

Building Digital Government by XML

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Outline

1. Digital government projects at the University of Jyväskylä
2. The use of XML in public administration
3. XML standardization
4. The RASKE methodology
5. Challenges
6. Conclusion

Digital Government

Attempts to achieve more strategic use of information and communication technologies in the public sectors

Case environments

- The Finnish Parliament and Government
- European Union
- The Finnish Air Force
- Finnish Center for Pensions

RASKE 1994 - 1998

Developed methods for improving document management in organizations, in particular for SGML/XML standardization.

The methods were developed and tested in the standardization of the Finnish Parliamentary documents.

Funded by: The Parliament of Finland, Ministry of Foreign Affairs, Ministry of Finance, Prime Minister's Office, Academy of Finland, Tekes

<http://www.cs.jyu.fi/~airi/docman.html#raske>

EULEGIS 1998 - 2000

Developed a consistent user interface to retrieve legal information created in different legal systems and at different levels - the European Union, a member state, a region, or a municipality.

Contextual metadata by graphical user interfaces, ontologies to support text search.

XML used for representing contextual metadata.

Funded by: EU Telematics Application Programme

<http://www.cs.jyu.fi/~airi/docman.html#eulegis>

RASKE2 2003 - 2006

Developing methods for metadata standardization and integration of e-government services.

A special focus is on the metadata and services related to the Finnish legislative process.

Usability of XML-based metadata standards investigated.

Funded by: The Parliament of Finland, Ministry of Finance, Ministry of Justice

<http://www.it.jyu.fi/raske>

2. The use of XML in public administration

Format for data interchange

Format for information assets

- documents
- metadata

Format for data interchange

to support:

- integration of systems by a common user interface
- integration of services by portal solutions
- data exchange between systems
- data exchange between organizations

XML as document format

to support:

- consistency and correctness in documents
- information retrieval
- information reuse and multichannel publishing
- independency of particular software providers
- long-term accessibility of information

XML as a format for metadata

to support:

- integration of data, systems, and services
- building of semantic web services
- long-term accessibility of information
- security and trust

Examples in Finland

- Data exchange format: Suomi.fi, Lomake.fi, TYVI, VAHTI, VIPU, Kalkati.net
- Document format: The Finnish Parliamentary documents
- Metadata format: MuseumFinland portal

Standardization levels

- *Universal*: rules for wide use for various application domains; development at W3C
- *Sectoral*: international and national rules for public sectors
- *Local*: rules, practices, and implementations in a particular environment

3. XML standardization

The extent of work needed in local standardization depends on its type

- *Data exchange format*: requires technical knowledge and agreements between system owners; not necessarily changes in user interfaces or work processes
- *Document format*: overall understanding of document management, structured documents, and XML needed; may cause major changes in document production
- *Metadata format*: the major concern in creating and maintaining the metadata; metadata may be produced automatically or manually

