

The future of Requirements Engineering

The formal way, the agile way

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DREAM10 event
March 9th, Houten

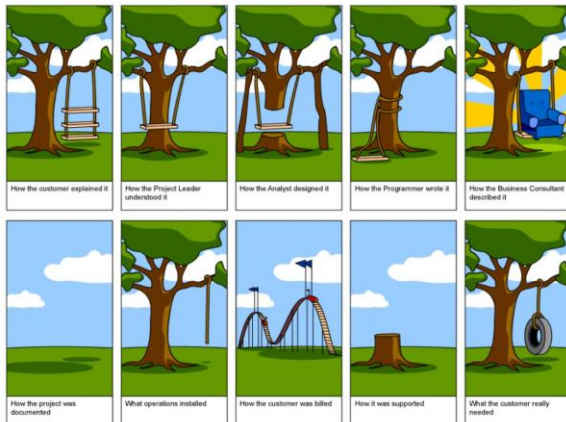
Key points of this presentation

- Is there a future for requirements?
- The requirements dilemma
- Solutions in 2 directions



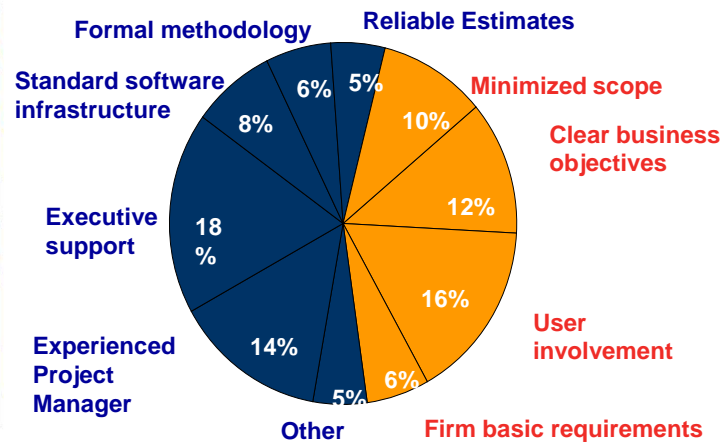
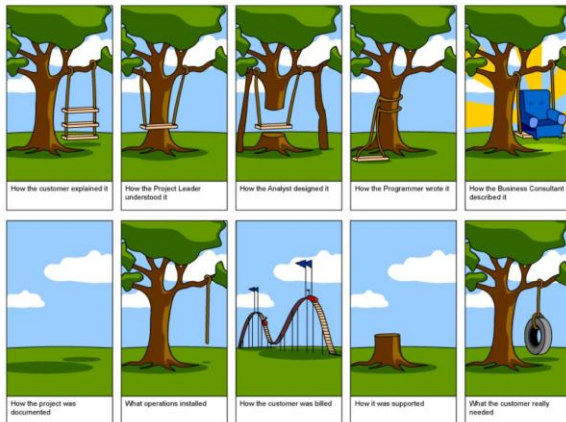
We know the problems

- ... how difficult *communication* really is...



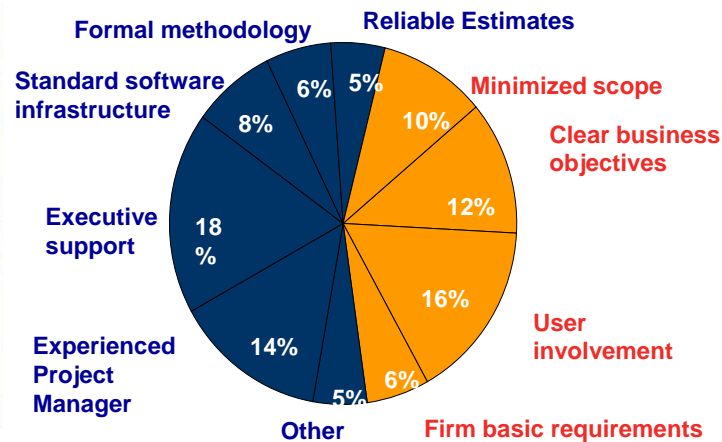
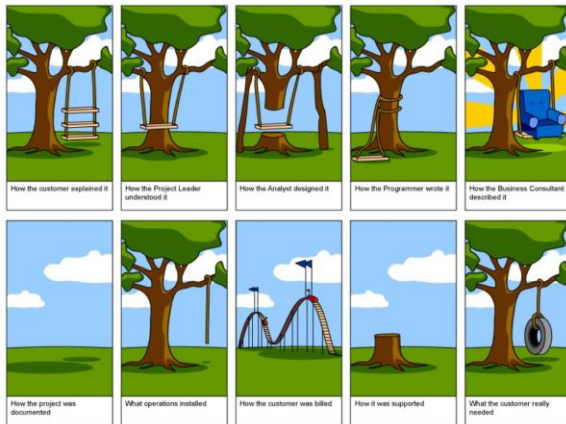
We know the problems

