Knowledge intermediaries and experience knowledge management in maintenance service work

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Contents of the presentation

- short introduction to the
  - distributed maintenance service work
  - experience knowledge management
  - knowledge intermediaries
- research questions, objectives and methods of this study
- work episodes of field support personnel presenting the challenges of the KM
- conclusions and propositions

Distributed maintenance service work

- supervising and executing the installation, maintenance and troubleshooting of complex multitechnical systems alone in the customer's premises in the field
  - executed by installation supervisors, service engineers, maintenance workers, troublehooters
  - communication tools in use: paper documentation, mobile phone, PDAs, electronic documentation off-line
  - network connections not guaranteed in the field

Distributed maintenance service work

- supporting the field personnel from back offices
  - executed by product support engineers and field support advisers
  - in smaller scale support provided also by designers from the production units

Experience knowledge management

- definition by Bergmann (2002): Experience knowledge management is

  ”a special kind of knowledge management that is limited to the management of *experience.* Experience is valuable, stored *specific knowledge* that was acquired by a problem-solving agent in a problem-solving situation. Experience management deals with collecting, modelling, reusing, evaluating, and maintaining experience”

- experience knowledge availability and cultivation is critical to the success of maintenance service work

Knowledge intermediaries

- experience knowledge delivery, cultivation and reuse are not easy tasks to realise effectively within distributed work community
- dedicated personnel is needed to support experience knowledge sharing and cultivation activities -> knowledge intermediaries
  - knowledge intermediary steers, enables and supports experience knowledge management in distributed work communities with the help of variety of communication tools
- field support personnel operates as practical knowledge intermediaries in maintenance service enterprises

Research questions, objectives and methods

- How do field support personnel practice their work as knowledge intermediaries and which cognitive and information ergonomic challenges they face?
- prototypical experience knowledge management activity episodes, which illustrate the nature of the knowledge intermediaries work patterns and bottlenecks are presented
- design guidelines are proposed to enhance information ergonomics of experience knowledge management practices
- methods: interviews (4+2) and qualitative survey data in two companies operating in global maintenace service business, content analysis

Cognitively challenging activity episodes in knowledge intermediaries work

- Help requests from the field with maximum urgency and minimum details: problem space assembly and narrowing
- Assembly of the hidden and forgot experience knowledge: if only we all could know what we know
- Two-way new component and product knowledge acquisition and updating

Discussion

- adhoc knowledge management tool – the mobile phone – is very limited as an experience knowledge management tool
  - efficient indexing, search, retrieval and reuse of support cases discussed in phone impossible
  - too much knowledge left hidden and undocumented
- division of the support case reporting work should be more concrete and resources allocated to realise the task should be offered

Design guidelines

- communication guidelines and socio-technical division of different experience knowledge management tasks should be designed and followed too!

- shared awareness and understanding of knowledge management activity interfaces between different functions of the organisation should be enhanced

Design guidelines

- web-based case reporting systems should support
  - metadata utilisation and generation when writing, searching and filtering support case descriptions
  - linking of the cases to different document resources
  - product structure data availability
  - automatic or simple on-demand delivery of new product documentation

Questions, comments?

Thank you!

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