



Scaled Agile Framework and Testing

Half-Day Tutorial

By

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Safe Journey

TestNet Autumn Event 2018

10-10-2018

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My Background

QA & Testing

+10 years of software testing and QA experience

- Testing
- Test Management

+10 years in DSTB and ISTQB

- Chair of DSTB
- ISTQB Governance Officer
- Vice Chair of ISTQB Examination Working Group

Agile

+10 years of agile experience

- Agile Team Member
- Test Manager

+4 years of SAFe® experience

- Agile Team Member
- Community of Practice (CoP) Facilitator
- Agile Coach
- Agile Transformation Leader

Co-author of the eBook:

“Testing and Quality in the Scaled Agile Framework for Lean Enterprises”

Safe Journey Agile Transformation & Personal Growth



Agile Methodologies

We help teams, departments and companies become more agile using their own methodology or a framework like SAFe



Training

We train and educate people in all roles to help them gain knowledge and increase their Agile competencies and skills



Agile Maturity & Growth

We facilitate and measure effective, intentional growth of people, teams, departments and organisations



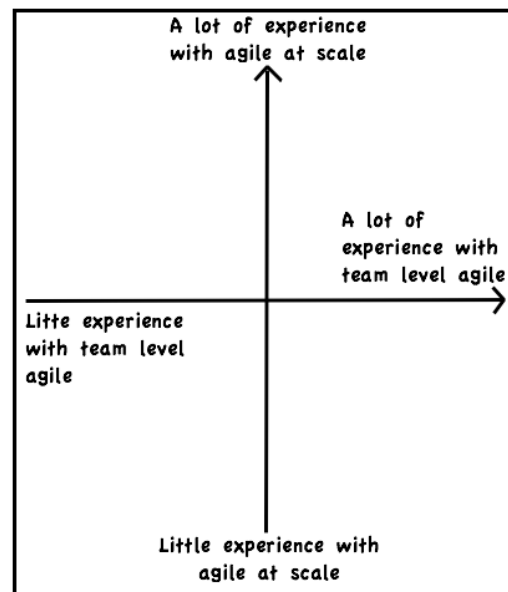
Coaching

We coach people one-to-one to help them grow and safely overcome personal challenges

What is your Level of Experience with Agile?



Value on Scale	Description
0	No experience at all
1 - 4	Theoretical knowledge (articles, training course, etc.)
5	Less than 1 year practical experience (the origin)
6 - 9	Between 1 year and 15 years of practical experience
10	More than 15 years practical experience



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Agenda



- Introduction to Agile at Scale
- QA and Testing Challenges when Scaling Agile



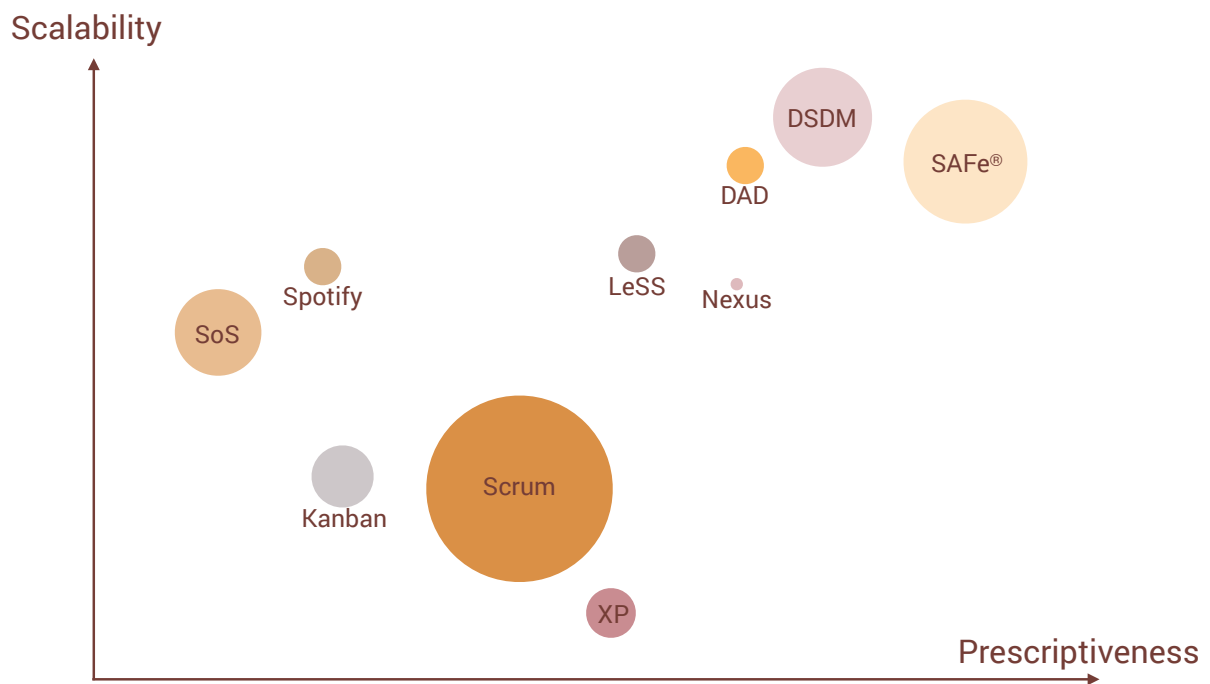
Photo by Nathan Dumlao on Unsplash

- Organisational Challenges
- Implementation and Customisation Challenges

Introduction to Agile at Scale



Agile Methodologies at a Glance



Information combined from several sources:
Agile Scaling Knowledgeable (ASK), Agile Scaling, agilescaling.org
12th annual State of Agile Report, Collabnet VersionOne, collab.net
World Quality Report 2017-18, Ninth Edition, Capgemini, Micro Focus, Sogeti, capgemini.com
Kanban and Scrum making the most of both, Henrik Kniberg & Mattias Skarin, 2010, C4Media

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Which Agile Methodologies Does your Company Use?