- ... how difficult *communication* really is...
- ... that projects are not easily successful



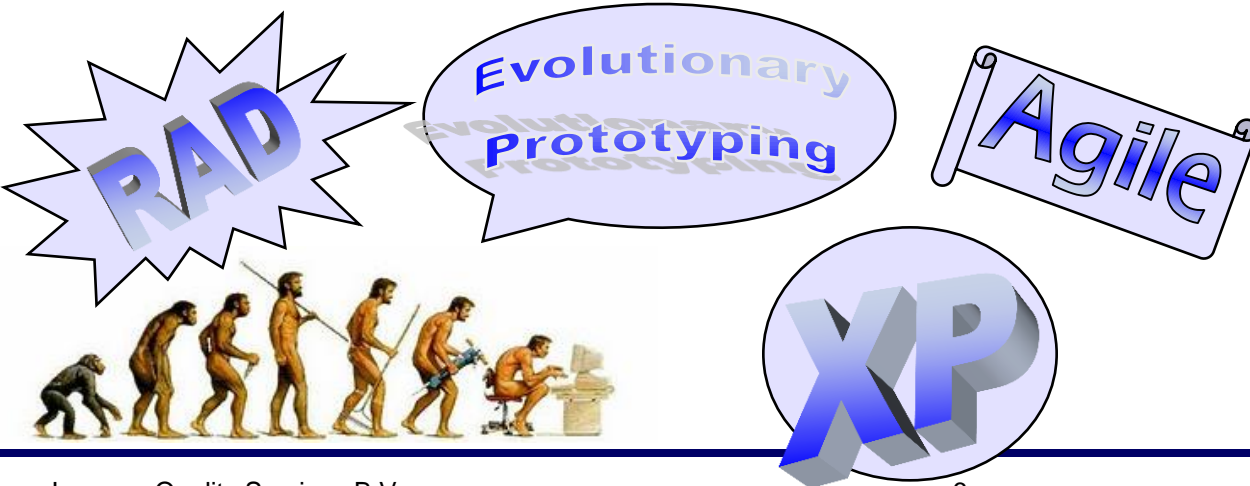
We know the problems

- ... how difficult *communication* really is...
- ... that projects are not easily successful
- ... that 'bad design' can be quite harmful

