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Metadata dictionary database: A proposed tool for academic library metadata management

Silvia B. Southwick

University of Nevada, Las Vegas, silvia.southwick@unlv.edu

Cory Lampert

University of Nevada, Las Vegas, cory.lampert@unlv.edu

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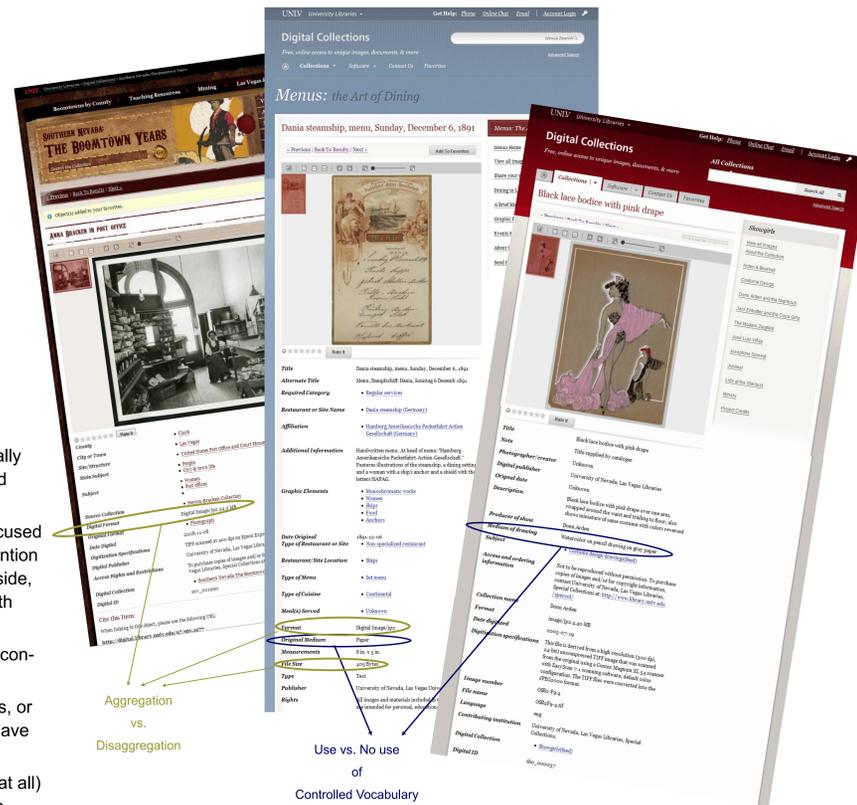
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What is the problem?

Efficient management of metadata is critical for developing quality, sharable, metadata. A variety of metadata challenges arise from metadata designed in a project-specific context versus taking a comprehensive metadata management approach applied across multiple digital collections in academic libraries.

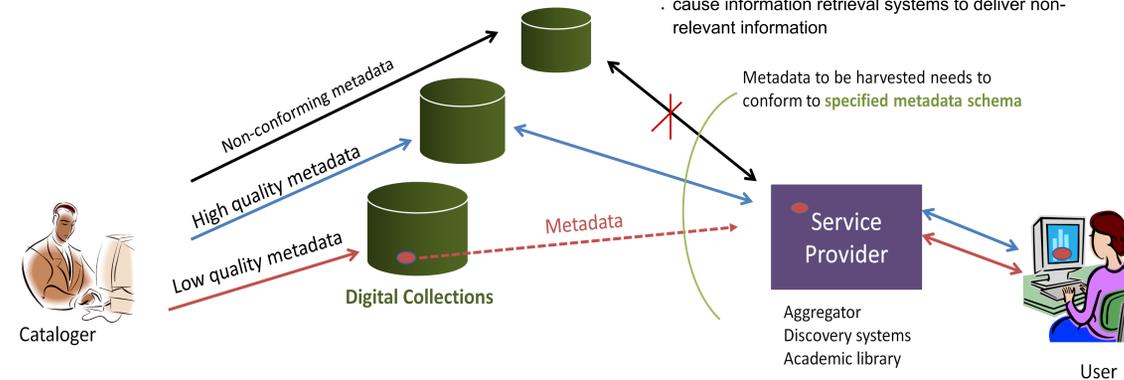
What causes this problem?