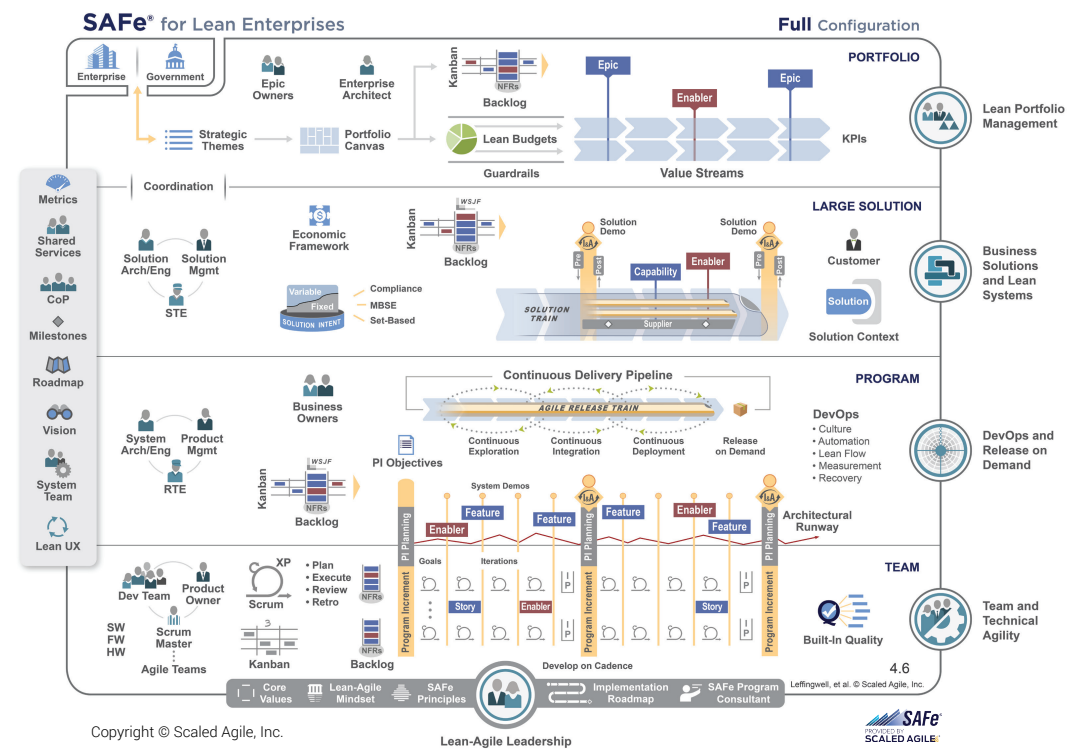


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SAFe® Big Picture v. 4.6



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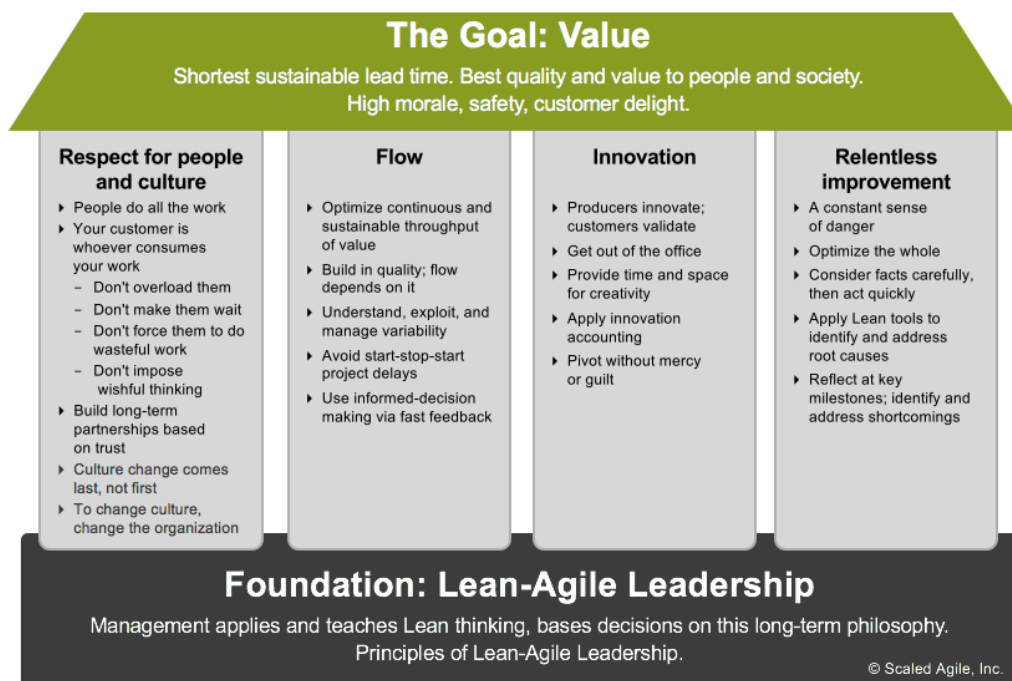
Lean-Agile Leadership

