DECOR: Delivery of Context-Sensitive Organizational Knowledge

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ICEIS-01
Setúbal, Portugal, July 2001

DECOR develops and tests methods and tools for business-process oriented knowledge management

- DECOR - delivery of context-sensitive organizational knowledge
- 6 partners from 3 European countries
- overall funding by the European Commission
  1.8 MECU - under contract No. IST-1999-13002
- Project start July 1st, 2000 - duration 24 months
- Main idea: Business-Process Oriented Knowledge Management (BPOKM)
The DECOR consortium consists of technology and method providers, consultants, and end users

- DFKI - the German Research Center for Artificial Intelligence
- ICCS / IMU – Information Management Unit of the National Technical University of Athens
- PLANET ERFN & YOUNG - Greek management consultancy company
- SEMA Group Benelux - one of Europe’s leading IT consulting and systems integration companies
- DHC - an innovative IT consulting and software development firm in the SAP area
- IKA - the most important social security institution in Greece
- SEIMA Group Benelux - one of Europe’s leading IT consulting and systems integration companies

Knowledge Management tools should address context-specific, proactive delivery of information

- Knowledge workers are involved in complex processes
- Process models and their enactment provide context information and facilitate proactivity
- Ontologies are the explicit basis for the knowledge-level description
- Access to various information sources relies on formal knowledge-item descriptions
Weakly-structured workflows represent knowledge-intensive business processes.

Augmented workflow models describe information flow between work activities and information needs for specific tasks.

For augmented workflow and associated indexing ontologies, modeling tools and a methodology for organisational take-up are developed.

The information assistant observes the running workflow and offers active, context-sensitive organisational knowledge, thus promoting a better exploitation of existing knowledge sources.

The pilot systems are built on top of conceptually indexed archives with domain ontologies and business process models as indexing structures.

DECOR results to be delivered

DECOR produces methods, tools, and three pilot systems for systematic engineering of BPOKM solutions

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DECOR Business Knowledge Method

- Business Process and Knowledge Modelling Toolkit
- Weakly-structured workflow models
- Process-oriented structured archive

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The method shall provide a guideline how to run a BPOKM project

- Identification of knowledge-intensive processes
- Process analysis
- Domain ontology construction
- Analysis of task-specific knowledge needs
- Handling with weak workflow structures

The DECOR method extends and combines well established existing results

- Borrow first steps from an established business process modeling method (CommonKADS)
- Task analysis identifies required knowledge and used sources
- Knowledge areas + source material as ontology engineering input
- Ontology engineering with IDEF5 method
- Future work:
  - Use of text analysis (LSA, MindAccess®)
  - Integration of method and tool (Protégé, VISIO®)
The CognoVision® tool (DHC) allows to establish multiple views and manifold links between documents.

Information units group documents, metadata, and links to structure elements / other information units in CognoVision®.
The conceptual model of proactive knowledge delivery in KnowMore / DECOR is WfMC-compliant

Characteristics of knowledge work do not suggest a typical workflow application scenario (Davenport et al, 1996)

- Unique and of low volume
- Variability in performance across individuals and time
- No strong sequential order
- Frequent exceptions and changes
- Uncertainty in inputs and outputs
- Unstructured work rules and routines
- Involves personal judgement & experience
Knowledge-intensive work varies
along the project-process spectrum

◆ more flexible workflow concepts are required to describe knowledge work:
  ➢ [Ellis & Nutt, 1996]: the situated work vs the workflow camp
  ➢ [DeMichelis et al., 1997]: „a smooth transition from ad-hoc cooperative
    work of humans and standardized, automated interaction between
    autonomous information systems“

◆ where to locate in the spectrum:
  ad-hoc activities - flexible workflow with exceptions- standard workflow

some observations:
  ➢ often no strong sequential order, but lists of required activities
  ➢ often cyclic, chaotic order of steps, but logical dependencies
  ➢ however, sequential parts or reusable templates for parts
  ➢ at least some MS project like, Timex like support possible
  ➢ sort of top-down refinement while actually executing the process
    (hierarchical task networks)

DECOR workflow approach (2/3)

The analysis of knowledge-intensive work motivates
design decisions for the DECOR workflow system

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1. Workflow management system as an assistant
2. Hierarchical decomposition
3. Modeling and enactment interleaved
4. Expressive process logic
5. Context-sensitive information management

DECOR’s weakly-structured workflows combine a project manager’s
flexibility with traditional workflow’s complexity handling
The technical realization of the BPOKM infrastructure is good on its way

- DECOR Business Knowledge method
  - Combine BP task modeling, knowledge elicitation & ontology design
  - Integrate method with modeling tool!

- DECOR Basic Archive System
  - Knowledge networks allow for multiple-view knowledge organization
  - Attributed links between info units and for knowledge organization
  - Exploit the power of knowledge-rich indexing!

- DECOR Workflow-Triggered Knowledge Delivery
  - Task activation triggers proactive information delivery
  - Context variables instantiate query templates

- DECOR Weakly-Structured Workflow Tool
  - Model repository contains process templates
  - Stepwise refinement of tasks in the user’s responsibility

Conclusions (1/3)

BP-KM integration potential can be identified in different system lifecycle phases

System design
- BP analysis, modeling & reengineering
- KM strategy, design & implementation

System operation
- Workflow-Enactment
- Collaboration tools & processes, (intelligent) document management

System evolution
- Continuous process improvement
- Continuous knowledge quality assurance

Conclusions (2/3)
"Knowledge is information in context."

"Knowledge is made actionable."

"Knowledge is in the relationships."