

The Future of Online Learning and Knowledge Networks

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An Emerging Consensus...

- Learning objects, LOM, learning design
- Enterprise architecture, common services, federated search
- Mostly based on Java, web services
- Commercial orientation, bundles and packaging, institutional purchasers, site licensing

Problems With the Consensus

- Dissatisfaction, low uptake of learning objects, the reusability paradox
- High barrier to adopting enterprise systems, supporting federated search (the closed marketplace)
- Issues with Java, web services
- Soft market for ‘content’, DRM issues

Analysis (1)

- The e-learning industry is misreading the marketplace
- Though short term gains may be found at the enterprise level, the long term market is at the consumer level
- The major product (for both industry and academia) is not content, but services

Analysis (2)

- The e-learning industry is misreading the technology...
- Though some technologies are adopted by the enterprise, the major drivers are technologies adopted by users (email, web)
- Large, centralized systems have a dubious history (with some exceptions – Google, Amazon), while distributed systems rule

Analysis (3)

- The e-learning industry is misreading the business models...
- While broadcast (push) still works at the enterprise, the major gains are being made by grassroots adoption (ICQ, blogs, RSS)
- Consumers are becoming producers, marketplaces are becoming conversations

Analysis (4)

- The e-learning industry is misunderstanding convergence
- While vertical markets represent the ascendance of big media, real gains are being made in horizontal markets (eg. Craig's List)
- Innovation should not be based on the 'sector' but the 'person'
- E-learning merging with other sectors

Rethinking Search

- Why federated search is the wrong way to go...
 - It closes the market to small players (and most producers are small players)
 - It restricts options for searchers (and searchers want options)
 - It is inefficient and slow (and searchers want speed)

The Harvest Model

- Metadata is collected by ‘aggregators’ which then provide custom (cross sectoral, cross provider) services to searchers
- Aggregate, repurpose, remix, feed forward
- Proven technology; consider Google
- Already major adoption in RSS, OAI

But Most Importantly...

- Federated search assumes a unidirectional flow of metadata, from producer to consumer
- It ensures that there is only ‘one voice’ in the description of learning resources
- It represents the ‘library’ model of static resources, while search itself is becoming a dynamic ‘flow’ model

Rethinking Metadata

- A separate metadata or learning? Yes, but only minimally
- One standard for all? Not likely
- Metadata as mix-and-match – a combination of different schemas (the RDF model)
- Multiple authors of metadata

Metadata Types

- ‘First Party’ – bibliographic metadata, rights and authorship information – metadata created by the creators of resources
- ‘Second Party’ – usage information, educational metadata – metadata created by the users of resources
- ‘Third Party’ – classifications, evaluations and ratings – metadata created by observers

