of metadata is sometimes. Capture data about the items in our digital collection for a variety of purposes and use those data to drive the entire system.

Keywords: Collection Management, Digital Preservation, Preservation Metadata, Selection for Preservation, Dublin Core

Introduction:

Metadata is data about data, Information about information. Metadata means machine understandable information to identify, locate and or describe web resources. We know the card catalogue in the library. Those cards contained the title of the book, subject of the book, author, date of publication, pages of the book. Those card catalogues were metadata. This catalogue card is a form of metadata. MARC 21 and set of rules used with it, such as AACR2 and metadata standards, Metadata can include bibliographic information, Libraries and librarians have been involved with metadata for a long time. They called it as cataloguing rules, controlled vocabulary Indexing format etc. for machines they have developed. A set of conventions to enable machine exchanges of cataloguing records. Dublin Core has the potential of being adapted as an international standard for resource description and discovery on the web and as *lingua Franca* for metadata, partly because of the simplicity. In recent development of digital libraries, Librarians have joined the other efforts related to metadata.

What is Metadata?

Metadata is data about data. "Data associated with objects, which relieves their potential users having to have full advance knowledge of their existence and characteristics. In other words standard bibliographic information summaries, indexing terms and abstracts is all surrogates

for the original material, hence metadata. The term metadata is generally applied to e-resources and refers to “data” in the broadest sense of data sets, textual information graphics and anything else that is likely to appear electronically. Information about authenticity availability and accessibility, digital signature, copyright, reproduction etc is also metadata.

Metadata Definitions:

The common definition of metadata is “data about data”. Metadata describes the attributes of information bearing object document, data set, database, image, artificial, collection etc. Metadata acts as a surrogate, representation of the content, context, structure, quality, province, condition and other characteristics of document for the purpose of representing the document to a potential user for discovery, evaluation, and fitness for use, access, transfer, and citation.

Getty Information Institute (2000): “Metadata includes data associated with either an information system or an information object for purposes of description, administration, legal requirements, technical functionality use and usage and preservation.”

Velucci (1998) defines: “Metadata is data that describes attributes of resources, characterize its relationships, support its discovery and effective use and exist in an electronic environment.”

Three features of metadata:

- 1) **Content:** Content relates to what the object contains or is about, and is intrinsic to an information object.
- 2) **Context:** Context indicates who, what, why, where, how aspects associated with the objects creation and is extrinsic to an information object.
- 3) **Structure:** Structure relates to the formal set of associations within or among individual information objects and can be intrinsic or extrinsic.

Types of Metadata:

- **Administrative Metadata:** Administrative metadata provide information to manage to resource e.g. when and how the resource has created.
- **Descriptive Metadata:** Descriptive metadata provide the source purpose e.g. title, abstract, author etc.
- **Structural Metadata:** Information necessary to record the internal structure of an item so that it can be rendered to the user in a sensible form (for instance, a book must be delivered in its page order.) This type of metadata is necessary as in item may often be comprised of multiple (often thousands) of files. For example, the images of individual pages that makes up a digitized book.

Role of metadata in digital resource Management:

Metadata Applications:

An increasing numbers and types of digital objects on Internet, It was recognized that raw data was of little value without information about how it was collected the purpose for which it was intended, formats, platforms for viewing and manipulating and restriction on reproduction and uses, aside from more conventional information such as author producer title, subject, and abstract.

Metadata serves many important purposes like data description, data browsing, data transfer, metadata has an important role in digital resource management. Metadata is playing key role in digital information system.

- 1) **Metadata increases accessibility:** Main role of metadata is resource discovery searching and location of resource.
- 2) **Metadata for Interoperability:** Metadata have compatibility of information structures for information retrieval and exchange.
- 3) **Metadata for Multi- Versioning:** Multi-versions of the same object may be created for preservation research, dissemination / product development purpose. The creator may include same administrative and descriptive metadata for this purpose.
- 4) **Metadata for Right Management:** Metadata allows depositors to track the many layers of rights and reproductions of information that exist for information objects and their multiple versions.
- 5) **Metadata for Preservation:** Technical descriptive and preservation metadata help to know now a digital object was created and maintained how it behaves, and how it relates to other digital objects. It should note that for the digital objects to remain accessible and intelligible essential to preserve and Migrate the metadata also.
- 6) **Metadata for system Improvement:** Metadata is also helpful to evaluate and refine-systems in order to make them more effective and efficient from a technical and economic stand point. The data can also be used in planning for new system.

Metadata Standards:

There are several metadata standards.

- 1) AGLS: Australian Government Locater service.
- 2) ANZLIS Australia New Zealand Information Council
- 3) CIMI Consortium for the Computer Interchange Museum Information
- 4) DC Dublin Core
- 5) EAD Enclosed Archival Description
- 6) ENDA Education Network Australia.

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| 7) GILS | Government Information Locator service. |
| 8) TEI | Text Encoding Initiatives. |
| 9) VRA | Visual Resource Association. |
| 10) METS | Metadata Encoding Transmission Standards |
| 11) MODS | Metadata Object Description Schema |

Why Metadata Standards?

1. Build on common and shared efforts.
2. Minimise duplication of efforts
3. Facilitate sharing and exchange of information between organizations/ Libraries.
4. Promotes collaboration
5. Reduce Web Fragmentation
6. Reduce costs.

Dublin Core Metadata Standard:

The Dublin Core (DC) is the most popular and widely accepted metadata standard proposed to describe almost all categories of networked electronic resources. OCLC and National Centre of Supercomputing Application (NCSA) developed it jointly and the conceptual framework was developed in the March 1995 workshop sponsored by the OCLC and NCSA to advance the state of the art in the development of metadata records for networked information resources. One of the goals of workshop was to reach as consensus on a simple and core set of metadata elements to describe e-resources. The result of workshop was a set of 13-metadata elements, which was called Dublin core metadata Elements (DCME) for describing what called Document like objects. By the third workshop the elements set was developed to 15 elements.

