Practices in Agile Architecture Governance: Multiple Case Studies in Large Organizations

Niklas Reiter, Master‘s Thesis – Kick-Off Presentation, 06.08.2018

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Outline

Motivation

Research Methodology

Current State

Research Roadmap

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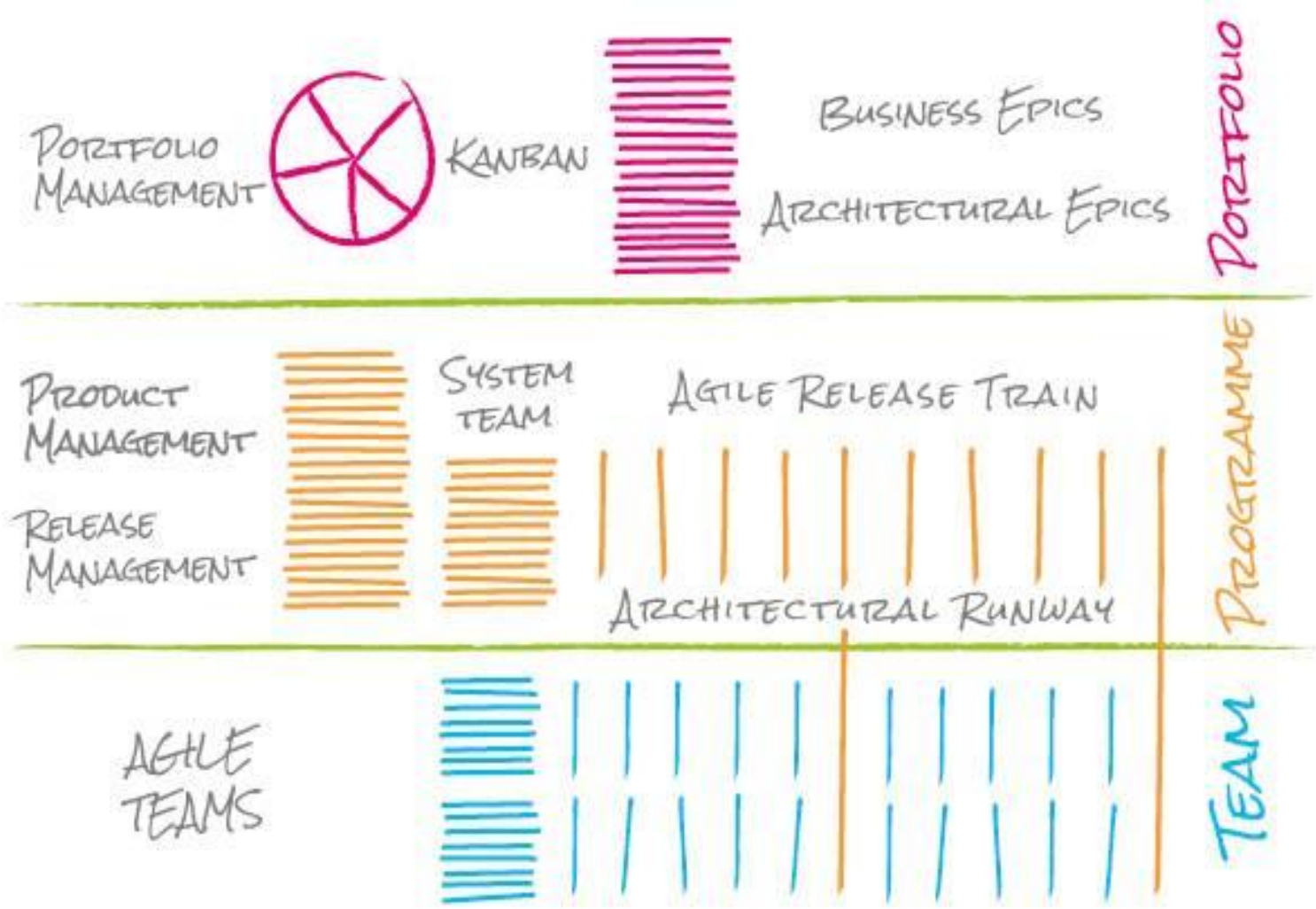
Motivation – Large Scale Agile Development

