

A case-study in Goal-Oriented Requirements Engineering

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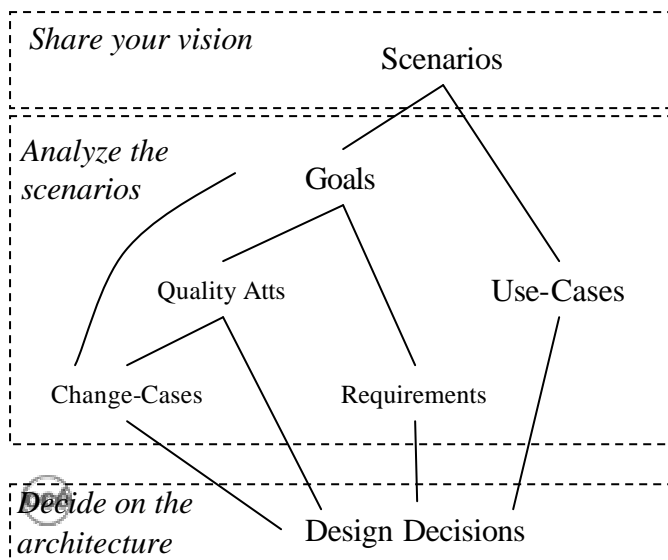


- **Context**
- **A Scenario-Based Approach:**
 - Step 1: Share your vision on the future
 - Step 2: Analyze scenarios
 - Step 3: Decide on architecture
- **Conclusion and discussion**



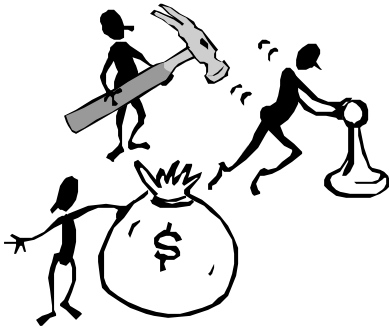
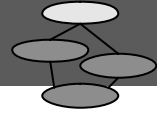
■ Industrial case-study (running example):

- Prototyping framework on one of Océ's controllers (cf. router between scanner and printer)
- 1,5 fte project conducted by two post-master students
- Results contribute to the ITEA MOOSE project

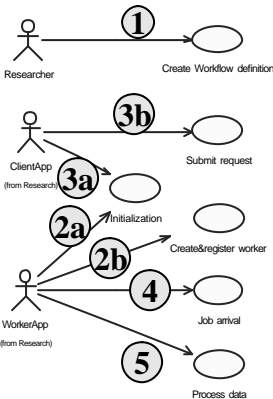
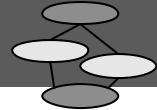
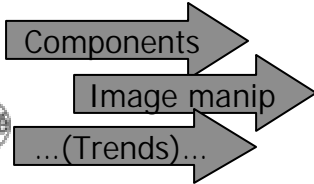
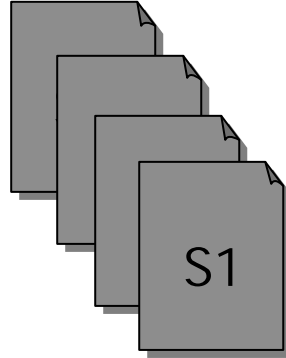


Legend

- Envision
- Analyze
- Analysis
- Influence/Evaluate
- Decide



(Per viewpoint,
per stakeholder)



Steps in 2-up copy:

- 1) Create a workflow definition with a unique ID
- 2) Start the 2-up worker. It must create and register a worker on the IEB
- 3) The Client application must create a request with a copy job. The workflow ID must be set to the one of the workflow definition
- 4) The 2-up worker is notified about arrival of a new job and registers for data.
- 5) The Researcher presses the green button and the worker is notified about new data, processing it image by image.

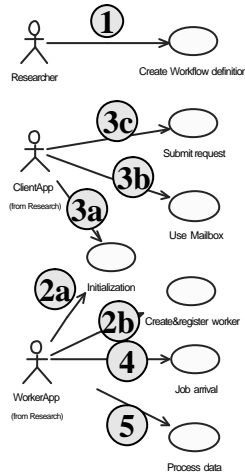
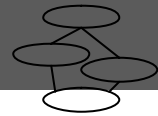


Image manip for print job

- 1) Create Workflow definition that incorporates image manipulation worker.
- 2) Create & register the image manipulation worker.
- 3) Retrieve a print request from the mailbox
- 4) Create a new printjob and fill the source with the bitmaps from the retrieved printjob. Set the workflow ID to the one for the image manipulator.
- 5) After submission of the request, the worker retrieves the images one by one and manipulates them.

