Master Thesis: Observing and Documenting Architecture Practices in a Large-Scale Agile Development Project

Soner Ercelik, Master Thesis – Kick-Off Presentation, 19.02.2018

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Outline

Motivation

Research Questions & Research Approach

Current State

Research Roadmap

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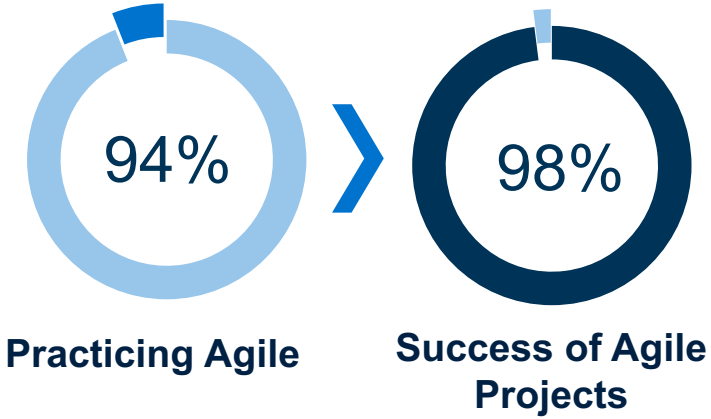
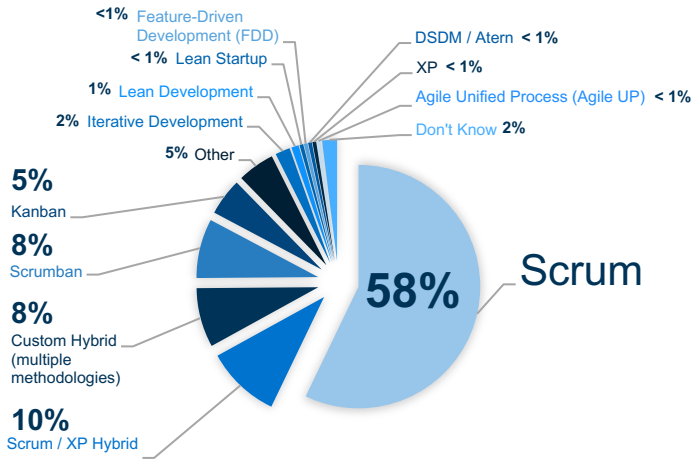
Motivation – Survey VersionOne 2017

