ASPECT – Adopting Standards and Specifications for Educational Content

Final Project Presentation

By David Massart, EUN

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Outline of the presentation

- **Main Outcomes**
- Performance Indicators
- Recommendations

ASPECT's Main Outcomes:
Identification of Best Practices

• The ASPECT Best Practice Network was supported by the European Commission's eContent*plus* Programme. It started in September 2008 and involved twenty-two partners from fifteen countries, including nine Ministries of Education (MoE), four commercial content developers and leading technology providers.

• In the course of thirty-two months, the ASPECT consortium implemented and tested an array of standards and specifications in the field of technology-enhanced learning. Through this work, the project identified **best practices** for learning content discovery and use and produced recommendations for the education community in Europe.

ASPECT's Main Outcomes:
The LRE Service Centre

• The ASPECT project developed tools and services to support these best practices. These tools are now publicly available via the Learning Resource Exchange (LRE) Service Centre, which includes:

- A Learning Technology Standards Observatory (LTSO)
- An application profile registry
- A Vocabulary Bank for Education (VBE)
- Learning Object Repository
- Validation services for testing conformance of metadata
- Metadata transformation services
- An automatic metadata translation service

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ASPECT's Main Outcomes: Identification of Needs

- During ASPECT, content providers applied content standards to their learning resources and made them available via the LRE. The following elements were identified as necessary for the successful adoption of a standard:
  1. Availability and quality of tools for producing compliant content and metadata
  2. Availability and quality of tools to test for compliance
  3. Availability of solutions adapted to the different needs of content providers from both the public and private sectors

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ASPECT's Main Outcomes:
Training

- During ASPECT, 46 teachers from Belgium, Lithuania, Portugal and Romania took part in a series of three workshops to elicit their opinions and observe their use of content packaging, search features and mechanisms developed in the ASPECT project.

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ASPECT's Main Outcomes:
Creating Awareness

- The different ASPECT activities were driven by the needs of the different stakeholders as identified at the start of the project. ASPECT conducted several studies on the different stakeholders' adoption and awareness of content discovery/repository standards (e.g. IEEE LOM, ILOX…) and content packaging standards (SCORM & IMS Common Cartridge).

- ASPECT carried out interviews with the ASPECT content providers (Ministries of Education and commercial content providers), ascertaining their readiness and willingness to adopt content standards. Insights from these interviews informed the development of the ASPECT recommendations.

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ASPECT's Main Outcomes: Dissemination

- ASPECT results were disseminated trough face-to-face events and online webinars. Over thirty events were organized during the project attracting 1,479 attendees. Events and other activities allowed ASPECT to create an active community that will exist after the end of the project. Nearly 200 Associate Partners registered in the ASPECT website and benefited from the ASPECT outcomes, including access to expertise in standards and specifications for learning technologies.

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Outline of the presentation

- Main Outcomes
- **Performance Indicators**
- Recommendations

Performance Indicators

1. Translations of metadata
   - Expected: 2000
   - Actual: 641 571

2. Additional learning objects from Europe and rest of world
   - Expected: 20 000
   - Actual: 37 952

3. Additional learning assets from Europe and rest of world
   - Expected: 50 000
   - Actual: 71 838

4. Number of vocabularies in the vocabulary bank
   - Expected: 260
   - Actual: 694

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Performance Indicators (ii)

5. Number of participants at ASPECT technical events, codebashes, and plugfests
- Expected: 100
- Actual: 265

6. Number of participants at workshops and conferences
- Expected: 200
- Actual: 925

7. Number of unique users of ASPECT web site
- Expected: 6 000
- Actual: 13 664

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Performance Indicators (iii)

8. Number of references to ASPECT activities and deliverables
- Expected: 500
- Actual: 724

9. Number of external European experts, professionals, policy makers joining/actively supporting the BPN
- Expected: 150
- Actual: 200+

9bis. Number of visits to the LTSO website
- Expected: not mentioned
- Actual: 1 502 893