Agile methods were originally designed for working at team level

Do not provide sufficient guidance on program and portfolio level, especially in terms of governance

To coordinate work and to develop reliable and scalable systems companies need to have a suitable governance and the right architectural planning

Find balance between agile development and architectural governance



Source: *image: https://www.agil8.com/consulting/safe-scaled-agile-framework/*

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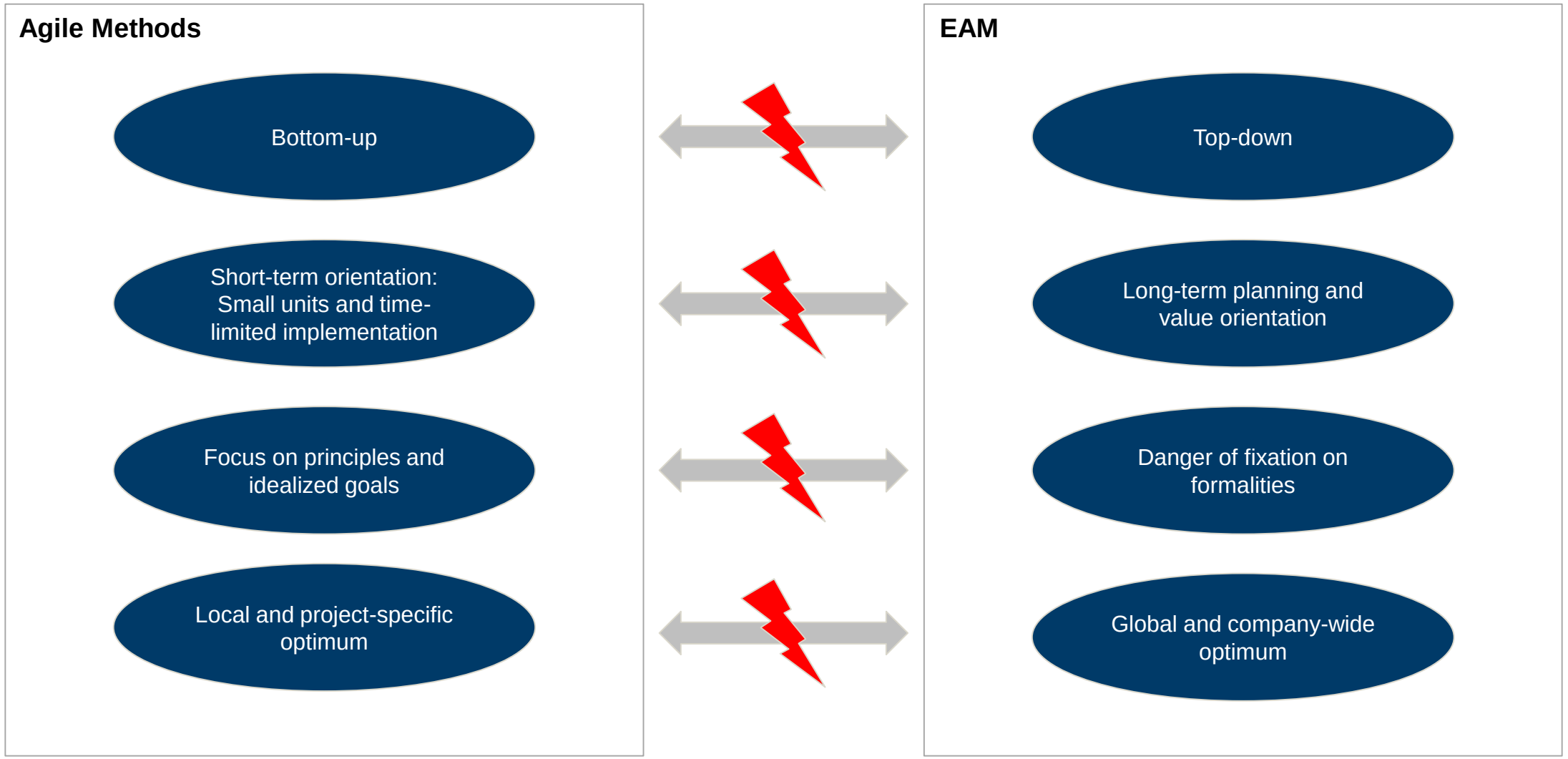
Motivation - Agile Methods and EAM are in Conflict