The Dublin Core Metadata Element (DCME) set includes; Title, Creator Subject, Description, Publisher, Contributor, Date, Type, Format, Identifier, Source, Language Relation, Coverage and Rights.

Dublin Core Metadata Elements (DCME):

The Dublin core has a set of fifteen Core descriptive elements relating to content, Intellectual property etc, The applications of Dublin Core elements have been designed to cover not only the types of resource in traditional repositories of information, but also on the Internet web. Each of the elements is repeatable and can also have sub type and sub-object relationships. The element sets describe the simple resource description designed to be used by content creators.

The Uses of Metadata:

The metadata use is in facilitating the process of search, identification, choice, assessment and documentation of network resources that bring about faster and precise recalling. The Lukas mentions three main functions about metadata:

- In collection, it provides the capability to separately identify each informational entry/item.
- It provides multi-mode methods to access and find each informational entry.
- It places the existing information in each informational entries, information and knowledge.

Other uses of metadata are as follows:

- Organizing informational resources,
- Organizing resource link through addressee, subject, ...
- Using metadata designs, exchange protocols and sharing network resources,
- Classifying metadata results,
- Content analysis and indexing,
- Facilitating data analysis path,
- Preserving and conserving digital data,
- Tracking information resource record,
- Determining access level,
- Determining legal conditions regarding data use,
- Recognizing data structures,
- Data interaction capability,
- Assessment of informational resources,
- Finding resources through related subject,
- Placing similar resources side by side,
- Identifying and distinguishing dissimilar resources,
- Suggesting information location,
- Suggesting information that affects data users like legal conditions/ size/ etc,
- Suggesting data history like main source and every other subsequent change,
- Suggesting information about owner or creator of the source (to establish link) link e-mail address,
- Showing relationships with other sources such as links to previous and subsequent copies of the source,
- Helping to decide about what form and frame of the data should be recalled,
- Providing indexing possibility of large amount of different network information without need to network band width,

- Facilitating efficient search and recall of information sources and rendering complex and complete information search possible to designed elements for precise content analysis of the data,
- Organizing informational resources present in the network,
- Describing informational bases, digital images, phonetic files and other non-written resources in the network,
- Content analyzing and indexing and organizing various informational sources in the network,
- The possibility of adapting, sharing and integrating and integrating dissimilar informational sources in the network,
- Providing the possibility to reuse various informational sources distributed in network environment through documenting information content,
- More precise management of large amount of information in network and digital libraries,
- Describing informational sources, like text, images, phonetic files and the like,
- Providing the possibility to access precise and related data by users .

Use of Metadata in Informational Source Management:

Through expressing museum objects characteristic, metadata describes them in a systematic way:

Asadi (2002) regarding metadata importance for organizing informational resources in an article entitled

“Metadata understanding and its standards” deems it necessary to create new patterns and standards to store, organize and precisely recall digital resources while referring to metadata as a response to this new need. He introduces Dublin Core, METS and MODS metadata designs that were introduced in this paper, as the most

Frequently used metadata designs in booting and organizing digital resources.

Actors, roles and metadata:

When analyzing potential benefits of reuse and refinement of metadata, we found it necessary to look into who creates - and benefits from the creation of - metadata. Each role has a set of Interests connected with it, and these interests are what determine the Metadata needs of immediate interest.

Actor: An entity that plays an active part in the lifecycle of the resource and that can create, refine, use and circulate metadata. Every actor can act in different roles. Actors can be:

- Individuals

- Publishers
- Private
- Universities
- Public administration
- Libraries
- Repositories
- Bookstores

Role/s: A role is defined by action. Each action is connected with a certain stage in the life cycle of the resource. Roles are creator, publisher, distributor, access provider and end user.

- Creator: an entity primarily responsible for making the content of the resource.
- Publisher/Distributor: an entity who issues or makes available publications to the public.
- Access provider: one or more institution(s) or system(s) that give end users access to resources.
- End user: one or more individual(s) or group(s) that consume (use, read, listen to, reuse) the content of the resource.

Metadata created: the metadata actually created by an actor in one of his/her roles.

What metadata is created depends on the actor, his/her behavior and which tools are used. Eventual discrepancies between metadata needs and metadata created pose the questions whether this is a good idea. (E.g. is MARC really the best format/tool for a library serving as a publisher, access provider? Could the individual using MySpace to publish and give access gain from being able to create more "library-like" metadata? Etc.)

IMPLEMENTATION OF METADATA CREATION ACTIVITIES:

Choosing metadata standards for a digital library project

- Metadata for a purpose
- Factors to consider
- Functions of metadata standards
- Using multiple standards
- Notes

Creating metadata usage guidelines:

- Continuing to plan
- Topics to cover in metadata usage guidelines
- Writing, testing, and refining usage guidelines
- Notes

Creating metadata:

- The metadata creation process
- Designing a metadata creation workflow
- User interfaces for metadata creation
- Creating metadata directly in XML
- Benefits of learning XML technologies
- Quality control for metadata creation
- Notes

Practical implementation of a metadata strategy:

- Staffing
- What it means to be a metadata specialist
- Integrating metadata work into a larger infrastructure
- Financial implications
- Notes

CONCLUSION:

Metadata is data about data, Metadata serves many important purposes like data description, data browsing, data transfer, and metadata has an important role in digital resource management. Metadata is playing key role in digital information system. The Dublin core Metadata Element set includes; Title, Creator Subject, Description , Publisher, Contributor, Date, Type, Format, Identifier, Source, Language Relation, Coverage and Rights.

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