Interorganizational
Ontology Engineering

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Collaborative Communities

- Collaborative communities: goal-oriented
  → effectiveness and efficiency of interactions
- Require a range of collaborative services and applications, e.g., knowledge discovery
- Specification of these services/applications/data requires meaning formalization
- How to balance informality of community interactions with formality of specifications?

The problem

- Multiple organisations, different conceptual frameworks (=ontologies)
- What are the similarities, what are the differences?
- How to arrive at a relevant common ontology as efficiently as possible?
- Not (only) a knowledge representation and reasoning problem, but a socio-technical process of meaning negotiation

Starting points

- The ontology is modelled by domain experts ("ownership"), not by knowledge engineers.
- No straitjacket: find balance between common ontology and the various organisational ontologies
- Development takes place in various versions, so that evolving insights can best be used.
- Starting point for every version is the current insight in the common interest and purpose.
- At the end of each version, this common interest has been refined with relevant insights of the participating organisations.

Meaning evolution support

DOGMA methodology
The process

Interorganisational Ont. v_x

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<tr>
<th>Templates (UCO)</th>
<th>Meaning Negotiation (LCO)</th>
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<td>Org 1 Definitions (OO_1)</td>
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Interorganisational Ont. v_x+1

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Elicitation: task template

- Part of upper common ontology
- Elicited from core domain expert

Creating the LCO meaning negotiation agenda

- Many organizational specializations of the same template
- How to efficiently distill common patterns for next version of IOO? => scalability...
- Idea: core domain expert defines relevance definitions indicating current interest of community (human interpretation essential, cannot be automated!)
- Project (parts of) definition into organizational specializations, using organizational concept type hierarchies => if according to local semantics the definition is relevant its score is increased
- The most relevant definitions are put on the agenda for (human) meaning negotiation

Ontological Framework

Elicitation: task graph Org. A

Creating the LCO meaning negotiation agenda

Meaning negotiation

- Identify Meaning Antiguities
- Set Discussion Agenda
- Select Stakeholders
- Conduct Discussion
- Change Definitions
The system

The implementation

Testbed for OE tools (1)

Testbed for OE tools (2)

Results and agenda

Conclusions

• Interorganizational ontology engineering: a socio-technical problem
• Human MESS is essential part of the ontological process: meaning elicitation, interpretation, negotiation...
• Understanding efficiency and relevance of this very complex socio-technical process is key to acceptance
• More testbeds of conceptualizations, implementations, and combinations of operations and tools needed for org ontology engineering theory and tools to progress
• To be continued....