

# SAFe® Scrum Master

Applying the Scrum Master Role  
within a SAFe Enterprise

6.0.1

Workbook



# Welcome to the course!

# Make the Most of

# Your Learning



## Access the SAFe Community Platform

Manage your member profile, access videos and training resources, join Communities of Practice, and more.



## Prepare Yourself

Access your learning plan featuring your digital workbook, study materials, and certification practice test



## Become a Certified SAFe Professional

Get certified to validate your knowledge, expand your professional capabilities, and open the door to new career opportunities.



## Access SAFe Content and Tools

Access professional development resources and toolkits.



## Collaborate with Your Team

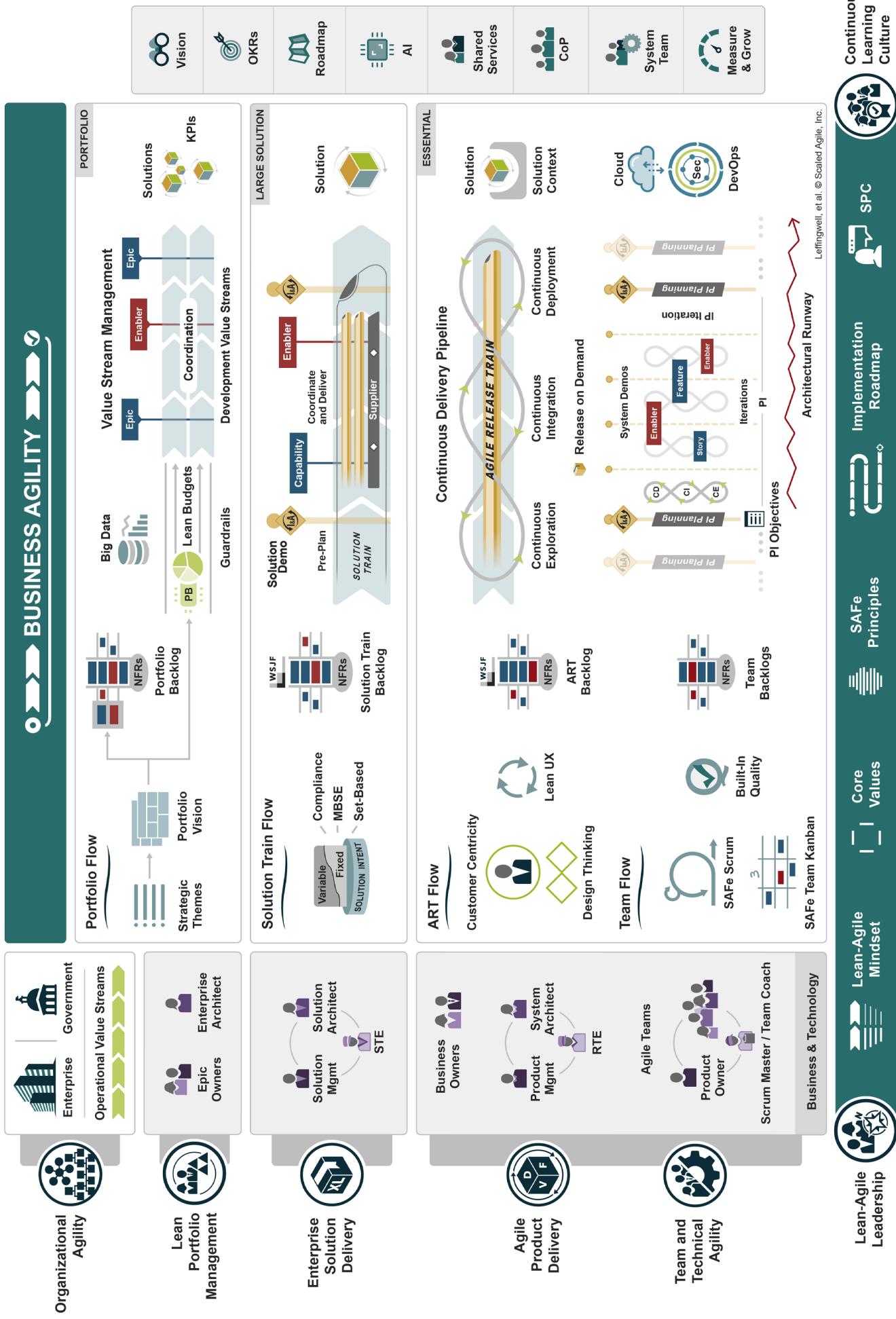
Choose from hundreds of collaboration templates to easily set up events like PI Planning and work in real time with your team and others—all with SAFe Collaborate.



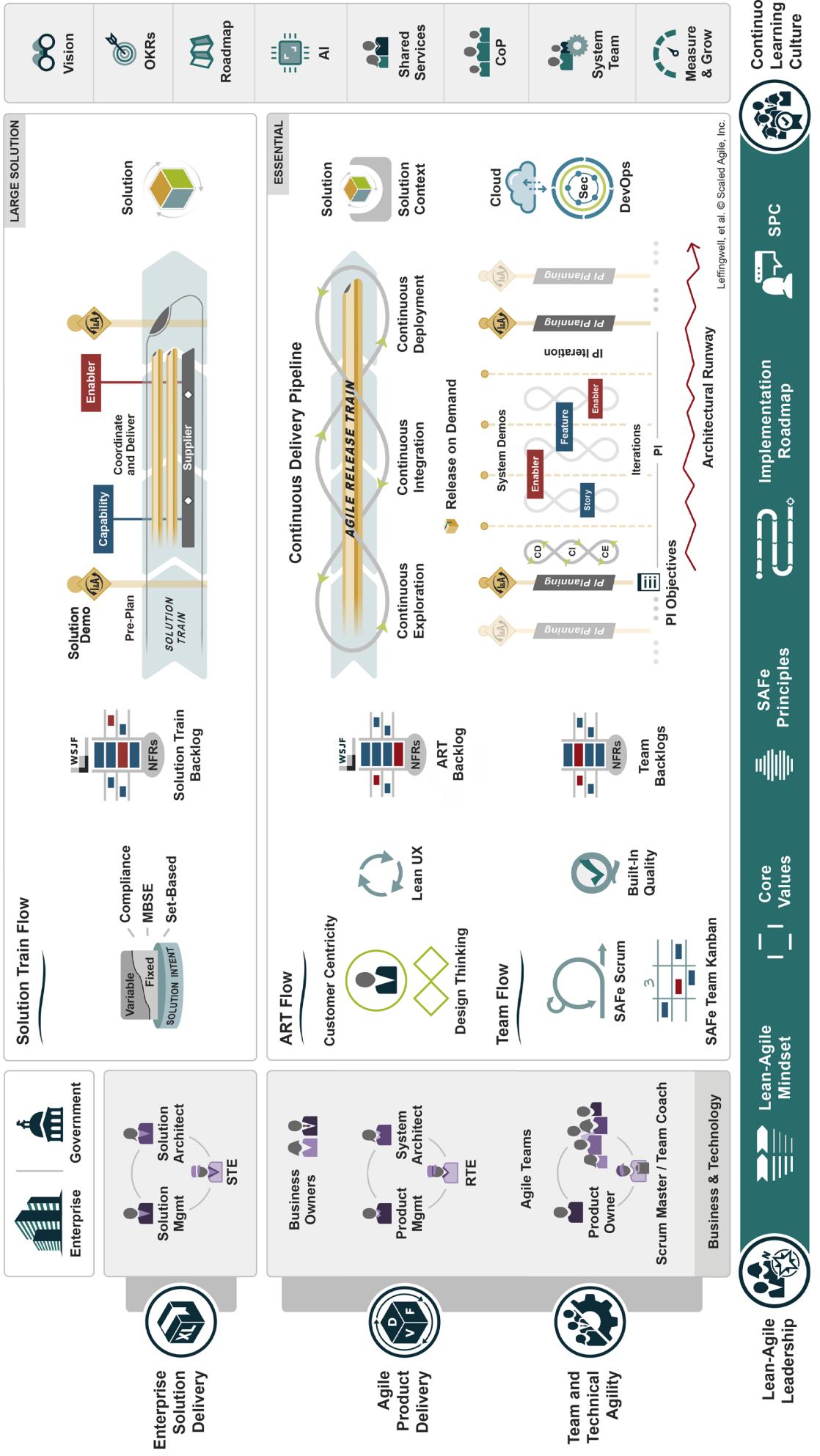
## Showcase SAFe Credentials

Display your digital badge to promote your SAFe capabilities and proficiencies throughout your career.

