Enterprise Attention Management System

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Tenerife – June 2, 2008
Introduction

- How to adapt to knowledge-intensive dynamic business environments including the ability to deal with changing situations and large quantities of information;

- Human attention in knowledge intensive organisations (and on Web, in general) is scarce resource which is difficult to manage and support;

- AMS proactively supports the user in dealing with processes, activities and tasks defined by a semantically-enhanced business workflow.
Attention Management Framework

Introduction
Semantically-enhanced AMS
Future Work

Motivation
System Overview

Darko Anicic
Enterprise Attention Management System
## Requirements

### Events

Proactive user support through combination of *context-aware ECA* rules with ontologies.

### Contexts

It is important to identify the *context* during which active behavior is relevant.

### Preferences

Enabling filtering of relevant information according to its importance/relevance to the given user’s context.
Requirements

Events
Proactive user support through combination of context-aware ECA rules with ontologies.

Contexts
It is important to identify the context during which active behavior is relevant.

Preferences
Enable filtering of relevant information according to its importance/relevance to the given user’s context.
Requirements

Events
Proactive user support through combination of context-aware ECA rules with ontologies.

Contexts
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Preferences
Enabling filtering of relevant information according to its importance/relevance to the given user’s context.
SAKE Ontologies

- Information Ontology;
- Process Ontology;
- Preference Ontology;
- Log Ontology;
- SAKE use-case specific ontologies.
Contextual Event Processing

- On an event check the context out, and find all relevant preference rules;
- Then execute preference rules in order to proactively deliver relevant information resources.
Contextual Event Processing

- Business context is derived using a context observer;
- The context observer triggers an event;
- Which starts reasoner for context evaluation and preference rule execution.
Preference Rules

Preference: n-ary relation between a user, multiple resources, context, and a preference value.

- Information resource may be assigned with different preference values;
- Preference values are not pre-computed and persisted;
- Adding a preference rule may significantly influence the whole preference model.

```
Document(?res) \land yearCreated(?res, "2006") \land 
RuntimeContext(?ctx) \land queryContext(salesSystem, ?ctx) \land 
isDefinedBy(?ctx, userA) \land isDefinedBy(?ctx, processZ) \land 
swrlx:createIndividual(?x) 
\implies Preference(?x) \land hasPreferenceRule(?x, "rule_2") \land 
preferenceValue(?x, "1.0") \land hasPreference(?res, ?x)
```
Preference Editor

Create a new rule

Name:

preference Value:

0.6

for all

pref:PreferredResource as Variable RES

where

RES pref:hasPreference Variable X AND
Variable X rdf:type ...

Figure: Preference Editor: Step-wise, interactive rule development
Results of Rule Execution

Preference Rules Partlet

- Preference 1.0 for all File
- Preference 1.0 for Forum Messages created in activity "Identification of a Need"

Select aggregation function: SumAggregationFunction
Show only: CSFDocuments

Preference Output Partlet

<table>
<thead>
<tr>
<th>Information Resource</th>
<th>Preference Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>file_1</td>
<td>1.3862944</td>
</tr>
<tr>
<td>forummessage_11</td>
<td>0.0</td>
</tr>
<tr>
<td>file_12</td>
<td>0.0</td>
</tr>
<tr>
<td>forummessage_12</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Synchronization of work, cooperation between concurrent workflows, access to shared resources;

Collaboration in *ad-hoc* workflows: all this, but not in a completely *predefined* manner.

Intelligent event processing (logic-based CEP with reasoning capabilities over situations).
Thank you!
Questions...