

The Role of Architects in Scaling Agile Frameworks

Ömer Uludağ, September 21, 2017, sebis Workshop, Munich

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Motivation

Scaling Agile Frameworks

The role of architects in Scaling Agile Frameworks

Future work

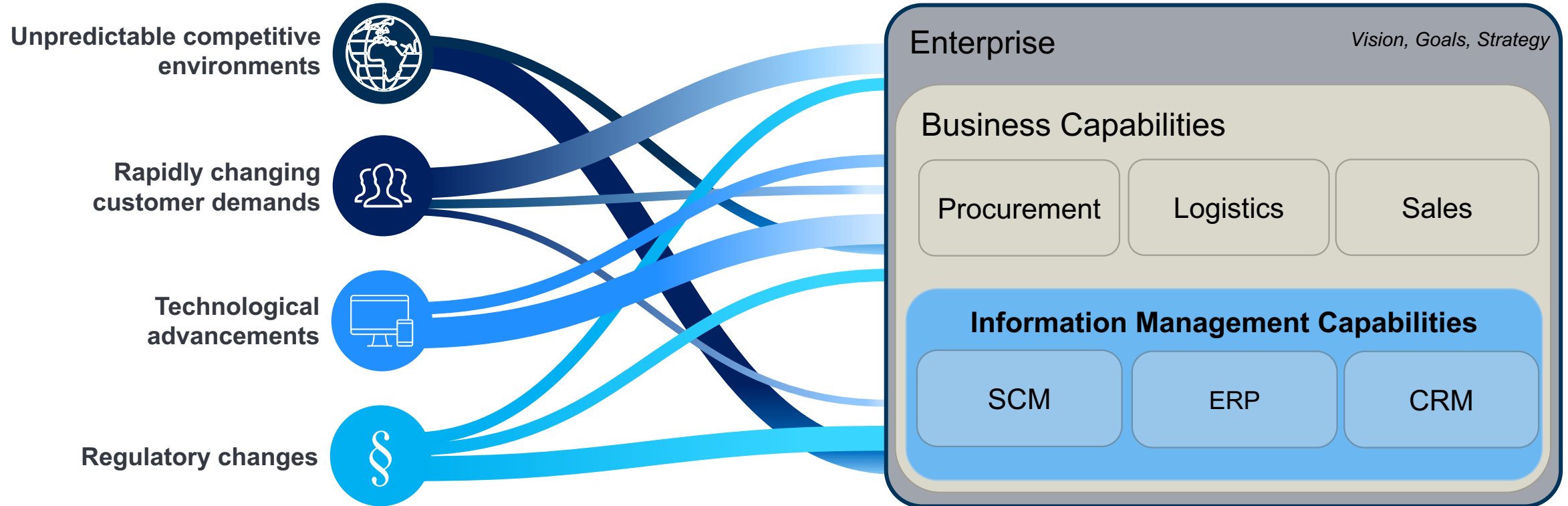
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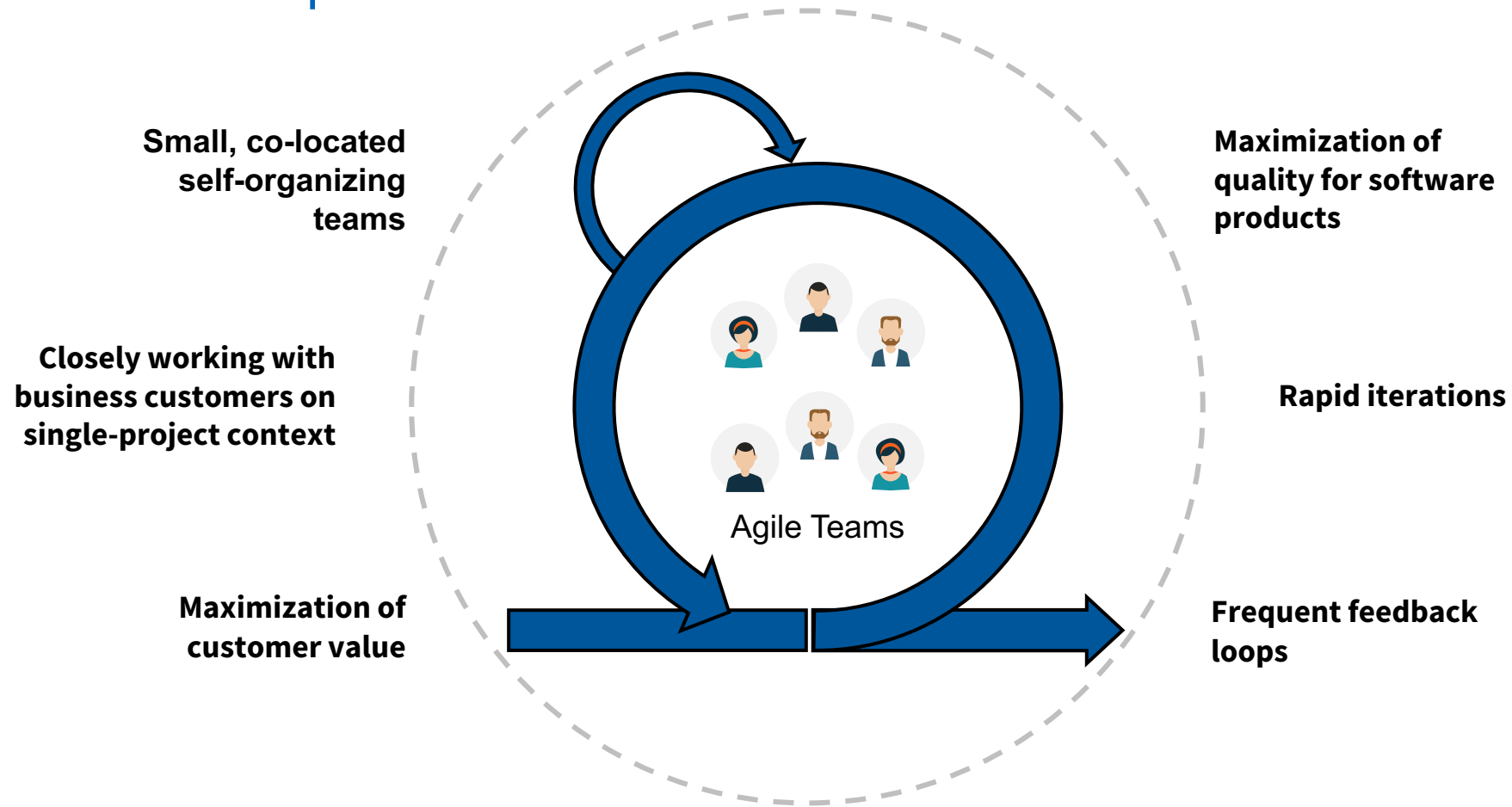
The role of architects in Scaling Agile Frameworks