# SAFe® 6.0

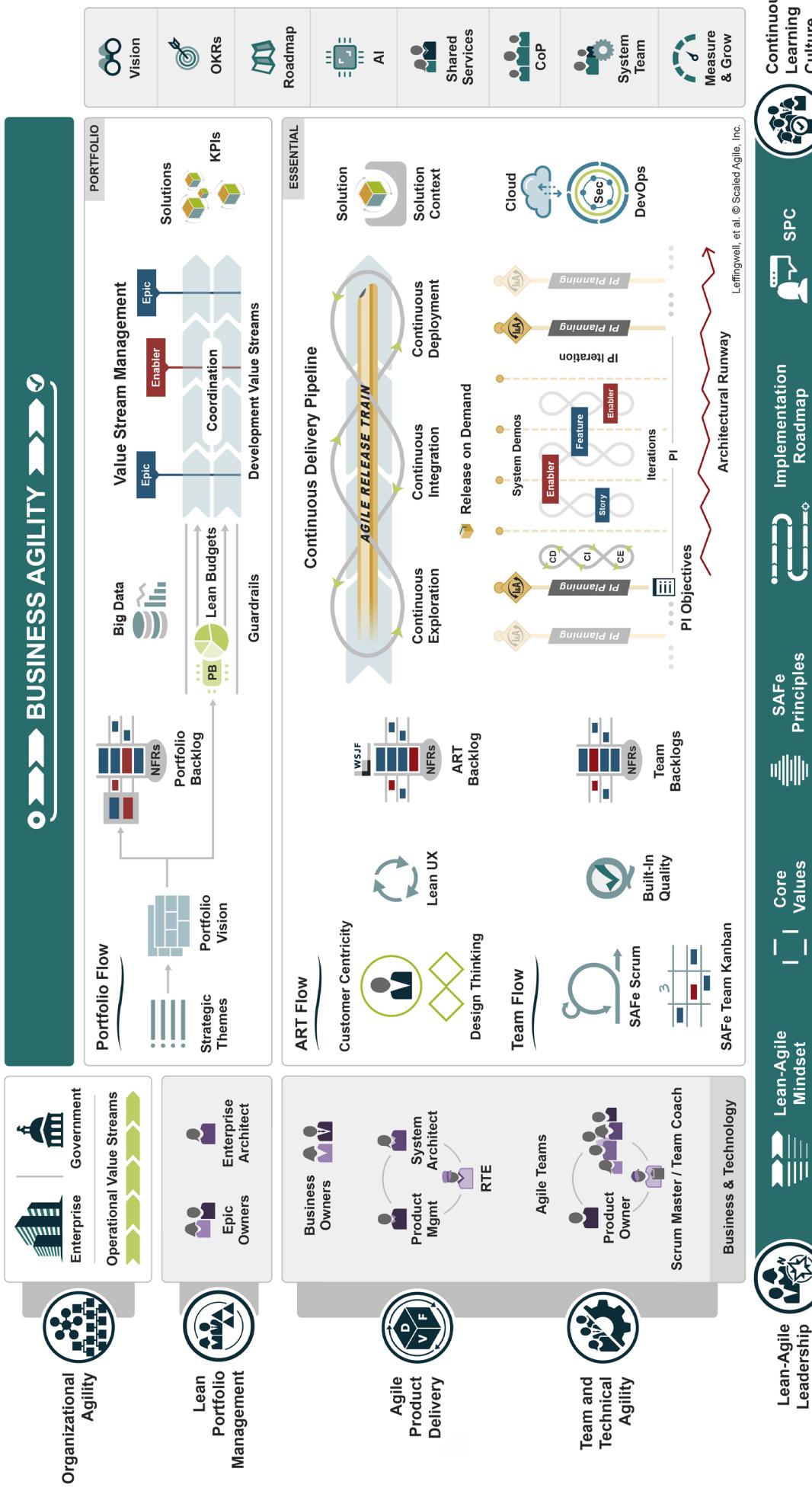


# SAFe® 6.0



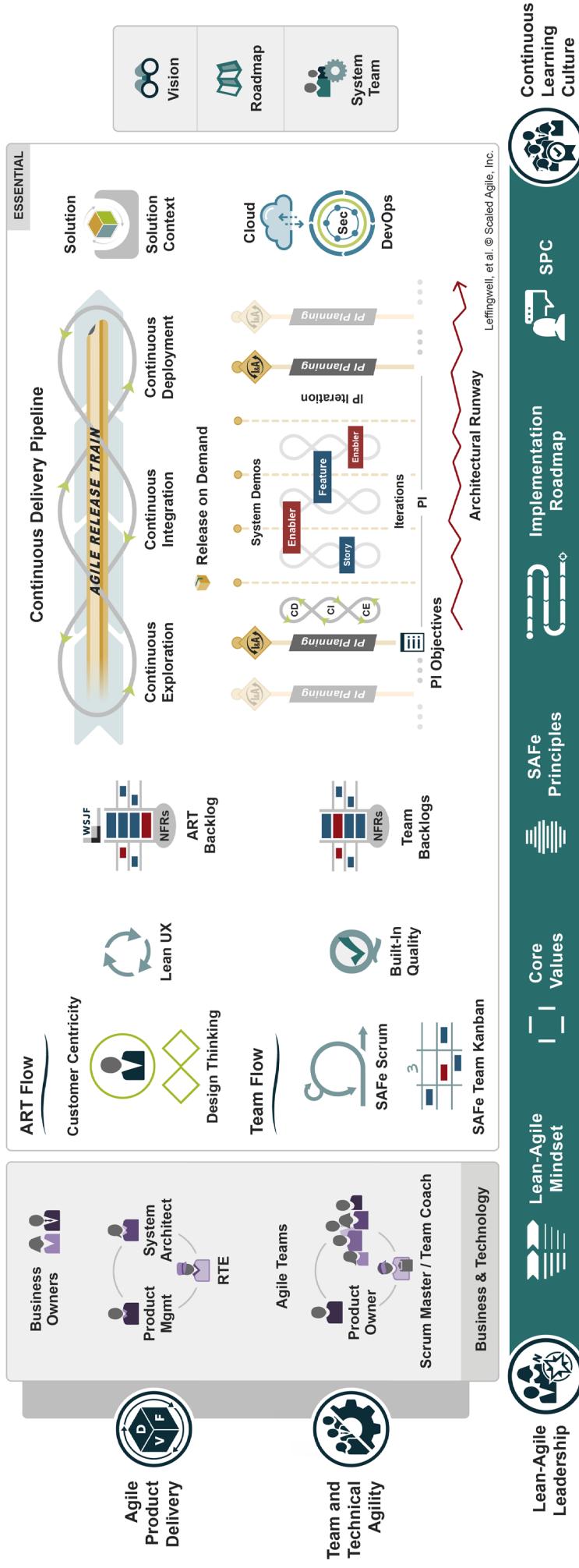
SCALED AGILE®

# SAFe® 6.0



SCALED AGILE®

# SAFe® 6.0



SCALED AGILE®



SPC

Implementation Roadmap

SAFe Principles

Core Values

Business & Technology



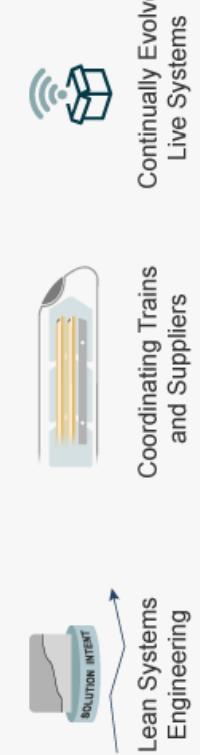
Lean-Agile Mindset

Continuous Learning Culture

Lerfingwell, et al. © Scaled Agile, Inc.

# BUSINESS AGILITY

## Enterprise Solution Delivery



## Lean Portfolio Management



Strategy & Investment Funding

Lean Governance

Agile Portfolio Operations

## Agile Product Delivery



Agile Teams

Built-in Quality

Teams of Agile Teams



Agile Teams

Built-in Quality

Teams of Agile Teams

## Lean-Agile Leadership



Mindset & Principles

Leading Change

Leading by Example



Learning Organization



Innovation Culture



Relentless Improvement

## Team and Technical Agility



Agile Teams

Built-in Quality

Teams of Agile Teams

## Continuous Learning Culture



Learning Organization



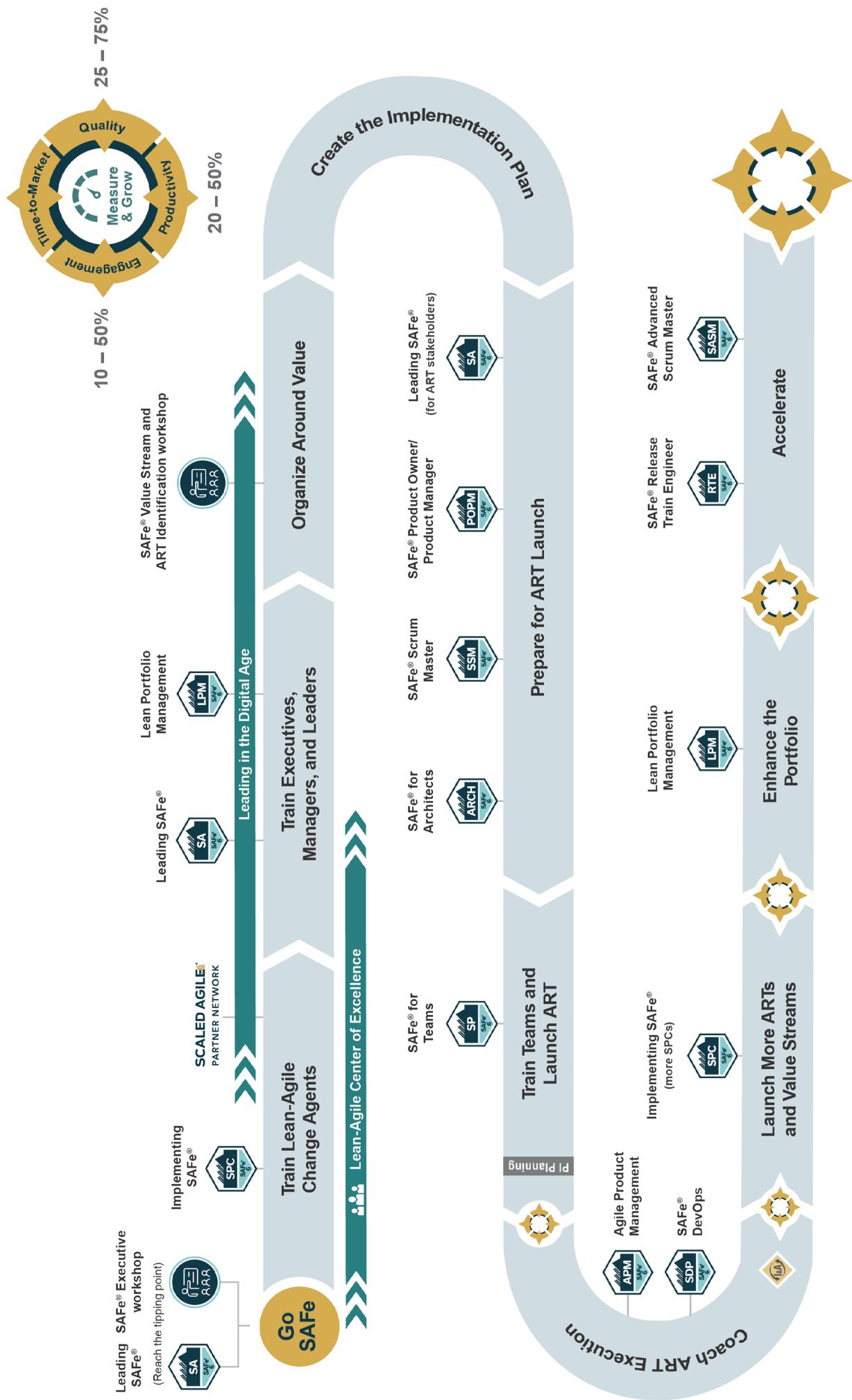
Innovation Culture



© Scaled Agile, Inc.

SAFe® Implementation Roadmap

## Business results



SCALED AGILE®

# Table of Contents

Privacy Notice.....	10
Course Introduction.....	11
Lesson 1: Introducing Scrum in SAFe .....	14
Lesson 2: Characterizing the Role of the Scrum Master .....	38
Lesson 3: Experiencing PI Planning.....	69
Lesson 4: Facilitating Iteration Execution .....	109
Lesson 5: Finishing the PI.....	145
Lesson 6: Practicing SAFe .....	158
SAFe Glossary .....	164

# Privacy Notice

Your name, company, and email address will be shared with Scaled Agile, Inc. for course fulfillment, including testing and certification. Your information will be used in accordance with the Scaled Agile privacy policy available at <https://www.scaledagile.com/privacy-policy/>.

# SAFe® Scrum Master

Applying the Scrum Master Role within  
a SAFe Enterprise

**SAFe® Course** - Attending this course gives learners access to the SAFe® Scrum Master exam and related preparation materials.

6.0.1



 **SAFe®** | PROVIDED BY   
© Scaled Agile, Inc.

## Logistics

- ▶ Course meeting times
- ▶ Breaks
- ▶ Facilities
- ▶ Technology requirements
- ▶ Working agreements



## Activity: Access the Class Page

Duration  
5 min

- ▶ **Step 1:** Navigate to the Class Page on SAFe Studio
- ▶ **Step 2:** Select Learn, then My Classes, then SAFe Scrum Master (6.0)
- ▶ **Step 3:** Click on the link to Download the SAFe Scrum Master (6.0) workbook (PDF)

SAFe STUDIO™

Visit the SAFe Release Train Engineer Class Page to download the workbook

<https://bit.ly/Studio-MyClasses>

SCALED AGILE® © Scaled Agile, Inc.

1-3

## Course outline

- ▶ Lesson 1: Introducing Scrum in SAFe
- ▶ Lesson 2: Characterizing the Role of the Scrum Master
- ▶ Lesson 3: Experiencing PI Planning
- ▶ Lesson 4: Facilitating Iteration Execution
- ▶ Lesson 5: Finishing the PI
- ▶ Lesson 6: Practicing SAFe

SCALED AGILE® © Scaled Agile, Inc.

1-4

## The SAFe Scrum Master/Team Coach role

- ▶ In SAFe 6.0, the role of the Agile Team coach is called the Scrum Master/Team Coach
- ▶ This course will exclusively use the term Scrum Master in alignment with the course certification
- ▶ Both terms are correct and can be used interchangeably to meet the needs of teams and organizations



### Discussion: Spell out SAFe Scrum Master

Duration  
3 min

- ▶ **Step 1:** Introduce yourself to someone you don't know.
- ▶ **Step 2:** Choose one letter from the course title. Use it to explain what you hope to learn in this class.
  - Example: "I selected 'C' for 'Communication' because I want to know how to communicate better with my team."



# Lesson 1

## Introducing Scrum in SAFe

**SAFe® Course** - Attending this course gives learners access to the SAFe Scrum Master exam and related preparation materials.



### Lesson Topics

- 1.1 Basic Agile development concepts**
- 1.2 Scrum basics**
- 1.3 The Agile Team in a SAFe Enterprise**



## Learning objectives

At the end of this lesson you should be able to:

- ▶ Explain basic Agile development concepts
- ▶ Discuss Scrum basic concepts and values
- ▶ Identify an Agile Team in the Scaled Agile Framework (SAFe)

## 1.1 Basic Agile development concepts



## Activity: Too much work in process (WIP)

Duration  
4 min

- ▶ Step 1: On your instructor's command, write the numbers 1 to 26 as many times as possible until the instructor says to stop
- ▶ Step 2: On your instructor's command, write the letters A to Z as many times as possible until the instructor says to stop
- ▶ Step 3: On your instructor's command, write number/letter pairs (such as 1A, 2B, 3C) as many times as possible until the instructor says to stop



SCALED AGILE® © Scaled Agile, Inc.

1-11



## Discussion: Too much work in process (WIP)

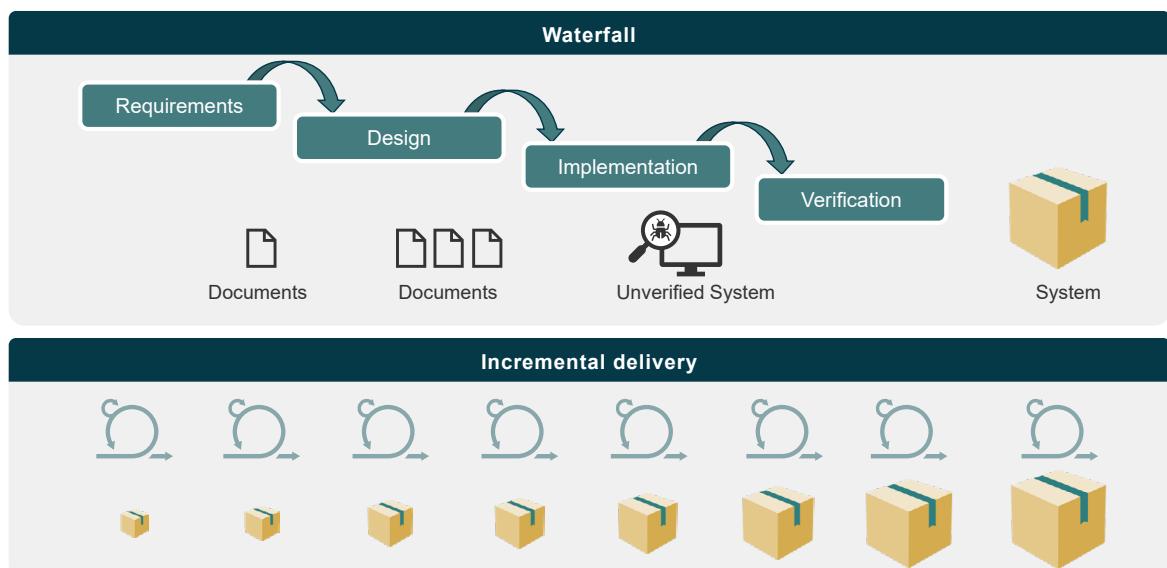
Duration  
4 min

- ▶ **Step 1:** As a class, discuss the following:
  - How many numbers did you write down? How many letters? How many number/letter pairs?
  - How many active projects are you currently juggling?
  - How much of your day is actually spent adding value versus running from meeting to meeting?

SCALED AGILE® © Scaled Agile, Inc.

