Building Internet Services with Layered Topic Maps

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Presentation

- Topic Maps
- Wandora
- Layered Topic Maps
Topic Maps

Alternative to RDF

Base concepts

- Topic: Any entity or concept you may want to state something about
- Association: A relation between two or more topics
- Occurrence: Textual data about a topic or a link (URI) to an external resource
Topic Maps and RDF

- Essentially same but
  - Each topic may have several unique identifiers (subject identifiers)
  - Topic names can have a scope describing the relevant context
  - Associations can have more than two players
Merging of Topics

- Topic map standard specifies rules for merging of topics:
  - Two topics have the same base name
  - Two topics have the same subject identifier
  - (And a few others)
- Merged topic has all properties of all merging topics
Wandora

- Knowledge extraction, management and publishing environment based on topic maps
- Utilizes the layered topic map paradigm
Layered Topic Maps

- There is a need to combine several knowledge packages.
- Topic merging rules make this possible.
- At the same time should be able to keep different sources separate.
- Layer paradigm keeps topic maps internally separate but presents them to user as one merged map.
Applications of Layered TM

- Combine information with third party topic maps
  - Updates to third party topic maps are possible because of layers
- Toggle layer visibility to see only information that is relevant
- Organize information with layers
Example Layer Application

Movie Database
- Movie
  - Dr. Strangelove
- Actor
  - Sellers, Peter
- Director
  - Kubrick, Stanley

DVD Database
- Dr. Strangelove
  - Collector's edition DVD
  - Special features
  - Subtitles
  - Region

Personal DVD collection
- My DVDs
  - Dr. Strangelove
    - Collector's edition DVD
Example Layer Application

- User only needs to manage the simple personal topic map
- Information automatically merges with DVD database
- DVD database links user’s DVDs with vast cinematographic information in the movie database
- Updates to third party topic maps are straightforward because of layers
Layered RDF?

- RDF and topic maps are equally powerful languages, conversions from one to the other are relatively simple.
- Merging in RDF is somewhat different.
- RDF still has the same motive to keep different information sources separate.
- No major obstacles using the same idea with RDF.
Summary

- Layered topic maps enable knowledge building on existing knowledge
- Updates to third party maps are straightforward because of layers
- There are many immediate applications for layered topic maps
- Same idea could be used with RDF
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