Semantic and Context-aware Message Sharing between Organizations

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Agenda

- Introduction to KMO
- E-mail collaboration case of KMO project
- Software system description
- System demonstration
- Conclusions
Importance of knowledge

- Information sharing and communication are paramount in any organization
  - E.g. Employers leave, they carry with them irreplaceable knowledge. The experience should be collected and stored.
- Sharing gains experience
- Do not reinvent the wheel once more

Smart data continuum

- Multidomain Ontology
- XML documents using one vocabulary
- Text documents and database
Introduction to KMO

- Knowledge Management Organization (KMO) Community of Practice (CoP):
  - University of Vaasa
  - University of Maribor
  - Staffordshire University
  - Madurai Kamaraj University
- The purpose of KMO is
  - Creation collaboration environment for sharing knowledge and experience
  - Enhancing collaboration among organizations
  - Enhancing R&D activities
  - Tracking the history of interaction among KMO nodes

KMO processes
E-mail collaboration case(1)

- The aim of email collaboration case of the project is to give a solution for a meaningful semantic description for the content messages passed through e-mail and to develop the techniques on how to manage the knowledge in messages for domain experts.

E-mail collaboration case(2)

- Give a treatment of the email message in networks of KMO researchers
- Processing messages and storing it
- Reasoning
- Enhancing content of the message by adding links to external resources
- Data presentation in web based human friendly interface
Fragment of e-mail collaboration ontology

Sequence of systems’ operations
The architecture of system using ZOE solution


Used technologies and frameworks

- **ZOE** open-source software
- Lucene Text processing engine
- Mail handling by [JavaMail](https://www.oracle.com/java/technologies/javase-jem.html)
- Persistence engine by [JDBM](http://www.jdbm.com/)
- [Jena](https://jena.apache.org/) framework and [Joseki](http://www.joseki.org/) RDF storage
- HTML parser by [HTMLParser](http://www.htmlparser.org/)
- XML parser by [XPP](http://www.cosMIC.com/xpp)
- HTTP server by [Simple](http://www.simplehtmlserver.com/)

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KMO – 2006, Maribor, Slovenia
Agent-based approach

Conclusions

- Designed and demonstrated the system for management of email message knowledge
- Continue development and improvement of the KMO framework
- Improving the mail case by using agent technologies
Thank you for your attention

Please questions …