- Academic library digitization programs typically develop digital collections on a project-based model.
- Metadata formatting and content building focused on the specific context of the data. Little attention to overall context in which the project will reside, i. e., interdependencies and relationships with other collections in the digital library.
- Metadata design data-driven as opposed to concept-driven.
- Metadata is based on one or more standards, or local convention. Material formats may not have metadata standards at all.
- Metadata quality control process (if present at all) happens within limits of individual collections.
- Lack of a systematic, comprehensive and integrative approach for designing digital collections may lead to various levels of inconsistencies across them.



What are the consequences of this problem?

- Interoperability not achieved.
- Quality of metadata across collection not controlled.



Low quality metadata may:

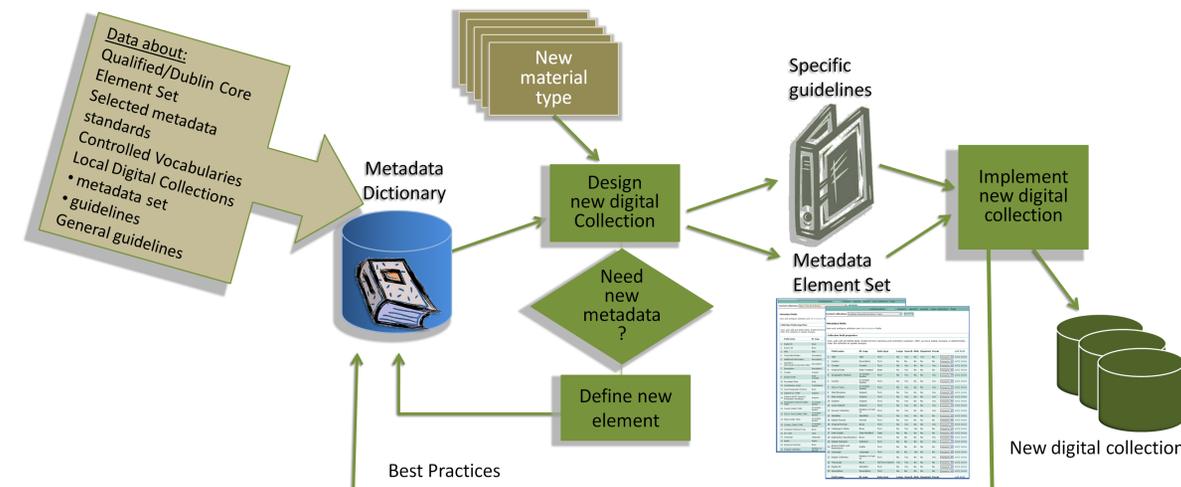
- prevent harvesting
- prevent users to find relevant information
- provide users with incomplete information
- cause information retrieval systems to deliver non-relevant information

What is a Metadata Dictionary?

MDD is a repository of metadata about metadata elements (meta-metadata) specified for local digital collections. Its main purpose is to serve as a tool for managing local metadata schemas in order to provide consistency, quality and interoperability across multiple local digital collections. An MDD stores information about metadata standards such as metadata element sets including metadata elements created to record non-standard data, general guidelines and recommended controlled vocabularies. It also stores data produced about local digital collections and their specific guidelines (best practices).

Rules to use MDD as a design tool:

- Digital collections metadata sets should be derived from metadata set specified in MDD.
- New metadata elements can only be created for values that don't conform to any standard metadata element (these metadata values are likely to be lost in harvesting processes).
- Guidelines for data creation are refinements of the general guidelines provided by metadata standards.
- All digital collections should use MDD in order to guarantee interoperability.

