Getting to Know the User

User Profile Services for Work-integrated Learning

aposdle – New ways ...

... to work, learn and collaborate!

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Topics

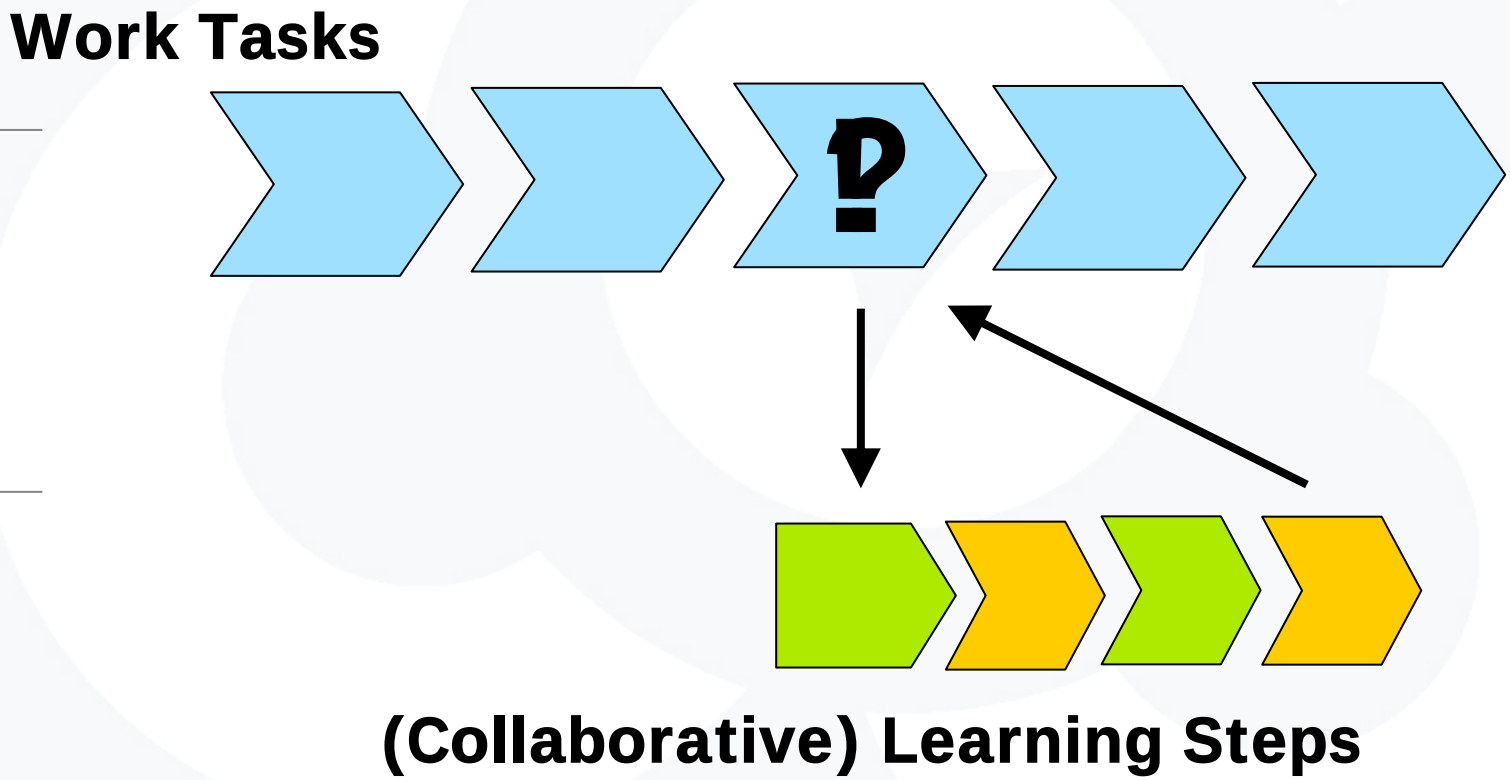
Focus

- Personalization to current work task

Outline

- Challenges
- Szenario
- Approach
- User profile services
- Outlook

Work-integrated Learning



APOSDLE Key Distinctions: Learning Perspective

- **Integrated support for Learner, Knowledgeable Person and Worker**

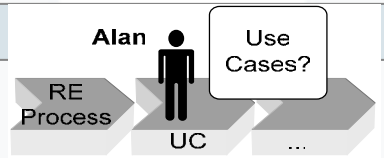
  - Real Time
  - Real Work Environment
  - Real Content

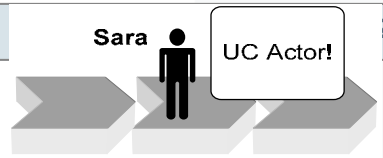
Work-integrated Learning

APOSDLE Key Distinctions: Technological Perspective