See latest description on <http://v46.scaledagileframework.com/#>

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The SAFe® House of Lean



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See latest description on www.scaledagileframework.com/lean-agile-mindset

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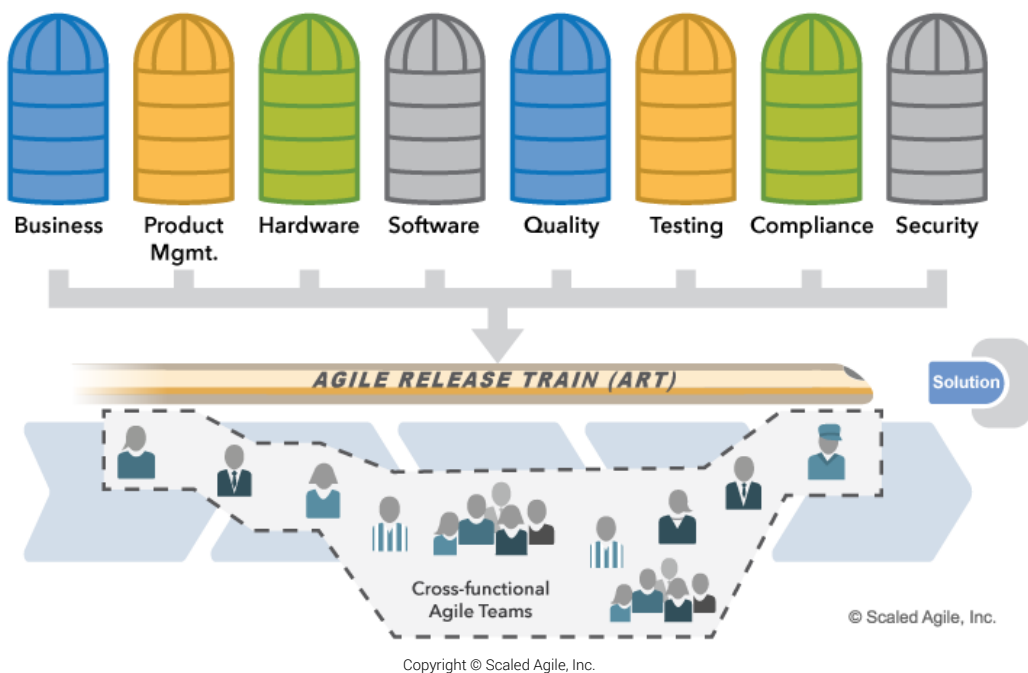
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Long-Lived Agile Release Train (ART)



Fully Cross-Functional Agile Release Train (ART)



Similar Roles in Scrum and SAFe®



Agile Team



Product Owner

Team Backlog of user stories



Scrum Master

Team Ways of Working



Dev Team

Define, build, test and implement solutions

Agile Release Train



Product Mgmt

ART Backlog of Features



Release Train Engineer

ART Ways of Working



System Architect

Architectural runway and technical excellence

Similar Events in SAFe®



Agile Team



Iteration Planning

2-4 weeks



Standup

Daily



Review

User stories - end of sprint



Retro

More tactical

Agile Release Train

Program Increment Planning

8-12 weeks

Scrum of Scrums & ART Sync

Weekly

System Demo

Features - end of program increment

Inspect & Adapt

More strategic



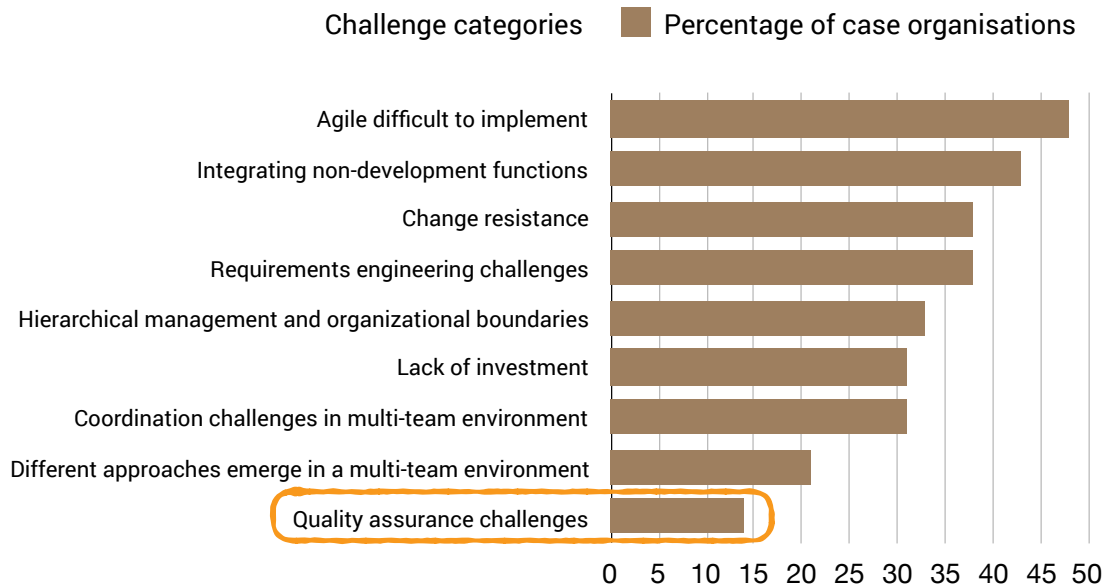
QA and Testing Challenges when Scaling Agile



What are your Biggest Challenges?