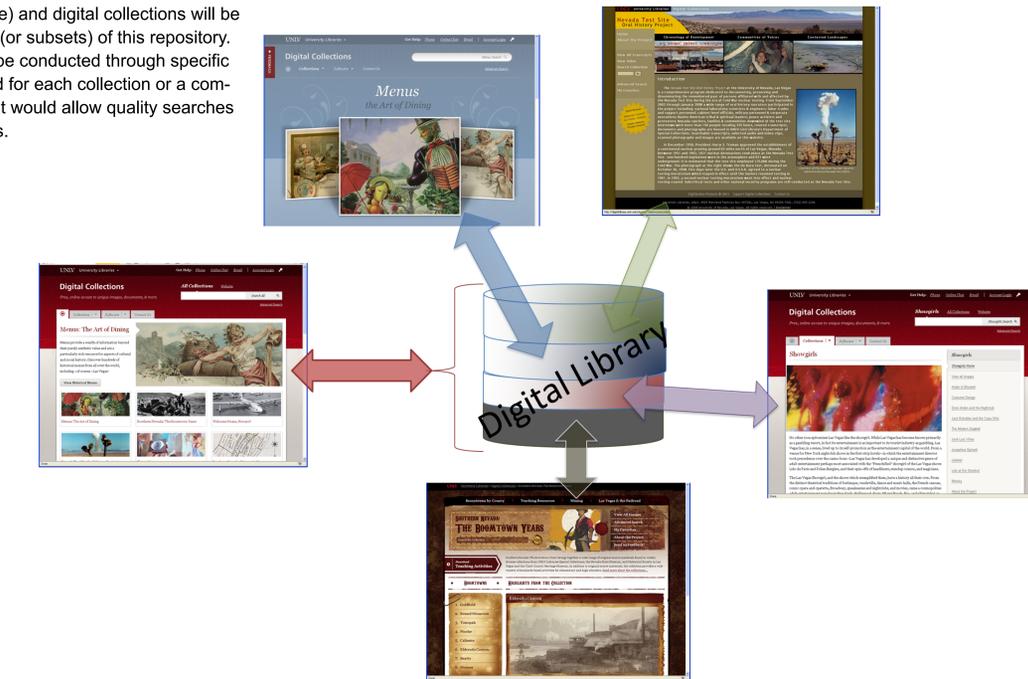


Metadata quality questions that MDD can support:

- What are the metadata elements defined for each collection?
- Which metadata elements are specific for each collection?
- Which metadata elements are common to various collections?
- Are these metadata elements consistently defined?
- Are guidelines for data entry consistent?
- Is the use of controlled vocabularies consistent throughout all digital collections?
- What are locally developed controlled vocabularies? Are these shared among digital collections?
- What metadata elements are searchable in all collections?

What does MDD mean for the future?

A single repository can be created in which digital objects share a common metadata set (application profile) and digital collections will be defined as views (or subsets) of this repository. Searches would be conducted through specific interfaces defined for each collection or a common interface that would allow quality searches across collections.



Who can benefit from using MDD?

- Metadata librarian** will use MDD as: a main source for designing metadata schemas for new projects; tool for managing compatibility and consistency among local digital collections; Tool for evaluating sharable controlled vocabularies.
- Catalogers**: will use MDD as a documentation reference for metadata content creation.
- Other digital collections designers or implementers**: will have access to information for designing new collections.
- Digital collection end-users**: will be provided with more consistent data, which fields are searchable, and which vocabularies are being used.
- Aggregators or service providers**: will have access to detailed information about data value and data mapping for harvesting.

Benefits

- Enhance user access
- Systematize digital collection development
- Potential cost saving
- Facilitate future migrations to new software applications
- Facilitate preservation since all digital collections will share common design

Challenges

- Metadata management expertise required / knowledge for design
- Additional work (initially) creating documentation
- On-going maintenance responsibility
- Institutional resistance / compliance
- Migration of existing legacy digital collections
- Training staff to ensure sustainability of MDD