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The SEMP and how to meet the most important requirement

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Niels Malotaux is an independent Project Coach specializing in optimizing project performance. He has over 35 years experience in designing electronic hardware and software systems, at Delft University, in the Dutch Army, at Philips Electronics and 20 years leading his own systems design company. Since 1998 he devotes his expertise to helping projects to deliver Quality On Time: delivering what the customer needs, when he needs it, to enable customer success. To this effect, Niels developed an approach for effectively teaching Evolutionary Project Management (Evo) Methods, Requirements Engineering, and Review and Inspection techniques. Since 2001, he taught and coached over 100 projects in 25+ organizations in the Netherlands, Belgium, China, Germany, India, Ireland, Israel, Japan, Romania, South Africa and the US, which led to a wealth of experience in which approaches work better and which work less in the practice of real projects.

Niels puts development teams on the Quality On Time track and coaches them to stay there and deliver their quality software or systems on time, without overtime, without the need for excuses. Practical methods are developed, used, taught and continually optimized for:

- Evolutionary Project Management (Evo)
- Requirements Engineering and Management
- Reviews and Inspections.

Within a few weeks of turning a development project into an Evo project, the team has control and can tell the customer when the required features will all be done, or which features will be done at a certain date. Niels enjoys greatly the moments of enlightenment experienced by his clients when they find out that they can do it, that they are really in control, for the first time in their lives.

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Result Management

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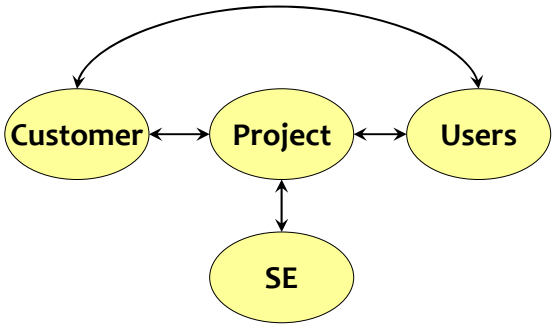
Universal Project Goal

- Providing the customer with
  - what he needs
  - at the time he needs it
  - to be satisfied
  - to be more successful than he was without it
- Constrained by (win - win)
  - what the customer can afford
  - what we mutually beneficially and satisfactorily can deliver
  - in a reasonable period of time

2

SEMP



Systems Engineering Management Plan

defining an appropriate and consistent systems engineering approach

3

The Right Result at the Right Time

- *Why* we should do which SE activities (Business Case - RoI)
- *Which* SE activities should be performed, how *much*, with which results and *why* (SE activity Requirements)
- *How* can we perform these activities
  (not first hunch - possible solutions - process design)
- Assumptions, questions and unclears, with solutions
- Which method has been chosen to perform each activity with the reasoning why (selection criteria - implementation)
- Loop back if any element of the SEMP should better be improved (continuous improvement)

4

Our first SEMP

- Initially our SEMP will probably be more or less
  - Incorrect
  - Incomplete
  - Excessive
  - Irrelevant
- No problem, as long as we keep capture learning and updating, *during* the project
- Keep focus on the most important requirement
  - Include and maintain the SE TimeLine in sync with others
- Suggestion
  - Try the Design-Log / Process-Log format

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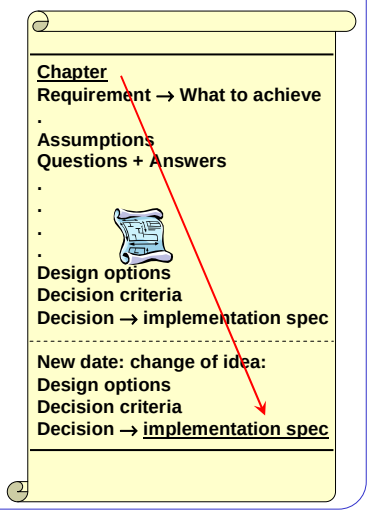
DesignLog (project level)

- In computer, not loose notes, not in e-mails
  - Text
  - Drawings!
  - On subject order
  - Initially free-format
  - For all to see
- All concepts contemplated
  - Requirements
  - Assumptions
  - Questions
  - Available techniques
  - Calculations
  - Choices + argumentation:
    - If rejected: why?
    - If chosen: why?
- Rejected choices
- Final (current) choices
- Implementation



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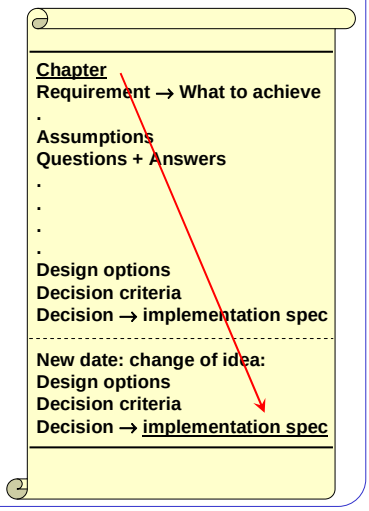
ProcessLog (department / organization level)

- In computer, not loose notes, not in e-mails
  - Text
  - Graphics (drawings)
  - On subject order
  - Initially free-format
  - For all to see
- All concepts contemplated
  - Related requirement
  - Assumptions
  - Questions
  - Known techniques
  - Choices + argumentation:
    - If rejected: why?
    - If chosen: why?
- Rejected choices
- Final (current) choices
- Implementation



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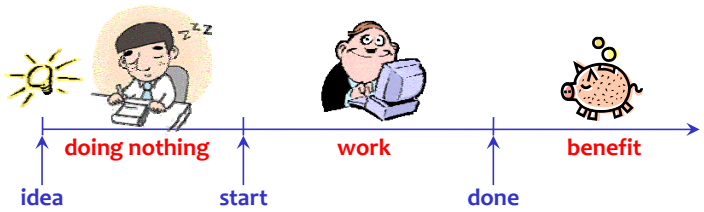
The Cost of Being Late



Expected Return on Investment (ROI)

- \+ Benefit of doing - huge (otherwise other projects would be more rewarding)
- – Cost of doing - project cost, usually minor compared with other costs
- – Cost of doing nothing - every day we start later, we finish later
- – Cost of being late - lost benefit
- – Loss of doing nothing at all - diminishing benefit from legacy system

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Most important requirement

Project delivery time

- Is a requirement just like all others
- Usually one of the most important requirements

- **Most 'solutions' to get a project on time, don't work:**
  - Hoping for the best (fatalistic)
  - Going for it (macho)
  - Working Overtime (fooling ourself)
  - Moving the deadline
- **Dangerous 'solution':**
  - Adding people (Brooks' Law)

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Saving time

yes: also for SE's - *Especially* for SE's !

We don't have enough time, but we can save time
without negatively affecting the Result !

- Efficiency in *what* (*why*, for *whom*) we do - doing the right things
  - *Not* doing what later proves to be superfluous
- Efficiency in *how* we do it - doing things differently
  - The product
    - Using proper and most efficient solution, in stead of the solution we always used
  - The project
    - Doing the same in less time in stead of immediately doing it the way we always did
  - Continuous improvement and prevention processes
    - Constantly learning doing things better and overcoming bad tendencies
- Efficiency in *when* we do it - doing things in the right order, at the right time
- TimeBoxing - much more efficient than FeatureBoxing

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How to handle Time should be included in the SEMP

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