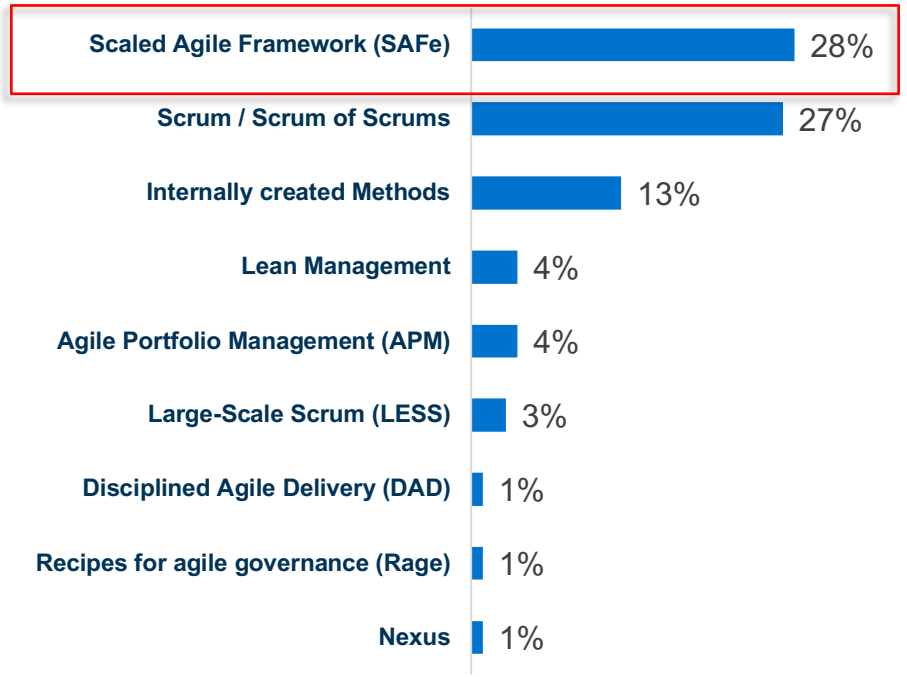
Agile Success and Metrics



Agile Methods and Practices



Scaling Methods and Approaches



VersionOne
2017

VersionOne (2017): http://stateofagile.versionone.com

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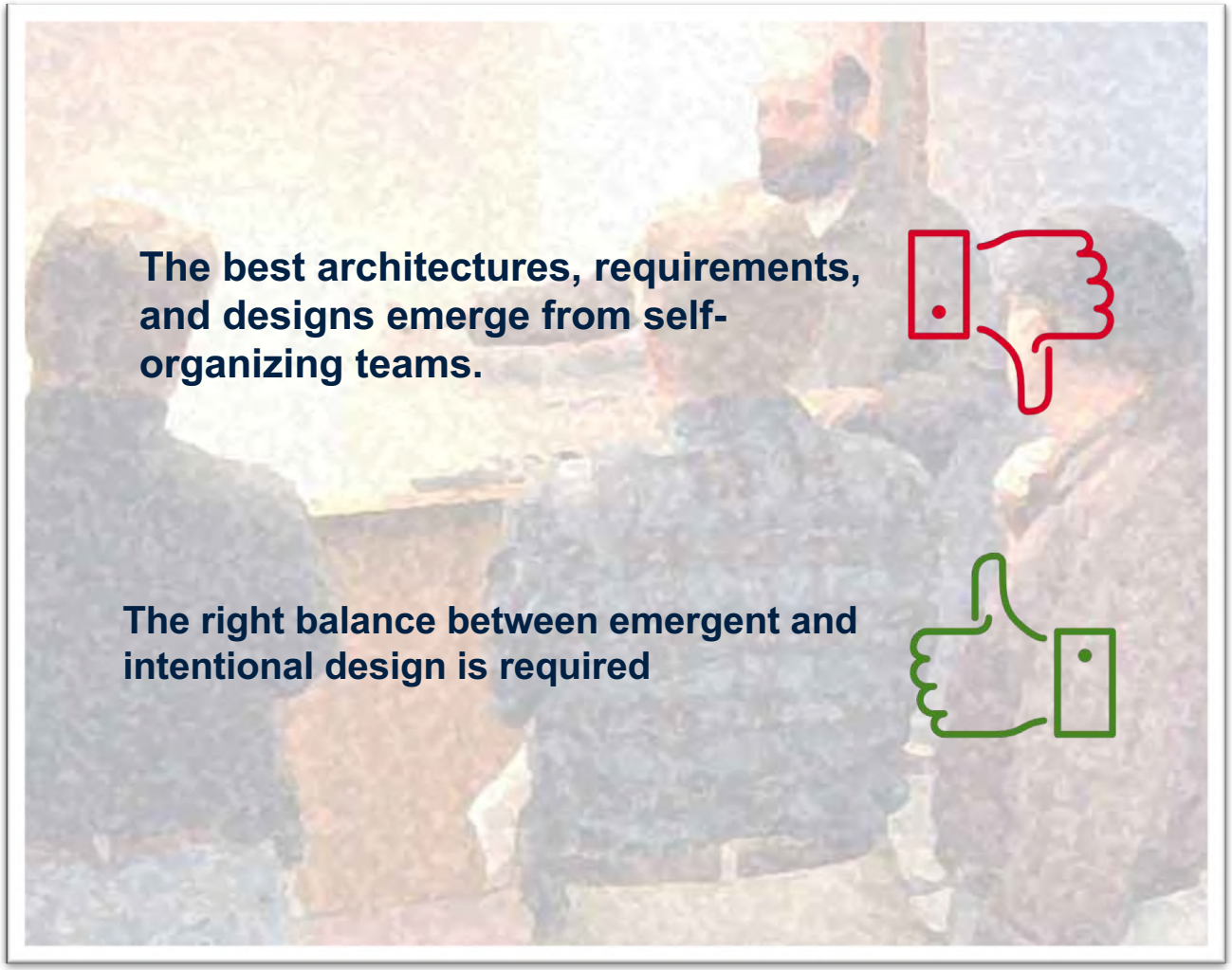
Motivation – Abrahamson & Agile Manifesto