Source: *Hauder, Roth, Schulz, & Matthes, 2014; Hanschke, Ernsting, & Kuchen, 2015, S. 4101; Bente, Bombosch, & Langade, 2012, S. 159, 162 f.; Hanschke et al., 2015, S. 4101*
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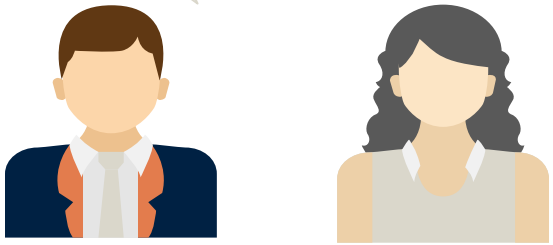
Motivation – Governance vs. Autonomy

How much **specification** is necessary?

How much **freedom** should the agile team have?

Freedom that is needed should be **adapted iteratively.**



Provide agile teams with **guiding principles** and **proof of practices.**

If teams need more freedom, then these **freedoms** should also apply **globally** to other teams.

Balance of freedom is very important from **EAM's point of view** - balance between freedom and leadership.

Teams **demand guidance**, they don't want to stumble around.

Source: *Scaling Agile Workshop TUM*

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Research Methodology

RQ1

Research Question 1

- Which architectural principles exist in an agile environment?

Literature Review + Case Study

RQ2

Research Question 2

- What kind of architectural boards exist in an agile environment?

Case Study

RQ3

Research Question 3

- Which tasks and responsibilities of an EA team exist in an agile environment?

Case Study

RQ4

Research Question 4

- Which approaches exist to determine the effectiveness of the EA team?

Case Study

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Research Methodology - Case Study Partner