Future work

Enterprises struggle to deal with rapidly changing influence factors



Software development projects in such environments face changes either directly or indirectly.



- Agile methods are originally tailored for small teams.
- Large enterprises are interested in extending agile methods to include larger teams and inter-team coordination and communication.



The term ‘large-scale agile development’ refers to agile development in everything from large teams to large multi-team projects to making use of principles of agile development in a whole organization.



Various Scaling Agile Frameworks, e.g., Scaled Agile Framework, Disciplined Agile 2.0, and Large-Scale Scrum, has been developed for use in large-organizations to resolve issues associated with team size, customer involvement, and project constraints.

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Primary analysis of Scaling Agile Frameworks

	Descriptive Information				Adoption					
	Publication Date	Methodologist	Organization	Category	Contributions	Cases	Documentation	Training Courses and Certifications	Community, Forum or Blog	Maturity
Crystal	1992	Alistair Cockburn	-	Set of Methods	17	1	Yes	No	Yes	🟡
DSDM	1994	Arie van Bennekum	DSDM Consortium	Framework	28	4	Yes	Yes	Yes	🟢
SoS	2001	Jeff Sutherland and Ken Schwaber	Scrum Inc.	Mechanism	27	2	Yes	No	Yes	🟡
eScrum	2002	Mike Beedle	Enterprise Scrum Inc.	Framework	4	-	Yes	Yes	Yes	🟡
ASSF	2007	Asif Qumer and Brian Henderson-Sellers	University of Technology	Framework	2	2	No	No	No	🟠
LeSS	2008	Craig Larman and Bas Vodde	LeSS Company B.V.	Framework	29	22	Yes	Yes	Yes	🟢
SAFe	2011	Dean Leffingwell	Scaled Agile Inc.	Framework	35	35	Yes	Yes	Yes	🟢
DA 2.0	2012	Scott Ambler	Disciplined Agile Consortium	Framework	27	4	Yes	Yes	Yes	🟢
Spotify	2012	Henrik Kniberg, Anders Ivarsson, and Joakim Sundén	Spotify	Model	11	1	Yes	No	Yes	🟡
Mega	2012	Rafael Maranzato, Marden Neubert, and Paula Heculano	Universo Online S.A	Framework	2	1	No	No	No	🟠
EADAGP	2012	Erik Marks	AgilePath	Set of Practices	1	-	Yes	No	Yes	🟡
RAGE	2013	Kevin Thompson	Cprime	Framework	4	1	Yes	Yes	No	🟡
CAF	2014	Andy Singleton	Maxos LLC	Framework	3	-	Yes	No	Yes	🟡
S@S	2014	Jeff Sutherland and Alex Brown	Scrum Inc.	Framework	9	-	Yes	Yes	Yes	🟢
ETF	2014	-	agile42	Framework	1	2	Yes	Yes	Yes	🟡
SALD	2014	Peter Beck, Markus Gärtner, Christoph Mathis, Stefan Rook and Andreas Schliep	-	Set of Principles	2	-	Yes	No	Yes	🟡
XSCALE	2014	Peter Merel	Xscale Alliance	Set of Principles	3	-	Yes	Yes	Yes	🟡
LEAF	2015	-	LeanPitch Technologies	Framework	0	-	Yes	Yes	Yes	🟡
Nexus	2015	Ken Schwaber	Scrum.org	Framework	5	-	Yes	Yes	Yes	🟡
FAST Agile	2015	Ron Quartel	Cron Technologies	Set of Methods	2	-	Yes	No	Yes	🟡

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The role of architects in Scaling Agile Frameworks

Future work

Identified architect roles in Scaling Agile Frameworks

	Enterprise Architect	Software Architect	Solution Architect	Business Architect	Information Architect	Integration Architect
DSDM	-	X	X	-	-	-
eScrum	-	-	-	-	-	-
SAFe	X	X	X	-	X	-
DA 2.0	X	X	X	-	-	-
Mega	-	X*	-	-	-	-
EADAGP	X	X*	X*	-	X	-

In total, 11 architect roles were identified and described extensively.

*'X' marked with an asterisk '**' indicates that an architect role is described superficially, indicating that further analysis is not possible.*

Identified architect roles in Scaling Agile Frameworks

	Enterprise Architect	Software Architect	Solution Architect	Business Architect	Information Architect	Integration Architect
DSDM	-	X	X	-	-	-
eScrum	-	-	-	-	-	-
SAFe	X	X	X	-	X	-
DA 2.0	X	X	X	-	-	-
Mega	-	X*	-	-	-	-
EADAGP	X	X*	X*	-	X	-

In SAFe, software und solution architects share a lot of common responsibilities.

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DSDM	-	X	X	-	-	-
eScrum	-	-	-	-	-	-
SAFe	X	X	X	-	X	-
DA 2.0	X	X	X	-	-	-
Mega	-	X*	-	-	-	-
EADAGP	X	X*	X*	-	X	-

Only 4 out of 20 scaling agile frameworks describe the role of architects explicitly.

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DSDM	-	X	X	-	-	-
eScrum	-	-	-	-	-	-
SAFe	X	X	X	-	X	-
DA 2.0	X	X	X	-	-	-
Mega	-	X*	-	-	-	-
EADAGP	X	X*	X*	-	X	-

None of the scaling agile frameworks describes the role of business and integration architects.

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	Enterprise Architect	Software Architect	Solution Architect	Business Architect	Information Architect	Integration Architect
DSDM	-	X	X	-	-	-
eScrum	-	-	-	-	-	-
SAFe	X	X	X	-	X	-
DA 2.0	X	X	X	-	-	-
Mega	-	X*	-	-	-	-
EADAGP	X	X*	X*	-	X	-

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DSDM	-	X	X	-	-	-
eScrum	-	-	-	-	-	-
SAFe	X	X	X	-	X	-
DA 2.0	X	X	X	-	-	-
Mega	-	X*	-	-	-	-
EADAGP	X	X*	X*	-	X	-

SAFe provides most descriptions about architect roles.

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Identified architect roles in Scaling Agile Frameworks

	Enterprise Architect	Software Architect	Solution Architect	Business Architect	Information Architect	Integration Architect
DSDM	-	X	X	-	-	-
eScrum	-	-	-	-	-	-
SAFe	X	X	X	-	X	-
DA 2.0	X	X	X	-	-	-
Mega	-	X*	-	-	-	-
EADAGP	X	X*	X*	-	X	-

More mature frameworks are more likely than others to describe architect roles.

