Collaborative Knowledge Engineering via Semantic MediaWiki

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Outline

• Motivations toward collaborative Knowledge Engineering
• Our contribution: an approach and a tool to support it (MoKi)
• Short demo of MoKi
• Experiences with MoKi
• Future Works
The APOSDLE project

APOSDLE aims at developing a software platform to support the process of learning@work, that is learning within the context of the immediate work of a user and within his/her current work environment.

Website: www.aposdle.org

APOSDLE is a 48 months research and development integrated project partially supported by the European Community under the Information Society Technologies (IST) priority of the 6th framework programme for R&D (contract no. IST-027023).
The enterprise model in APOSDLE
Building the enterprise model

• Models creation difficulties to face:
  – Models not already available in the enterprise;
  – Different types of formal models (and tools to produce them);
  – Modeling teams in enterprise were composed of several domain experts and possibly people with some limited knowledge engineering skills;
  – Lack of motivations within the enterprise to acquire the missing knowledge engineering skills;
  – Needs to collaborate both among the team and also with external actors able to provide the knowledge engineering support.

• Most of these difficulties hold in general, not only for APOSDLE.
Our Contribution

• A new approach for modelling based on two main pillars:
  – The usage of a Semantic MediaWiki as a uniform layer for modelling different aspects of an enterprise
  – Tight integration with formal modelling tools

• Collaborative modelling

• Informal/formal alignment of knowledge
Collaborative modelling

1. Explicitation of new knowledge and feedback on existing formal models
2. Facilitation and coordination of the process of knowledge elicitation
3. Formalisation of acquired knowledge

INFORMAL       FORMAL
Informal/formal alignment of knowledge

- Explicitation of new knowledge and feedback on existing formal models
- Formalization of acquired knowledge

Informal specification

Formal models
MoKi: the Modelling WiKi

- Built to support our approach
- Built on top of Semantic MediaWiki
- Why a (semantic) wiki?
  - wikis support collaborative editing;
  - users are quite familiar with wikis;
  - wikis do not require any software installation on the client side;
  - Semantic information provided in the wiki can be automatically extracted to create the formal models.
Ideas behind MoKi

• Facilitates an informal but structured description via templates
• Allows import/export of formal models
• Insert/reuse of already existing techniques for modelling (Aim: to obtain a complete suite of features covering the entire modelling process)

• Let me show you a short demo of the APOSDLE MoKi!
Usage of MoKi

• APOSDLE:
  – environmental consultancy domain (REACH area):
    • 144 concepts and 42 tasks;
  – electromagnetism simulation domain:
    • 43 concepts and 24 tasks;
  – innovation and knowledge management domain:
    • 132 concepts and 40 tasks;
  – RESCUE (requirements engineering) domain:
    • 78 concepts and 78 tasks;
  – Statistical data analysis domain:
    • 71 concepts and 19 tasks.

• Oncocure – modeling medical guidelines encoded in ASBRU protocol language

• TreC - Personal Health Record in the Province of Trento.
Things we are working on…

- Improve the support for process modelling:
  - Support the modelling of a workflow
  - Support the modelling of processes with an adequate graphical interface;
- Strength the integration between informal and formal models.
This is the end…

- A basic demo version of MoKi is available online. (If you would like to try/test it we can grant you access to it.)
- For any question/info feel free to contact me at:

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- Thank you!

  Questions?
References


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