- **Hybrid Approach: Coarse grained semantic models complemented with "scruffy" technologies**
  - Automatic discovery of work task based on user interactions
  - Automatic inference of prior knowledge based on task executions
  - Automatic identification of similarities based on text, multi-media data and semantic analysis
  - Automatic maintenance of similarity measures and user profiles based on usage data and user feedback

Users





APOSDLE Services

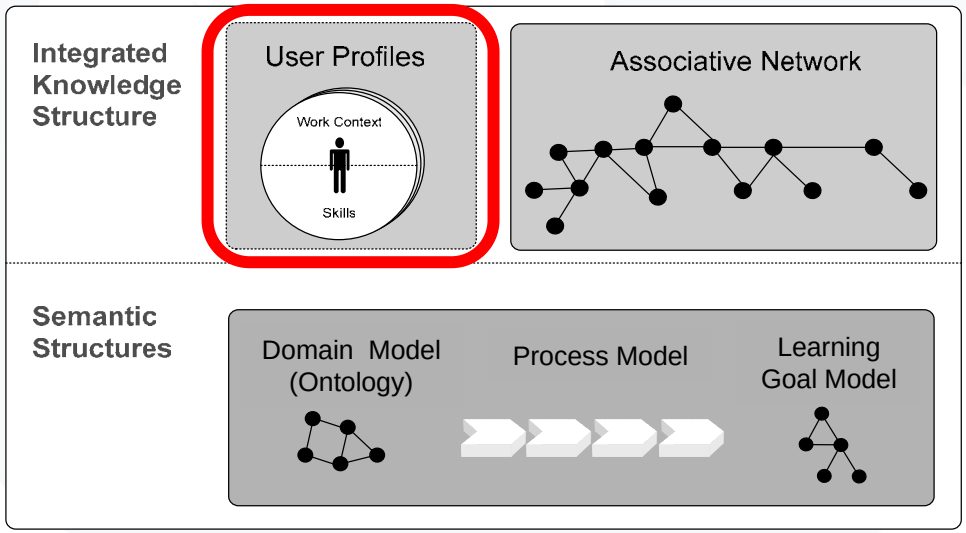
Task Detector

Work Tools

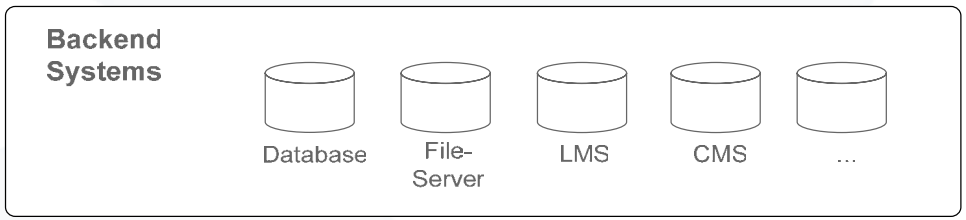
Learn Tools

Cooperation Tools

APOSDLE Platform



Organizational IT-Infrastructure



User profile challenges in work-integrated learning

How to get to know the user?

