

Towards the Management of Meaning

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Overview

- Semantic Web Deployment WG
- Towards the Management of Meaning

SWD WG

- Semantic Web Deployment Working Group
- w3.org/2006/07/SWD/
- Began: 10 October 2006
- Lifetime: 20 months
- Chairs:
 - Guus Schreiber
 - Thomas Baker

SWD WG: Work Areas

- SKOS
 - W3C Recommendation Track
- Managing and Publishing RDF/OWL Vocabularies
- Embedding RDF in XHTML (RDFa)
- Ontology Engineering Practices

- Continuation of focused work originating in previous Semantic Web Best Practices & Deployment WG (SWBPD)

SKOS

- Simple Knowledge Organisation Systems
 - Design pattern for representing controlled structured vocabularies in RDF
- w3.org/2004/02/skos
- Working Draft (May 2005)
- Use Cases & Requirements Analysis...
 - Do you have a use case for SKOS?
 - Do you have requirements/issues?
 - (Look out for call for use cases, expected shortly)

Publishing & Managing RDF (1)

- Best Practice Recipes for Publishing RDF Vocabularies
 - “The Cookbook”
 - w3.org/TR/swbp-vocab-pub/
 - Working Draft
 - To be revised ... input, comments, feedback?

Publishing & Managing RDF (2)

- (Principles for Managing RDF Vocabularies)
 - Managing identifiers, change, version control etc.
 - Rough draft from SWBPD
 - Interested ... ?

RDF in XHTML

- RDFa
 - Syntax for embedding RDF statements in XHTML
 - Makes use of existing XHTML elements and attributes (“link”, “rel” etc.)
 - Joint work with (X)HTML WG(s?)
 - RDFa Primer
 - w3.org/TR/xhtml-rdfa-primer/
 - Working Draft
 - Use cases & requirements ... ?

Ontology Engineering (1)

- SWBPD “OEP” task force produced ...
 - Representing Classes As Property Values on the Semantic Web (W3C Note)
 - Representing Specified Values in OWL: "value partitions" and "value sets" (W3C Note)
 - Defining N-ary Relations on the Semantic Web: Use With Individuals (Working Draft)
 - Simple Part-Whole Relations in OWL ontologies (Editor's Draft)
 - Qualified cardinality restrictions (QCRs) (Editor's Draft)
 - Time (Editor's Draft)
 - Semantic Integration (Editor's Draft)
- See w3.org/2001/sw/BestPractices/OEP/

Ontology Engineering (2)

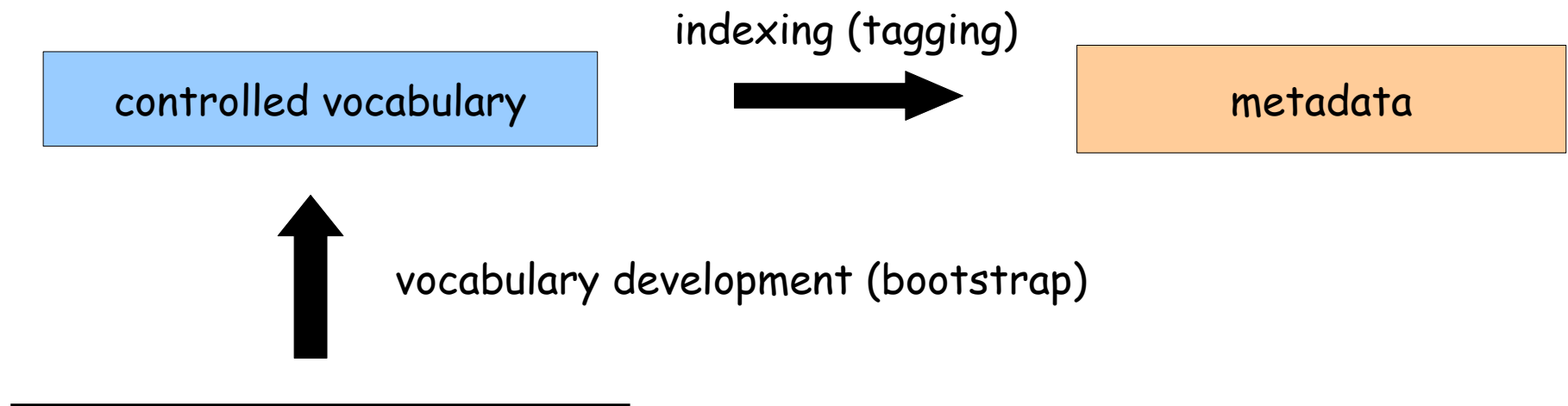
- Continue SWBPD OEP work
- Semantic Integration
 - (Ontology Alignment)

Digression ...

Towards the Management of Meaning?

- Quotes from Online Information 06...
 - Google... metadata is dead.
 - BBC... metadata is key.
- N.B. Both acknowledge severe scalability issues.