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Transformation Challenges - Literature Review*



* Challenges and success factors for large-scale agile transformations: A systematic literature review, Digert, K. et al, The Journal of Systems and Software, 119 (2016) 87-108

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Quality Assurance Challenges when Scaling Agile



Quality Assurance Challenges

- Accommodating non-functional testing
- Lack of automated testing
- Requirements ambiguity affects QA

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Building a New Online Application - An Example of Dealing with QA Challenges



- Target both consumer and business customers
- Focus on customer experience
- Replace an existing application
- Reuse existing data sources

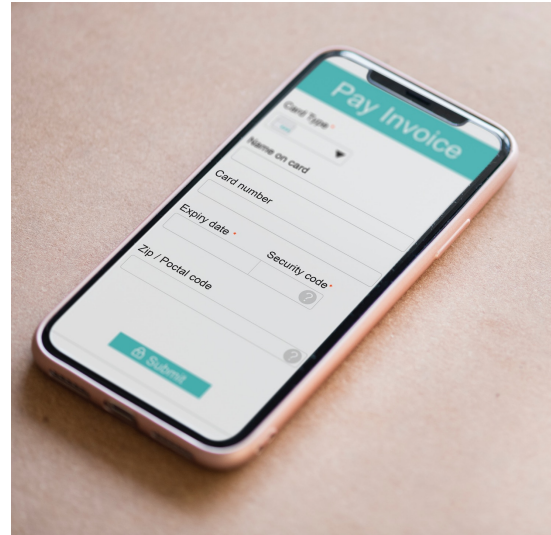


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Project Background - An Example of Dealing with QA Challenges

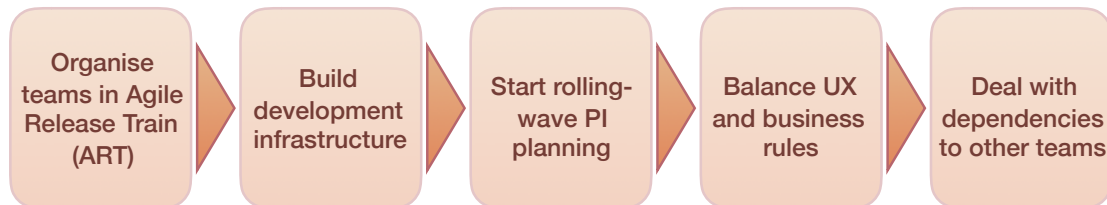


- Project initiated
- Approx. 80 people
- Teams by function
- Several countries
- Demo version ready in 6 months



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Introducing Agile Using SAFe® - An Example of Dealing with QA Challenges

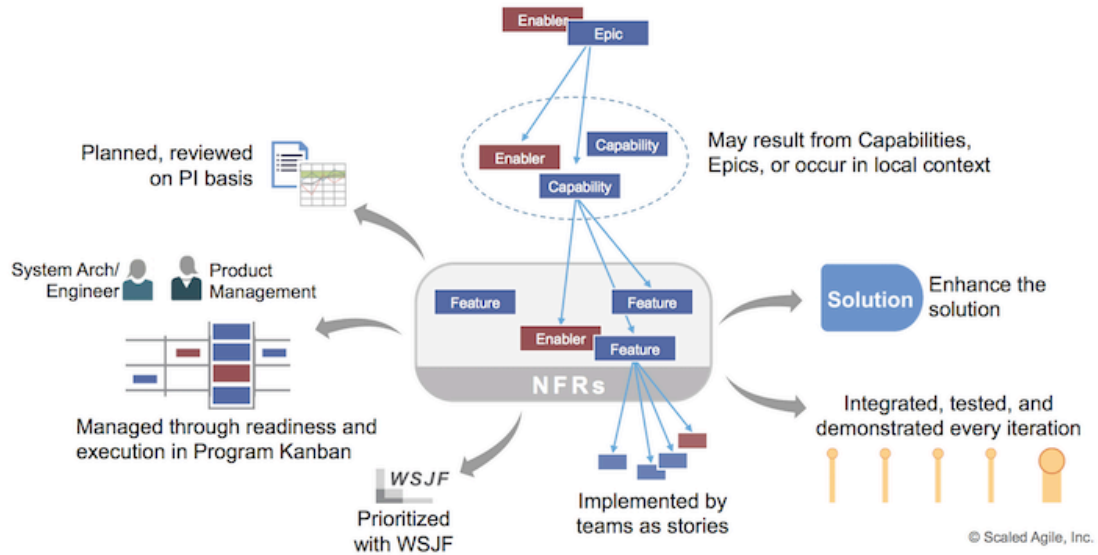


Changes in QA & Test - An Example of Dealing with QA Challenges



- Test managers and testers became part of the Agile teams
- Some Agile teams did not have professional QA or test professionals
- The Agile teams were responsible for all QA and test activities
- Established a Community of Practice for testing (topic-based instead of role-based)

