Knowledge Management – Is it all done by IT?

A practical view

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How is work organized in today’s R&D?

Why Knowledge Management?

Data, Information and Knowledge

Target of Knowledge Management

Fundamental Problem in cooperative work

Processes, Data & Information and Communication

Summary
How is work in organized in today’s R&D in industry?

- Work is organized by task sharing between different individuals
- Persons are embedded in complex process networks with many interfaces
- Critical success factor: **Collective understanding** of the targets and tasks
Key *Target* of Knowledge Management: Collective understanding of targets and tasks

- Work processes do have complex aspects and interfaces, which cannot be overseen by an individual alone.

- To be successful in a team, each individual has to have an imagination of the targets and tasks.

- The more individuals have similar (“same”) imaginations, the more the work has a chance to be realized successfully.
Information = Data + Context

Knowledge = Learned information

Information is a precondition for knowledge creation

Knowledge enables to do the right things right

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Key problem in cooperative work: Building a Collective Brain between different individuals.
What person A assumes behind the “wall”

“Mountainous world!”
What person B assumes behind the “wall“

- World of the others is unknown
- Marginal information
- Linear thinking

“Linear world!”
Goal of Knowledge Management: Building a collective brain with a systematic approach
Trinity of Knowledge Management:
Building a collective brain for doing the right actions

- Processes
- Data & Information
- Exchange of Knowledge

Project goal
Trinity of Knowledge Management: Building a collective brain for doing the right actions

- Processes
- Data & Information
- Exchange of Knowledge

Actions

Project goal
• **We know about what we are doing.**
  • No! If asking a little, the initial process knowledge is thin and always different when asking different individuals

• **There is no time left to discuss the processes in detail.**
  **No more paperwork. Start solving the real problems now!**
  • No! Acquiring missing process knowledge during project execution is much more time consuming than acquiring process knowledge at the beginning.

• **Processes are always linear and simple structured**
  • No! Almost all processes are complex systems.
Processes: Tasks and Targets

Pretest 1  
Pretest 2  
Mass screening  
Greenhouse  
Long Term Tests

Simple?
Obvious to all?
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Processes: Tasks and Targets

Pretesting 1
Pretesting 2

Mass screening

Greenhouse

Long Term Tests
Processes: Tasks and Targets

- Processes represent the individual and global activities, tasks and targets of work

- Processes can be documented, made accessible to all relevant team members and can be collective developed

- Process analysis help to detect bottlenecks and critical points

- Processes are necessary for efficient development of supporting IT-systems
Trinity of Knowledge Management: Building a collective brain for doing the right actions

- Processes
- Data & Information
- Exchange of Knowledge

Project goal
Data and Information: Where and how do we store data and information

- Long term storage of data
- User Friendliness
- Unification of data and technical terms
Data and Information: Where and how do we store data and information

User Interface (Rich Client or Web Client)

Business Logic (Processes)

Persistency Layer (Databases)
Trinity of Knowledge Management: Building a collective brain for doing the right actions

- Processes
- Data & Information
- Exchange of Knowledge

Project goal
Exchange of Knowledge: Increase probability of contacts between individuals

- Workshops
- Coffee corners
- Discussion forums
- Social events

Document management system
Exchange of Knowledge: Knowledge Broker

• Link between different organizations and projects

• Focusing on
  • Targets
  • Interests
  • Spirit

• Working towards a collective brain

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Finding of a collective standpoint is an iterative process minimizing the stress energy.
Seven heuristically **rules** for finding a quick path to a collective standpoint

• Don´t believe that your discussion partner understands you initially or that you understand him or her.

• Don´t believe that the context of the topic in discussion is completely known to all.

• Provoke opposite views in order to check the stability of the common view of the discussed topics

• Be always aware of your body language and those of the others

• Eliminate disagreements immediately, even if they are only tangible

• Summarize your point of view with your own words and let summarize results in the words of your discussion partners

• Only be satisfied with a result of a discussion, if the result is emotionally satisfying to all

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Seven heuristically *rules* for finding a quick path to a collective standpoint

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Knowledge on temperaments supports to cope with different working styles: Examples of different temperaments (www.keirsey.com)

- Promoter
  - Promoting tasks and targets
- Inventor
  - Creating ideas and visions
- Inspector
  - Building structured work, demanding of roles and responsibilities
- Mastermind
  - Deep understanding and solving of problems

- Lifted off
- Spontaneous
- Down-to-earth
- Highly Structured

Observant, “Pragmatic”

Intuitive, “Non-Understandable”

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Summary and “take home messages”

- Do you know about all your processes?

- Do you care about your data and information?

- Do you cultivate a communication culture?