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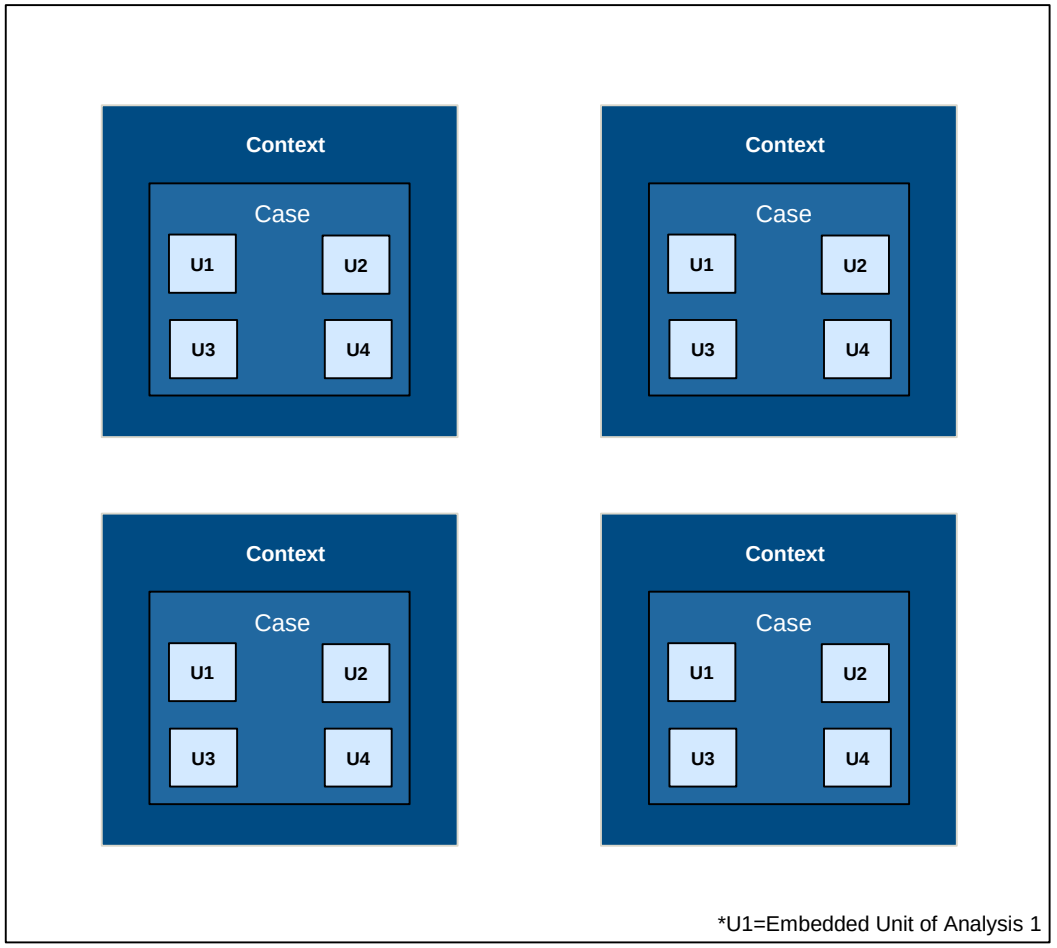
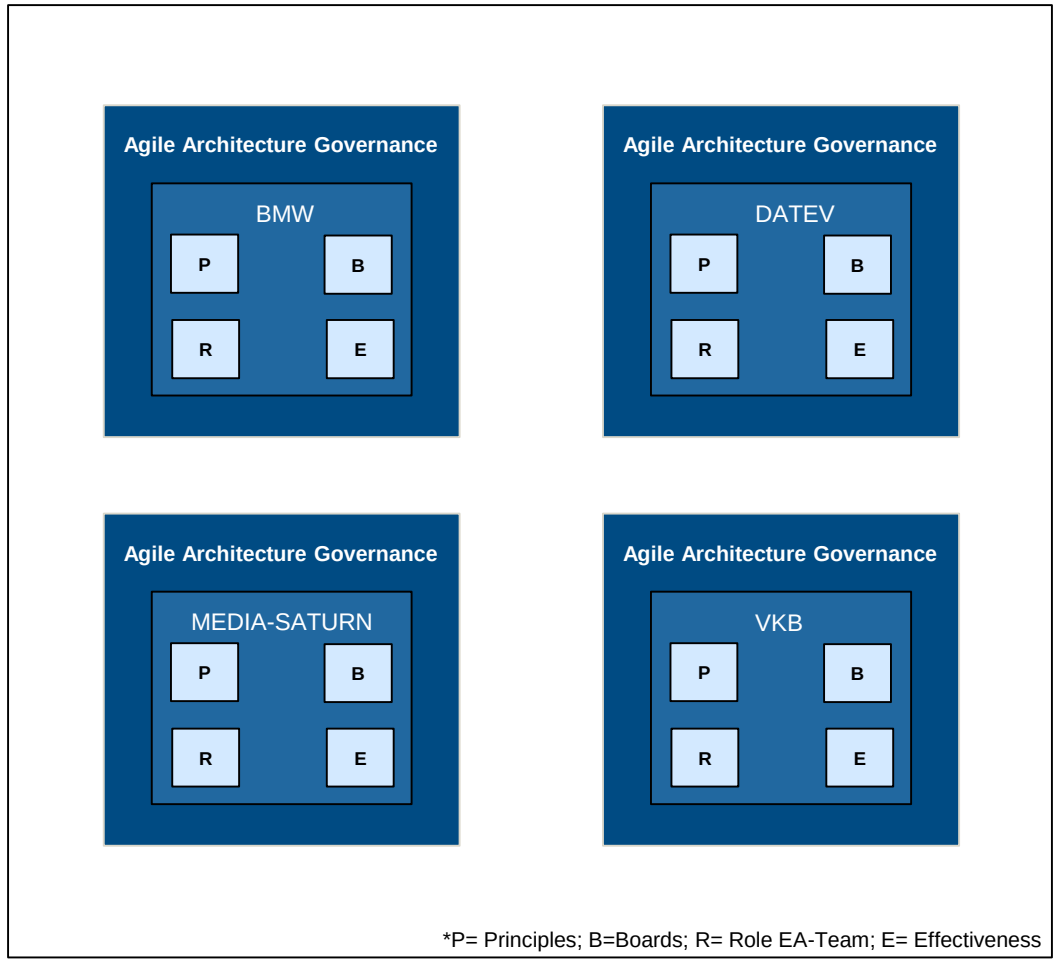
Research Methodology – Embedded Multiple Case Study