Performance Indicators (iv)

10. Number of CEN Workshop Agreements (subject to approval by the CEN/ISSS WSLT)
- Expected: 2
- Actual: 3

11. Number of IMS GLC specifications (subject to approval by IMS TAB)
- Expected: 1
- Actual: 1

12. Number of ENs submitted to TC353
- Expected: 2
- Actual: 3

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Performance Indicators (v)

13. Number of contributions (i.e., articles, presentations) to relevant conferences and events
- Expected: 60
- Actual: 143

14. Number of high-quality, scientific papers accepted for leading, internationally recognized conferences or journals
- Expected: 4
- Actual: 10

Performance Indicators (vi)

15. Number of newsletters
    - Expected: 6
    - Actual: 6

16. Number of new national portals connected to the LRE
    - Expected: 2
    - Actual: 2

Outline of the presentation

- Main Outcomes
- Performance Indicators
- **Recommendations**

Recommendations

• The following recommendations reflect the experience of partners in the ASPECT Best Practice Network and are grouped by the different categories of stakeholders involved in the project: content providers and repository owners, tools providers, federation and discovery service builders, and standards organizations. Given that end-users should benefit from standards and specifications rather than be concerned with issues related to their implementation and adoption, they are not addressed as a category of stakeholders.

• The general recommendations are those that are applicable to all the categories of stakeholders. Policy making decisions should be informed by recommendations in all the categories.

General Recommendations

R-G.1: Use standards and specifications.

R-G.2: Check conformance.

R-G.3: Select appropriate standards.

R-G.4: Don´t profile without consent.

R-G.5: When profiling, preserve interoperability.

R-G.6: Combine standards and specifications consistently.

R-G.7: Use a progressive strategy.

Content Providers and Repository Owners

R-CP.1: Only use content specifications when required

R-CP.2: For learning assets, stick to web-standards

R-CP.3: Learning assets (i.e., single file content) should not be packaged

R-CP.4: The distribution of complex content requires packaging

R-CP.5: Use content package specifications used by your intended audience

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Content Providers and Repository Owners (ii)

R-CP.6: "Creative Commons" maximizes reuse

R-CP.7: Make sure the distribution of interoperable content does not conflict with your business model.

R-CP.8: Make metadata creation easy and, where possible, try to generate metadata automatically

R-CP.9: Combine as many sources of information as possible about the resource.

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Content Providers and Repository Owners (iii)

R-CP.10: Expose metadata and content in as many ways as possible.

R-CP.11: Register your repository to ensure its discoverability.

R-CP.12: Describe each re-usable part of content.

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Tools' Providers

R-TP.1: Build tools that support all features and options in a specification.

R-TP.2: Support content specifications best adapted to the type of learning scenarios a platform supports.

Federation and Discovery Service Builders

R-DS.1: Minimize the cost of joining a federation.

R-DS.2: Offer persistent management of learning resources and metadata.

R-DS.3: Establish good communication channels between the different stakeholders of a federation.

R-DS.4: Use already existing best practices and tools when setting up a federation.

Standards Organizations

R-SO.1: Support the development of free and user-friendly tools to edit, deploy, re-arrange, and play educational content.

R-SO.2: Provide community-based conformance competence forums.

R-SO.3: Support the development of application profiles and domain profiles of existing standards reflecting what is used in common practice.

R-SO.4: Maintain backward compatibility.

R-SO.5: Do not encode controlled vocabularies in bindings.

R-SO.6: Uniquely identify each controlled vocabulary and controlled vocabulary term and only use identifiers in metadata records.

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ASPECT online resources

ASPECT's web site
www.aspect-project.org

Learning Resource Exchange (LRE)
http://lreforschools.eun.org/LRE-Portal/Index.iface

LRE Service Centre
http://www.aspect-project.org/node/52

Learning Technology Standards Observatory (LTSO)
http://www.cen-ltso.net/