Accommodating Non-Functional Testing - An Example of Dealing with QA Challenges



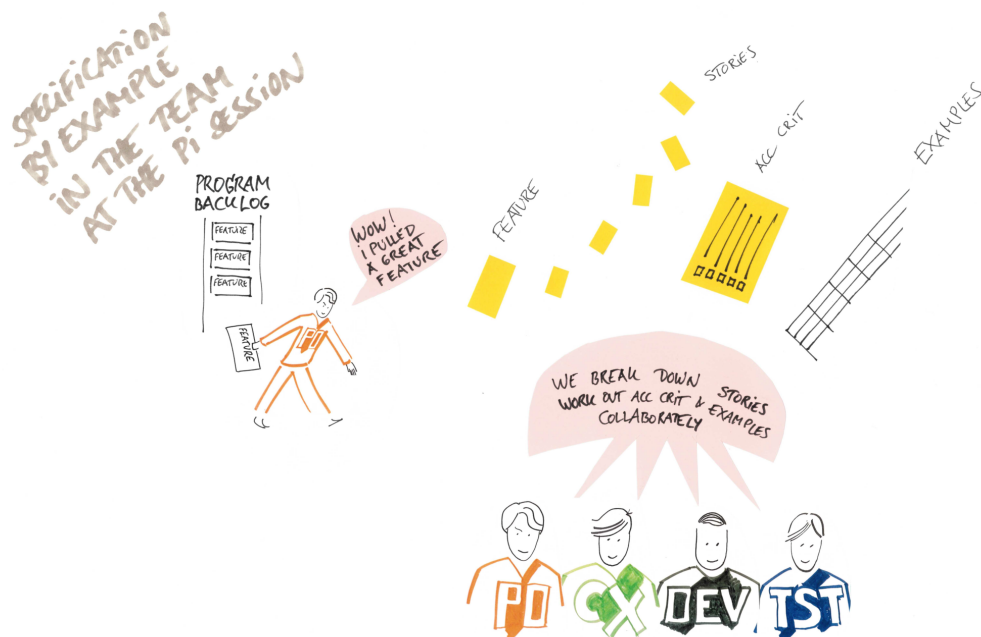
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See latest description on www.scaledagileframework.com/features-and-capabilities/

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Requirements Ambiguity Affects QA - An Example of Dealing with QA Challenges



Picture created by Ole Luntang Christensen

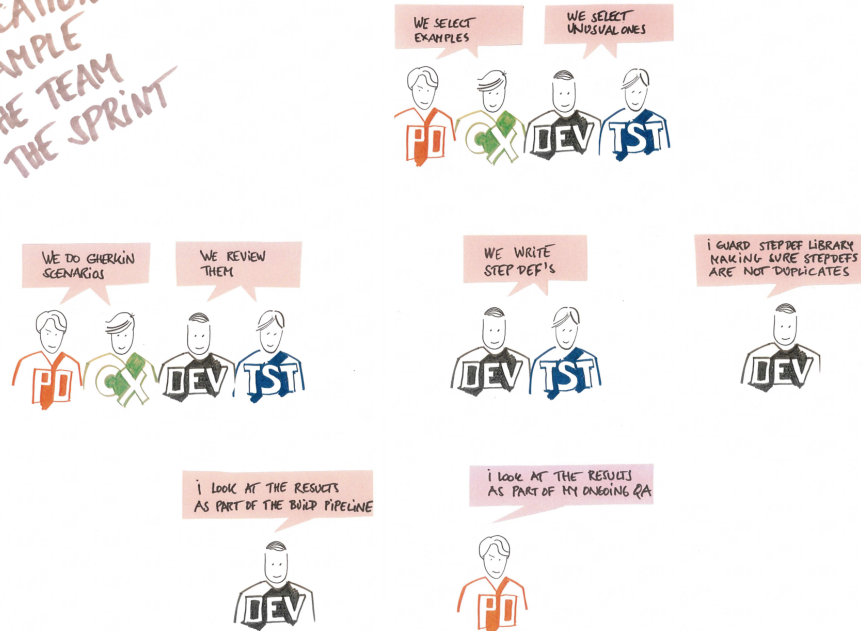
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Lack of Automated Testing - An Example of Dealing with QA Challenges



*SPECIFICATION
BY EXAMPLE
IN THE TEAM
IN THE SPRINT*



Picture created by Ole Luntang Christensen

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Lessons Learnt - An Example of Dealing with QA Challenges



Technical Excellence

- DevOps
- Infrastructure
- Built-in quality

Agility

- Team focus vs. solution focus
- IP sprint not HIP sprint
- Active topic-based CoP

Organisation

- Include teams outside the ART as much as possible
- Get the business to lead
- Leader involvement

