

# Manifestations of metadata: from Alexandria to WCMS, the old is new again

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## Abstract

*A discussion of the use of metadata, in its various manifestations, to access information. Information management standards are discussed. The connection between the ancient world and the modern world is highlighted. Individual perspectives are paramount in fulfilling information seeking. Metadata is interpreted and reflected upon in a broad sense, using its literal meaning.*

***Avise la fin*** Consider the end (Latin motto)

## Introduction

Ideas of continuum and diversity provide a logical view of world. This is also the case for information management and use. Connection of people with ideas is a fundamental human activity. Metadata is not new! It was used in earliest times to store, access and retrieve collections of information or objects. Ideas within documents or objects can be viewed as an intangible entity given an identifiable format, with metadata as the abstract representation of the tangible.

Just as biodiversity applies to the variety of species in their relevant ecosystems in the natural world, diversity applies to human interactions and understanding within various circumstances. Same principle – different contexts. Human perspective in information seeking and use is assisted through metadata by using the surrogate or label or identifier for a resource such as a book, web page, image or object.

## Definitions

Metadata is commonly and currently simply defined as structured data about data. 'Meta' is a prefix, from the Greek, meaning with or after; added to the noun, 'data'. Accordingly, metadata is descriptive information about an object or resource. The term metadata is currently used for managing information available in an electronic format. However, the concepts and use of metadata are long-standing, ie cataloguing or indexing library, museum or gallery collections are centuries-old information management activities.

In the online environment, while metadata is most commonly used for information retrieval, it should be seen as equally important for the governance and administration of information resources. The more specific and authoritative Dublin Core definition states in part:

"The Dublin Core metadata standard is a simple yet effective element set for describing a wide range of networked resources. ... Another way to look at Dublin Core is as a "small language for making a particular class of statements about resources". In this language, there are two classes of terms -- elements (nouns) and qualifiers (adjectives) -- which can be arranged into a simple pattern of statements.

The resources themselves are the implied subjects in this language.” (Dublin Core Metadata Initiative, <http://dublincore.org/documents/usageguide/>)

Tannenbaum defines metadata as:

“The detailed description of the instance data; the format and characteristics of populated instance data; instances and values depend on the role of the metadata recipient. Examples of metadata include filenames, data elements definitions, data element names, lengths, program names, and so on.” (Tannenbaum, p461)

Caplan, in her overview of metadata, *Metadata fundamentals for all librarians*, clearly defines and explains metadata applications and implementations. Going beyond descriptive and administrative metadata such as Dublin Core and MARC, Caplan also explains other types of metadata such as structural metadata. The role of structural metadata includes representations of content, ie how content is to be displayed; relationships, ie between physical files; and metadata for preservation purposes. (Caplan p158)

Metadata definitions link the concept of metadata inclusion with information use – the key to the purpose of metadata.

### **Perspective**

As a librarian involved in web publishing, my metadata perspective is most frequently that of subject analysis, the ‘aboutness’ of content being published. Discussions about information management with colleagues from other disciplines have proven interesting. A records manager legitimately takes the perspective that all information is activity based; related to a specific function of an organisation. A spatial data manager once challenged me to consider how all information is primarily geographically based; his perspective being geospatial. I have tested how these various points of view can be applied equally to all information - to be able to analyse and categorise information evenly according to varying perspectives - subject, ownership, geographical. Which is correct? All are and more! Acknowledging the importance of perspective is at the heart of effective facet analysis for metadata application and inclusion.

Tannenbaum’s interpretation of metadata is from an information technology business analyst perspective, with a focus on objects and data analysis. This includes identifying labels for objects such as customers and stock; with the aims of inventory control. However, it is possible to extrapolate the principles of this body of theory into the equivalent specific information management perspectives of web publishing and library services.

### **Metadata examples**

A library catalogue is a perfect and familiar example of metadata inclusion and use. Catalogue fields provide descriptive information about the item, including author, title, subject, publication and series. Objects in an art gallery (realia) have metadata, including the artist’s name, date of creation, provenance of the object, its composition and subject. Web pages have metadata included with the resource or in an associated repository, created either as standard, calculated or entered values. Web metadata elements include creator, title, publisher, identifier, subject and type.