Methods for

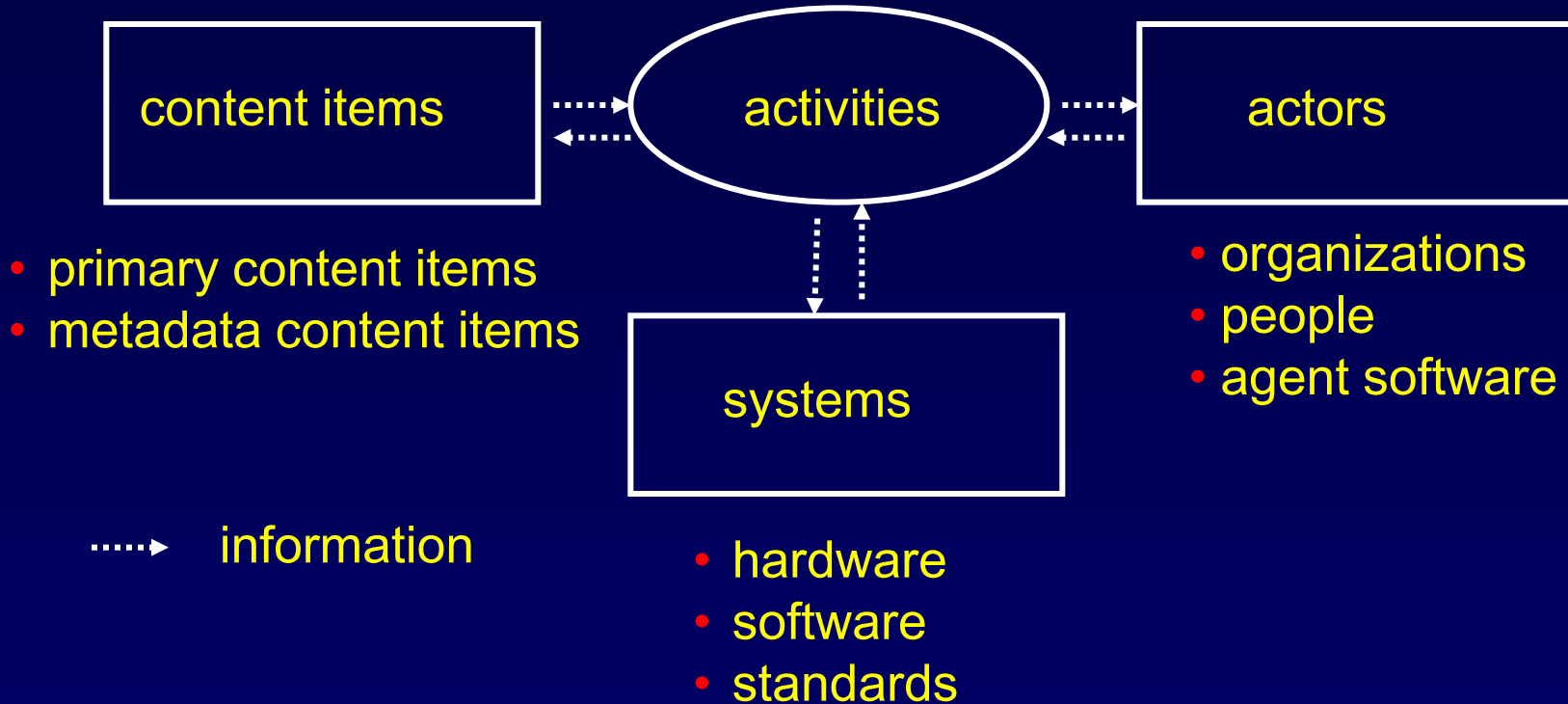
- document standardization
- metadata standardization

Methods for

- content management analysis
- process, content, and role modelling
- user needs analysis
- evaluation of solutions

4. The RASKE methodology

content management framework



The analysis and descriptions concern

- inter-organizational and intra-organizational work processes
- organizations and people as actors in the processes
- documents and their metadata
- systems in the processes
- needs of organizations and people

4. The RASKE methodology

The methods have been developed and tested in RASKE project, during the standardization of the Finnish parliamentary documents.

In RASKE2 the methods are further developed for the purposes of metadata analysis and standardization.

5. Challenges

- Continuous changes in XML-related specifications and software
- Parallel development of related / competing specifications at W3C and industry sectors
- Often need to use (and depend on) universal or sectoral level specifications before they are finalized
- Standards once implemented for an environment require maintenance

5. Challenges

- Requires effective collaboration; good communication skills needed
- Developing and finding agreements about ontologies and document structures may be extremely hard
- In document standardization the document production practices and tools may radically change
- The benefits of new solutions not necessarily to the people experiencing most of the changes in their work
- Vulnerability of the Internet

6. Conclusions

- Many possibilities for the use of XML in public administration
- Major differences in the extent of work needed for various types of XML standardization
- Challenges in all types of XML standardizations
- The RASKE methodology intended to help the standardization

For more information see

- Digital government research at the University of Jyväskylä:
<http://www.cs.jyu.fi/~airi/docman.htm>
- RASKE2 project: <http://www.it.jyu.fi/raske>
- Publications related to the RASKE and RASKE2 projects:
<http://www.it.jyu.fi/raske/julkaisut>
- XML family of languages. Overview and classification of W3C specifications: <http://www.cs.jyu.fi/~airi/xmlfamily>