1-12

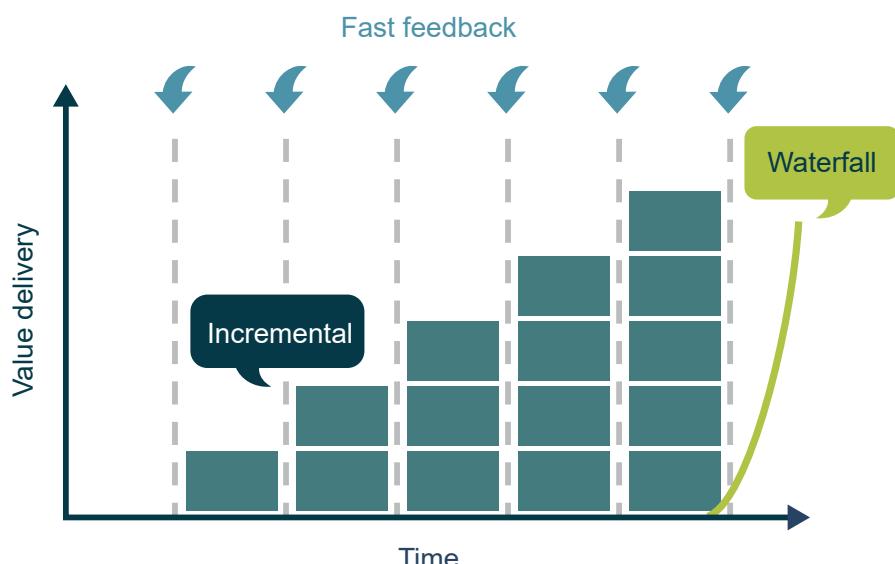
## Agile economics: Deliver early and often



SCALED AGILE® © Scaled Agile, Inc.

1-13

## Deliver value incrementally



SCALED AGILE® © Scaled Agile, Inc.

1-14

## Agile frameworks

# Agile Development

A general term defined by **values** and **principles**

Agile Frameworks		
• SAFe	• Scrum	• Kanban
Practices		
• Timeboxing • Stories • Team syncs • Pair/mob programming	• Frequent demos • Test-driven development • Behavior-driven development	• Information radiators • Retrospectives • Continuous Integration • DevOps

SCALED AGILE® © Scaled Agile, Inc.

1-15



## Activity: Manifesto for Agile software development

Duration  
2 min

- ▶ Step 1: Locate the activity in your workbooks
- ▶ Step 2: Individually fill in the following value statements using the appropriate phrases

Value statements	Phrases
1) _____ over processes and tools 2) Working software over _____ 3) Customer collaboration over _____ 4) _____ over following a plan	responding to change individuals and interactions comprehensive documentation contract negotiations

SCALED AGILE® © Scaled Agile, Inc.

1-16

# Agile Manifesto value statements

**Instructions:** Type the complete four Agile Manifest value statements by adding the appropriate phrases:

## The Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others do it.

Through this work we have come to value:

**Individuals and interactions** over processes and tools

**Working software** over comprehensive documentation

**Customer collaboration** over contract negotiation

**Responding to change** over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Reference: Agile Manifesto

**SCALED AGILE®** © Scaled Agile, Inc.

1-17

## The Agile Manifesto Principles

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference for the shorter timescale.
4. Business people and developers must work together daily throughout the project.

**SCALED AGILE®** © Scaled Agile, Inc.

1-18

## The Agile Manifesto Principles

5. Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. Working software is the primary measure of progress.
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

SCALED AGILE® © Scaled Agile, Inc.

1-19

## The Agile Manifesto Principles

9. Continuous attention to technical excellence and good design enhances agility.
10. Simplicity—the art of maximizing the amount of work not done—is essential.
11. The best architectures, requirements, and designs emerge from self-organizing teams.
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

SCALED AGILE® © Scaled Agile, Inc.

1-20



## Discussion: Adopting Agile principles and practices



► **Step 1:** Working in your groups, discuss the following:

- Do the Agile values and principles align with the culture in your organization?
- Are there any contradictions?
- Which principle or practice stands out to you?
- What are some of the biggest areas where Agile challenges traditional development?

► **Step 2:** Be prepared to share with the class

## 1.2 Scrum basics

## The roots of Scrum

“The traditional sequential or ‘**relay race**’ approach to product development... may conflict with the goals of maximum speed and flexibility. Instead, a holistic or ‘**rugby**’ approach—where a team tries to go the distance as a unit, passing the ball back and forth—may better serve today’s competitive requirements.”

—Hirotaka Takeuchi and Ikujiro Nonaka, *The New New Product Development Game*

## Scrum Values

The three pillars of Scrum — *transparency, inspection, and adaptation* — support the Scrum Values.

### Scrum Values

Courage



Commitment



Focus



Respect



Openness





## Discussion: Scrum Values create transparency



- ▶ **Step 1:** As a group, pick a Scrum value and discuss it in the context of your work
- ▶ **Step 2:** Write how this Scrum value increases transparency in the process, the workflow, and the work progress
- ▶ **Step 3:** Be prepared to share with the class



Courage



Commitment



Focus



Respect

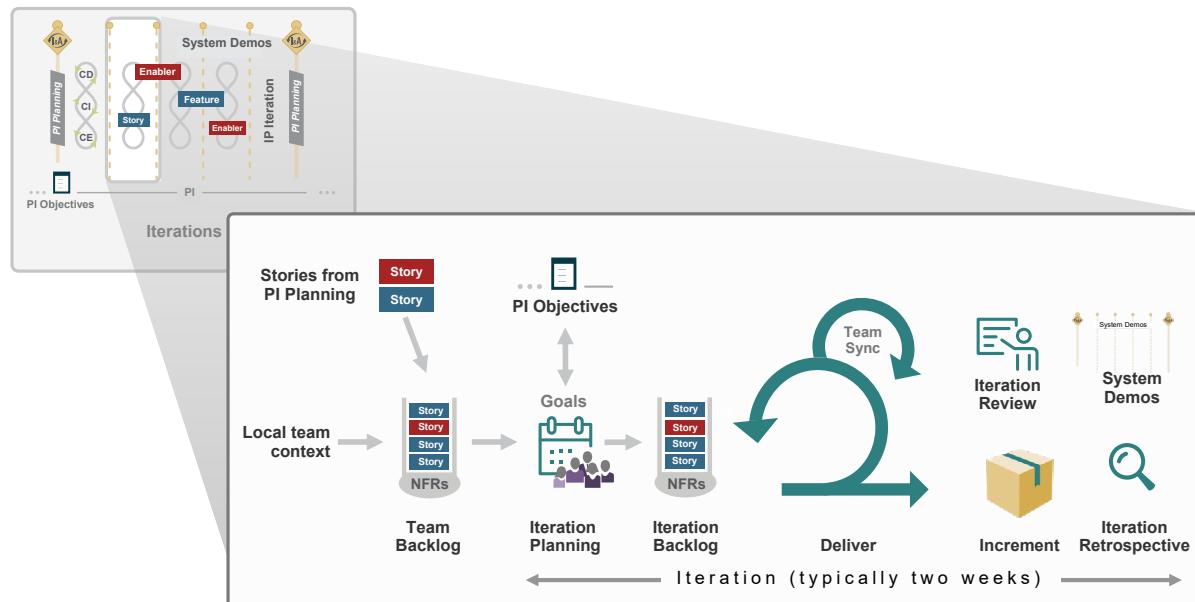


Openness

## Scrum and SAFe terminology

Scrum	SAFe
Sprint Planning	Iteration Planning
Sprint Review	Iteration Review
Sprint Retrospective	Iteration Retrospective
Sprint Goals	Iteration Goals
Sprint Backlog	Iteration Backlog
Daily Scrum	Team sync
Increment	Team Increment
The Scrum Team	Agile Team

## Agile for team: Scrum

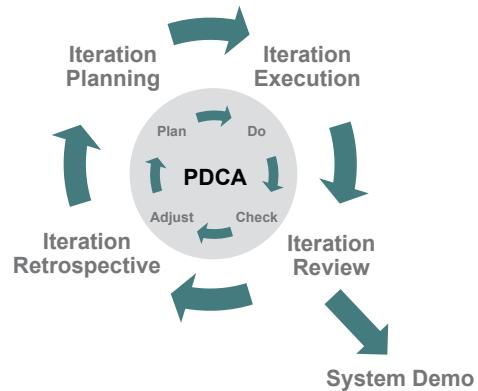


SCALED AGILE® © Scaled Agile, Inc.

1-27

## Iteration basics

- ▶ **Definition:** Iterations are a single development cycle where each Agile Team defines, builds, integrates, and tests the Stories from their Iteration Backlog
- ▶ **Duration:** Each Iteration is the same length, running back-to-back. SAFe advises two-week Iterations
- ▶ **Goal:** To deliver new value to the Customer at the end of each Iteration
- ▶ Avoid adding scope once the Iteration has begun

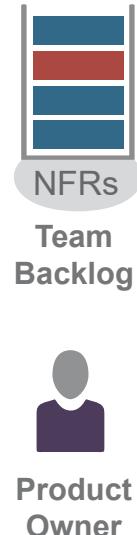


SCALED AGILE® © Scaled Agile, Inc.

1-28

## The Team Backlog organizes the team's work

- ▶ The Team Backlog is everything. If a piece of work is in the backlog, it might get done. If it isn't, there is no chance that it will be done.
- ▶ Work sizes may be estimated, but estimates do not imply committed delivery.
- ▶ The Team Backlog:
  - Is created by the Agile Team
  - Is owned and prioritized by the Product Owner
  - Represents opportunities, not commitments

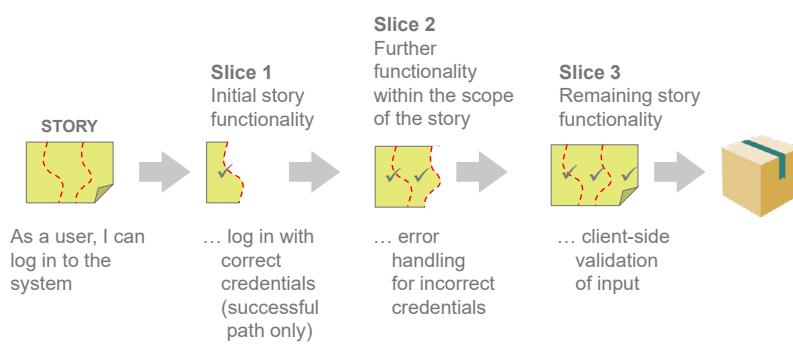


SCALED AGILE® © Scaled Agile, Inc.

1-29

## Foundation for incremental development

- Implementing Stories in vertical slices is key to incremental development.
- ▶ Enables a short feedback cycle
  - ▶ Allows refinement of understanding of functionality
  - ▶ Facilitates more frequent integration of working systems



SCALED AGILE® © Scaled Agile, Inc.

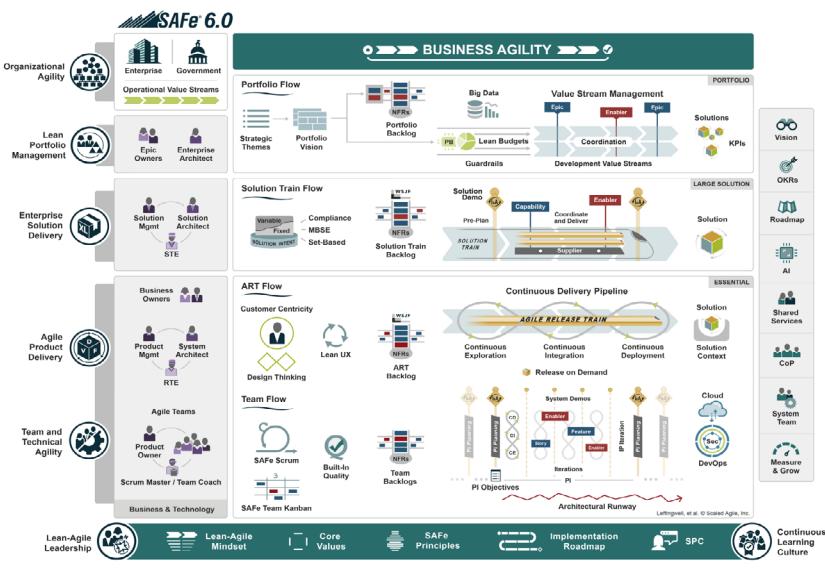
1-30

## 1.3 The Agile Team in a SAFe Enterprise

SAFED AGILE® © Scaled Agile, Inc.

1-31

### The Scaled Agile Framework® (SAFe)



SAFED AGILE® © Scaled Agile, Inc.

1-32

## SAFe Core Values

“Before we build cars,  
we build people.”

— from *The Toyota Way*

Alignment

Transparency

Respect for People

SCALED AGILE® © Scaled Agile, Inc.

