

Lost in a sea of data? Navigating with Topic Maps

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Background on Topic Maps

- O'Reilly: Computer Book Publisher
- Multi-volume series on Unix software
- Common index to the series
- Davenport Group (1991-1995)
- Ended in Failure
- Why? Could not reliably merge indexes from different books into a single index.

Why not?

- No notion of subjects
- No notion of subject identity
- What makes this subject the same, or different, from another subject
- Core principles of topic maps:
 - What is a subject?
 - How to determine if a subject is the same or different?

What is a Subject?

- **Reference Model:** “Any thing whatsoever, regardless of whether it exists or has any other specific characteristics, about which anything whatsoever may be asserted by any means whatsoever.”
- Well, that’s helpful 😊!
- **Actually covers three cases:**
 - Subjects like: moon, wardum, OR 4445
 - Subjects that are statements/assertions about subjects or their relationships
 - Parts of statement/assertions about subjects

How to Distinguish Subjects?

- Reference Model: Subject Identity Discrimination Properties (SIDPs)
- Consists of:
 - All the properties of the subject, name, etc.
 - All of its relationships with other subjects in a topic map and the part it has in those relationships
 - Example: moon (as in Earth's moon) versus moon (as in one of Jupiter's moons)

How to Represent a Subject?

- Subjects are represented in a topic map by topics
- Statements about relationships between subjects are topics
- Components of statements about relationships between subjects are also topics
- All of these topics are subject to merger

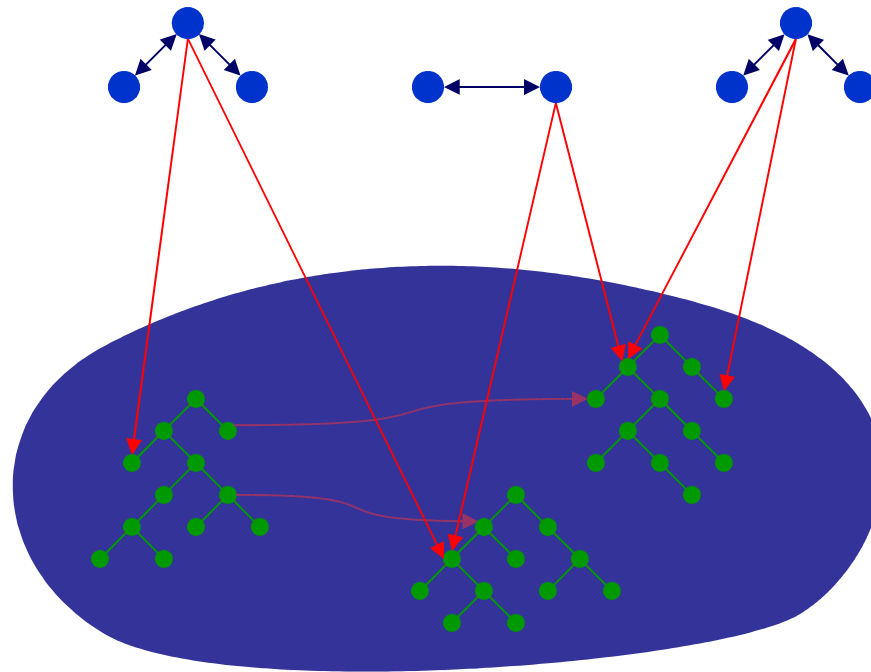
How to Represent a Subject? II

- Subject indicators
 - Not “the” subject, but an indicator for it
 - Ex. Asherah in Webster’s Third International Dictionary (subject: column in Canaanite temple)
 - Note: not the column but an indicator for it
- Topic map machinery uses subject identifiers to keep up with subject indicators

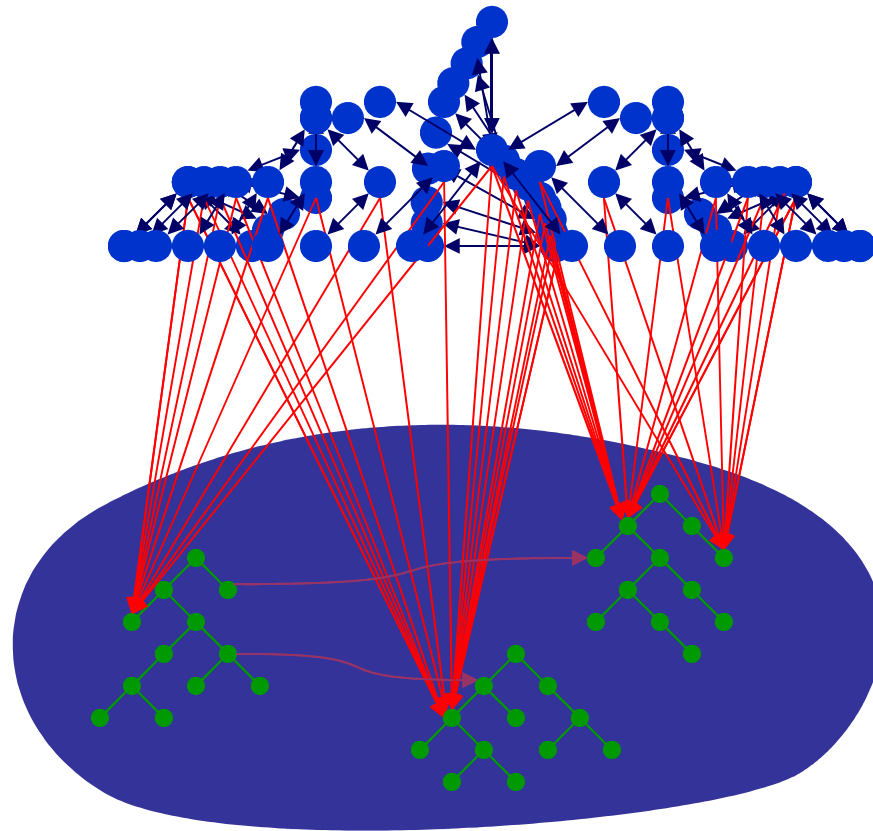
Merging Identical Subjects

- Same Subject
 - Topics merge
 - Preserve information (statements/assertions) about the previously separate topics
- Different Subject
 - Topics must not merge
- And process must be reliable
- Knowledge Integration: (Animation courtesy of Steve Newcomb, www.coolheads.com)

What is “knowledge integration”?



What is “knowledge integration”?



Common Questions

- Do I have to use the same terms?
 - No
- Do I have to use the same software or technology?
 - No
- Do I have to use the same classification?
 - No
- Do I have to put all my resources online?
 - No

Why all the no answers?

- Topic maps:
 - Exist as a separate navigation guide to subjects and their relationships
 - Access to resources about subjects not required (more convenient)
 - No limitations on how information is held, retrieved, addressed, formatted, etc.
 - Can reliably aggregate mixed ontologies and cataloging approaches

Further Resources

- Coolheads Consulting:
<http://www.coolheads.com>
- Easytopicmaps:
<http://www.easytopicmaps.com>
- Etopicality:
<http://www.etopicality.com>
- Ontopia:
<http://www.ontopia.com>
- SBL: <http://www.sbl-site.org> (early 2004)

Conclusion

- In use by the IRS and Social Security Administration
- Free as well as commercial software is available
- Provide reliable and useful access to information, without being limited to a particular world view, terminology or technology