Typical Information Management Strategy



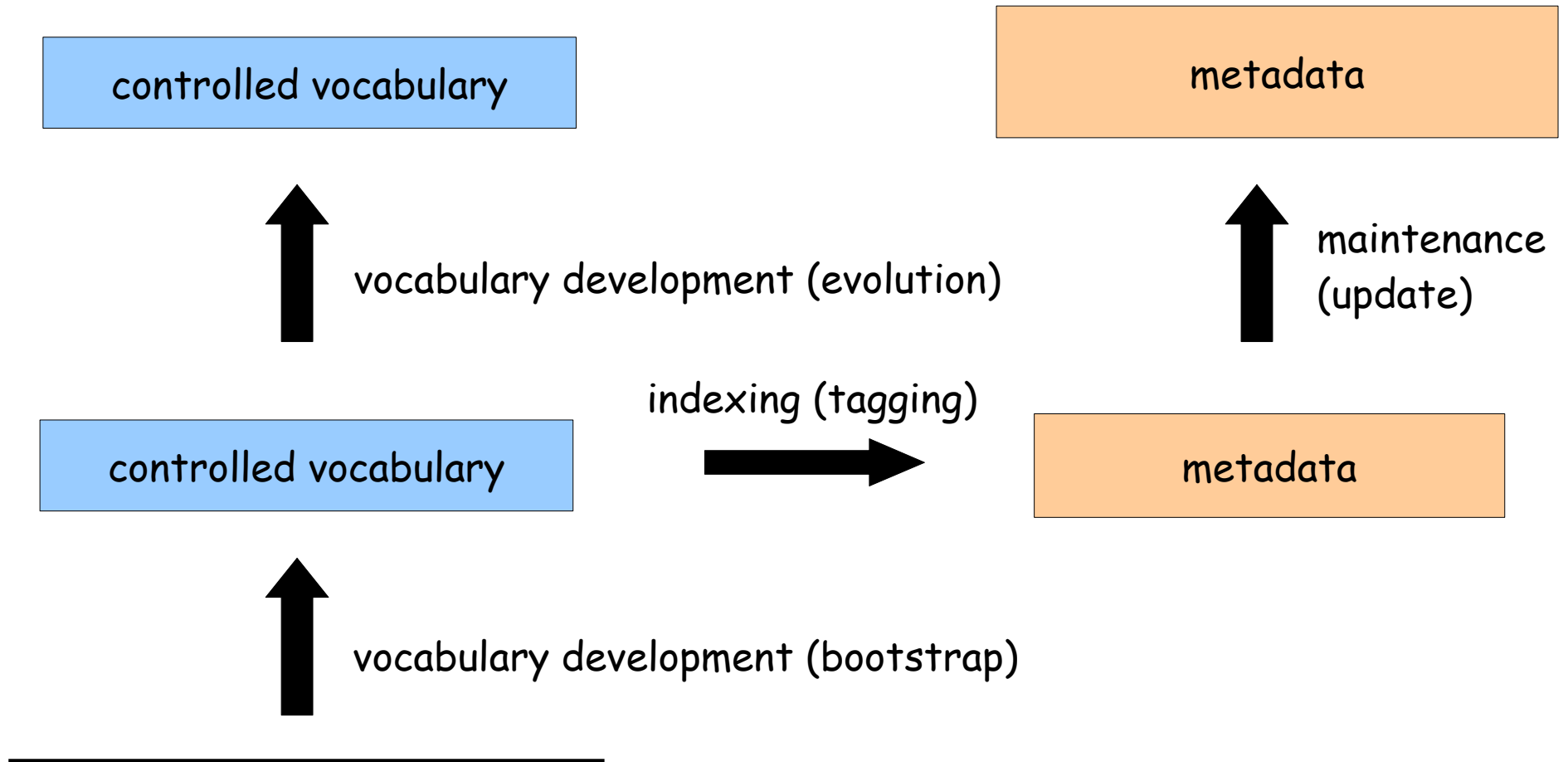
Problems (1)

- Vocabulary Development (Bootstrap)
 - Requires intellectual labour
 - Complex social process
 - Quality control / benchmarking?
 - Costly and high risk.

Problems (2)

- Indexing/tagging
 - Automated techniques
 - cost effective?
 - poor performance
 - Manual techniques
 - require intellectual labour, training, quality control (not guaranteed good quality) ...
 - effort (cost) scales with volume of information!
 - Hybrid techniques?
 - Also costly, high risk.

Typical Information Management Strategy



Problems (3)

- Vocabulary development (evolution)
 - Same problems as for bootstrap (cost, risk)
 - How to handle dependency?
 - Change management?
 - ... increased cost & complexity.

Problems (4)

- Metadata Maintenance
 - Unless old metadata is updated with new vocabulary, end up with heterogeneous metadata ...
 - ... which can lead to unpredictable loss of performance in derived applications.
 - So how update metadata?
 - Manually? Cost, poor scaling.
 - Automatically?

Themes

- Risk management
- Quality control
- Economics of scale
- People and process management
- Humans and computers

What is needed? (1)

- A theory of change management and version control for controlled structured vocabularies
 - Designed from the ground up to **enable collaboration**, to support **quality control procedures**, to enable the **management of dependencies** between vocabularies and metadata, and to **minimise any/all of the associated costs**.

What is needed? (2)

- A coherent, common, and readily understood process model and methodology for the development and maintenance of controlled structured vocabularies
 - Designed from the ground up to **facilitate rich interaction, communication and feedback** between people with specialised skills and knowledge, to enable **management and control of risk**, and to **integrate multiple strategies for the objective evaluation** of the vocabulary into the development process.

What is needed? (3)

- Development tools where both the theory of change management and the process model and methodology determine the design of the user environment and the ways in which users can interact.
 - I.e. Tool design informed by an understanding that the role of the tool is to support and enable a social process.

Themes

- Human effort where it is indispensable
 - How do you balance computational and intellectual capabilities in a comfortable and complimentary way?
- Practical, social challenges
 - The technology is way ahead of the business!

Final Word

- I would like some answers in the next 12 months please ...
- ... incorporate an understanding of **practical, social challenges** and **realistic business models** into design of all SWDWWG outputs (SKOS, RDFa, Vocabulary publication & management, Ontology Engineering)
- (... and btw now would be a great time to join SWDWWG!)
- Thanks :)