- What is she doing?
- What has she achieved?
- Which goal is she persuing?
- Where does she need help?
- ...

Approach

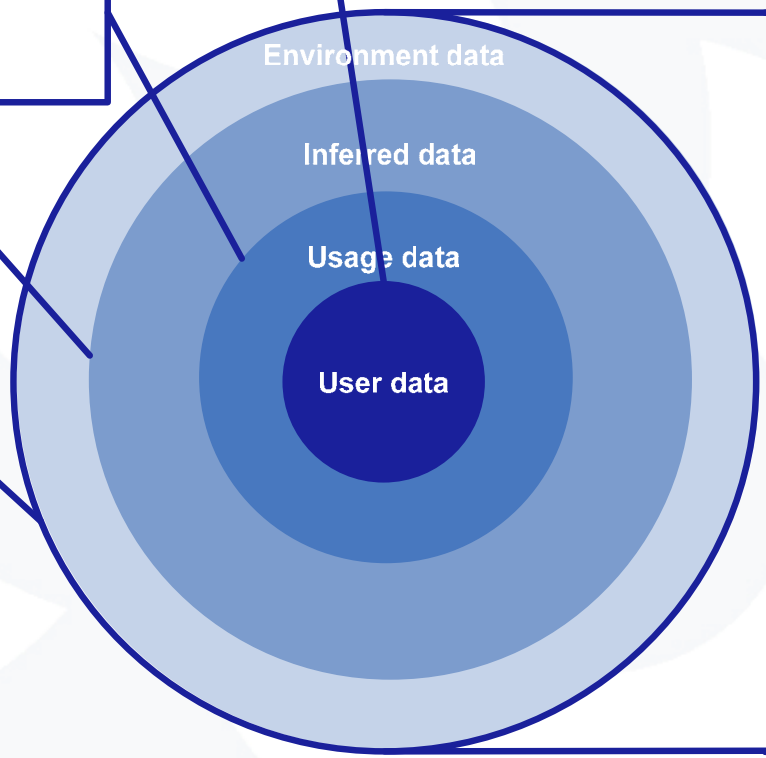
- Automatically recognize user's task executions, collaboration and learning events
- Store interaction history in User Profile
- Apply a multitude of mining techniques to user profile data
- Interpret mining results in relationship to organizational knowledge structures (domain model, task model, learning goal structure)
- Embed mining and interpretation functionality within knowledge services

Facts about the user, e.g.
Name
Address
Email address

User's behavior during work, e.g.
Tasks executed
Collaborations participated

Further information inferred from usage data, e.g.
Potential future competency development
Potential collaboration partners

Data external to the user but still having an impact, e.g.
Domain model
Task/Competency mappings



