LASARIS SEMINAR TOPICS

AGILE – IN THEORY, IN INDUSTRY, IN ACADEMIA

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Presentation agenda

1. Agile introduction
2. Agile in the industry
3. Research context definition
4. Problems
5. Case study in LabSeS
6. Aims of future research

Agile introduction

- A work organization paradigm
- Originated with „Manifesto for Agile Software Development“, 2001
- Redefines many focal aspects of previous approaches
- People, value, customer, change

Agile introduction

- People
  - Foster collaboration, not processes
  - Create environment, where spontaneous communication can thrive
  - Unlock intrinsic potential of knowledge workers
  - Motivate by autonomy, mastery, and purpose (Daniel Pink)
    - Not by simple positive and negative stimuli, e.g. by money (Taylorist approach)

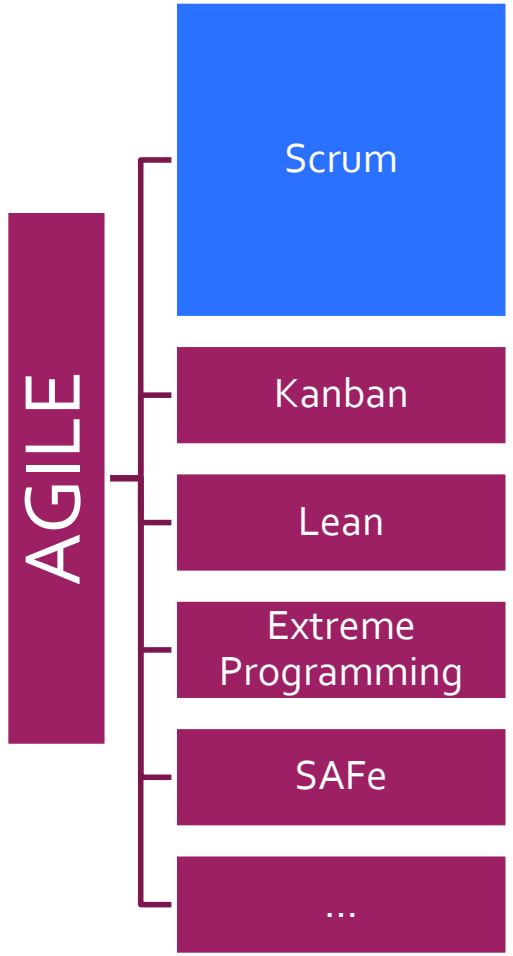
Agile introduction

- Change
  - Cynefin framework = problem classification pattern, based on Dave Snowden (1999)
  - **Simple** = cause and effect is clear
    - Best practice realm – e.g. BPM process
  - **Complicated** = cause and effect requires analysis
    - Good practice realm – e.g. Waterfall
  - **Complex** = cause and effect visible only in retrospect
    - Agile realm – e.g. experimentation
  - **Chaotic** = cause and effect completely unpredictable
    - Chaos realm – e.g. COVID-19 emergency

Agile in the industry

- Paradigms and frameworks

  - **Agile** = a paradigm
    - Contains principles and practices
  - **Framework** = minimal set of prescriptions
  - **Methodology** = maximal set of prescriptions



Research context definition

- Academia
  - Agile in the industry is well-known and well-tested
  - Many new context are being explored (such as general IT, marketing, HR, sales, public management, …)
  - Research and academic environments are not exception
  - Many laboratories and research groups are managed ad-hoc; research is by definition unpredictable (and thus change-based)

Problems

- Academia
  - Ad-hoc management
  - High stress on central figures
  - Lack of transparency in processes, people, work products, status, …
  - Low teamwork and inadequate synergy finding
  - Managing academic culture, management by KPIs, compliance
  - Scaling

Case study – LabSeS

- Criteria: simplicity, motivating, decrease stress on faculty
- Biweekly Sync
  - Lab news, Scrum, smaller-group discussions
- Technical discussions on-demand
- Semestral Retrospective, Semestral Thesis Presentation
- Scrum Master role

Case study

- Achieved results

  - Differences between May 2020 (n=5, 70 %) and April 2021 (n=7-8, 80 %)
  - Better median achieved in 12 out of 13 measured questions
  - Statistically significantly better distribution in 7 out of 13 measured questions
    - Quality of interactions with supervisor and his availability
    - Subjective evaluation of thesis quality, productivity, motivation, and overall feeling of writing
  - Statistically significantly more inclination to write papers about Smart Cities and to represent the laboratory

Aims of future research

- In the laboratory and specific process
  - Pulling customers (municipalities) into the process
  - Uncovering synergies among laboratory members
  - Implementing the process in another laboratory for control

Aims of future research

- Overall
  - Systematic literature review
    - Focus on element enumeration
    - Focus on framework classification
  - Correlation studies
  - Standardization
  - General (parametrized / decision-tree) process design
  - Empirical verification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