- Existing Agile Methods have common characteristics:
  - Iterative and incremental life cycles
  - Focus on small releases
  - Collocated teams
  - A planning strategy based on a release plan
- They more or less agree to the values of the agile manifesto!

Problem:

- In complex systems this design might not work anymore

Principles behind the Agile Manifesto



Agile Manifesto Principles: https://agilemanifesto.org/

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Research Questions & Research Approach

RQ1

Literature Review

Research Question 1

Which activities, roles, artifacts and tools exist regards to architecture in Scaled Agile Framework (SAFe)?

RQ2

Case Study

Research Question 2

How does the collaboration take place among architects and agile teams in a large-scale agile development endeavor?

RQ3

Case Study

Research Question 3

Which architectural practices exist in a large-scale agile development endeavor, which is based on SAFe?

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Current State – Related Work

- **Abrahamson et al.: “Agility and Architecture”** [1]
  - Increasing confusion about
    - Software architecture’s role
    - Importance in agile approaches
  - Finding a balance between these two extreme approaches and mind-sets
  - Recommendation to include an architect role in agile projects

- **Falessi et al.: “Peaceful Coexistence”** [2]
  - Survey of 72 IBM software developers
  - Agile developers perceive software architecture as relevant as:
    - Communication among team members
    - Inputs to subsequent design decisions
    - Documenting design assumptions
    - Evaluation design alternatives

- **Faber: “Architects as Service Providers”** [3]
  - Architects should actively guide but not dominate developers
  - Architects should accept deviations from original architectural designs if developers request it

- **Leffingwell et al.: “Principles of Agile Architectures”** [4]
  - Continuously Refactoring large-scale, emerging architectures becomes less practical as the size of systems grow
  - Possible solution: Intentional Architecture

1) Abrahamson et al. (2010): Agility and Architecture
2) Falessi et al. (2010): Peaceful Coexistence
3) Faber (2010): Architects as Service Providers
4) Leffingwell et al. (2008): Principles of Agile Architectures