Time Horizon

- Short-term vs. long-term
- Project delivery vs. organisational growth

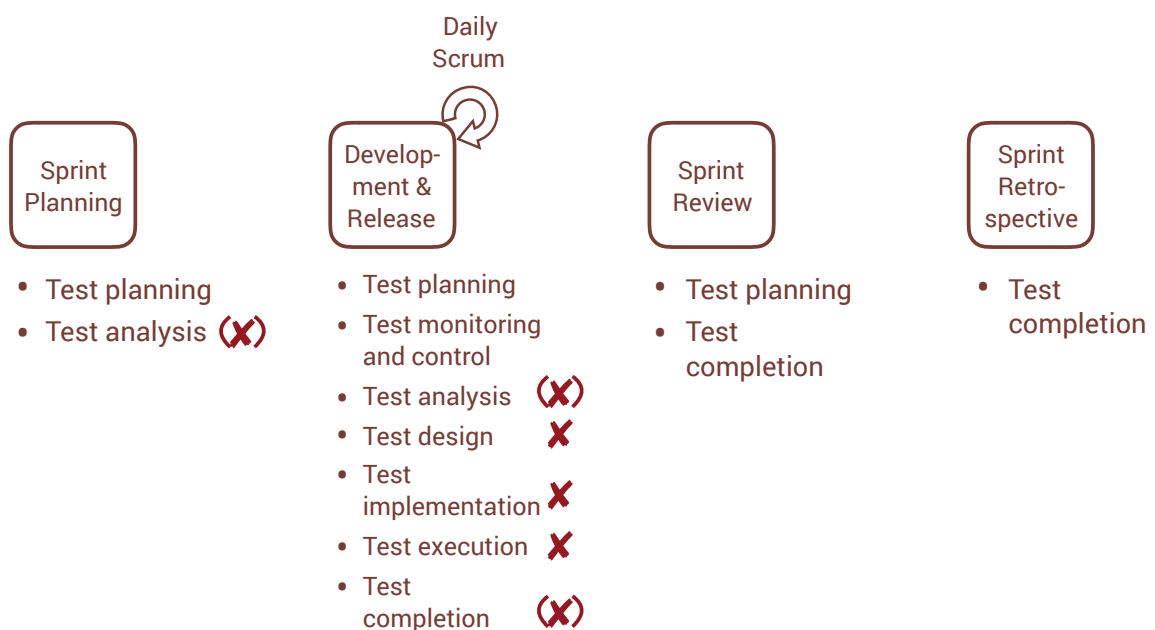
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QA Specialist or Tester in a Dev Team



Test Manager in a Dev Team



Which Roles in an ART Inherit the Typical Responsibilities of a Test Manager?



Product Management



Release Train Engineer



System Architect

- Test Reporting
- Defect Management
- Test Planning (features)
- Test Approach
- Test Environments
- Test Tools
- ?
- ?



Shared Services

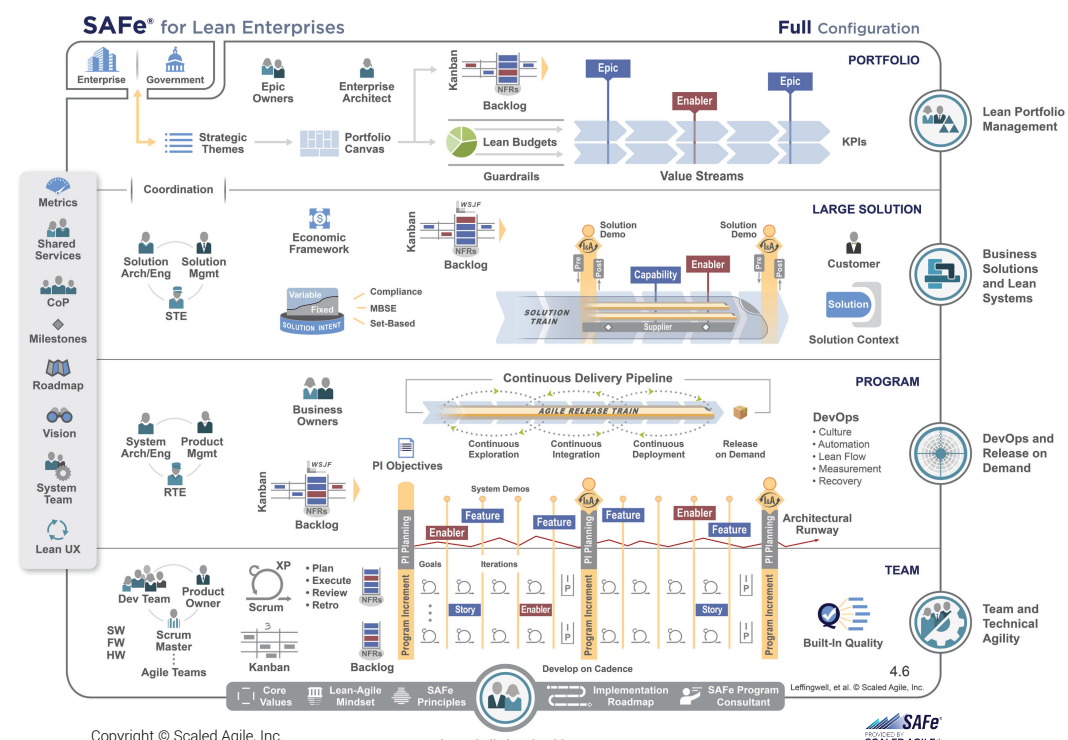


System Team

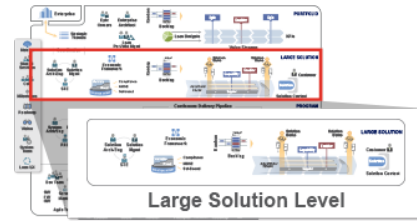


Agile Team

SAFe® Big Picture v. 4.6



Test Managers on Large Solution Level - An Example



See latest description on www.scaledagileframework.com/large-solution-level/

- Support the Agile teams in the ARTs throughout the PI
- High level coordination of test activities across ARTs and programmes
- Implement the corporate test strategy
- Define QA enabler epics in collaboration with Solution Trio
- QA and Testing CoP Lead

Challenges Implementing SAFe®



Implementation Difficulties when Scaling Agile



Agile difficult
to implement



- Misunderstanding agile concepts
- Lack of guidance from literature
- Agile customized poorly
- Reverting to the old way of working
- Excessive enthusiasm

Crucial Aspect of SAFe®



“PI planning is essential to SAFe:
If you are not doing it, you are not doing SAFe.”