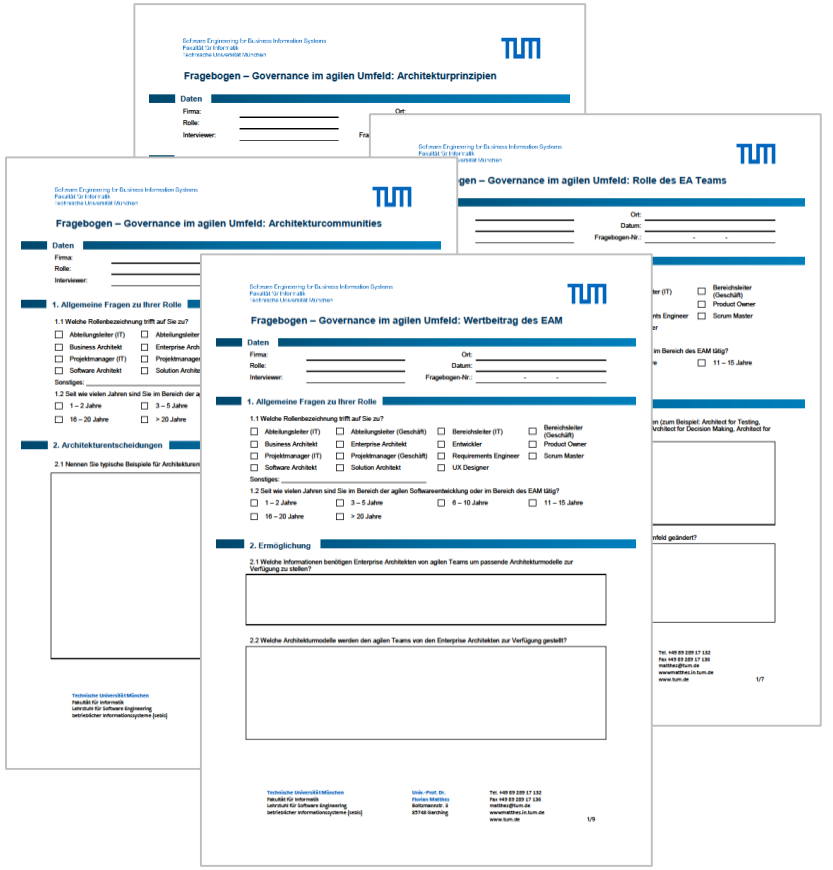


Source: *Yin (2008); Runeson and Höst (2009); Cruzes, D. S., & Dyba, T. (2011)*

Research Methodology – Embedded Multiple Case Study

1. **Data Collection**
   - Literature review
   - Provide a list with new findings in an agile context
   - Gather data via semi-structured group interviews

2. **Data Analysis**
   - Analyze and codify interviews using MAXQDA
   - Identify patterns and challenges within large scale agile development



Source: *Yin (2008); Runeson and Höst (2009); Cruzes, D. S., & Dyba, T. (2011)*

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Current State – Related Work

- **Abrahamson et al.: “Agility and Architecture”**
  - The role of software architects is getting more and more complex
  - Architecture should emerge gradually sprint after sprint as a result of successive small refactoring
  - A healthy focus on architecture isn’t contradictory to any agile process

  →Satoshi Basaki: “It seems that many agile method users misunderstand what agile methods are, just ignore architecture, and jump onto refactoring”

