Strategic Management of Metadata Projects

Arthur Y. Chen & Sophy S. Chen

Computing Centre
Academia Sinica

18 Jan., 2001
Metadata Projects in Academia Sinica

- Taiwanese Aborigines – The Pingpu Group
- Knowledge Base of Taiwan’s Earthquake
- Taiwan Memory -- Digital Photo Museum
- Digital Rubbings
- National Palace Museum
- Biodiversity Metadata
Analysis of Metadata Projects

Pingpu Case

Integration of Material Type & DB Schema

Research
Historical map, Music, Ancient contract, Interview

Reference
Book, Serial, Article, Table and Figure, Video and Audio Photo Digital

Other DBs
GIS, Full-text DBs

Interaction across Domains

<table>
<thead>
<tr>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical map, Music, Ancient contract, Interview</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book, Serial, Article, Table and Figure, Video and Audio Photo Digital</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other DBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS, Full-text DBs</td>
</tr>
</tbody>
</table>

Interaction across Domains
Analysis of Metadata Projects

Metadata Types

- Person
- Object
- Space
- Time

Event connections between the elements.
What problems have we encountered? –1

- How to handle MD issues with different disciplines and domain needs?
- How to accommodate many different types of context?
- Should we have to design a ‘universal MD format’?
- Or should we adopt “an/several” existing MD format? MARC? DC?
What problems have we encountered? -2

- How to evaluate the right MD format for our MD projects?
- How can we collaborate with professionals of various domains?
- How to develop the MD Project in a strategic way?
Strategies

- Front-end level – Workflow, worksheets, and clearinghouse
- Back-end level – Workflow and framework
Metadata Workflow

- Interview
- Analysis
- Confirm
- Practical experiments and revisions
- MD system Prototype
- Trials and revisions
- User guide
Front-end (1) : worksheets

Diagram of Structured Content and Context

Stone/Wood → Rubbings → Image → Inscription

Whole Frame

Reference

Ver. A
Ver. B
Ver. C
Front-end (2) : worksheets

*Element Analysis Table*

- **Cluster**
  - Context
  - Content

- **Core Class**
  - Time, Space, Person, Object, Event
  - Information about title, author, publication, media, reference, identifier, access management, system administration

- **Element**
Front-end (3) : worksheets

*Element Analysis Table*

<table>
<thead>
<tr>
<th>Cluster (群集)</th>
<th>Core Class (核心群組)</th>
<th>Object (元素名稱)</th>
<th>層次</th>
<th>次層次</th>
</tr>
</thead>
<tbody>
<tr>
<td>知識內涵</td>
<td>時間</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>空間</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>人/單位</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>事/主題</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>物/性質</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>管理層面</td>
<td>著作資訊</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>作者資訊</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>出版資訊</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>參考資訊</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>媒體資訊</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>識別碼系統</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>取用機制</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Front-end (4) : worksheets

Defining Element Table

- Metadata Element
- Definition
- Rule for Description
- Control Term
- Sample
Front-end (5) : worksheets

Defining Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Definition</th>
<th>Rules for Description</th>
<th>Control Term</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Front-end (6) : worksheets

Function Requirement

- D, I, L, A, S, H
  - Display (D) for label
  - Index (I) for retrieval
  - Limitation (L) for search
  - Access management (A)
  - Statistic Indicator (S)
  - Hyperlink Integration (H) with other DBs
Front-end (7) : Clearinghouse

**SMART**

Sinica Metadata Architecture and Task
Front-end (8) : Clearinghouse

- Predefined Premises:
  - Project management
  - Information sharing for those who engage in digital library projects
  - Workflow standards
Front-end (8) : Clearinghouse

Goals of the Clearinghouse

- To help users easily locate and access the Digital Library Project information.
- To offer members of the Metadata Projects a common communication place to discuss and locate information.
- To encourage the use of standards to create and expand access for information and online services / information exchange.
Front-end (9) : Clearinghouse

*Functions of the Clearinghouse*

- Search
- Input
- Share
- Communication
- Interoperability
- Repository
Front-end (10) : Clearinghouse

*The Features of SMART*

- The background for all metadata concept and information in the Digital Library Projects
- Communication Zone for each project.
- Getting start with metadata management
- Metadata application tools
- Documentation
- Resource Sharing
- Search engine
Back-end (1): Framework

Metadata Types
Back-end (2) : Framework

The IFLA Model

WORK

EXPRESSION

MANIFESTATION

ITEM

IsRealizedThrough

IsEmbodiedIn

IsExemplifiedBy
Back-end (3) : Framework

*The Content & Context Model*
Findings (1)

- **Metadata Types**
- **Catalogue vs. Metadata**
  - Simple vs. diverse
  - Static vs. dynamic
  - Unit - ambiguous
  - Association or relationship
- **The extension of metadata can achieve from content description to context annotation The approaches shift from library domain to combination of various domains**
Findings (2)

- Framework
- Workflow / Worksheet
- Dublin Core is ‘core’?
- What is the appropriate ‘Information Unit’ for Metadata?
- Position of original object and duplicate one
Conclusion

- Metadata should consider to be a kind of project management, instead of just an adoption of any metadata standards and elements.
- Strategic management plays a key role for any Metadata project.
Future Works

Some works are required to be examined with more case studies, such as

- How can IFLA model be applied to metadata analysis?
- Does any core elements exist among metadata standards?