The Everlasting Dawn of Educational Brokers –
A Search for Key Design Principles

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Educational Brokers are not new ….

- **Platforms:**
  - EducaNext.org, Ariadne, Merlot, Edna, … („Web 1.0“)
  - Slideshare, Oercommons.org, … („Web 2.0“)

- **Papers**
  - Simon, B. *E-Learning an Hochschulen: Erfolgsfaktoren und Gestaltungsräume von Wissensmedien* Eul, Lohmar, Köln, **2001**.
Are they successful?

- Merlot: 17,641 learning materials, 44,000 users
- EducaNext: 1,000 learning resources, 3,000 users
- Ariadne: 5,000 learning objects
- Oercommons: 1,000 learning objects (estimation)
(Closed) Learning Management Systems

Why is a single institution able to produce and (internally) share more resources than a leading educational broker?
Methodology: Action Research

- Design an Educational Broker for Austrian Higher Ed Institutions | Schools
- Involve users early up-front
- Prototype
- Reflect current implementations
- Implement
Preliminary finding: Balanced Metadata Model for Learning Resource Descriptions
Our Recipe

1. Starting points:
   - LOM application profile of EducaNext
   - LOM application profile of Bildungspool

2. Design use case

3. Include elements required for use case

4. Exclude elements not required for use case

5. Exclude elements not used by users

6. Include elements required for interoperability
   (e.g. EUN LRE LOM Application Profile)
## Metadata Model for Higher Education

<table>
<thead>
<tr>
<th><strong>Mandatory Elements</strong></th>
<th><strong>Recommended Elements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifier (ID)</td>
<td>Learning Resource Type</td>
</tr>
<tr>
<td>Title</td>
<td>Description</td>
</tr>
<tr>
<td>Language</td>
<td>Keyword</td>
</tr>
<tr>
<td>Contributor</td>
<td>Creation Date</td>
</tr>
<tr>
<td>Location</td>
<td>Issue Date</td>
</tr>
<tr>
<td>Rights</td>
<td>Format</td>
</tr>
<tr>
<td></td>
<td>Instructional Method</td>
</tr>
<tr>
<td></td>
<td>Context</td>
</tr>
</tbody>
</table>
Preliminary Finding: Users Want Their ‘Home System’ Connected

- An Educational Broker should not necessarily become an extra tool teachers need to register with
- Instead: Connect their 'Home System'
Open Source AJAX Component for Sharing LRs - Architecture

LRR  Learning Resource Repository
UI^{P/C}  User Interface Provider / Consumer
A^{P/C}  Agent Provider / Consumer (= Mediator)
Open Source AJAX Component for Sharing LRs - GUI

<table>
<thead>
<tr>
<th>Importieren &gt; Kontrollieren &gt; Ergänzen &gt; Veröffentlichen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anbieter</strong></td>
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<td><strong>Titel</strong></td>
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<tr>
<td><strong>Beschreibung</strong></td>
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<tr>
<td><strong>Schulbuch</strong></td>
</tr>
<tr>
<td>Lorem Ipsum</td>
</tr>
</tbody>
</table>

**General Metadata**
- Identifier
- ISBN
- Schoolbook Number
- Title
- Short Title
- Language
- Description
- Keyword

**Contributors & Lifestyle**
- Contributor
- Version
- Creation Date
- Issue Date
- Valid

**Technical Metadata**
- Format
- Location
- Technical Prerequisites
- Duration

**Educational Use**
- Intended Enduser Role
- Instructional Method
- Learning Resource Type
- Typical Learning Time
- Interactivity Level

**Educational Context**
- Level of Education
- Type of School
- Stage of Education
- Discipline
- Subject
- Related Schoolbook

**Costs and Rights**
- Rights
- Cost Flag
- Price

**Certificates and WAI**
- Certificate
- WAI Compatibility

**Ablehnung der Daten übernehmen und ergänzen**
Preliminary finding: Support Collaboration!
No Need for Rights Management
Rights Management for Open Content = Open Content License + Usage Tracking

- Providers don’t care where their material goes, but would like to know who is using it
- Tracking is required in order to:
  - report on the effectiveness of the brokerage infrastructure
  - potential investigation of the correct application of the open content license attached to the material
  - providing a first contact point for future collaboration
Thanks! Questions? Remarks?

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