Situational Method Engineering and Capability Assessment

CAPABILITY ASSESSMENT AND IMPROVEMENT WORKSHOP
IPRES 2013, LISBON, PORTUGAL, SEPTEMBER 6 2013
ARTUR CAETANO
ARTUR.CAETANO@IST.UTL.PT | WWW.BENCHMARK-DP.ORG
IST, UNIVERSITY OF LISBON & INESC-ID, PORTUGAL
Agenda

- Non-situated methods.
- Situated methods.
- Situated methods and preservation capability assessment.
A **method** defines a **process** to structure, plan and control the lifecycle of a project.

A **process** specifies units of work (*how*) and resources (*what*).

**Method engineering** deals with the design, construction and evaluation of methods, techniques and support tools.
A word on Reference Models

- Methods focus on **activities/processes**.
- Reference models focus on **results**.
Method flexibility

Use of rigid method
Selection from rigid methods
"Toolkit/MultiView" approach
Selection of path within method
Selection and tuning of scenario
Modular method construction

Low
degree of flexibility
High

(From Harmsen, A. et al. Situational method engineering for information system project approaches., 1994)
ISO/IEC 15288:2008 (Systems Engineering lifecycle stages)
Rigid methods in IS/IT
INCOSE: Requirements Engineering
<table>
<thead>
<tr>
<th>Suitability of the technique for the sub-activities</th>
<th>Developing new and innovative requirements</th>
<th>Eliciting existing requirements</th>
<th>Identifying requirement sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technique</td>
<td>Effort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brainstorming</td>
<td>very low</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Prototyping</td>
<td>depends on realisation technology</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>KJ method</td>
<td>very low</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mind mapping</td>
<td>very low</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Elicitation checklists</td>
<td>very low</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Interview</td>
<td>Medium to high</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Workshop</td>
<td>High to very high</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Focus groups</td>
<td>Medium to high</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observation</td>
<td>High to very high</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Questionnaire</td>
<td>Low to medium</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Perspective-based reading</td>
<td>Medium to high</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Method flexibility

(from Harmsen, A. et al. Situational method engineering for information system project approaches., 1994)
Why is flexibility important?

(adapted from R. Winter, University of St. Gallen, 2008)
Populating the method library

Method Fragments

Add to library

Method Library

Identify and describe fragments

Method Fragment

Pre-conditions
Post-conditions
Inputs
Outputs
Roles
...
Specification of the activity
Using a situated method

Project
Characterize Project

Method Library
Select and assemble method fragments

Evaluate Situated Method (pre- and post-project execution)

Situated Method
Method Library

- Method Fragment 1
- Method Fragment 3
- Method Fragment 5
- Method Fragment 7
- Method Fragment 4
- Method Fragment 4
- Method Fragment 6
- Method Fragment 8

Rules
- R1
- R2
- R3

Situation/Context

- Project Type
- Requirements
- Goals
- Artefacts

Query the Library

Compose Situated Method
Challenges in defining a Preservation Capability Assessment method

- Multiple preservation domains.
- Different goals and drivers.
- Multiple project types.

- High-level models are too general.
- Specific models are difficult to generalize.

- Flexibility is required to assess preservation capabilities.
Situational Method Engineering and Preservation Capability Assessment

- Situated methods can be assembled and configured according to the project context.
- The method library is incrementally populated and optimized.
- Reuse rate increases with project execution.
- Enables identifying PCA classes and PCA good/bad practices.