These examples fit the definition of the International Federation of Library Associations (IFLA) *Functional Requirements for Bibliographic Records (FRBR)*:

- “to find entities that correspond to the user’s stated search criteria (i.e., to locate either a single entity or a set of entities in a file or database as the result of a search using an attribute or relationship of the entity);
- to identify an entity (i.e., to confirm that the entity described corresponds to the entity sought, or to distinguish between two or more entities with similar characteristics);
- to select an entity that is appropriate to the user’s needs (i.e., to choose an entity that meets the user’s requirements with respect to content, physical format, etc., or to reject an entity as being inappropriate to the user’s needs);
- to acquire or obtain access to the entity described (i.e., to acquire an entity through purchase, loan, etc., or to access an entity electronically through an online connection to a remote computer).” (FRBR, p90)

Essentially, metadata aims to connect a surrogate with the tangible.

### **Information standards**

The use of standards facilitates consistency and allows data exchange. The international metadata standard for web content is the Dublin Core Metadata Initiative. Dublin Core is an example of an international interdisciplinary initiative, which involved collaboration between groups of researchers and practitioners.

National standards extend the international, with specifics relevant to local conditions. In Australia, the Australian Government Locator Service (AGLS) was published as an Australian Standard in 2002, as *AS 5044.1-2002 : AGLS Metadata element set - Reference description* and *AS 5044.2-2000: AGLS Metadata element set - Usage guide*. Other significant national standards are enhanced and managed by Dublin Core international affiliates, such as Finland and the United Kingdom.

More specific standards focus on local or discipline requirements. An example is the Queensland Government Information Standard *Metadata (IS34)*. Specific disciplines such as education or mapping, have specialised metadata standards such as *edna* (education) and *ANZLIC* (spatial).

The metadata standard for archival management is the Encoded Archival Description (EAD). In addition to descriptive and administrative metadata of collection aggregations, the EAD includes finding aids with vital provenance information and groupings such as series and container contents. (Caplan pp88-98) The Metadata Encoding and Transmission Standard (METS) is an XML scheme, which can combine aspects of structural metadata. (Caplan p162)

Traditional library cataloguing is based upon the International Standard Bibliographic Description (ISBD) Standards and explained in full with examples in the Anglo-American Cataloguing Rules (AACR). (Caplan p55)

### **Crosswalking**

Different metadata schemes have been developed and followed for different reasons, focussing on the relevant perspective. For holistic information management, it is possible to map metadata standards for both overlap and difference to meet the goals of data reuse and to indicate specificity. Mapping various metadata schemes is known as crosswalking. Metadata crosswalking provides a logical method to attain interoperability in cross platform or federated searching. It also encompasses the idea that metadata should not be recreated every time but cumulatively built upon for new purposes.

This information science concept of metadata crosswalking and reuse applies as much for business advantage as it does for research purposes. Tannenbaum explores the concepts of meta-metadata and metamodels within the business context and defines 'Metadata solution' in a similar way to crosswalking, as follows:

"An organized and integrated set of related metadata, logically connected but often physically separate, with common access points and methods. The solution can embrace one or more metadata stores with distinct or common metamodels and must be accessible to metadata suppliers and beneficiaries who may reside inside or outside the metadata solution architecture." (Tannenbaum p259)

Crosswalking of metadata facilitates interoperability for XML data transfer and exchange.

## **MARC**

MARC, MACHine-Readable Cataloging, as encoded cataloging, is the manifestation of metadata which led to the acceptance and ubiquity of online catalogues. As a representative record, MARC is explained in the frequently asked questions:

"It provides the mechanism by which computers exchange, use, and interpret bibliographic information, and its data elements make up the foundation of most library catalogs used today." (Library of Congress, Network Development and MARC Standards Office, <http://www.loc.gov/marc/faq.html>)

From the 1970s, the metadata of the MARC tags facilitated the functionality of Online Public Access Catalogues, (OPACs), and other online modules such as acquisition and circulation. Resource sharing between libraries then became a professional reality with national bibliographies such as Australian Bibliographic Network (ABN) and Kinetica; although these collaborative efforts were incomplete and necessarily dependent upon cooperation and contribution by libraries.

While many countries devised their own MARC Standards and specific formats, eg CAN/MARC (Canada), UKMARC (United Kingdom) and AusMARC (Australia), with UNIMARC an interim unifying standard, the contemporary standard being used in Australia is MARC21. MARC tags can be crosswalked or matched to other descriptive formats for interoperability and data reuse. These terms include: Leader, Directory, Variable fields, Variable control fields, Variable data fields, Indicator positions, Subfield codes.