1-33

## SAFe Lean-Agile Principles

#1 Take an economic view

#2 Apply systems thinking

#3 Assume variability; preserve options

#4 Build incrementally with fast, integrated learning cycles

#5 Base milestones on objective evaluation of working systems

#6 Make value flow without interruptions

#7 Apply cadence, synchronize with cross-domain planning

#8 Unlock the intrinsic motivation of knowledge workers

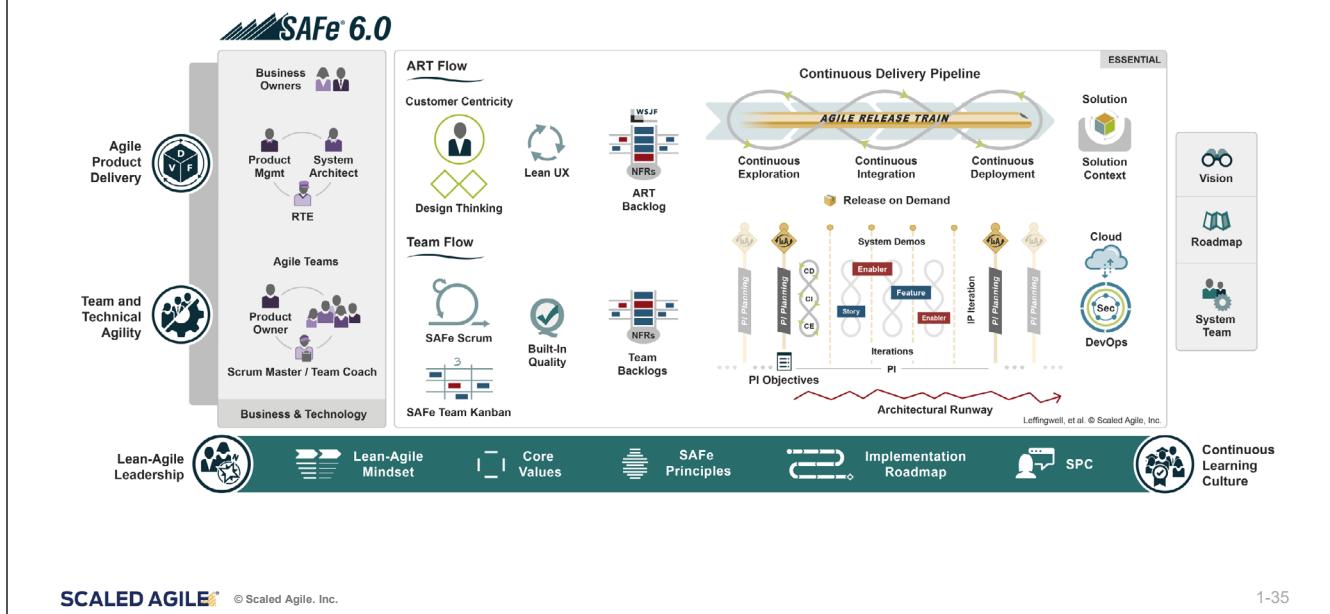
#9 Decentralize decision-making

#10 Organize around value

SCALED AGILE® © Scaled Agile, Inc.

1-34

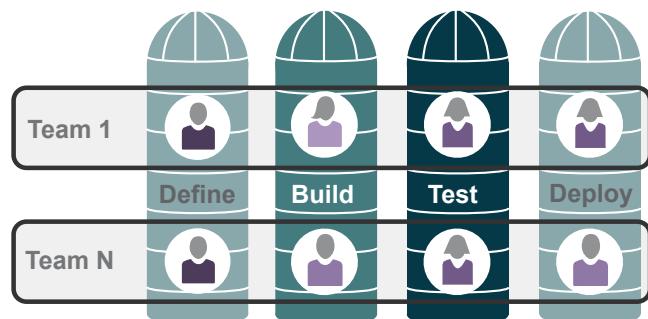
## Positioning an Agile Team in a SAFe Enterprise



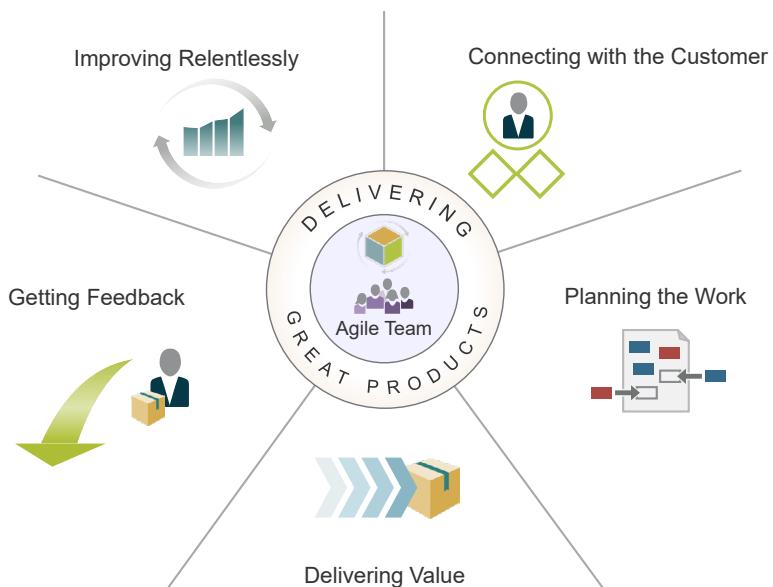
## Build cross-functional Agile Teams

Agile Teams are cross-functional, self-organizing entities that can define, build, test, and — where applicable — deploy increments of value.

- ▶ Optimized for communication and delivery of value
- ▶ Typically include 10 team members or less
- ▶ Contain two specialty roles:
  - Scrum Master
  - Product Owner



## Responsibilities of the Agile Team



SCALED AGILE® © Scaled Agile, Inc.

1-37

## Agile Teams have two speciality roles



### Scrum Master

- Facilitates PI Planning
- Supports Iteration Execution
- Improves Flow
- Builds a high-performing team
- Improves ART performance

### Product Owner

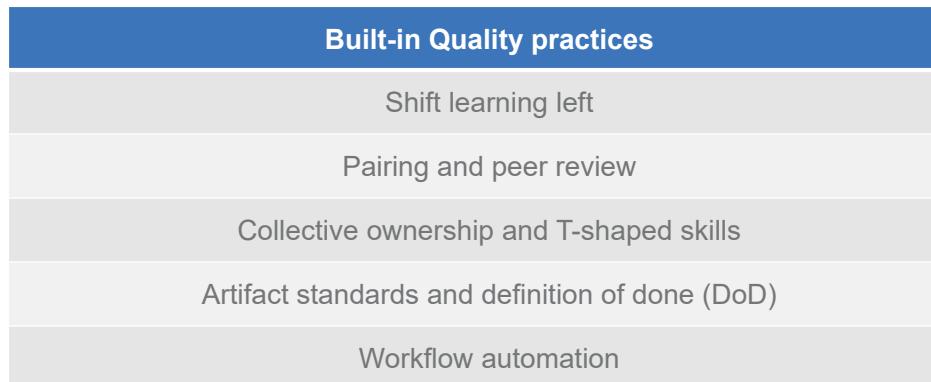
- Connects with the Customer
- Contributes to the Vision and Roadmap
- Manages and prioritizes the Team Backlog
- Supports the team in delivering value
- Gets and applies fast feedback

SCALED AGILE® © Scaled Agile, Inc.

1-38

## Nothing beats an Agile Team ...

- ▶ Teams use Scrum and Kanban for Team Agility
- ▶ Apply Built-in Quality practices for Technical Agility



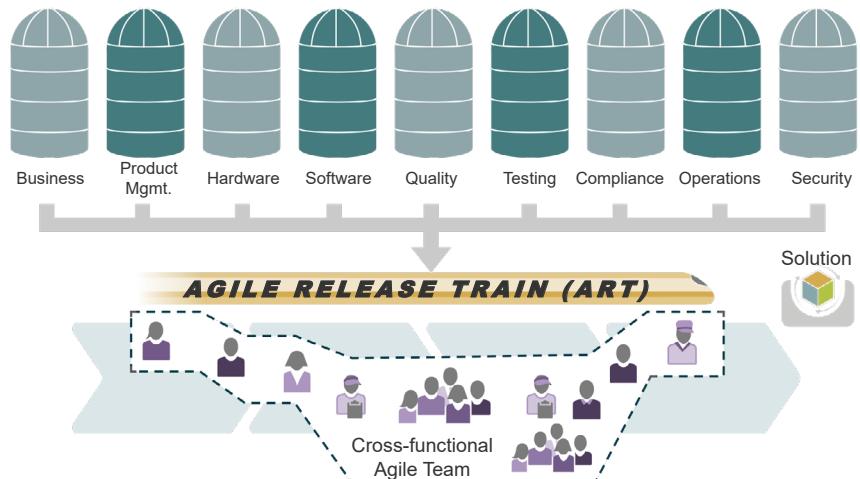
SCALED AGILE® © Scaled Agile, Inc.

1-39

## ... except a team of Agile Teams

A self-organizing, self-managing team comprised of Agile Teams operates on common principles:

- ▶ Deliver working, tested, full-system increments every two weeks
- ▶ Have common Iteration lengths and start/end dates
- ▶ Plan work at periodic, largely face-to-face PI Planning events
- ▶ Develop on cadence and Release on Demand

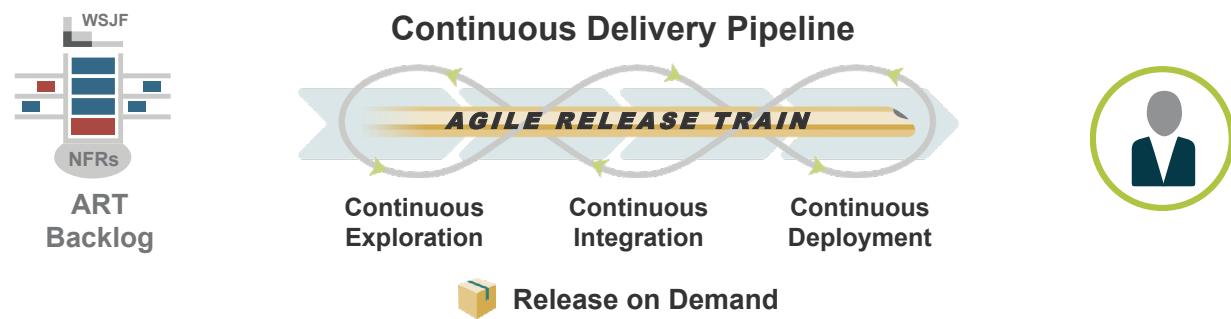


SCALED AGILE® © Scaled Agile, Inc.

1-40

## Agile Release Trains (ARTs)

- ▶ A virtual organization of 5–12 teams (50–125+ individuals)
- ▶ Synchronized on a common cadence—a PI
- ▶ Aligned to a common mission via a single ART Backlog



SCALED AGILE® © Scaled Agile, Inc.

1-41

## ART events

Event	Timebox	Value
PI Planning	2 days	Teams commit to a set of objectives to be delivered in the PI
Coach Sync	1 hour	The teams on the ART sync regarding the progress of the PI
System Demo	1 hour	Deliverables are reviewed with stakeholders who provide feedback
Inspect and Adapt	½ day	The ART reviews and improves its process before the next PI

SCALED AGILE® © Scaled Agile, Inc.

1-42



## Action Plan: Focus on promoting and coaching transparency

Duration  
5 min

- ▶ **Step 1:** Locate the Scrum Master Action Plan section in your workbooks
- ▶ **Step 2:** Begin adding tools to the Action Plan by brainstorming the following:
  - What are some of the key insights from this lesson?
  - What is your plan for promoting transparency in the process, the workflow, and the work progress?
  - What are some techniques you can apply for coaching the team in Scrum values?
  - What tools from the class page can you use to help you coach Scrum Values?
- ▶ **Step 3:** Share one of your insights with the class



SCALED AGILE® © Scaled Agile, Inc.

1-43

## Lesson review

In this lesson you:

- ▶ Explained basic Agile development concepts
- ▶ Discussed Scrum basic concepts and values
- ▶ Identified an Agile Team in SAFe

SCALED AGILE® © Scaled Agile, Inc.

1-44



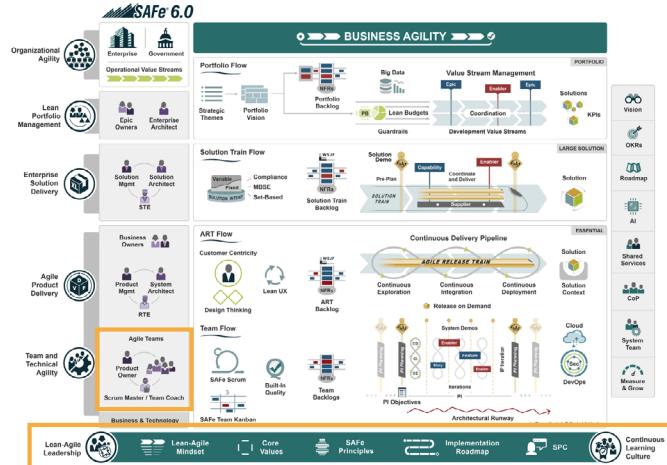
## Action Plan

Focus on promoting and coaching transparency

## Articles used in this lesson

Read these Framework articles to learn more about topics covered in this lesson

- ▶ “SAFe Core Values”  
<https://www.scaledagileframework.com/safe-core-values/>
- ▶ “Lean-Agile Mindset”  
<https://www.scaledagileframework.com/lean-agile-mindset/>
- ▶ “SAFe Lean-Agile Principles”  
<https://www.scaledagileframework.com/safe-lean-agile-principles/>
- ▶ “Agile Teams”  
<https://www.scaledagileframework.com/agile-teams/>



SALE AGILE® © Scaled Agile, Inc.