User Profile Data

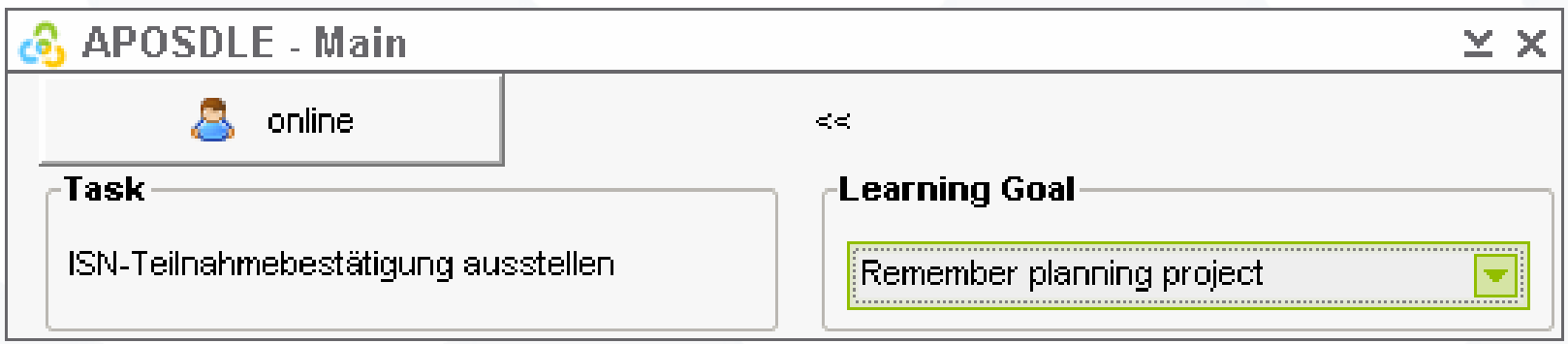
Types of User Profile Services

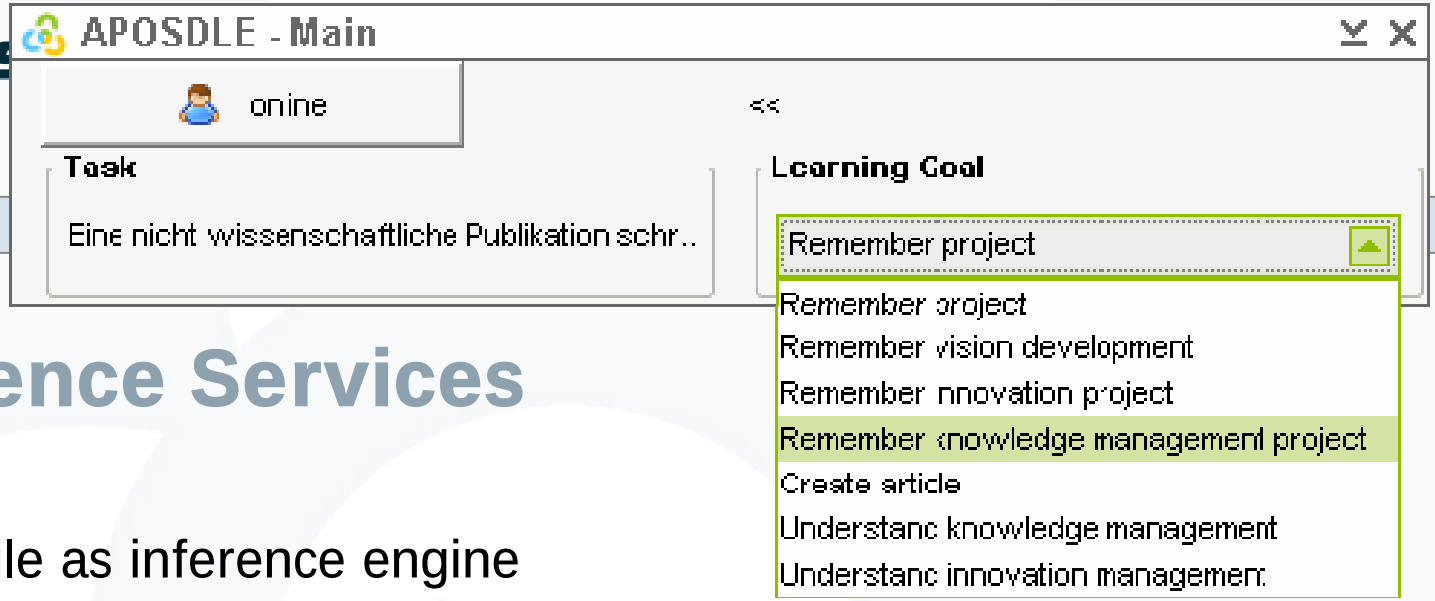
- Logging Services
- Inference Services
- Visualization Services
- Adaptation Services
- Recommendation Services