## **Databases**

Using acoustic couplers and modems to access online research databases was a significant step along the continuum of accessing information collections using metadata. This task has been considered highly skilled professional work for librarians who prided themselves on interpreting a research request and 'going online' on behalf of the client. The iterative nature of search refinements and high online charges involved the heuristics of information searching with evaluation, analysis and selection.

Database collections, marketed by commercial vendors such as The Thomson Corporation's Dialog and RMIT's Informit, continue to provide authoritative and comprehensive access to content or to their surrogates. Increasingly, significant research databases are being made available on the Internet, free of charge.

Scientists, with their understanding of taxonomy, use metadata to organise information into database collections. This metadata is then used to facilitate searching allowing a researcher to extract relevant information. An example is Western Australia's FloraBase, a database of over 19 000 records with information about vascular flora. This database collocates pertinent information presented as text, hypertext, image and map. This use of the 'deep web' or the 'invisible web' is still vital for quality research results.

### **Publications databases**

On many web sites, publications databases are effectively quasi catalogues, organised by metadata. These listings allow web searchers to quickly access full text publications; which are increasingly published as html content but are still often published as PDF files.

An example is the Search Publications on the Queensland Environmental Protection Agency's website, where it is possible to search by title or series title, by subject (a list of 29 subjects) and by type of publication (including Books, Reports and Plans, Guidelines, Policies). (<http://www.epa.qld.gov.au/publications>) Similar listings are available on the web sites of Australian Government Department of the Environment and Heritage DEH Publications, where publications are organised by subject and type. (<http://www.deh.gov.au/about/publications/index.html>), and of New South Wales National Parks and Wildlife Service Staff Research Papers, where the papers can be accessed by subject matter, author or date. (<http://www.nationalparks.nsw.gov.au/npws.nsf/Content/Staff+research+papers+by+author>)

In these three examples, metadata has been assigned via allocation of categorisation of the publications.

### **Indexing**

Providing an index is a metadata related activity. Having an alphabetical A to Z listing, in the back of a book, for a journal volume or for a web site provides an accurate access mechanism for an information user. A to Z web indexes are deceptively simple and extremely popular! They are easy to use by merely scanning a list and may provide a high or low degree of granularity.

While indexes can be automatically generated, such concordances lack analysis and systematic organisation. Ultimately, the value of a good index is the human element who, in the organisational context, or with subject and professional expertise, is involved in its creation.

An index on a website meets the diversity principle by catering for alternatives in information seeking patterns, providing an alternative to searching or browsing. An example is the Queensland Environmental Protection Agency's Site Index, which has approximately 1000 terms listed: ([http://www.epa.qld.gov.au/site\\_information/site\\_index/](http://www.epa.qld.gov.au/site_information/site_index/)).

Three indexing features are:

- the use of scientific names in addition to common names, eg  
B bilby *Macrotis lagotis*  
M *Macrotis lagotis*

- the use of *see* references to direct information seekers to another reference, eg  
L Lawn Hill National Park  
see B Boodjamulla (Lawn Hill) National Park
- and some use of inverted terms, eg  
D dogs, barking  
B barking dogs.

This index provides valid multiple paths for seeking information and provides value to users by providing an alternative simple structure.

While manual creation of a site index is initially time consuming, its maintenance can be incorporated at the time of website updates and inclusion of new content. A to Z is a logical metadata structure, known to all.

### **Image management**

Media asset management requires metadata for informed description and retrieval. The saying, 'A picture paints a thousand words' implies that an image can stand alone, without descriptive text or identification. However, an image requires identifying information to make sense of, give context to and legitimise the usage.

An image does not stand-alone. Metadata is an integral aspect of identifying, locating, and using images, especially digital images. In addition to enabling resource discovery of digital images, metadata facilitates collection management activities and specifies relationships between images.

“...digital images cannot be directly located or searched; this must be done indirectly through the information that describes them—their metadata—created either manually or with automatic indexing software. A digital image not associated with metadata will be difficult to find or identify and is likely to become useless very quickly.” (Besser p3)

Mandatory metadata elements for images include: creator details, ie photographer (even if specified as unknown); contextual information such as title, description, subject, location, date; technical data such as format variations and identifiers; ownership details such as publisher, copyright, usage and usage restrictions. Metadata can be automatically captured and held within the properties of a digital image; stored in an associated document such as a spreadsheet or a web page; or entered into a repository such as a database. Photographic integrity is improved with the inclusion of metadata.