1-45

## Continue your SAFe journey with the following resources:

Watch this three-minute video, <i>Welcome to Your Scrum Team</i> , for an overview of what to expect in your first days on a Scrum team, and the role each team member plays in executing as a team. <a href="https://bit.ly/Video-WelcometoYourScrumTeam">https://bit.ly/Video-WelcometoYourScrumTeam</a>	Watch this three-minute video, <i>Navigating the Big Picture</i> , to understand how to use the SAFe Big Picture. <a href="https://bit.ly/Video-NavigatingtheBigPicture">https://bit.ly/Video-NavigatingtheBigPicture</a>
Share this five-minute video, <i>SAFe Overview in Five Minutes</i> , with your team to give everyone a basic understanding of SAFe and how it works. <a href="https://bit.ly/Video-SAFeOverviewin5Minutes">https://bit.ly/Video-SAFeOverviewin5Minutes</a>	Build your knowledge of the goals and methods of SAFe to achieve Business Agility with the <i>What is SAFe?</i> online learning. <a href="https://bit.ly/Community-GettingStarted">https://bit.ly/Community-GettingStarted</a>
Complete the online learning, <i>Agile Basics</i> , to learn more about what Agile is and how it supports value delivery. <a href="https://bit.ly/Community-GettingStarted">https://bit.ly/Community-GettingStarted</a>	

SALE AGILE® © Scaled Agile, Inc.

1-46

## References

Agile Manifesto. "Manifesto for Agile Software Development." Updated 2001. <https://agilemanifesto.org>.

Reinertsen, Donald G. *The Principles of Product Development Flow: Second Generation of Lean Product Development*. Redondo Beach: Celeritas 2009. 31.

Takeuchi, Hirotaka and Ikujiro Nonaka. "The New New Product Development Game." *Harvard Business Review*. January 1986. <https://hbr.org/1986/01/the-new-new-product-development-game>.

# Lesson notes

Enter your notes below. If using a digital workbook, save your PDF often so you don't lose any of your notes.

## Lesson 2

# Characterizing the Role of the Scrum Master

**SAFe® Course** - Attending this course gives learners access to the SAFe® Scrum Master exam and related preparation materials.



## Lesson Topics

- 2.1** Responsibilities of the Scrum Master
- 2.2** Characteristics of an effective Scrum Master
- 2.3** High-performing teams
- 2.4** Team events
- 2.5** Coach the Agile Team using powerful questions
- 2.6** Collaborate with other teams
- 2.7** Resolve team conflicts



## Learning objectives

At the end of this lesson you should be able to:

- ▶ Define the role of the Scrum Master
- ▶ Identify characteristics of high-performing teams
- ▶ Discuss facilitating effective team events
- ▶ Coach the Agile Team using powerful questions
- ▶ Discuss techniques for team collaboration and conflict resolution

## 2.1 Responsibilities of the Scrum Master

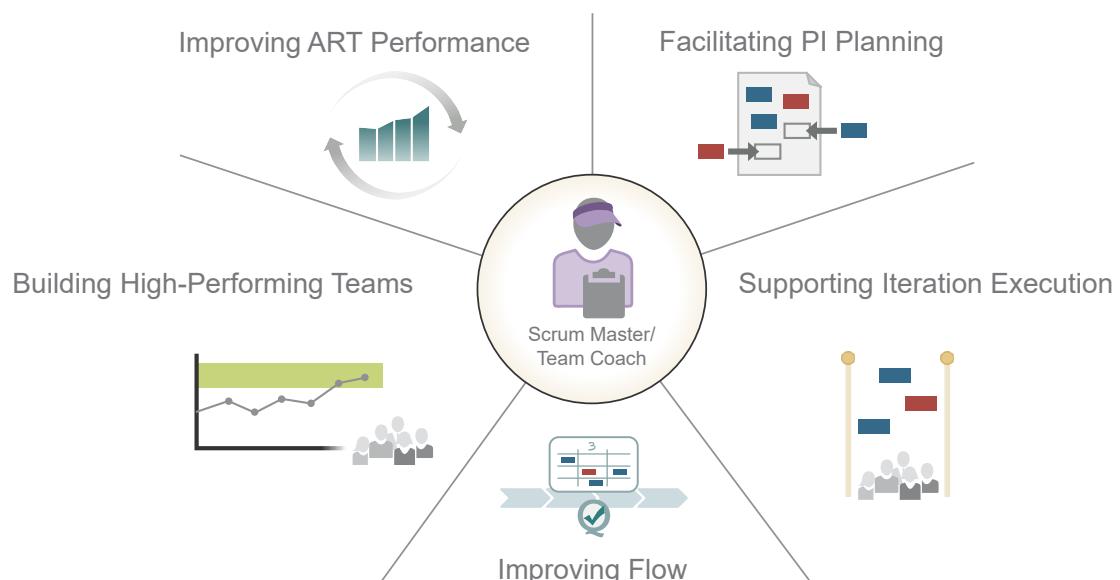


## Discussion: The role of the Scrum Master in SAFe



- ▶ **Step 1:** Read the Scrum Master article at <https://www.scaledagileframework.com/scrum-master-team-coach/>
- ▶ **Step 2:** In your group, discuss the role of the Scrum Master in SAFe and identify key responsibilities
- ▶ **Step 3:** Capture your group's key takeaways to share with the class

## Scrum Master responsibilities



## The Scrum Master in a SAFe Enterprise

- ▶ Works with the RTE to ensure the train meets its overall PI Objectives
- ▶ Coordinates with other Scrum Masters, the System Team, and Shared Services during PI Planning
- ▶ Works with the teams throughout each Iteration and PI
- ▶ Participates in the Coach Sync
- ▶ Fosters normalized estimating within the team
- ▶ Helps teams operate under architectural and portfolio governance, system integration, and System Demos



SCALED AGILE® © Scaled Agile, Inc.

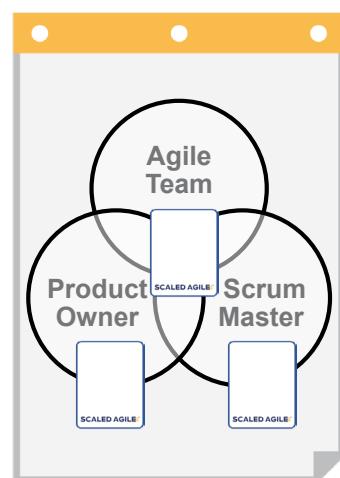
2-7



### Activity: Agile team roles and responsibilities



- ▶ **Step 1:** With your team, draw the following Venn diagram or refer to the remote template
- ▶ **Step 2:** Review the responsibility cards
- ▶ **Step 3:** Place them either in the role or at an intersection of the Venn diagram
- ▶ **Step 4:** Present your Venn diagram to the class



SCALED AGILE® © Scaled Agile, Inc.

2-8

## 2.2 Characteristics of an effective Scrum Master

SCALED AGILE® © Scaled Agile, Inc.

2-9

### Discussion: Effective Scrum Master in SAFe



- ▶ **Step 1:** In your groups, discuss what traits and attributes you think an effective Scrum Master needs
- ▶ **Step 2:** Be prepared to share with the class



SCALED AGILE® © Scaled Agile, Inc.

2-10

## Servant leadership

A servant leader knows that their growth comes from *facilitating the growth of others* who deliver the results.

“The great leader is seen as servant first, and that simple fact is the key to his greatness.”

—Robert K. Greenleaf, *Servant Leadership*

## Act as a servant leader

- ▶ Listen to and support team members in problem identification and decision-making
- ▶ Understand and empathize with others
- ▶ Encourage and support the personal development of each individual
- ▶ Persuade rather than use authority
- ▶ Think beyond day-to-day activities
- ▶ Seek to help without diminishing the commitment of others
- ▶ Be open and appreciate openness in others



## Scrum Master as servant leader

Trait	In the context of SAFe
Listens to and supports team members in decision identification	<ul style="list-style-type: none"> <li>• Encourages everyone to express their opinions</li> <li>• Is attentive to hesitant behavior and body language during Iteration events</li> <li>• Helps the team identify positive and negative changes during retrospectives</li> </ul>
Understands and empathizes with others	<ul style="list-style-type: none"> <li>• Shares in celebrating every successful demo, feels bad about Iteration failures</li> </ul>
Encourages and supports the personal development of each individual	<ul style="list-style-type: none"> <li>• Encourages team learning</li> <li>• Fosters collaborative practices like side-by-side programming, Continuous Integration, collective code ownership, and short design sessions</li> <li>• Encourages rotation in technical areas of concern like functionality, components/layers, and role aspects</li> <li>• Facilitates team decision-making rather than making decisions for the team</li> </ul>
Persuades rather than uses authority	<ul style="list-style-type: none"> <li>• Asks questions that encourage the team to consider new perspectives</li> <li>• Articulates facts, helps the team see things they may have overlooked, helps them rethink</li> </ul>

2-13

## Scrum Master as servant leader

Trait	In the context of SAFe
Thinks beyond day-to-day activities	<ul style="list-style-type: none"> <li>• Sets long-term operating goals for the team like Agile practices to master or new skills to acquire</li> <li>• Examines what is missing to make the environment better for everyone, prioritizes improvement activities and makes them happen</li> </ul>
Seeks to help without diminishing the commitment of others	<ul style="list-style-type: none"> <li>• Facilitates ad hoc meetings (design discussions, Story reviews with the PO, coding and unit testing approaches, critical bug-fix strategies)</li> <li>• Helps the team find access to external sources of information like subject matter experts, and shared resources (architects, UX designers, tech writers)</li> <li>• Helps clarify and articulate the rationale behind scope commitments</li> <li>• Helps team members prepare for Iteration Review and System Demo</li> <li>• Helps the team find techniques to be more collaborative</li> </ul>
Is open and appreciates openness in others	<ul style="list-style-type: none"> <li>• Shows appreciation for team members who raise serious issues, even when delivery is jeopardized</li> <li>• Encourages and facilitates open communication among team members and with external colleagues</li> <li>• Encourages healthy conflict during team meetings</li> <li>• Gives open, honest opinions</li> </ul>

SCALED AGILE® © Scaled Agile, Inc.

2-14



## Video: SAFe Scrum stories: Madison Fisher

Duration  
2 min



<https://bit.ly/Video-SMStories-Madison>

SCALED AGILE® © Scaled Agile, Inc.

2-15



## Activity: A day in the life of a Scrum Master

Prepare  
7 min      Share  
3 min

- ▶ **Step 1:** In your group, brainstorm the typical daily activities that a Scrum Master as a servant leader would be involved in
- ▶ **Step 2:** Include the following:
  - A list of 10 activities
  - Time estimates for each of the activities
- ▶ **Step 3:** Share with the class:
  - What conclusions can you make about the Scrum Master role?
  - Is this a full-time or part-time role?

SCALED AGILE® © Scaled Agile, Inc.

2-16

## 2.3 High-performing teams

SCALED AGILE® © Scaled Agile, Inc.

2-17

### Common attributes of high-performing teams

- ▶ Self-organizing
- ▶ Effective decision-making
- ▶ Open and clear communication
- ▶ Value diversity
- ▶ Mutual trust
- ▶ Healthy conflict
- ▶ Clear goals and purpose
- ▶ Concentration and focus
- ▶ Ownership and accountability
- ▶ Understand work's impact on organization
- ▶ Aligned and collaborative
- ▶ Safe atmosphere to take risks
- ▶ Effective, timely feedback
- ▶ Sufficient resources for local control
- ▶ Success focus over failure avoidance
- ▶ Abilities balanced with challenge
- ▶ Engagement
- ▶ Have fun with work and each other

SCALED AGILE® © Scaled Agile, Inc.

2-18

## Stages of high-performing teams

1 Forming

2 Storming

3 Norming

4 Performing



Reference: Tuckman, *Developmental sequence in small groups*

SCALED AGILE® © Scaled Agile, Inc.

2-19



Video: SAFe Scrum stories: Sam Ervin

Duration  
2 min



<https://bit.ly/Video-SMStories-Sam>

SCALED AGILE® © Scaled Agile, Inc.

2-20



## Discussion: Building a high-performing team



► **Step 1:** In your groups, discuss the following:

- Have you ever been on a high-performing team?
- What was it like?
- As a Scrum Master, what are some actions you can take to build a high-performing team?
- How would you sustain a high-performing team?

► **Step 2:** Be prepared to share with the class.

## 2.4 Team events

## Team events: Overview

Event	Timebox	Value
Backlog Refinement	1 hour	Team prepares requirements for Iteration Planning
Iteration Planning	2 to 4 hours	Team commits to a set of goals to be delivered in the Iteration
Team sync	15 minutes	Team members sync regarding the progress of the Iteration Goals
Iteration Review	1 hour	Team meets with stakeholders to review the deliverables and provide feedback
Iteration Retrospective	1 to 1.5 hours	Team reviews and improves its process before the next Iteration

## The challenge with meetings

- ▶ Meetings can be challenging because:
  - The purpose is not clear
  - There are no actionable outcomes
  - They may result in unproductive conflict
  - They may be boring
  - Conversation may divert from agenda to deep discussion
- ▶ Such meetings add almost no value
- ▶ Ineffective meetings can (and should) be fixed

## Running successful meetings

- ▶ Prepare for every meeting, no matter how short
- ▶ Communicate a clear purpose and agenda
- ▶ Identify someone to maintain agenda/action items
- ▶ Expect participants to know why they are attending, what contributions they will make, and the expected outcomes
- ▶ Leave with clear action items
- ▶ Promote and keep to timeboxes
- ▶ Be prepared to challenge and be challenged
- ▶ Get participants moving and ensure active engagement

## Running successful meetings

- ▶ Establish default decisions—decisions should never wait for a meeting
- ▶ Don't bring a problem without bringing at least one possible solution
- ▶ Review actions taken to meet commitments—enforce accountability
- ▶ Use “Yes, and ...” instead of “No, but ...” to keep inputs positive and flowing
- ▶ Take frequent breaks
- ▶ Go the extra mile to bring remote participants into the discussion
- ▶ Maintain communication beyond the meeting



## Discussion: Best or worst meeting ever

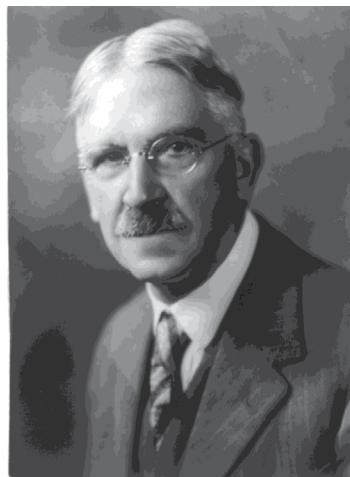


- ▶ **Step 1:** In your group, share a personal story about your best or worst meeting experience
- ▶ **Step 2:** Outline some reasons why the meeting was bad, or what made the meeting great
- ▶ **Step 3:** Share with the class

## 2.5 Coach the Agile Team using powerful questions

## Coaching with powerful questions

Coaches don't give people the answer. Instead, they guide people to the solution.