*'X' marked with an asterisk '**' indicates that an architect role is described superficially, indicating that further analysis is not possible.*

The role of the enterprise architect within Scaled Agile Framework

Key concerns

- Drives enterprise architecture strategy, e.g., choice of technology, software and solution strategy, development and deployment infrastructure strategy, **inter-program collaboration**, etc.

Area of interest

- Portfolio level

Main contributions

- Provides strategic technical directions and **drives collaboration of programs and teams** around a common technical vision

Strategy

- Involve enterprise architects actively in the portfolio level by ensuring the presence of **enterprise-wide architectural systems, platforms, and infrastructures**

Responsibilities

- Maintains a high-level and **holistic vision** of **enterprise solutions** and **development initiatives**
- Supports development by providing specialist expertise in a **shared services role**
- Understands and communicates strategic themes and other key business drivers for architecture to system architects and nontechnical stakeholders
- Works closely with software and solution architects to ensure that **individual program and product strategies align with enterprise objectives**
- Participates in the strategy for building and maintaining the **enterprise architectural runway**
- Facilitates the **reuse of ideas, components, and patterns**

Commitment

- Active support of agile teams

The role of the enterprise architect within EADAGP

Key concerns

- Provides **governance requirements** that span **multiple sprints or releases** and **cross-sprint team coordination** and **collaboration**

Area of interest

- Community governance, in particular **agile community team** (ACT)

Main contributions

- Addresses **governance** requests, escalates them to IT governance if they cannot be addressed, and notifies agile teams and IT governance for their agreement and/or approval

Strategy

- Involve enterprise architects passively within the ACT

Responsibilities

- Escalates governance issues to IT governance
- Supports agile teams by making appropriate **governance decisions** and **providing guidance**
- **Communicates governance decisions** to enterprise **IT governance** for their agreement
- Harmonizes governance requirements across sprints and agile teams
- Reports **technology** and **architecture requirements/issues to EA oversight** for alignment and issue resolution
- Identifies **security requirements** and **challenges** that may not have been pre-determined
- Raises **potential compliance** and **risk requirements** that have to be reviewed and signed off by governance, risk and compliance bodies, and EA sign offs

Commitment

- Passive support of agile teams by protecting them from the slowness and rigidity of traditional IT governance

*Marks (2014): Governing enterprise agile development without slowing it down: Achieving friction-free scaled agile governance via event-driven governance;
Marks (2017): A lean non-functional requirements (nfr) framework: A common framework for governance, risk and compliance as well as traditional nfrs.*

Maturing scaling agile frameworks at the portfolio and enterprise level.

Majority of Scaling Agile Frameworks focus on the team level.

1

4

Sparing agile development from traditional IT governance.

SAFe, EADAGP, and DA 2.0 recommend governance models that are collaborative, decentralized, and lightweight that allow teams to decentralize their decision making and to govern themselves.

Increasing development speed by balancing emergent and intentional architecture.

DA 2.0 and SAFe highlight the importance of upfront architecture in large-scale agile projects.

2

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Involving architects as facilitators and communicators.

Active involvement of architects in large-scale agile development.

Finding the right balance between centralized and decentralized architectural decision-making.

Centralize non-urgent architectural decisions with high financial impact and decentralize urgent architectural decisions with low financial impact.

3

6

Ensuring the reuse of enterprise assets.

Architects are aware of existing enterprise assets, e.g., frameworks, patterns, and standards, which are available for reuse and ensure that agile teams utilize them where applicable.

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Future work

Exploratory multiple case studies

- Describing scaling agile practices in practice
- Describing architecting in large-scale agile project
- Describing the role of architects in large-scale agile projects
- Describing success factors and challenges in large-scale agile projects
- Identifying best practices in scaling agile practices

Scaling Agile Practices Pattern Catalog

- Compilation of identified patterns and concerns
- Creation of a conceptual model and pattern language
- Inspired by the EAM Pattern Catalog



Scaling Agile Practices
Pattern Catalog

Release 1.0
June 2019



Software Engineering for Business Information Systems (sebis)
Ernst Denert-Stiftungslehrstuhl
Chair for Informatics 19
Technische Universität München

Become a part of our research!

- How to collaborate?
 - Join to our working group
 - Be a case study partner
 - Participate in our surveys

- When to make the next workshop?
 - March 2018



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For further information about our research please visit:
<https://www.matthes.in.tum.de/pages/mdl9jm5nwbk2/Scaled-Agile-IT-Organizations>





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