

Research Challenges in Large-Scale Agile Development

7 June 2013

Torgeir Dingsøy, Nils Brede Moe
SINTEF

Why this workshop?

“agile value set and practices best suit colocated teams of about 50 people or fewer who have easy access to user and business experts and are developing projects that are not life-critical” Williams and Cockburn, 2003

- Agile methods increasingly used in large scale projects
- Projects that are critical for society
- Little research-based knowledge on the topic
- Top “burning research question” from practitioners (Freudenberg and Sharp 2010)

Workshop goals

- Define a research agenda: “main research challenges”
- Discuss how such research should be conducted

Workshop organization

■ Workshop organizers:

- Torgeir Dingsøy, SINTEF, Norway
- Nils Brede Moe, SINTEF, Norway

■ Program committee:

- Kieran Conboy, National University of Ireland, Galway
- Jutta Eckstein, IT Communication, Germany
- Casper Lassenius, Aalto University, Finland
- Helen Sharp, Open University, UK
- Darja Smite, Blekinge Institute of Technology, Sweden
- Hans van Vliet, Vrije Universiteit Amsterdam, the Netherlands

Overview of presentations

1. An Overview of Research on Large-Scale Agile Development
Torgeir Dingsøy, Tor Erlend Fægri, SINTEF, Norway, Juha Itkonen, Aalto University, Finland
2. Non-functional Requirements in Large-Scale Agile Development
Parastoo Mohagheghi, The Norwegian Labour and Welfare Service
3. Requirements Engineering: Leading Challenged Customers to Success in Large-Scale Agile Development
Elke Hochmüller, Carinthia University of Applied Science, Austria
4. Validity of Research on Large-Scale Agile Projects
Darja Smite, Blekinge Institute of Technology and Burak Turhan, University of Oulu
5. Alleviating Challenges of Distributed Software Development through Agile Practices
Samireh Jalali, Blekinge Institute of Technology
6. Metric Challenges in Large-Scale Agile Software Development
Jeanette Heidenberg, Marta Olszewska, Max Weijola, Kirsi Mikkonen and Ivan Porres, Åbo Akademi University, Finland
7. Experiences in Studying Large-Scale Agile Software Development
Maria Paasivaara, Casper Lassenius and Ville Tomi Heikkilä, Aalto University, Finland

What is large-scale agile development?

Table 1. Definitions of large-scale development in identified articles.

<i>Study</i>	<i>Definition</i>	<i>Reference</i>
Batra	\$15 million project	[16]
Berger	10 million british pounds	[17]
Bjarnason	2 years, 60-80 new features	[18]
Bjarnason	2 years, 60-80 new features	[19]
Giblin	-	[20]
Giblin	-	[21]
Paasivaara	40 people, 7 teams, 2 sites	[22, 23]
Petersen	More than 5 million lines of code	[24]
Petersen	More than 5 million lines of code	[25]
Tessem	150 person years (70 people, 30 developers)	[10]

Research questions addressed

Table 2. Research questions related to large-scale agile development.

<i>Study</i>	<i>Research question</i>
Batra [16]	Can agile and structured development approaches be combined and balanced in large projects, and how?
Berger [17]	The utility of rapid application development in large-scale, complex projects
Paasivaara [22, 23]	How are agile practice applied in a large-scale global software development project?
Petersen [24]	What are the advantages and issues in industrial large-scale software development informed by agile and incremental practices?
Tessem [10]	Are scrum teams able to adapt empowering factors to ensure work motivation and satisfaction in large projects?