Logging Services

User profile as repository for user-related information

- Task executions
- Collaboration events and status
- Learning events





Inference Services

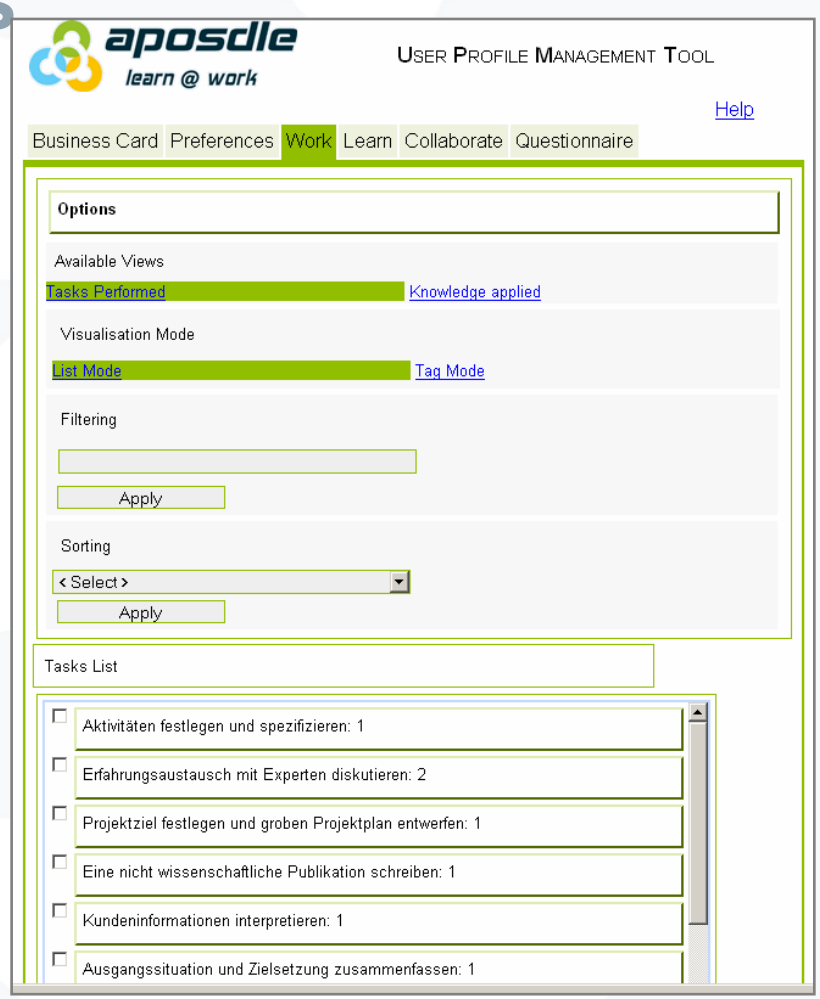
User profile as inference engine
for user characteristics

- Identify prior knowledge based on relevant task executions, collaboration events and learning events
- Compute and rank possible learning goals based on gap analysis