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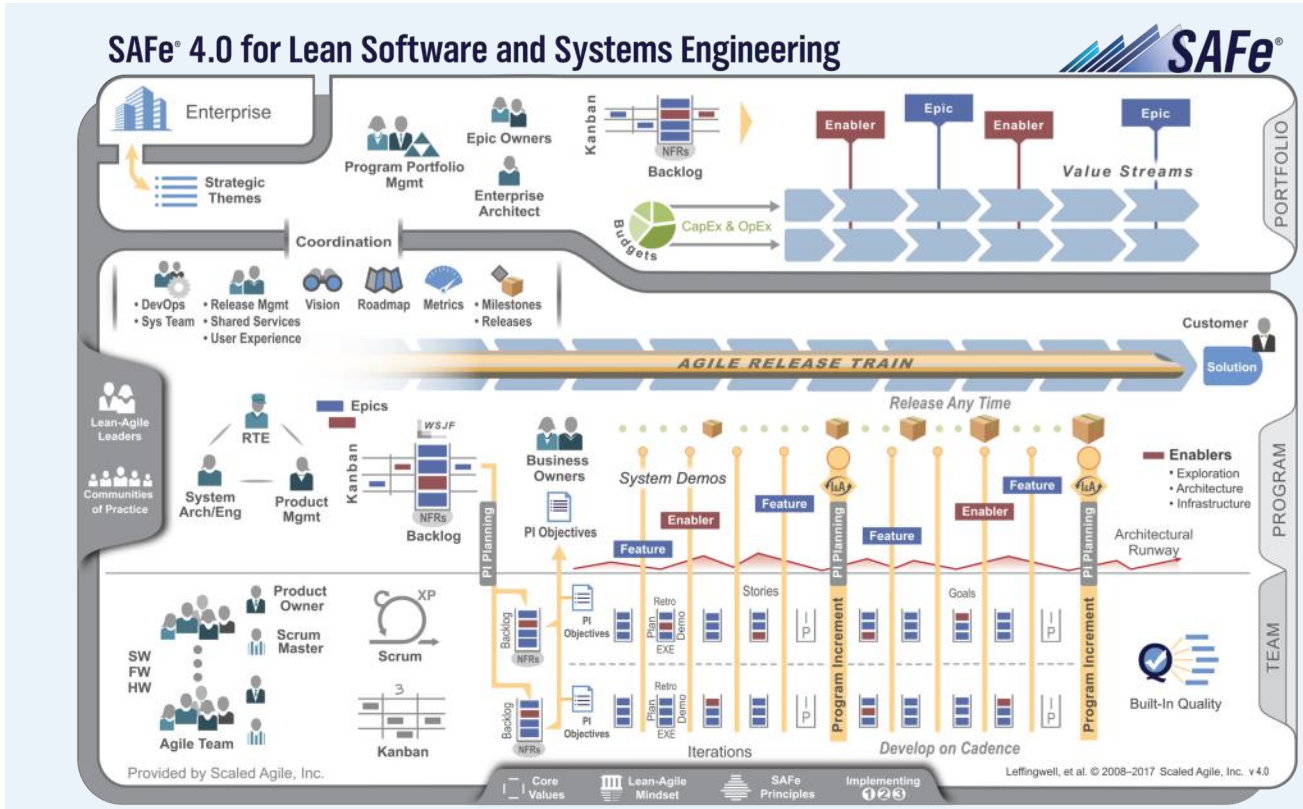
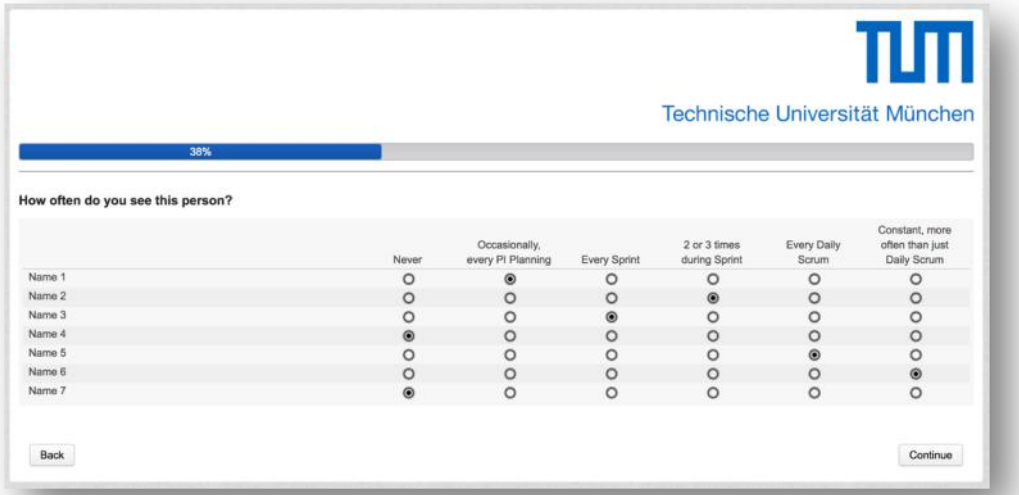
Current State – Scaled Agile Framework (SAFe)