Portrait of John Dewey. Photo used with permission from Library of Congress.

“A problem well stated is half solved.”

— John Dewey, *Dictionary of Education*

SCALED AGILE® © Scaled Agile, Inc.

2-29

## Shift towards new behaviors

Move away from...	Move toward...
Coordinating individual contributions	Coaching the whole team to collaborate
Acting as a subject matter expert	Being a facilitator
Driving toward specific outcomes	Being invested in the team's overall performance
Knowing the answer	Letting the team find their own way
Directing	Guiding
Talking about deadlines and technical options	Focusing on business value delivery
Driving ‘the right’ (your) decisions	Doing the right thing for the business right now
Fixing problems rather than helping others fix them	Facilitating team problem-solving

Reference: Adkins, *Coaching Agile Teams*

SCALED AGILE® © Scaled Agile, Inc.

2-30

## Why are questions powerful?

- ▶ They are thought-provoking
- ▶ They generate curiosity in the listener
- ▶ They channel focus
- ▶ They generate energy and forward movement
- ▶ They stimulate reflective conversation
- ▶ They surface underlying assumptions
- ▶ They invite creativity and new possibilities
- ▶ They inspire more questions
- ▶ They help reach for deep meaning



## Powerful questions you can ask

Powerful questions like these can help connect ideas and generate deeper insights.

- ▶ What new connections are you making?
- ▶ What had real meaning for you from what you've heard?
- ▶ What surprised you?
- ▶ What challenged you?
- ▶ What's missing from this picture so far?
- ▶ What is it we're not seeing?
- ▶ What has been your major learning, insight, or discovery so far?
- ▶ What is the next level of thinking we need to do?
- ▶ What do we need more clarity about?
- ▶ What hasn't been said that would help us reach a deeper level of understanding and clarity?
- ▶ What would you do if success was guaranteed?



## Activity: Powerful questioning



- ▶ **Step 1:** Working in your group, select one person to play the role of the Scrum Master.
- ▶ **Step 2:** The group brainstorms an issue with a deadline they are currently facing and presents it to the Scrum Master.
- ▶ **Step 3:** The Scrum Master coaches the team to resolve the issue by only responding in one of two ways:
  - Reflective listening: “I hear you saying ...”
  - Asking a powerful question
- ▶ **Step 4:** As a Scrum Master, share your experience with the class:
  - Were you able to guide the team with powerful questioning rather than telling them what to do?

SCALED AGILE® © Scaled Agile, Inc.

2-33

## 2.6 Collaborate with other teams

SCALED AGILE® © Scaled Agile, Inc.

2-34

## Collaboration with other teams

The team should:

- ▶ Integrate their work often with other teams on the ART (at least multiple times per Iteration)
- ▶ Work with the System Team on automated system-level tests
- ▶ Join other team's planning events, demos, or syncs when important issues arise
- ▶ Work with the System Architect to better manage dependencies with other teams



Video: Quick tips: Scrum Master / Team Coach community

Duration  
1



<https://bit.ly/Video-SMTips-Community>



## Discussion: Actively engage with other Scrum Masters

Duration  
5 min

- ▶ **Step 1:** Discuss the importance of collaborating with other Scrum Masters, and the ways a Scrum Master can engage with their community. Some examples include:
  - Work together with other Scrum Masters to organize and maintain communities of practice
  - Actively participate in the ART Sync
  - Coordinate the implementation of ART improvement backlog items
  - Visit other teams' Scrum events and invite other teams to yours
  - Self-organize with other Scrum Masters and the RTE to optimize the whole

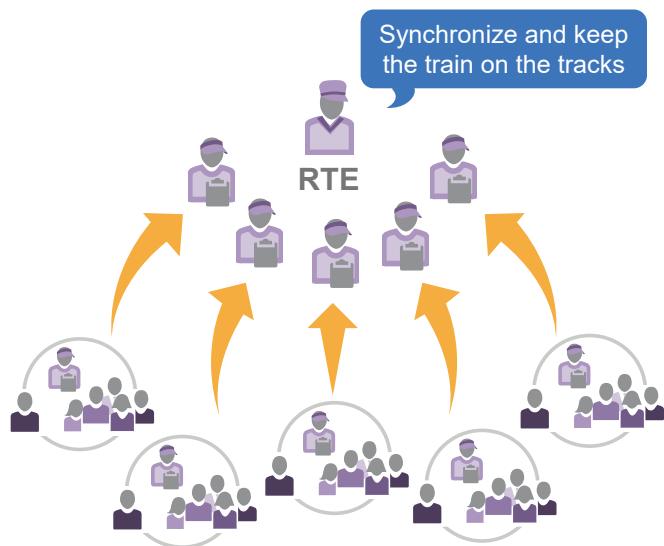
SCALED AGILE® © Scaled Agile, Inc.

2-37

## Coach Syncs

ARTs continuously coordinate dependencies through Coach Syncs.

- ▶ The Coach Sync is a meeting for Scrum Masters and the Release Train Engineer to gain visibility into team progress and ART impediments
- ▶ It is typically held weekly (more frequently if needed)
- ▶ It is timeboxed but is followed by a meet-after for problem-solving



SCALED AGILE® © Scaled Agile, Inc.

2-38

## 2.7 Resolve team conflicts

SCALED AGILE® © Scaled Agile, Inc.

2-39

### Teams produce results

- ▶ Teams are far more productive than the same number of individuals
- ▶ Face-to-face communication is extremely efficient
- ▶ Teams perform best when they have planned periods of focused, uninterrupted work
- ▶ Products are more robust when a team has all the cross-functional skills necessary
- ▶ When teams themselves make a commitment, they will probably figure out how to meet it
- ▶ Changes in team composition can impact productivity
- ▶ Peer pressure is a strong motivator



SCALED AGILE® © Scaled Agile, Inc.

2-40



## Activity: Dysfunction in action



- ▶ **Step 1:** Select one member in your group to play the role of the Scrum Master and another to play the role of a developer. Everyone else will play the role of the team.
- ▶ **Step 2:** Read the scenario in your workbook and the parts for the Scrum Master, John (the developer), and the team.
- ▶ **Step 3:** Reenact the parts following the instructions.
- ▶ **Step 4:** Share your experiences with the class:
  - What dysfunctions do you see playing out in this team?
  - As a Scrum Master, what do you do about it?

SCALED AGILE® © Scaled Agile, Inc.

2-41

## The five dysfunctions of a team

- ▶ Teamwork is the ultimate competitive advantage. However, many teams are dysfunctional.
- ▶ Absence of trust is the key problem that leads to the other four dysfunctions.



Source: Lencioni, *The Five Dysfunctions of a Team*

2-42

SCALED AGILE® © Scaled Agile, Inc.

# Role Play: Dysfunction in action

## Team Dysfunction During Retrospective

### Scene 1

The Scrum Master of the team is facilitating a Team Retrospective. The team is gathered together to discuss the results of the Iteration.

**SCRUM MASTER:** It looks like we were unable to achieve the Iteration goals.  
What happened?

**TEAM:** Well, we spent a lot of time on unplanned work dealing with defects from previous Iterations.

**JOHN THE DEVELOPER:** I can fix all of the defects myself! Just let me work on my own and stay out of my way!

Team members exchange looks or silently look at the ground.

## SAFe helps address the five dysfunctions

**Inattention to Results** Results are empirically reviewed at the end of every Iteration and release. Iteration Retrospectives drive continuous improvement.

**Avoidance of Accountability** Stakeholders, peer pressure, and review of results drive accountability.

**Lack of Commitment** Teams make shared commitments to each other and to external stakeholders.

**Fear of Conflict** Scrum creates a safe environment for conflict; the Scrum Master encourages discussion of disagreements. Shared commitment avoids individual conflict that occurs when objectives are not aligned.

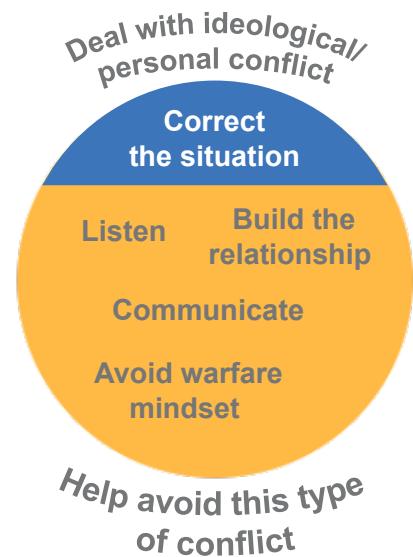
**Absence of Trust** The environment is safe. The team shares commitment and goals, displays hyper-transparency, and engages in retrospectives.

SCALED AGILE® © Scaled Agile, Inc.

2-43

## Avoiding ideological/personal conflicts

- ▶ A leader should spend far more time helping things go right than dealing with things that are going wrong
- ▶ Help others see their teammates as human beings with their own needs, cares, worries, and objectives (instead of as obstacles)
- ▶ Help the team set a common vision, goals, and values
- ▶ Start gradually, dealing with long-term tension within the team
- ▶ Educate the team on achieving consensus
- ▶ Build relentless collaboration
- ▶ Master proven conflict resolution techniques



Reference: The Arbinger Institute, *The Anatomy of Peace*

SCALED AGILE® © Scaled Agile, Inc.

2-44

## Resolving conflicts

- ▶ Meet with the conflicting parties
- ▶ Identify exactly what each party wants
- ▶ Identify why each party needs what they want
- ▶ Obtain agreement that the common goal is correct
- ▶ Dig deeper and review the assumptions
- ▶ Challenge each of the assumptions
- ▶ Find out what the common goal is that ties these reasons together

SCALED AGILE® © Scaled Agile, Inc.

2-45



Video: Quick tips: conflict resolution

Duration  
2 min



<https://bit.ly/Video-ConflictResolution>

SCALED AGILE® © Scaled Agile, Inc.

2-46

## Working agreements facilitate conflict management

Example working agreements:

- ▶ I am committed to the team's objectives and goals
- ▶ I respect other people's opinions, even when they contradict or conflict with mine
- ▶ If we cannot reach agreement, I will seek and support a consensus decision
- ▶ I will always avoid blocking my team from moving forward
- ▶ Whether or not the team decision coincides with mine, I will do my best to support it

## Achieving consensus

- ▶ Define why reaching a consensus is important in this situation.
- ▶ Let people exchange thoughts. Begin with someone who disagrees and then ask someone who agrees to give their perspective.
- ▶ Decompose the disagreement. Identify precisely what parts of the idea they disagree with. Can a portion be removed or modified?
- ▶ If that doesn't work, ask those who disagree to propose a modification to the idea or exchange alternative ideas.
- ▶ Continue exchanging thoughts and finding alternatives until you reach a consensus or decide consensus is not possible. If consensus isn't possible, make a majority decision and clarify that everyone will support this decision.



## Activity: Resolving team conflicts

Prepare  
8 min

Share  
2 min

- ▶ **Step 1:** Select one member in the group to play the role of the Scrum Master and another to play the role of John (the developer). The rest play the team. Note: You can assume the same roles as previously played or switch roles.
- ▶ **Step 2:** Read the scenario and the parts for the Scrum Master, John (The developer), and the team in your workbook.
- ▶ **Step 3:** Reenact the script.
- ▶ **Step 4:** As a Scrum Master, how would you handle the escalating conflict between John and the team? What tools or techniques would you use to resolve the conflict?
- ▶ **Step 5:** Share your experiences with the class.

SCALED AGILE® © Scaled Agile, Inc.

2-49



## Action Plan: Being an effective Scrum Master

Duration  
5 min

- ▶ **Step 1:** Locate the Scrum Master Action Plan section in your workbooks.
- ▶ **Step 2:** Add more tools and techniques to the Action Plan by reflecting on the following:
  - What Scrum Master traits do you identify with the most and will bring to your role? What traits will be challenging for you?
  - What are some tools and techniques you can implement for coaching the Agile Team?
  - What tools or resources will you use from the Class Page to support your team?
- ▶ **Step 3:** Share one of your insights with the class.



SCALED AGILE® © Scaled Agile, Inc.

2-50

# Activity: Resolving team conflicts

## Team conflict

### Scene

You meet with the team. Everyone is present but John (The Developer) who comes in late to the meeting with a negative attitude.

**SCRUM MASTER:** Thank you for coming together as a team. Is everyone here?

Where is John?

**TEAM:** Yeah, about John. John is not doing his work. He has been offensive and extremely difficult to work with.

**JOHN THE DEVELOPER:** What?! I have been working after hours and all my work is done! You are being unfair as a team!

The team continues to argue with John. The tension in the team room is rising.