Visualization Services

User profile

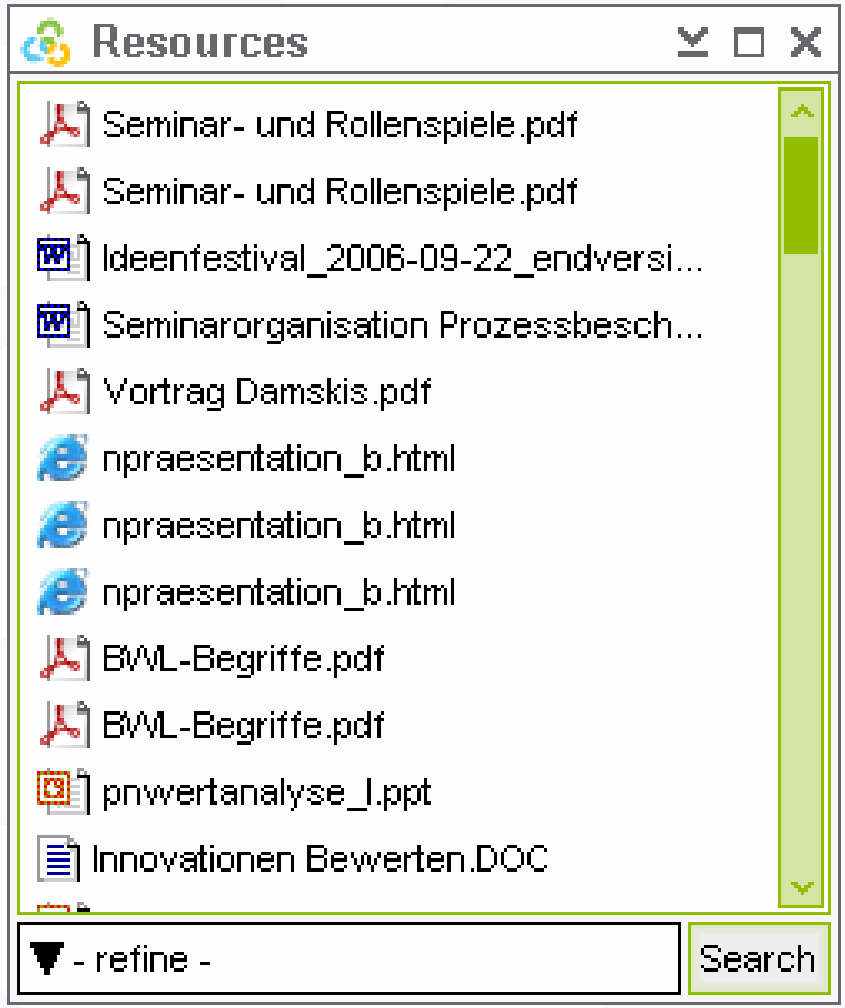
- Allow user to examine context snapshot and interaction history
- Allow user to examine relationship between work tasks and learning goals



Adaptation Services

User profile for personalization

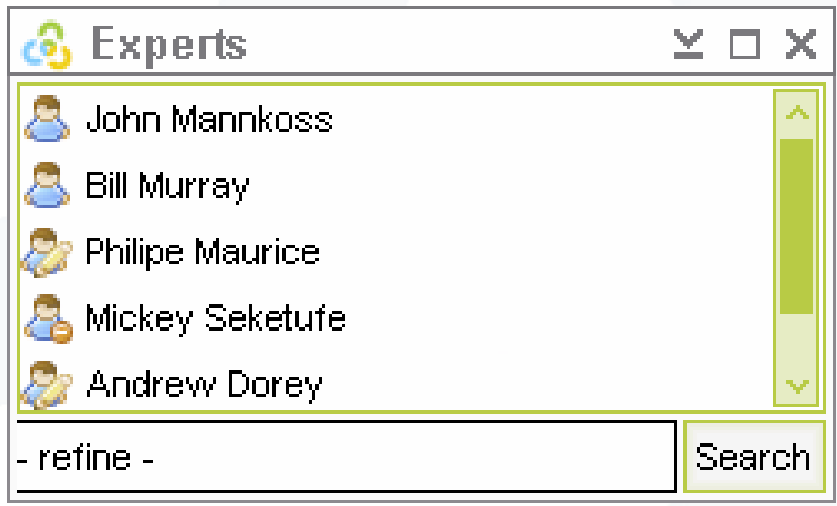
- Tailor recommended knowledge artefacts to user's prior knowledge
- Tailor recommended learning events to user's prior knowledge



Recommendation Services

User profile for personalization

- Recommend people based on user's skills and work tasks
- Recommend people based on their role within social network



Outlook

- Further extension of user profile services, e.g.
  - Social Network Analysis to build learning groups
- User Evaluation, e.g.
  - Longterm observation at application partners
  - Feedback on service usability
- Privacy, e.g.
  - Legal
  - Social
  - Technical

Thank you for your attention

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Back-Up Slides