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
8. Conclusion

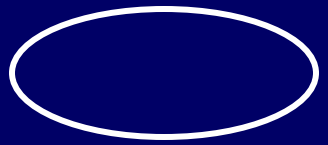
1. ECM as ICM

ECM = Enterprise Content Management

ICM = Information Control Net (Ellis, 1979)

ICM symbols:

resource



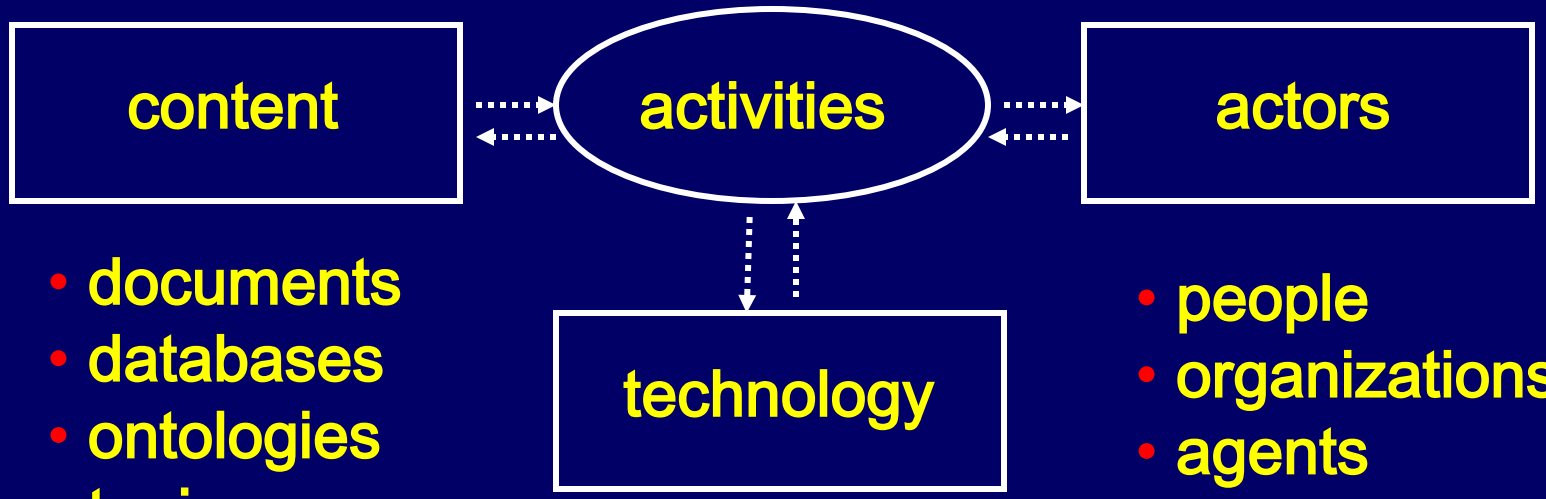
activity

control flow

information flow

Ellis, C.A. (1979). Information Control Nets: A mathematical model of office informa-tion flow. *Proceedings of the Conference on Simulation, Measurement and Modeling of Com-puter Systems, ACM SIGMETRICS Performance Evaluation Review,* 8 (3), 225-238.

1. ECM as ICM



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

- people
- organizations
- agents

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

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.