# Action Plan

Being an effective  
Scrum Master

## Lesson review

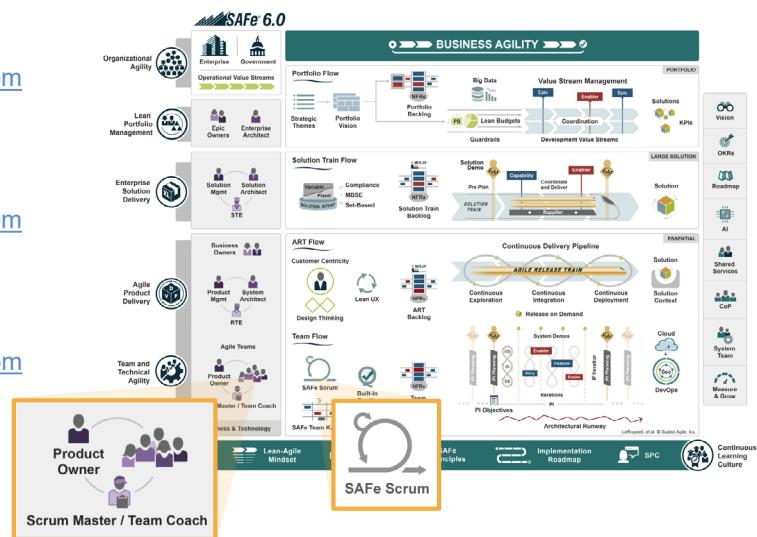
In this lesson you:

- ▶ Defined the role of the Scrum Master
- ▶ Identified characteristics of high-performing teams
- ▶ Discussed facilitating effective team events
- ▶ Practiced coaching the Agile Team using powerful questions
- ▶ Discussed techniques for team collaboration and conflict resolution

## Articles used in this lesson

Read these Framework articles to learn more about topics covered in this lesson

- ▶ “Scrum Master”  
<https://www.scaledagileframework.com/scrum-master-team-coach/>
- ▶ “Agile Teams”  
<https://www.scaledagileframework.com/agile-teams/>
- ▶ “SAFe Scrum”  
<https://www.scaledagileframework.com/safe-scrum/>



## Continue your SAFe journey with the following resources:

Watch this three-minute video, <i>Quick Tips: Facilitating Great Team Events</i> , for quick tips and actions to energize your facilitation of team events and meetings. <a href="https://bit.ly/Video-QuickTips-Facilitation">https://bit.ly/Video-QuickTips-Facilitation</a>	Download and use the “Team Formation Toolkit” to build your Agile Team charter and clearly define your purpose, responsibilities and success criteria, and other critical elements necessary for your new team to flourish. <a href="https://bit.ly/Community-ToolkitsandTemplates">https://bit.ly/Community-ToolkitsandTemplates</a>
Download and use the “Facilitation Guidance Brief” to help you build skills to become a better facilitator and servant leader. <a href="https://bit.ly/Community-FacilitationGuidanceBrief">https://bit.ly/Community-FacilitationGuidanceBrief</a>	Watch this one-hour webinar, <i>Facilitating an Agile Team Charter Workshop</i> , for a detailed review of the Team Formation Toolkit, and how to use it in team formation events. <a href="https://bit.ly/Video-AgileTeamCharterWebinar">https://bit.ly/Video-AgileTeamCharterWebinar</a>
Use the “Agile Team Charter Virtual Workshop” in SAFe Collaborate to help a remote or distributed team capture the ideas and decisions from the “Team Formation Toolkit.” <a href="https://bit.ly/Template-SAFeAgileTeamCharter">https://bit.ly/Template-SAFeAgileTeamCharter</a>	Listen to this 21-minute podcast episode, “The Value of Emotional Intelligence,” to hear a discussion of emotional intelligence, how it can help individuals and organizations succeed, and the role it plays in SAFe. <a href="https://bit.ly/Podcasts-EQ">https://bit.ly/Podcasts-EQ</a>

## References

- Adkins, Lyssa. *Coaching Agile Teams: A Companion for ScrumMasters, Agile Coaches, and Project Managers in Transition*. San Francisco: Addison-Wesley Professional, 2010. Kindle edition.
- The Arbinger Institute. *The Anatomy of Peace: Resolving the Heart of Conflict*. Oakland: Berrett-Koehler Publishers, 2015. Kindle edition.
- Dewey, John. *Dictionary of Education*. New York: Philosophical Library, 1959. 106.  
[https://archive.org/stream/johndeweydictio012543mbp/johndeweydictio012543mbp\\_djvu.txt](https://archive.org/stream/johndeweydictio012543mbp/johndeweydictio012543mbp_djvu.txt).
- Greenleaf, Robert K. *Servant Leadership*. New York: Paulist Press, 1977. 1.
- Lencioni, Patrick. *The Five Dysfunctions of a Team: A Leadership Fable*. San Francisco: Jossey-Bass, 2011. Kindle edition.
- Tuckman, Bruce. “Developmental sequence in small groups.” *Psychological Bulletin* 63, no. 6 (1965): 384-399.
- Tuckman, Bruce and Mary Ann Jensen. “Stages of Small-Group Development Revisited.” *Group & Organization Management* 2, no. 4 (1977): 419-427.

# Lesson notes

Enter your notes below. If using a digital workbook, save your PDF often so you don't lose any of your notes.

# Lesson 3

## Experiencing PI Planning

**SAFe® Course** - Attending this course gives learners access to the SAFe® Scrum Master exam and related preparation materials.



### Lesson Topics

- 3.1 PI Planning basics
- 3.2 Draft PI plans
- 3.3 Final plans and business value
- 3.4 Final plan review and PI Objectives
- 3.5 Facilitating PI Planning



## Learning objectives

At the end of this lesson you should be able to:

- ▶ Participate in a simulated PI Planning event
- ▶ Create and review simulated draft PI plans
- ▶ Review the simulated final plans
- ▶ Commit to a set of PI Objectives

## 3.1 PI Planning basics



## Video: SAFe at Travelport: The power of PI Planning

Duration  
3 min



<https://bit.ly/Video-PowerofPIPlanning>

SCALED AGILE® © Scaled Agile, Inc.

3-5

## What is PI Planning?

PI Planning is a cadence-based event that serves as the heartbeat of the ART, aligning all teams on the ART to a shared mission and Vision.

- ▶ Two days every 8 – 12 weeks (10 weeks is typical)
- ▶ Everyone plans together
- ▶ Product Management owns Feature priorities
- ▶ Development teams own Story planning and high-level estimates
- ▶ Architect and UX work as intermediaries for governance, interfaces, and dependencies

SCALED AGILE® © Scaled Agile, Inc.

3-6

## The benefits of PI Planning

- ▶ Establishes personal communication across all team members and stakeholders
- ▶ Aligns development of business goals with the business context, Vision, and Team/ART PI Objectives
- ▶ Identifies dependencies and fosters cross-team and cross-ART collaboration
- ▶ Provides the opportunity for the right amount of architecture and Lean UX guidance
- ▶ Matches demand to capacity, eliminating excess work in process (WIP)
- ▶ Allows for faster decision-making

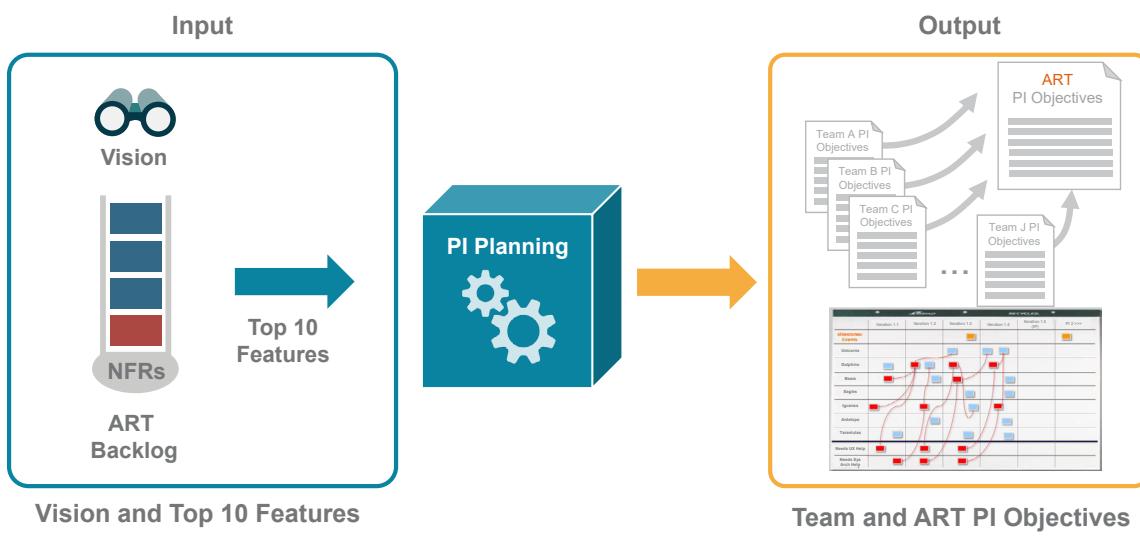


Cross-team collaboration

SCALED AGILE® © Scaled Agile, Inc.

3-7

## The PI Planning process



SCALED AGILE® © Scaled Agile, Inc.

3-8

## Create alignment with PI Objectives

- ▶ Objectives are business summaries of what each team intends to deliver in the upcoming PI.
- ▶ They often directly relate to intended Features in the backlog.
- ▶ Other examples:
  - Aggregation of a set of Features
  - A Milestone like a trade show
  - An Enabler Feature supporting the implementation
  - A major refactoring

Objectives for PI 1	BV	AV
1. Show routing calculations between the 5 most frequent destinations	—	—
2. Navigate autonomously from distribution center to the most frequent destination	—	—
3. Parallel park for a delivery	—	—
4. Return to the distribution center after delivery	—	—
5. Include traffic data in route planning	—	—
6. Recall a delivery that is already in progress	—	—
<b>Uncommitted Objectives</b>		
7. Spike: Reduce GPS signal loss by 25%	—	—
8. Demonstrate real-time rerouting to avoid delays (e.g., accident, construction)	—	—

SCALED AGILE® © Scaled Agile, Inc.

3-9

## Maintain predictability with uncommitted objectives

Uncommitted objectives help improve the predictability of delivering business value.

- ▶ They are planned, not extra things teams do "just in case you have time"
- ▶ They are not included in the commitment, thereby making the commitment more reliable
- ▶ If a team has low confidence in meeting a PI Objective, it should be moved to uncommitted
- ▶ If an objective has many unknowns, consider moving it to uncommitted and putting in early spikes\*
- ▶ Uncommitted objectives count when calculating load

Objectives for PI 1	
—	
—	
—	
—	
—	
<b>Uncommitted Objectives</b>	
7. Spike: Reduce GPS signal loss by 25%	
8. Demonstrate real-time rerouting to avoid delays (e.g., accident, construction)	

\*Spikes are research Stories, considered exploration-style Enablers.

SCALED AGILE® © Scaled Agile, Inc.

3-10

## Outcomes of the PI Planning simulation

Actively participating in a simulated PI Planning event will reinforce:



### Communication

Experience the business benefits of establishing communication across all team members and stakeholders



### Estimating Capacity

Experience estimating capacity for the Iteration



### Drafting Objectives

Experience drafting PI Objectives for achieving the PI and committing to the plan



### Managing Risks

Experience managing ART PI Risks

## Features represent the work for the Agile Release Train

- ▶ The Feature benefit hypothesis justifies development costs and provides business perspective for decision-making
- ▶ Acceptance criteria are typically defined during ART Backlog refinement
- ▶ Reflect functional and nonfunctional requirements
- ▶ Fits in one PI

### Multi-factor authentication

#### Benefit hypothesis

Enhance user security via both password and a device

#### Acceptance criteria

1. USB tokens as a first layer
2. Password authentication second layer
3. Multiple tokens on a single device
4. User activity log reflecting both authentication factors

#### Example Feature



## Activity: Feature writing



- ▶ **Step 1:** Consider the following: Your team is tasked with creating a new Personal Assistance Mobile App
- ▶ **Step 2:** As a team, brainstorm five Features you would like to see on the new app and write them down
- ▶ **Step 3:** Choose at least two Features and write down the details, including:
  - Title and description
  - Acceptance criteria
  - Benefit hypothesis



SCALED AGILE® © Scaled Agile, Inc.

3-13

## Features are implemented by Stories

- ▶ Stories are small increments of value that can be developed in days and are relatively easy to estimate
- ▶ Story user-voice form captures the end user's roles, activities, and goals
- ▶ Features fit in one PI for one ART; Stories fit in one Iteration for one team

### Business Feature

Shipping Method Selection

**Benefit hypothesis:**  
Users can select a shipping method based on cost, delivery speed, and carrier

### Enabler Story

Research how to calculate the shipping costs.

### User Story

**As a book purchaser I can see the price for each shipping method for my current order so that I can select a shipping method based on price.**

SCALED AGILE® © Scaled Agile, Inc.

3-14

## Teams break down Features into User Stories and Enabler Stories

- ▶ User Stories are short descriptions of a small piece of desired functionality written in the user's language
- ▶ The recommended form of expression is the user-voice form, as follows:  
**As a** (user role), **I want to** (activity), **so that** (business value).

As a driver, I want to limit the amount of money I spend before I fuel so that I can control my expenditure.

As a driver, I want to get a receipt after fueling so that I can expense the purchase.

As the vehicle sensor system, I want to get information from the gas tank so that I can send notifications about how soon a refill is needed to the driver interface.