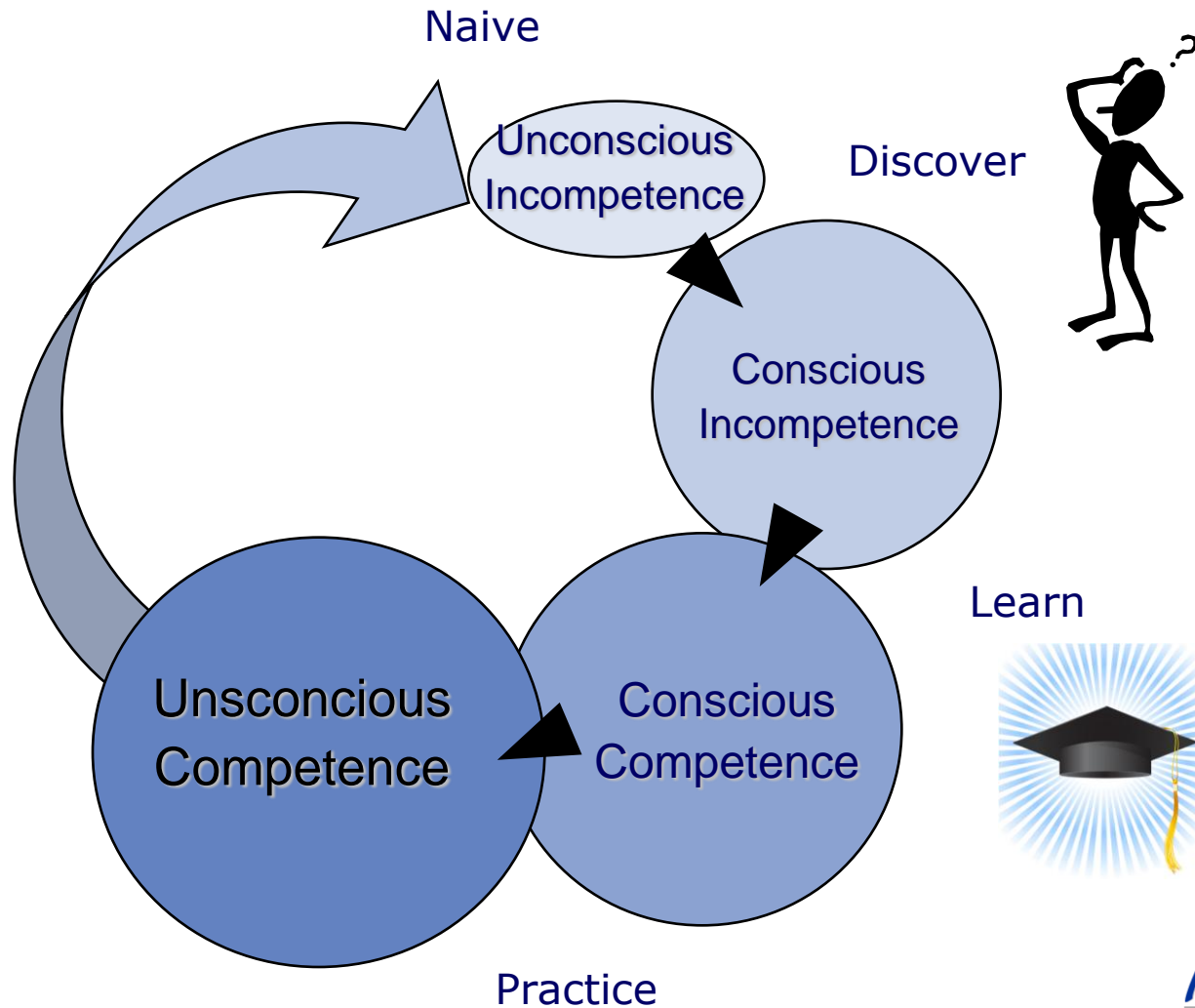


... but the *real* question is ...

- ...what's the **solution** for these problems?
 - ... write 'the perfect requirements' ?
 - ... more 'formal requirements' ?
 - ... or go for 'something completely different'...?



The learning cycle



Solution - approach

- We see solutions in 2 different directions ...



The
formal
way

vs.

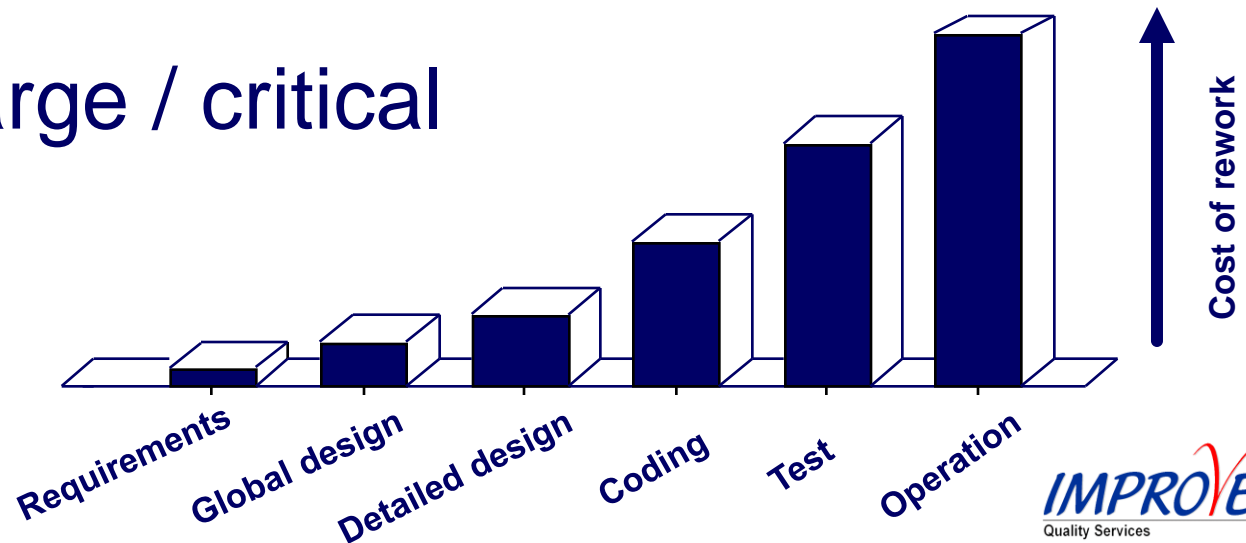


The
lean
way

The formal way



- Good requirements prevent trouble in the end
- Communication by process / specification
- Supported by models like CMMI
- Lifecycle like V-model
- Typically large / critical



The formal way



- ...is also a place of refuge for:
 - concealing incompetence with formality
 - politicians, bureaucrats, lawyers, blame culture
 - specialists
- ... can be a pitfall:
 - if sequences lead to a 'waiting for ...' – culture
 - if disciplines become separated by virtual walls
 - if feedback loops become too long



