Metadata - general introduction

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Cataloguing Online Resources: an Introduction to Metadata for Librarians, Manchester, 26 April 2006

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Event timetable

- 09:30 Registration
- **10:00** Metadata - general introduction
- **10:15** Discovery metadata
- 11:00 *Break*
- 11:15 Learning Object metadata
- **12:00** Other types of metadata
- 13:00 *Lunch*
- 14:00 Metadata in practice - JORUM & LOM
- 15:00 Feedback and final discussion
- 15:30 Close
Session overview

• Metadata - general overview
  – Definitions
  – Some basic questions
  – Metadata standards
Defining metadata (1)

• Some definitions:
  – Literally, "data about data"
    • Defines the basic concept, but is (perhaps) not very meaningful
    • Refers to everything and nothing (Wendy Duff, 2004)
  – "Machine-understandable information about Web resources or other things" - Tim Berners-Lee, W3C (1997)
Defining metadata (2)

- "Structured data about resources that can be used to help support a wide range of operations - Michael Day, 2001
- "Structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use or manage" information objects - NISO, 2004
  - Hints at the many roles metadata can support
Defining metadata (3)

- Metadata is now typically defined by function
  - "Data associated with objects which relieves their potential users of having to have full advance knowledge of their existence or characteristics" (Dempsey & Heery, 1998)
  - Popular categorisation:
    » Descriptive metadata
    » Structural metadata
    » Administrative metadata
What functions can be supported?

- Resource disclosure & discovery
- The retrieval and use of resources
- Resource management, including preservation
- Verification of authenticity
- Intellectual property rights management
- Commerce
- Content-rating
- Authentication and authorisation
- Personalisation and localisation of services
- …

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To what can metadata be applied?

- "Web resources or other things," e.g.:
- Web sites, Web pages, digital images, databases, books, museum objects, archival records, collections, services, geographical locations, organisations, events, concepts, ... even metadata itself
Where can metadata be found?

– Within a resource, e.g.:
  • Title page and table of contents (books), META tags in document headers (Web pages), ID3 metadata (MP3), "file properties" (office documents), EXIF data (images)

– Directly linked to the resource, e.g.:
  • Link rel="meta" elements (Web pages)

– Independently managed in a separate database; can be linked by identifiers
  • This is the most common approach
How important is metadata?

— … "is recognised as a critically important, and yet increasingly problematic and complex concept with relevance for information objects as they move through time and space" —
Gilliland-Swetland (2004)
Metadata standards (1)

• But there are a large (and growing) number of metadata initiatives, formats, schemas, etc.
  – See James Turner's MetaMap for one attempt to visualise the metadata information space:
    – http://mapageweb.umontreal.ca/turner/meta/english/

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Metadata standards (2)

• Typically defined by "resource management communities"
  – Different traditions, perspectives, functional requirements
• Typically comprise:
  – A "conceptual model" (sometimes not explicit)
  – A set of named components ("terms", "elements" etc) and documentation on their meaning and use
  – A specification of how to represent a metadata instance in a digital format (binding)
Some examples (1)

– Bibliographic:
  • MARC (Machine-Readable Cataloguing) formats, e.g. MARC21
    – Exchange format since 1960s
    – Content often based on family of related standards, e.g. the ISBD series, AACR2
  • MODS (Metadata Object Description Schema)
    – A subset of MARC
  • ONIX
    – Used by publishers and the book trade
Some examples (2)

– Archives and records:
  • ISAD(G) (General International Standard Archival Description)
  • EAD (Encoded Archival Description)
  • EAC (Encoded Archival Context)
  • Recordkeeping metadata (e.g., ERMS (The National Archives), RKMS)

– Museum objects (and collections):
  • SPECTRUM
Some examples (3)

– Digital images:
  • VRA Core, NISO Technical Metadata for Digital Still Images

– Government information:
  • AGLS, e-GMS

– Learning objects:
  • IEEE LOM, UK LOM Core, IMS specifications

– Multimedia:
  • MPEG-7, MPEG-21 (for rights information)
Summing up

– Metadata is ubiquitous
– Metadata enables people and software applications to do things (functions)
  • Not only about "discovery"
  • Different functions require different metadata
– There are many different standards
– Challenges remain in working across standards, or in using standards in combination

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