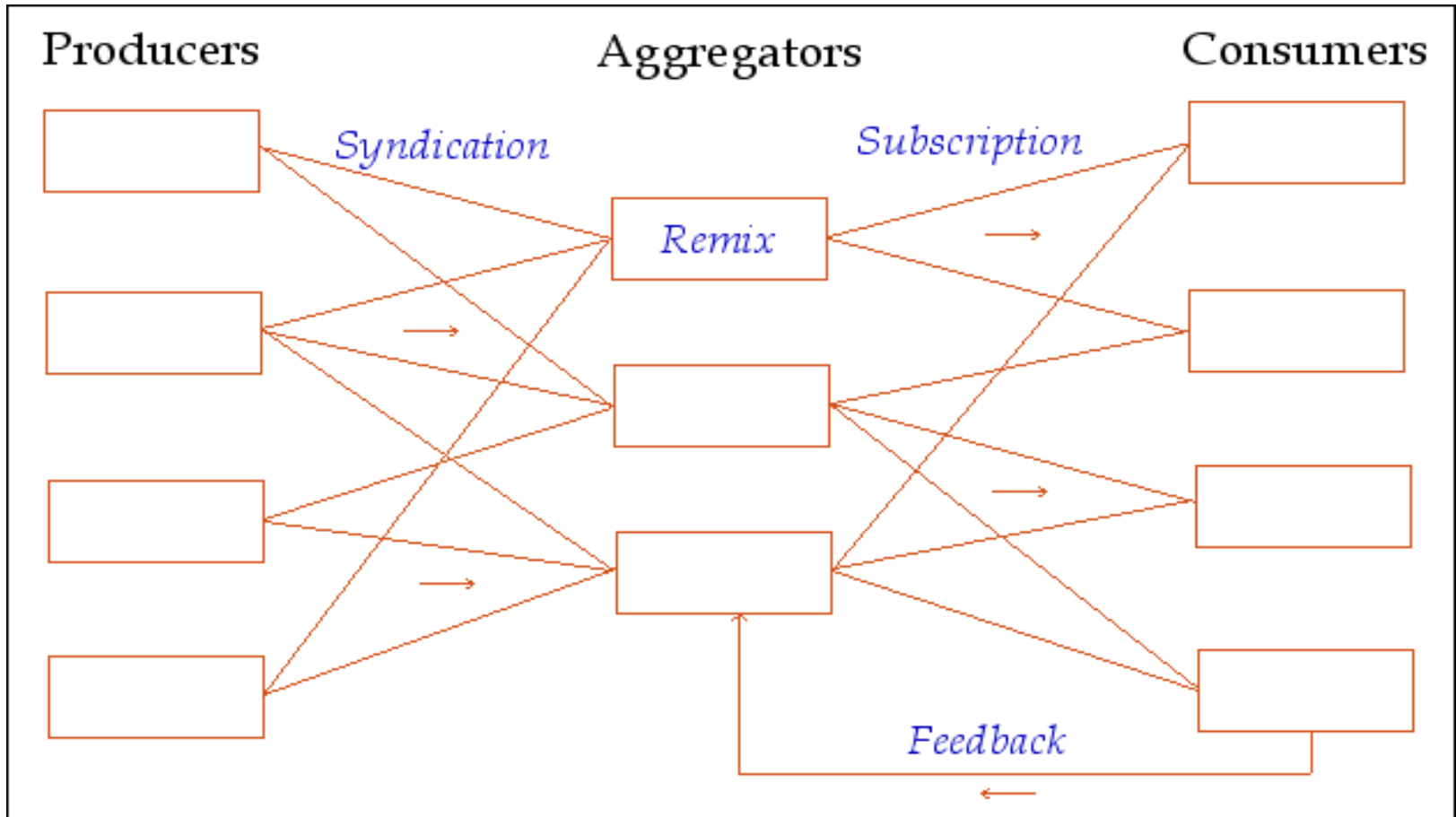
Resource Profiles

- Similar to the idea of a personal profile
- Resources are released to the system with minimal descriptive metadata
- As it is evaluated and used, a resource acquires second and third party metadata – a ‘reputation’
- Multiple views, multiple profiles

Distributed Metadata

- No ‘single source’ for metadata about a learning resource
- Different locations / providers host:
 - Bibliographic metadata
 - Rights metadata
 - Classifications
 - Evaluations and use reports

The Network is the Search



Properties of Networks

- Robust, reliable, redundant
- ‘Small pieces loosely joined’ – simple technology (social agents)
- Self-organizing, targetted
- Capacity for growth, scalable
- But require: open access for data flow, autonomy at the unit level, feedback (back propogation) mechanism

Edu_RSS and DLORN

- Demonstration of aggregation, remix and feed-forward
- Written in small, simple software
- Effectiveness already demonstrated
- Emulated by commercial grade software – eg. Thomson's Urchin

The Big Idea...

- E-learning not as static, course-based resources assembled and delivered by institutions...
- But rather, e-learning as dynamic, unstructured stream of learning resources obtained and organized by learners...

Take One...

- The ‘learning browser’ – a learner based e-learning tool accessing multiple feeds from multiple providers...
- A more-or-less consistent content format using XML, XSLT, Javascript, CSS

Take Two...

- ‘Learning Environments’ ... an application or social based framework into which learning resources are ‘fed’
- Examples: simulations, games, performance support systems
- Long-term – ubiquitous e-learning that follows the learner app to app, place to place