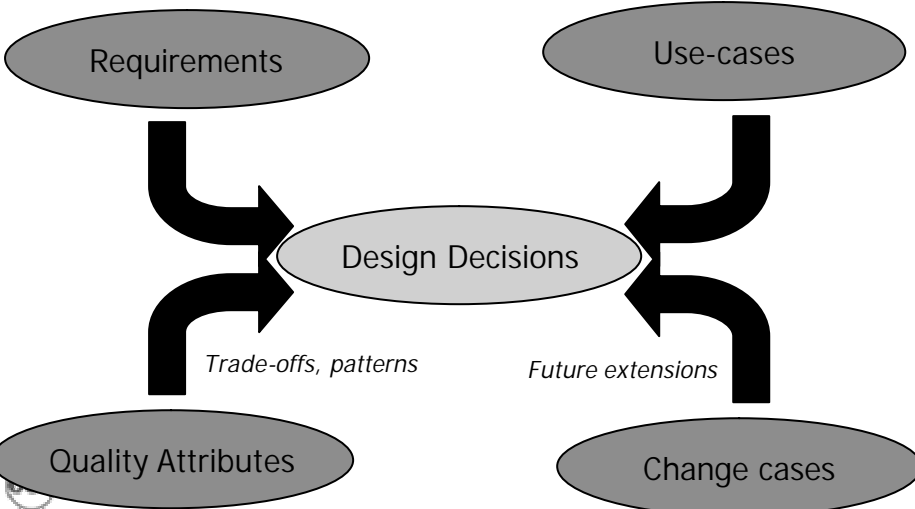
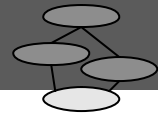
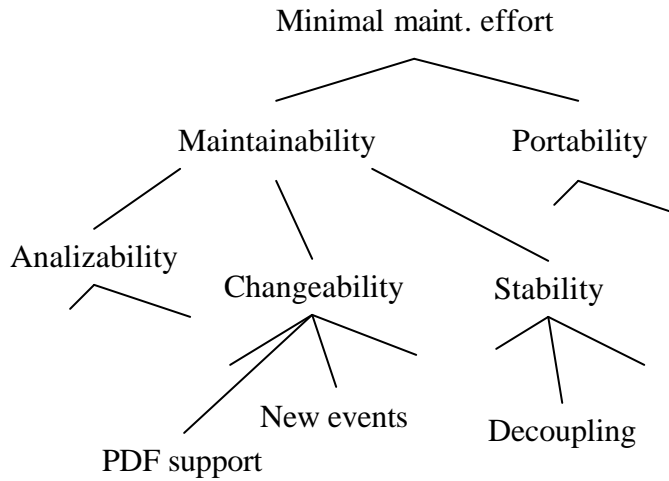


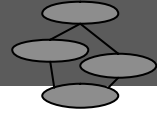
GOAL



Quality Attributes

Requirements (f/n-f),
Change-cases,
...





- **Conclusion**
 - Start with making Stakeholders and their goals explicit.
 - Goals are much more stable than requirements (not shown) AND are what stakeholders concern about.
 - Goal-Oriented approach complements Scenarios
 - Clear link between requirements and stakeholders (traceability and coverage)
- **However...**
 - Heuristics needed for decomposition
 - Stability depends on *definition* of (sub)goals as well
 - Scalability of decomposition (trees grow quickly!)
- **Goals *instead of* requirements?**
- **A next step: Quality-driven Architecture Design and Analysis (QADA)**



- L. Vrijnsen, C. Delnooz, L. Somers, D. Hammer, *Experiences with Scenario-Based Architecting*, to appear in ICSSEA2003
- C. van Lamsweerde, *Goal-Oriented Requirements Engineering: a Guided Tour*, Proceedings RE'01, 5th IEEE International Symposium on Requirements Engineering, Toronto, August 2001, pp. 249-263
- M. Matinlassi, E. Niemelä, L. Dobrica, *Quality-driven architecture design and quality analysis method*, VTT Publications, 2002, ISBN 951-38-5968-1