### **Controlled vocabularies**

Thesauri and controlled vocabularies facilitate control, consistency and choice in choosing appropriate terms when assigning subject headings. Traditional structure of a thesaurus includes a hierarchy of Authorised Terms, Broader Terms (BT), Narrower Terms (NT), Related Terms (RT), Scope Notes (SN) and References such as Used For (UF).

Controlled vocabularies vary in their specificity and granularity and include:

- broad subject thesauri  
eg Library of Congress Authorities  
(<http://authorities.loc.gov/>)

- focussed subject thesauri  
eg Australian Pictorial Thesaurus  
(<http://www.picturethesaurus.gov.au/>)
- functional thesauri  
eg Keyword AAA  
(<http://www.naa.gov.au/recordkeeping/control/KeyAAA/summary.html>).

## **Folksonomies**

A new metadata development – folksonomies – has occurred at the extreme end, far removed from controlled vocabularies and standardised schema. These folksonomies allow the information seeker to tag developed content or retrieved content as they choose, thus developing a personalised metadata scheme. The new hybrid term, ‘folksonomy’, was coined by Thomas Vander Wal and is the metadata philosophy (not scheme!) for the new resource sharing environments such as the image repository Flickr. In an anthropological sense, control is held by the ‘folks’ who own and use.

This concept of personalised metadata is also being proposed as being applicable in the intranet environment whereby information users can arrange access to their own customised set of documents, by developing and arranging their own scheme (albeit after locating content via a traditional taxonomy or architecture).

## **Libraries of Alexandria**

The ancient Library of Alexandria, founded by Alexander the Great, was a beacon of learning as a centre for teaching and research in the ancient world. The ancient research centre included the Mouseion (temple of the muses) and the Serapeion (the daughter library). The collection included scrolls, manuscripts, papyrus and parchment. An annotated bibliography of the ancient Alexandria Library collection was developed by the library assistant, Callimachus of Cyrene. (MacLeod, p5) This record of ancient Alexandrian Greek literature is the world’s first significant catalogue.

Robert Barnes in his chapter, “Cloistered Bookworms in the Chicken-Coop of the Muses: The Ancient Library of Alexandria”, explains how the catalogue, *The Pinakes*, was organised by subject and included Greek poetry; prose - history, rhetoric, philosophy, medicine, law; and a miscellaneous section. While fragments from the ancient world are only indicative, the metadata Callimachus recorded included author, biography, bibliography, opening text and length. The full title of this record of the collection was:

*“...Pinakes (or Tables) of those who were eminent in every branch of learning, and what they wrote, in 120 volumes.”* (Barnes in MacLeod, p69)

The research of the tutors and their scholars, who were based in Alexandria, was facilitated by this organised record of learning.

The modern Alexandria Library Project, the Bibliotheca Alexandrina, is seeking to renew the existence and status of the ancient Library of Alexandria. Built near the site of the ancient library, the new library’s fascinating and unique design of a solar disc facing the sea, is emblematic of openness of access to knowledge and learning. The collection includes approximately 8 million items together with a significant online archive.

The Bibliotheca Alexandrina aspires to be:

- “The World’s window on Egypt;
- Egypt’s window on the world;
- A leading institution of the digital age; and above all
- A centre for learning, tolerance, dialogue and understanding.”

(The Bibliotheca Alexandrina, <http://www.bibalex.org/English/Overview/overview.htm>)

Just as the ancient library was a centre for gathering and talking, teaching and learning, the modern Bibliotheca Alexandrina is more than a library collection. The new Library of Alexandria includes specialised collections, internet archive, museums, galleries, exhibitions, research institutes and a conference centre. This project, which receives international support, is symbolic of the continuum of the use of organised information from earliest times to the modern day.

Furthermore, the ideology of flow of ideas from organised information is represented in The *Alexandria Manifesto* on libraries: the information society in action, adopted in Alexandria, Egypt at the Bibliotheca Alexandrina, on 11 November 2005, which states:

“Libraries and information services contribute to the sound operation of the inclusive information society. They enable intellectual freedom by providing access to information, ideas and works of imagination in any medium and regardless of frontiers.”

## **WCMS**

A Web Content Management System (WCMS) is an information management system, which manages web published content by separating the design from the content. The system identifies and manages both content and structure. Key components are document templates and scripting language, which combine to present the web content. Publishing is generally distributed, rather than centralised, with workflows and levels of authorisation. The storage and archiving of content is controlled via system processes.