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Program Increment (PI) Planning



- All people on the ART and relevant stakeholders meet face-to-face for 2 days to plan the next PI
- Remote teams are planning at the same time using video conferencing.



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A Typical Agenda for PI Planning

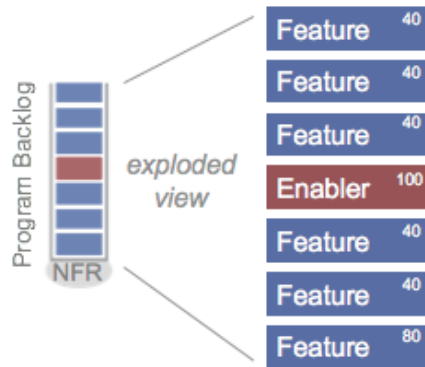


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Program Backlog

- Top 10 features
- Both Business and Enabler Features
- General and specific NFRs



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See latest description on www.scaledagileframework.com/program-and-solution-backlogs/

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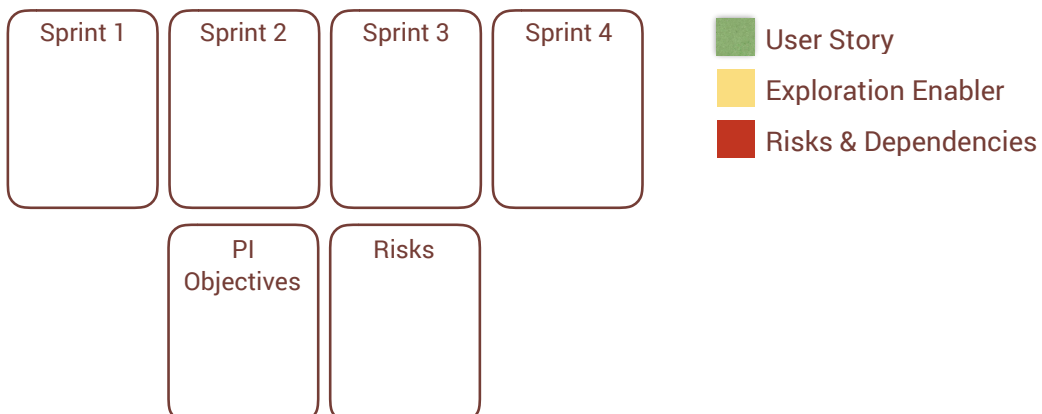
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Team Planning Area

During PI Planning the Agile teams plan each iteration by:

- Defining and estimating stories
- Setting team PI objectives with assigned business value
- Identifying and managing risks



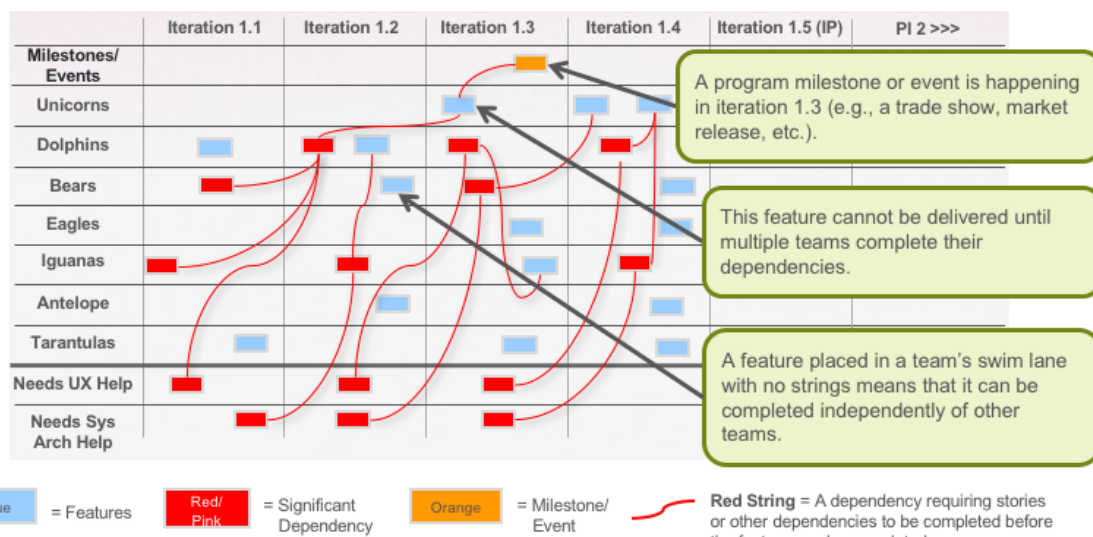
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Program Board



The plan for the next PI is documented on the Program Board



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See latest description on www.scaledagileframework.com/pi-planning/