- **Andreas Slogar: “The Agile Organization”**
  - Companies face enormous challenges through innovations, digitization, increasing complexity and speed of change

  → Requires new approaches, rethink the enterprise structure

- **Hauder, M., Roth, S., Schulz, C., & Matthes, F.: “Agile enterprise architecture management: an analysis on the application of agile principles”**
  - Agile principles and values are increasingly adopted by organizations but there is little known whether these practices have already made their way into EA management
  - Similarities between software development - centering rather on single systems - and EA management - focusing on the holistic management of systems of systems

  →Changing requirements while ensuring a close collaboration among stakeholders must be handled

  →No contribution was found that investigated on the current status quo of agile practices in industry

- **Nord et al.: “Agile in Distress: Architecture to the Rescue”**
  - A Big design up front (BDUF) is causing problems due to changing requirements during the development

  → “Agile teams naively hope that a suitable architecture will gradually emerge out of weekly refactorings”
  - Agile teams want to be autonomous and self-responsible in their decisions
  - Agile methods currently only work in the “sweet spot”: small teams of 5-12 working with small to medium-sized systems with simple architectures

How can EAM support large scale agile development?

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Current State – Embedded Multiple Case Studies

- Semi-structured group interview for each unit of analysis
- Each group consists at best of 2-3 people
- Stakeholder groups:
  1. Enterprise Architects (EA)
  2. Agile Teams (AT)
  3. Management (M)

Status	BMW	DATEV	MEDIA-SATURN	VKB
EA	75%	50%	0%	0%
AT	0%	0%	0%	0%
M	0%	0%	0%	0%
TOTAL	25%	0%	0%	0%

Example for BMW:

ID	Type	Topic	Role	Duration	Group	Done
I1	Semi-structured Interview	Architecture Principles	EA	41 mins	1	yes
I2	Semi-structured Interview	Architecture Boards	EA	58 mins	1	yes
I3	Semi-structured Interview	Role of EA-Team	EA	37 mins	1	yes
I4	Semi-structured Interview	Proof of Efficiency	EA	52 mins	1	yes
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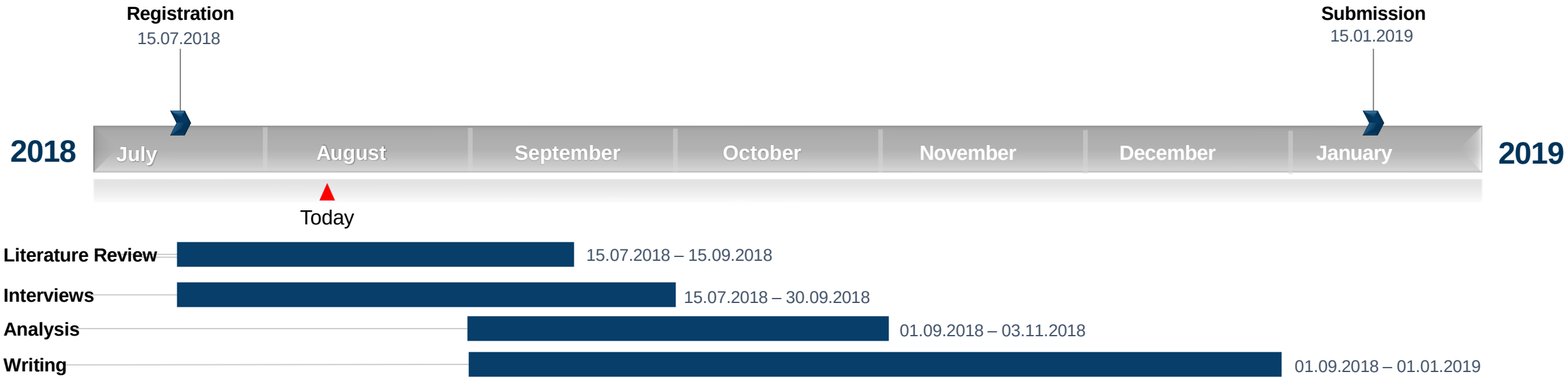

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Source:

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Thank you for your attention!

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