

Exercise Tool Acquisition

Objectives:

- Understand technology transfer process.
- Know important sources for tool evaluation

You are a product manager that supports your organization in process development. You have been asked to develop and establish tool support for product requirements engineering in your organization. You decided to manage your risks and follow a systematic technology transfer process.

Start by selecting the tool category for your exercise.

- Elicitation: tools for acquiring data from stakeholders and system context
- Requirements Management, PLM: database-oriented tools
- Modelling: drawing-oriented tools
- Ticketing (Issue Tracking) Systems: process-oriented tools

Observe: A systematic tooling process requires time. Only do this exercise rudimentarily to achieve your learning objectives. Use the exercise comprehensively as a guideline when confronted with real-world tool acquisition.

Tasks:

1. Problem: reflect on the major challenges in your personal professional environment. Identify the problem(s) that you would like to address with tooling. Here a catalogue of possible classes of problems:
 - Method support
 - Usability, efficiency
 - Interoperability
 - Scalability
 - Cost
 - (other)
2. Identify tool candidates: use the Internet to identify tool candidates. Possible starting points:
 - INCOSE:
<http://www.incose.org/productspubs/products/rmsurvey.aspx>
 - Objects by Design:
http://www.objectsbydesign.com/tools/umltools_byCompany.html
 - Wikipedia, z.B.:
http://en.wikipedia.org/wiki/Comparison_of_issue-tracking_systems,
http://en.wikipedia.org/wiki/List_of_Unified_Modeling_Language_tools
 - Google

3. Tool triage (theoretical validation): establish a criteria catalogue to reduce your tool candidates to a short list. Evaluate and compare at least 2 tools with criteria that cover following themes:
 - Information model to be supported: entities, attribute, relationships (traceability)...
 - Organization to be supported: user roles, process support, method support, flexibility for process changes...
 - Specification: attributes of information elements, configuration management (Baselining)...
 - Multi-user support: user management, access control...
 - Organization of data: views for data visualization, report generation, document export and import...
 - Specific functionality: prioritization, change management...
 - Interoperability: interfaces to other tools
 - Scalability: number of users, projects, products... to be supported
 - License cost
4. Prototyping (static validation): evaluate the tools in your short list with real data and use scenarios from your organization. Reflect on the following potential challenges:
 - Cost: hosting, user training, tool administration, user support
 - Change: resistance of employees, data migration
 - Usability: improvements perceived by the employees, motives for tool use
 - Success criteria for tool usage: efficiency increase, quality improvement, etc.
 - Relationship to supplier: required services, lock-in with supplier...
5. Piloting (dynamic validation): use the most promising tool for a representative project in your organization.
 - Prepare by defining two data management strategies: one for how to handle data provided that the validation is successful, one for the unsuccessful case.
 - Reflect on experiences in terms of achievements, remaining challenges, and risks.
 - Reflect on how you utilize the people involved in the pilot for tool roll-out.