Research topics in enterprise content management

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Overview

1. ECM as ICM
2. Features of activities
3. Features of actors
4. Features of technology
5. Features of content
6. A characterization of ECM
7. Examples of research areas and topics
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1. ECM as ICM

ECM = Enterprise Content Management

ICM = Information Control Net (Ellis, 1979)

ICM symbols:

- Resource
- Activity
- Control flow
- Information flow

1. ECM as ICM

- **content**
  - documents
  - databases
  - ontologies
  - topic maps
  - books
  - papers
  - photos
  - videos, ...

- **technology**
  - hardware (PCs, phones, TVs, ...)
  - software (web browsers, editors, ...)
  - standards (TCP/IP, XML, RDF, ...)
  - pens, scissors, ...

- **actors**
  - people
  - organizations
  - agents
2. Features of activities

- part of business processes
- automated, partly automated or non-automated
- collaboration of multiple actors important
- often distributed
- use distributed resources
3. Features of actors

- globally or locally distributed
- use different languages
- communication between actors important
- multicultural
3. Features of actors

- software agents may represent human or organizational actors
- trust important
3. Features of technology

- networked
- based on Internet technology
- standards important
- embedded or visible
- safety and trust issues important
4. Features of content

- often documents
- typically text written in some natural language(s) of the world
- more than one language needed
- multimedia (text, audio, video, figures)
- hypermedia (links between content units)
4. Features of content

• hierarchic structures
• possibly constrained by a schema
• varying sizes of content units
• globally or locally distributed storage
• globally or locally distributed use
4. Features of content

- used by different kinds of tools
- layout possibly separated
- long-term storage often important
- imperfect
4. Features of content

• separation of primary data and metadata

• metadata utilized both by human users and software users

• many kinds of metadata needed
  - embedded - external
  - centralized - distributed
  - human generated - automatically generated
  - about content - about context
5. A characterization of ECM

Call for papers for the

**Enterprise Content Management Minitrack** as part of the Digital Document and Media Track at 36th Annual Hawai'i International Conference on System Sciences (HICSS 2003):

"This minitrack focuses on the management of **textual and multimedia content** across and between enterprises, emphasizing the coexistence of technical and social aspects within the content management. Methods and techniques applicable for managing textual and multimedia information with **all sizes of content units**, ranging from XML and database structures through web pages and documents to document collections are welcome, as well as approaches focusing on specific content structures."

http://www.cc.jyu.fi/~pttyrvai/hicss/ecm_call.html
6. Examples of research areas and topics

- document and text databases (e.g. XML databases; topics related to data modelling, data definition, query languages, or efficiency of implementations)

- content personalization, internationalization, localization (e.g. new techniques)

- managing multilingual and multicultural content (e.g. comparison of requirements)
6. Examples of research areas and topics

- single-source multichannel publishing (e.g. multichannel publishing of XML data)

- digital rights management (e.g. models and techniques)

- information security (e.g. new kinds of support in web services)
6. Examples of research areas and topics

- semantic web
  - ontology languages
  - multilingual ontologies
  - methods and techniques for building ontologies
  - metadata management
  - methods for trust management
  - techniques for distributed annotations
6. Examples of research areas and topics

- content management issues in information systems planning and design (e.g. genre analysis, content modelling)
- usability issues (e.g. evaluation methods)
- ECM solutions for specific application areas like e-business, e-government, arts, education, entertainment
6. Examples of research areas and topics

- case studies in organizational contexts
- evaluating benefits or efficiency of ECM implementations
- ECM solutions for specific application areas like e-business, e-government, arts, education, entertainment, libraries
7. Conclusion

- Components of ECM: activities, actors, technology, and content

- Content: text and multimedia, multilingual, multicultural, distributed, graph & hierarchic structures, separation of data and metadata

- Research topics related to the features of content and to the features of activities, actors, and technology
7. Conclusion

• Possibilities for finding interesting and challenging research questions

• A wide variety of research areas, topics, approaches, and methods available

• Deadline for paper submissions to the ECM Minitrack at HICSS: June 1.