Metadata ideally facilitates the administration and governance of the content. Examples of the use of metadata in content management are the identification of content by specifying content owners and dates for validity or review, as well as management of assets or objects such as images and downloadable documents.

Content management systems available are proprietary or open source. They may be implemented as part of an overall Enterprise Content Management (ECM) or as incremental modules. Metadata is increasingly being viewed as integral to content management, with an increased understanding being demonstrated by vendors, implementers and content owners. This includes understanding of thesauri and knowledge of metadata standards.

Boiko in his diagram, ‘The wheel of content management’, illustrates metadata as the rim of the wheel, being the control mechanism of content management. (Boiko p497) He uses another structural metaphor to illustrate the essential nature of metadata in content management:

“More than anything else, the metadata behind a CMS is what defines the system. The set of names and relationships that a metatorial framework contains are the skeleton on which you hang the content. Without this structure, the content is as formless and flaccid as a body without bones”. (Boiko p491)

While Dublin Core/AGLS metadata represents the control implicit in standards compliance, many modern content management systems allow a measure of client autonomy regarding the inclusion of metadata. File structure and information architecture recede in importance as metadata driven systems retrieve relevant documents from a data repository.

“This metadata-driven model represents a profound change in how web sites are created and managed. Instead of asking, “Where do I place this document in the taxonomy?” we can now ask, “How do I describe this document?” The software and vocabulary systems take care of the rest.” (Rosenfeld and Morville p 177)

Accordingly, metadata is the key to accessing the content.

### **Metator**

(no, not the bluelegged grasshopper!)

An interesting new occupational title is emerging - ‘metator’, a hybrid of metadata and editor. This need for an editorial oversight and quality assurance of activities associated with inclusion of metadata is increasingly being identified. With a skill set including information retrieval and cataloguing, librarians are ideally suited to working as a metator, “... joining the ranks of the *digerati* and applying their incredibly valuable skills to digital information.” (Boiko p166) The job of a metator is similar to that of an editor in the relevant context. While some metadata capture is automated at a system level, “... a *metator* is a person who does the metatorial processing that authors and conversion systems can’t do.” (Boiko p511)

A metator uses a metatorial guide to manage content types, elements, element types, element values, usage rules, responsibilities and change rules; and to address management issues of review, retirement, creation rates and growth. (Boiko p513) Encompassing the traditional facets of description, retrieval and administration:

“Metatorial processing accomplishes the following tasks:

- Ensuring the completeness of metadata.
- Enforcing the consistency of metadata.
- Ensuring that you can manage the content.
- Ensuring that you can access the content.
- Ensuring that you can appropriately target the content.” (Boiko p508)

### **Information architecture**

Metadata activities associated with developing an information architecture for electronic content is a direct descendant of the Alexandrian *Pinakes* of Callimachus. Two pertinent aspects of the definition of information architecture are:

“The combination of organization, labeling, and navigation schemes within an information system.” and

“The art and science of structuring and classifying web sites and intranets to help people find and manage information.” (Rosenfeld and Morville, p4)

Information architecture is cataloguing by another name within a modern context, using traditional principles of scalability and extensibility - with a modicum of commonsense and organisational fit. Issues such as granularity and specificity should be considered. (Rosenfeld and Morville, p94) To iteratively improve the quality of information architecture, website headings can be refined by analysing web metrics.

The challenge in developing an information architecture for electronic content is to organise a unique taxonomy of labels (representing objects or electronic assets) which is based on topic, generally subject matter, and is focussed on audience. (A labelling approach to be used with caution is that based solely on author or the silo approach of organisational alignment.) As information seeking, regardless of physical context, is generally iterative and interactive, grouping of related objects facilitates associative learning. (Rosenfeld and Morville, p59) This is the theory behind both library catalogue subject access and website information architecture.

Information architecture and WCMS metadata activities include both the descriptive metadata (aligned with cataloguing and classification of information) and the administrative metadata (associated with provenance issues such as content ownership and review). Accordingly, "Content management and information architecture are really two sides of the same coin" (Rosenfeld and Morville, p11), with metadata the binding and enabling force.

### **Facet analysis**

SR Ranganathan, the Indian mathematician and librarian, developed five time lasting concepts of library science philosophy. These are:

1. Books are for use
2. Every reader his book
3. Every book its reader
4. Save the time of the reader
5. A library is a growing organism.

Along with this philosophy, Ranganathan elaborated and advanced five principles for facet analysis, PMEST:

- Personality
- Matter
- Energy
- Space
- Time.