The lean way



- Aim for flexibility, requirements *will* change
- Communication by involvement and teaming
- Supported by agile methods like XP, Scrum
- Typically small teams, time boxed
- Result driven, reduce 'waste'



The lean way



- ...is also a place of refuge for:
 - hackers, code-like-hell culture
- ... can be a pitfall:
 - if 'flexible' is confused with 'undisciplined'
 - if teams are not really working together



The formal way



- Responsibilities

- clearly separated, by specialism
- people can be more easily exchanged

- Changes in requirements

- through a formal change process
- need to be reviewed, committed and tracked

- Tooling

- numerous techniques and (mgt.) tools



The lean way



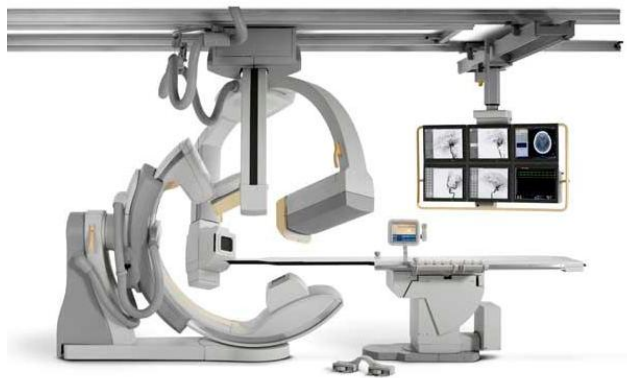
- Responsibilities
 - allocated to the team
 - competence, team and cooperation are essential
 - less need for written detailed specifications
- Changes in requirements
 - ability to handle flexibility is starting point
 - set priorities, refactoring, feedback, involvement
- Tooling
 - collaboration tools, e.g. Wiki, FitNesse

The formal way

EXAMPLE



- Case study: X-Ray systems
 - Large projects, safety-critical
 - Formal verification & traceability required (FDA)
 - CMMI process improvement program
 - V-model development life cycle



Mature and safe process



Difficult to reduce leadtime

The lean way

EXAMPLE



- Case study: automotive navigation systems
 - fast innovation cycles, technology/feature driven
 - agile development, Scrum project management
 - requirements: specifications, feature list, backlog
 - no requirements engineers anymore



Flexible, motivating



Lack of requirements

Two different worlds?

- Are these 2 solutions really different?



- Even in the formal world requirements change
- Even in the lean world requirements are needed

The best out of 2 worlds



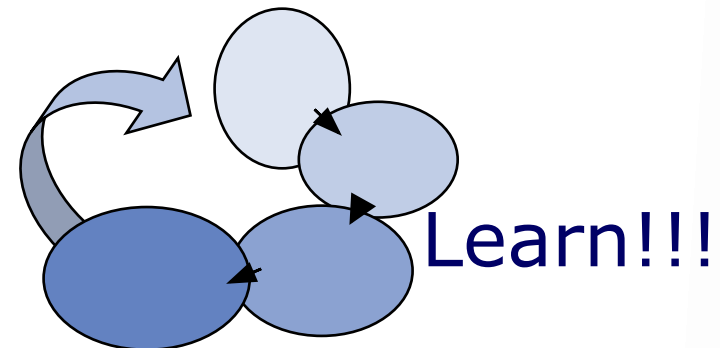
- Strong stakeholder involvement
- Good communication
- Level of detail depends on business factors
- Requirements skills & training (eg. IREB)
- Cross-discipline cooperation



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Conclusions

- It's not a matter of 'better' or 'worse' !
- Same theory, different mindset
- Requirements skills are still applicable

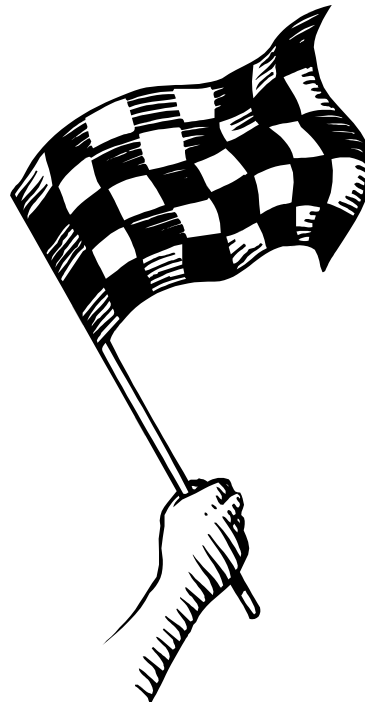


THE REQUIREMENTS MANIFESTO

- Principles over strict methodology
- Best practices over theory
- Cooperation over separation

Thank you!

- Any questions ??



Contact: info@improveqs.nl