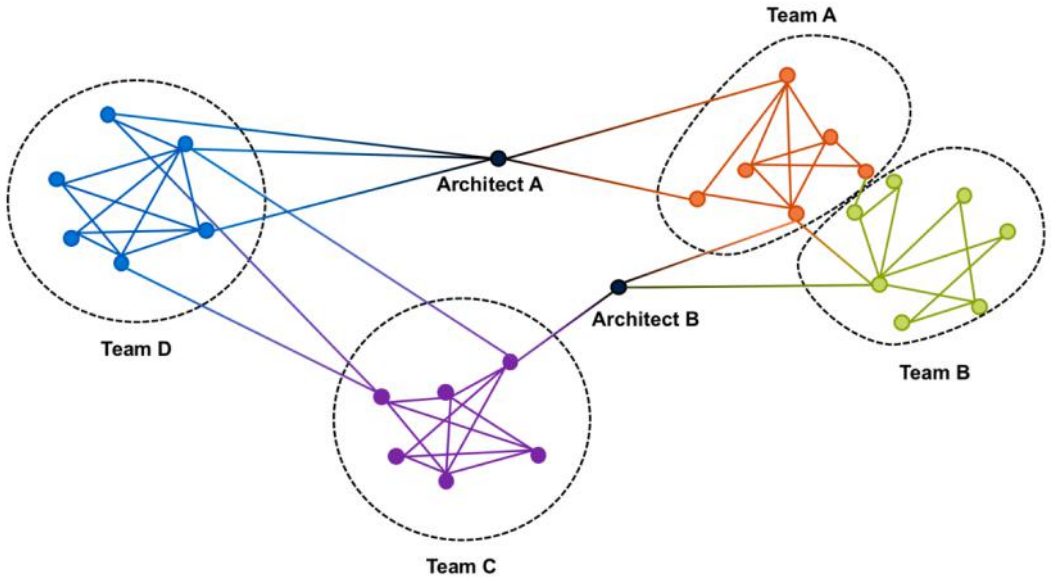


For more information visit Scaled Agile Framework | SAFe for Lean Enterprises: http://www.scaledagileframework.com/

Current State – Social Network Analysis

- Analyzing the collaboration between architects and agile teams
- Gaining insights to optimize communication channels for information sharing, problem solving, supporting and architecting





Excerpt of survey questions:

- How often do you see this person?
- How frequently do you exchange information with this person?
- How frequently do you exchange technical, personal or architectural advices with this person?

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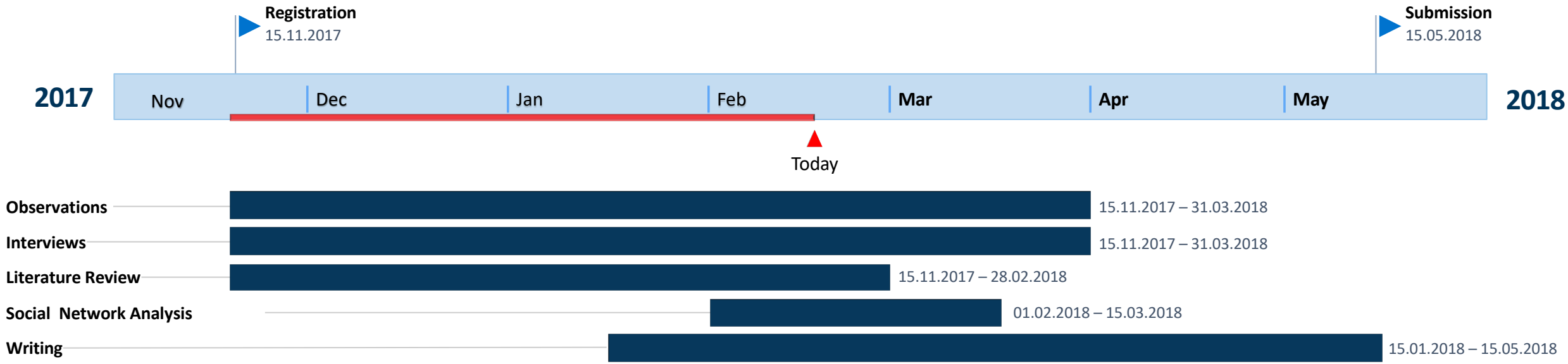

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Thank you for your attention!

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