Designing Knowledge Infrastructures

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Abstract
Despite growing interest about the use of knowledge management systems (KMS) in organizations, there is still a lack of knowledge about how to design a comprehensive knowledge management (KM) initiative that includes, but is not limited to the design and implementation of information and communication technologies (ICT) in support of KM. KMS can be both, tools that support particular KM tasks or platforms that provide an infrastructure supportive of handling knowledge in and between organizations. This contribution to the workshop reviews the current state of practice of KM initiatives, defines the concept of knowledge infrastructures and elaborates on methods and instruments to design such infrastructures.

Many organizations as well as societal institutions that support networking between organizations such as Universities, clusters, libraries and other governmental institutions, set up what could be called knowledge infrastructures that support sharing knowledge as well as networking of knowledge providers and seekers.

A knowledge infrastructure is a comprehensive ICT platform for collaboration and knowledge sharing with advanced knowledge services built on top that are contextualized, integrated on the basis of a shared ontology and personalized for participants networked in communities that fosters the implementation of KM instruments in support of knowledge processes targeted at increasing their effectiveness (see figure 1).

Knowledge infrastructures are implemented as part of a KM initiative that comprises a number of KM instruments, e.g., lessons learned, best practices, skill management, knowledge mapping, semantic content management. The design of knowledge infrastructures requires the joint consideration of (1) KM instruments, (2) the organizational design, i.e. knowledge tasks and processes, roles and responsibilities, (3) people, i.e. their skills, communication and cooperation in networks and communities, (4) knowledge topics and structures, i.e. the type of knowledge, structures, taxonomies, ontologies and meta-data and (5) ICT tools and systems in support of KM, i.e. the functions, structure and interaction of knowledge infrastructures.
Designing knowledge infrastructures requires adequate modeling techniques that consider the specifics of modeling context in knowledge work. The contribution reviews modeling techniques from the perspective of their suitability to guide the design of knowledge infrastructures. Particularly, business process management and activity theory are compared and concepts are studied that connect the two.

**Bibliography**