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Program Risks



- Risks, Impediments, Opportunities (RIO) are ROAM'ed on the RIO Board:
- Resolved - The teams agree that the issue is no longer a concern (different from mitigated)
- Owned - Someone on the train takes ownership of the item since it cannot be resolved during PI Planning
- Accepted - Potential problems that has been understood and accepted by the teams and stakeholders
- Mitigated - The teams have planned to reduce the likelihood and/or the potential impact of the problem

Committed PI Objectives



Program PI Objectives

- Deliver basic search, sort, and view of books in inventory
- Deliver basic shopping cart, purchase and shipping options
- Support investor demo by start of iteration 3



Team PI Objectives

Team A	BV
• One- click search for books by title, author and genre	10
• Support investor demo by start of Iteration 3	9
• Drag and drop columns by attribute	3

Team B	BV
• Purchase books via various credit card types	10
• Allow customers to choose their optimal shipping option	8
• Support investor demo by start of iteration 3	9

Team C	BV
• Allow users to comment on books they have purchased	8
• Support investor demo by start of Iteration 3	9
• Implement type-ahead using index from search	3

Team D	BV
• Provide book detail to web users	10
• Allow registered users to manage their profile	8
• Support investor demo by start of Iteration 3	9

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See latest description on www.scaledagileframework.com/pi-planning/

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What Would You Customise?



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Suggestion to Enhance the Program Board



- Dedicated swim lane for larger or more complex testing activities, e.g., Release Testing



		Sprint 1 PI 1	Sprint 2 PI 1	Sprint 3 PI 1	Sprint 4 IP PI 1	PI 2 >>
Business Releases/ Milestones	Segment 1					
	Segment 2					
Technical Releases						
Release Testing						
Team 1						
Team 2						
Team 3						
Team 4						
Team 5						
Team 6						
Deliveries to or from others (e.g.,suppliers, other ARTs)						

■ = Feature	■ = Business Release	■ = Release Testing
■ = Dependency	■ = Technical Release	

Simple Example of a Dedicated Swim Lane on the Program Board



- A feature completed by one team is release tested in the same iteration

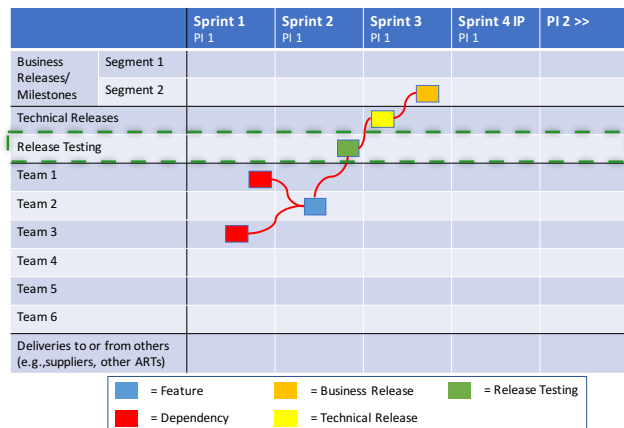
		Sprint 1 PI 1	Sprint 2 PI 1	Sprint 3 PI 1	Sprint 4 IP PI 1	PI 2 >>
Business Releases/ Milestones	Segment 1			■		
	Segment 2					
Technical Releases				■		
Release Testing			■			
Team 1		■				
Team 2						
Team 3						
Team 4						
Team 5						
Team 6						
Deliveries to or from others (e.g.,suppliers, other ARTs)						

■ = Feature	■ = Business Release	■ = Release Testing
■ = Dependency	■ = Technical Release	

Another Example of a Dedicated Swim Lane on the Program Board



- Feature completed by three teams
- Two teams complete their part in the first iteration
- Third team complete their part in the second iteration



Suggestion to Enhance the Team Planning Area



- Team planning area for PI Planning
- Add an area for putting things related to QA & Testing

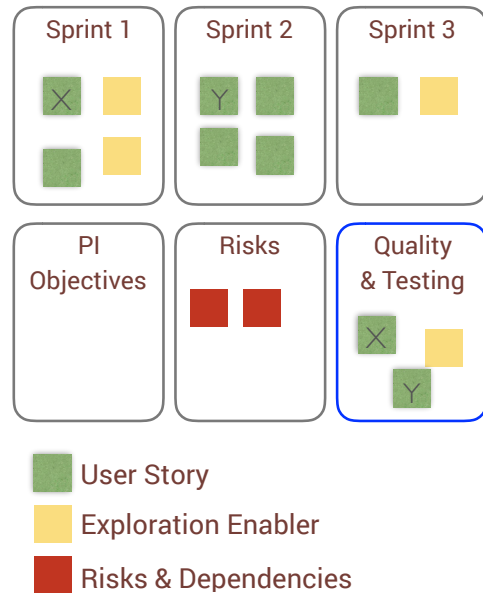


- User Story
- Exploration Enabler
- Risks & Dependencies

Simple Example of an Enhanced Team Planning Area



- Add an area for putting things related to QA & Testing e.g.,:
 - Things which impact multiple stories
 - QA & Testing activities unique to this PI
 - Help to other teams, e.g., create test data



Summary



- SAFe is one of the most popular and prescriptive frameworks
- QA & testing are typically not the biggest challenges
- Guidance on how to map typical QA and testing roles besides testers is missing
- Customising a framework like SAFe is crucial for success

Feedback on the Tutorial



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Contact Details



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