Engineering Process Transformation driven by Use Cases
From Process Models to Projects

One group, filtering and translating the requirements into the organization’s language

This cannot be our intension!
Some Success Factors

“Goal Orientation”
“Appropriateness”
# Process Management 4.0

## Define Goals
- Identify Business Objectives
- Derive Goals from Business Objectives

## Analyze Process Capability
- Assess Current Situation
- Identify and Prioritize Changes

## Define Process Organization
- Define Process Architecture
- Establish Process Management Organization

## Model Processes
- Model and Pilot Processes
- Rollout Processes

## Establish Learning Organization
- Measure Process Performance
- Derive Improvement Measures
Checklist ticking?

No, thank you!

Set the focus on the people!
Use Cases
Context Product Development

Product Development

Wikipedia:
“A use case in [...] system engineering is a description of a system’s behavior as it responds to a request that originates from outside of that system. In other words, an use case describes "who" can do "what" with the system in question. The use case technique is used to capture a system’s behavioral requirements by detailing scenario-driven threads through the functional requirements.”

A use case should:
• Describe what the system shall do for the actor to achieve a particular goal.
• Include no implementation-specific language
• Be at the appropriate level of detail.
More Details about “Use Cases”
Context Product Development

▪ User’s point of view

▪ What is the apparent functionality of the system?

▪ What are the neighboring systems and users?

▪ Where are the system boundaries?

▪ Use cases describe the operational flow of the system
Use Cases: How to Define Context Product Development

- Identify actors and define system boundary
- Identify use cases & link to actors
- Describe scenarios
  - Identify & describe secondary scenarios
  - Identify and describe primary scenario
- Structure use cases
Example: Use Cases for Products

GPS system

- Navigate to destination
- Provide traffic information
- Support maintenance
- Configure vehicle

<<actor>>
- Information server
- Driver
- Service shop personnel
- Customer service personnel
Use Cases for Use Cases
Context Product Development

Use cases

- Object oriented analysis
- Project planning
- Acceptance criteria and test scenarios
Use Cases
Context Process Development

Product Development

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Process Development

set of processes (external) process inputs
role model / activities
process requirements process tailoring
relevant stakeholder/ roles measurable process objective(s) process first, tools second granularity of processes
Actors = Process Stakeholder

1. **Management**
2. **HW**
3. **SW**
4. **ME**
5. **Supplier**
6. **Customer**
7. **Manufacturing**
8. **Controlling**

... and even more ...
Actors: Stakeholder Analysis

Document the Stakeholders

• For each Stakeholder
  • Name
  • Function (Role)
  • Additional personal data / contact data
  • Availability (time and region) during the project
  • Relevance of the Stakeholder
  • Knowledge area and scope
  • Personal goals / interests

Stakeholder Relationship Management

• Convince Stakeholders about the project’s benefit (motivation!)
• Prevent conflicts
• Basis for active Stakeholder Involvement during the project
More Details about “Use Cases”

Context Process Development

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Process Development

- roles/ team members
- process outcomes
- interfaces between processes, role model
- RASI
- process flows
- first ideas for tailoring
Example: Use Cases for Processes

<<actor>> Configuration Management System (MKS, etc.)

<<actor>> Product Life Cycle Management Tool

Configuration Management

- HW development has to implement a change because parts are not available anymore (supplier doesn't build anymore)
- SW development changes source code
- Delivery from supplier / customer
- Release of a Product Baseline
- Delivery to customer

- Project Team
- Supplier
- Manufacturing
- Customer

Identify actors and define system boundary
Identify use cases & link to actors
Describe scenarios
Identify & describe secondary scenarios
Identify and describe primary scenario
Structure use cases
Example Configuration Management

Stakeholder, e.g.:
- Controlling
- Purchasing
- Development (SW, EE, ME)
- Manufacturing

Challenges:
- Ensure information flow (The right information to the right place at the right time)
- Different tools per discipline / department

Prerequisite:
- Know who are the Stakeholders
- Understand the Stakeholder’s needs
- Understand their current problems: Terms, Processes, Tooling

Use Case Analysis
Use Cases for Use Cases
Context Process Development

- Process Improvement Planning
- Identification of Process Stakeholders
- Definition of processes and tool landscape
- Mapping between Use Cases and Process Assets supports to achieve completeness
- Verification of process assets
- Supports training
- Validation of process assets

Gap Analysis
Project Management / Configuration Management / Change Management / Quality Management

Process Improvement
- Kick-Off
- Requirements and Design
- Definition and Piloting
- Rollout

Establishing a consistent tool chain
- Evaluation
- Adaption
- Piloting
- Rollout

Training
- Concept
- Training Material
- Implementation
Lessons Learned

- Define model X as a Goal
- Define Processes

1. Define Vision /Goals
2. Analyze Stakeholder
3. Analyze Problems
4. Analyze Scenarios
5. Define Processes
6. Maintain Traceability
7. Review
8. Piloting

Use Case Analysis
Summary

Focus on Stakeholder Goals & Needs

- Traceability

Focus on Process Integration

- Mutual Comprehension
- What does my colleague need to be able to do the work?
- Build the “Big Picture”
  - Process architecture
  - Visualize Process Interfaces
  - Create a tool map
  - Terms (Glossary)

Help the business, help the people!
Think about what do they really need!
Thank You for your Attention!

Questions? Now or later:

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