Ellis and Vasconcelos discuss Ranganathan's contemporary relevance and continuing applicability of his principles to the modern world.

"If Ranganathan were alive today he would be aware of the potential of his ideas for searching and organising WWW materials. Indeed, the genius of Ranganathan is attested to by the very portability of his ideas across time, technology and cultures, simply because they address the very foundations of the business of effective information storage and retrieval." (Ellis and Vasconcelos, p8)

The application of Ranganathan principles for metadata facet analysis remain relevant and can be successfully applied to the organisation of web based content. Facet analysis is the key to creating a successful information architecture or a site index or for subject metadata.

### **Provenance**

Provenance is an interesting aspect of metadata analysis. This applies most specifically to objects and items from the world of the arts, whereby an aspect of the item being described is the history of its ownership and custodianship. This is less

often encountered in libraries. However, this metadata facet interestingly was noted by the ancient Library of Alexandria where manuscripts held on the ships passing through the port of Alexandria were confiscated and acquired for the Alexandrian collection. These were described in the catalogue as being “from the ships”. (MacLeod, p5) While the items confiscated were supposed to be copied and the originals returned, often this did not happen and the originals were retained.

The existence of identifying and explanatory information about the exhibits was one criterion for inclusion in the exhibition, *National Treasures from Australia's Great Libraries*. In her exhibition talk at the State Library of Queensland on 7 December 2006, Dianne Byrne, the Heritage Collections Librarian, explained how the relevance and significance of an item is enhanced by its story – its metadata. The why and who of an exhibit resonates as clearly as the what. Whether the item is Mary Watson's diary, the leather suitcase used to transfer oil mid-flight, Ned Kelly's helmet, Henry Lawson's collar, or Captain Cook's *Endeavour Journal* (edited and amended), along with the secret additional instructions from the Admiralty – the associated metadata intensifies understanding and provides context.

### **Annotations**

Personalised comments added by library staff or professional researchers contribute to the continuum of value by adding contextual metadata. Nicholson Baker discusses this theme in his *New Yorker* article “Discards” where he examines the loss of this contextual information and critical analysis as a product of the replacement of the card catalogue with online catalogues. His lament includes the loss of “...additional subject headings or enriching notes of various kinds” (Baker p66) and highlights “...the irreplaceable intelligence of the librarians who worked on them.” (Baker p86) The additional quality of annotation led to the quality of retrieval.

Metadata, as value added catalogue entries, facilitates use by remote users when accessing catalogues via the Internet. These value added catalogue entries include abstracts, contents, summaries, reviews and notes fields. A remote access catalogue, with enhanced metadata, supplements the role of reference librarian. An excellent example of the improvements in metadata in web-based catalogues is eLibCat, the Library Catalogue of the Brisbane City Council Library Services, where abstracts are increasingly being added to the catalogue records. This improved facility allows a library patron to make better-informed decisions for selecting and placing holds and for requesting specific advice.

### **Disintermediation**

The term ‘disintermediation’ has been used by Walt Crawford and Michael Gorman, who have identified the concept whereby the role of information retrieval has shifted to end users, no longer requiring an intermediary. However, metadata may be an intangible aspect mitigating such disintermediation. The metadata is a part of the information chain which allows the connection between item sought and item retrieved.

### **Conclusion**

Metadata is integral to the resource it is associated with. Whether in word processing document properties or in structured Dublin Core complete metatags, whether in geographical co-ordinates or in the description of an image, whether in keyword and description metatags or a library catalogue record - metadata represents attributes of the information. Metadata is pervasive and inextricably associated with the resource.

It is the intangible aspect of information, which, when correlated with the physical representation of the information in its container, extends and contributes to the human experience.

Information is for use now and for preservation for future generations. Be a modern web 'metator', as well as a documentalist in the spirit and practice of Callimachus. Librarians should be encouraged in becoming involved in these modern manifestations of metadata. There is a huge amount of scope for information specialists to engage with collections of information to achieve organisational outcomes as well as meeting the personal goals of professional practice.

*Avise la fin* Consider the end

Consider who uses information and consider how information is used. Consider how a professional approach to information organisation provides the nexus between an information resource and an information seeker, regardless of place and time.

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### ***Exhibition***

*National Treasures from Australia's Great Libraries* at State Library of Queensland.  
Guided tour  
Exhibition talk by Dianne Byrne, Heritage Collections Librarian  
(visited 7 December 2006)