## Using personas to better understand users

Personas are detailed fictional characters acting as a representative user.



**Jane: Mileage-sensitive**  
– Law-abiding driver  
– obeys all traffic signs  
– Wants to save on gas



**Bob: Time-sensitive**  
– Impatient driver  
– Ignores traffic signs if they slow him down

As Jane, I want to travel at the legal limit and operate in an energy saving manner so that I don't get a ticket and save money.

As Bob, I want to travel at the maximum speed the roadway and my vehicle safely allows so that I arrive quickly.

## INVEST in a good Story

I	<b>Independent</b>	Write Stories that can be developed on their own
N	<b>Negotiable</b>	Write Stories that have a flexible scope
V	<b>Valuable</b>	Write Stories that are useful to the Customer
E	<b>Estimable</b>	Write Stories that can be estimated
S	<b>Small</b>	Write Stories that can fit in an Iteration
T	<b>Testable</b>	Write Stories that are testable

Reference: Wake, "INVEST in Good Stories, and SMART Tasks"

SCALED AGILE® © Scaled Agile, Inc.

3-17

## Writing good Stories: The 3Cs



Reference: Jefferies, "Essential XP: Card, Conversation, Confirmation"

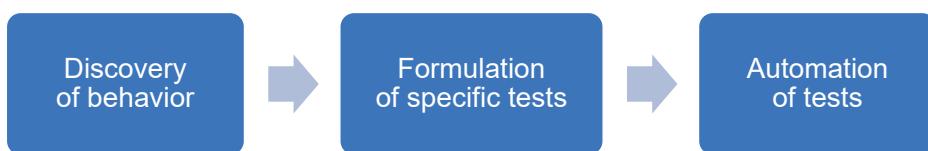
SCALED AGILE® © Scaled Agile, Inc.

3-18

## Behavior-driven development: From ambiguity to precision

- ▶ Behavior is often first described in general terms, which can be ambiguous
- ▶ Specific examples of behavior provide a better understanding
- ▶ The examples can directly become tests, or they can lead to specific behaviors, which then are transformed into tests

Example



SCALED AGILE® © Scaled Agile, Inc.

3-19

## Acceptance criteria

- ▶ Provide the details of the Story from a testing point of view
- ▶ Are created by the Agile Team
- ▶ Can be written in the Given-When-Then format

**As a driver, I want** to limit the amount of money I can spend before I fuel **so that** I can control my expenses.

### Acceptance criteria:

**Given** that the driver indicated a maximum amount of money  
**When** the fuel cost reaches that amount  
**Then** the fueling process stops automatically

**As a driver, I want** to get a receipt after fueling **so that** I can expense the purchase.

### Acceptance criteria:

**Given** that the fueling is over  
**When** the driver asks for the receipt  
**Then** it is printed and includes:  
amount fueled, the amount paid, tax, date, time

SCALED AGILE® © Scaled Agile, Inc.

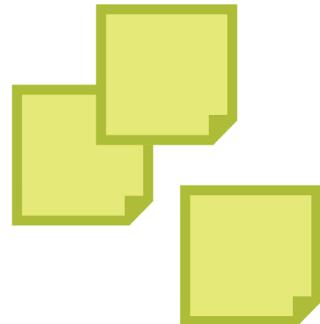
3-20



## Activity: Story writing



- ▶ **Step 1:** Review the Features you wrote for the Personal Assistant Mobile App
- ▶ **Step 2:** As a team, use the personas and the 3 Cs guidance to write five to seven Stories with acceptance criteria
- ▶ **Step 3:** Share an example with the class



SCALED AGILE® © Scaled Agile, Inc.

3-21

## Enabler Stories

Enabler Stories build the groundwork for future User Stories. There are four types of Enabler Stories:

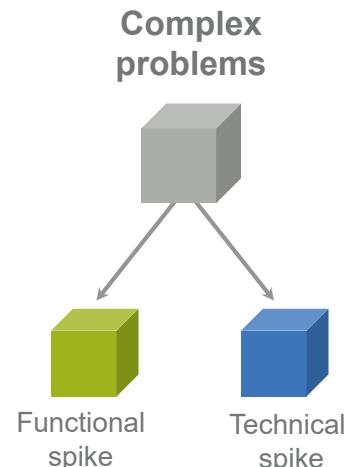
- ▶ **Infrastructure:** Build development and testing frameworks that enable a faster and more efficient development process
- ▶ **Architecture:** Build the Architectural Runway, which enables smoother and faster development
- ▶ **Exploration:** Build an understanding of what is needed by the Customer to understand prospective Solutions and evaluate alternatives
- ▶ **Compliance:** Facilitate specific activities such as verification and validation, documentation, signoffs, regulatory submissions, and approvals

SCALED AGILE® © Scaled Agile, Inc.

3-22

## Spikes and refactors

- ▶ Refactors are a systematic approach to improving the system without changing observable system behavior
  - Example: Improving maintainability, performance, or scalability
- ▶ Spikes are research activities to reduce risk, understand a functional need, increase estimate reliability, or define a technical approach
  - Technical spikes - Researching a technical approach or unknown
  - Functional spikes - Researching how a user might use or interact with the system

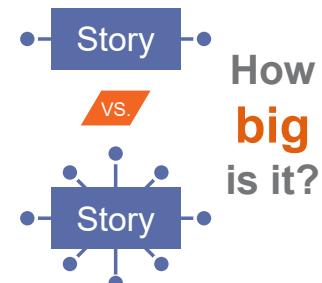


SCALED AGILE® © Scaled Agile, Inc.

3-23

## Fibonacci is used for estimation

- ▶ A Story point is a singular number that represents:
  - Volume: How much is there?
  - Complexity: How hard is it?
  - Knowledge: What do we know?
  - Uncertainty: What's not known?
- ▶ Story points are relative. They are not connected to any specific unit of measure.
  - An 8-point Story should take four times longer than a 2-point Story to complete
  - Typically, a 1-point Story would take one day to develop and test



SCALED AGILE® © Scaled Agile, Inc.

3-24

## Apply estimating poker for fast, relative estimating

- ▶ Estimating poker combines expert opinion, analogy, and disaggregation for quick but reliable estimates
- ▶ All members participate
- ▶ Increases accuracy by including all perspectives
- ▶ Builds understanding and creates a shared understanding

Steps	
1	Each estimator gets a deck of cards
2	Read a job
3	Estimators privately select cards
4	Cards are turned over
5	Discuss differences
6	Re-estimate

Reference: Cohn, *Agile Estimating and Planning*

**Warning:** Estimation performed by a manager, Architect, or select group negates these benefits.

## The Scrum Master's role in facilitating estimations

Best practices
Encourage everyone to participate
Ensure relative estimates are used
Focus the discussion around the contested items
Identify subject matter experts who need to be present
Keep time spent estimating Stories to a minimum

Common anti-patterns
Pressure by stakeholders to lower estimations
Only a few people participate
Not using the modified Fibonacci scale

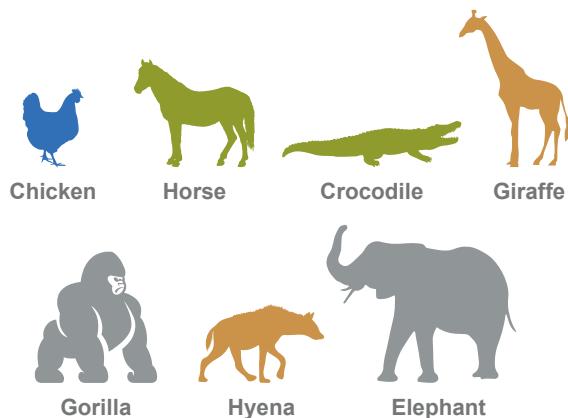


## Activity: Relative size estimating



Use estimating poker to relatively estimate the mass of a set of animals.

- ▶ **Step 1:** In your groups, identify the smallest animal and mark it as **1**
- ▶ **Step 2:** Estimate the remaining animals using values **1, 2, 3, 5, 8, 13, 20, 40, and 100**



## 3.2 Draft PI plans



## Video: Introduction to PI Planning: A quick overview

Duration  
3 min



<https://bit.ly/Video-PIPlanningOverview>

SCALED AGILE® © Scaled Agile, Inc.

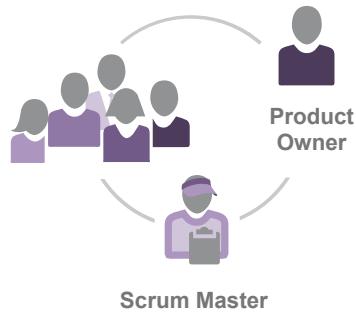
3-29



## Activity: Identify team names and roles

Duration  
3 min

- ▶ **Step 1:** Your team is your group. Create a team name
- ▶ **Step 2:** Select a Scrum Master for your team
- ▶ **Step 3:** Select a Product Owner for your team
- ▶ **Step 4:** Make sure the team name and the names of the people selected are visible to all other teams



SCALED AGILE® © Scaled Agile, Inc.

3-30



## Activity: Identify ART roles

Duration  
3 min

- ▶ **Step 1:** Identify ART roles for the simulation
- ▶ **Step 2:** Ensure that you have all key roles required for the PI Planning simulation

Simulation role	Assigned to Instructor
Executive	Volunteer
Product Manager	Volunteer
System Architect, UX, development manager	Volunteer
RTE	Trainer

SCALED AGILE® © Scaled Agile, Inc.

3-31



## Simulation: Why are we here?



### Alignment to a common mission

We are here to gain alignment and commitment around a clear set of prioritized objectives. I will now review the agenda for the next two days of the PI Planning event.

SCALED AGILE® © Scaled Agile, Inc.

3-32



## Simulation: Day 1 agenda

<b>Business context</b>	8:00 – 9:00	<ul style="list-style-type: none"> <li>State of the business</li> </ul>
<b>Product/Solution Vision</b>	9:00 – 10:30	<ul style="list-style-type: none"> <li>Vision and prioritized Features</li> </ul>
<b>Architecture Vision and development practices</b>	10:30 – 11:30	<ul style="list-style-type: none"> <li>Architecture, common frameworks, etc.</li> <li>Agile tooling, engineering practices, etc.</li> </ul>
<b>Planning context and lunch</b>	11:30 – 1:00	<ul style="list-style-type: none"> <li>Facilitator explains the planning process</li> </ul>
<b>Team breakouts</b>	1:00 – 4:00	<ul style="list-style-type: none"> <li>Teams develop draft plans and identify risks and impediments</li> <li>Architects and Product Managers circulate</li> </ul>
<b>Draft plan review</b>	4:00 – 5:00	<ul style="list-style-type: none"> <li>Teams present draft plans, risks, and impediments</li> </ul>
<b>Management review and problem solving</b>	5:00 – 6:00	<ul style="list-style-type: none"> <li>Adjustments made based on challenges, risks, and impediments</li> </ul>

SCALED AGILE® © Scaled Agile, Inc.

3-33



## Simulation: Day 2 agenda

<b>Planning adjustments</b>	8:00 – 9:00	<ul style="list-style-type: none"> <li>Planning adjustments made based on previous day's management meeting</li> </ul>
<b>Team breakouts</b>	9:00 – 11:00	<ul style="list-style-type: none"> <li>Teams develop final plans and refine risks and impediments</li> <li>Business Owners circulate and assign business value to team objectives</li> </ul>
<b>Final plan review and lunch</b>	11:00 – 1:00	<ul style="list-style-type: none"> <li>Teams present final plans, risks, and impediments</li> </ul>
<b>ART PI Risks</b>	1:00 – 2:00	<ul style="list-style-type: none"> <li>Remaining risks are discussed and ROAMed</li> </ul>
<b>PI confidence vote</b>	2:00 – 2:15	<ul style="list-style-type: none"> <li>Team and ART confidence vote</li> </ul>
<b>Plan rework if necessary</b>	2:15 – ???	<ul style="list-style-type: none"> <li>If necessary, planning continues until commitment is achieved</li> </ul>
<b>Planning retrospective and moving forward</b>	After commitment	<ul style="list-style-type: none"> <li>Retrospective</li> <li>Moving forward</li> <li>Final instructions</li> </ul>

SCALED AGILE® © Scaled Agile, Inc.

3-34



## Simulation: Briefings



Executive



Product  
Management



System  
Architect



## Simulation: Planning guidance



Expect this first PI Planning to feel a bit chaotic. Future PI Planning meetings will become more routine.

**PO:** You are responsible for making decisions at the User Story level by leveraging your content authority

**SM:** You are responsible for managing the timebox, the dependencies, and the ambiguities

**Agile Team:** You are responsible for defining User Stories, planning them into the Iteration, and working out interdependencies with other teams

## Simulation: Planning requirements

Iteration 1.1		Iteration 1.2		Iteration 1.3		Iteration 1.4		Iteration 1.5	
Feature 1		Capacity: Load:		Capacity: Load:		Capacity: Load:		Capacity: Load:	
Feature 2									
<b>PI Objectives</b>		<b>Risks</b>							
PI Objectives		BV	AV						
Uncommitted Objectives									

**Focus on the highlighted area for this simulation.**

G User Story  
P Maintenance  
Y Exploration Enabler  
O Infrastructure Enabler  
R Risks or dependencies

3-37

**SCALED AGILE®** © Scaled Agile, Inc.

## Activity: Select the Feature from Product Management

Duration: 5 min

- ▶ **Step 1:** Work with your team to select a Feature from Product Management
- ▶ **Step 2:** Ensure this information is visible so it can be referred to during the PI Planning simulation

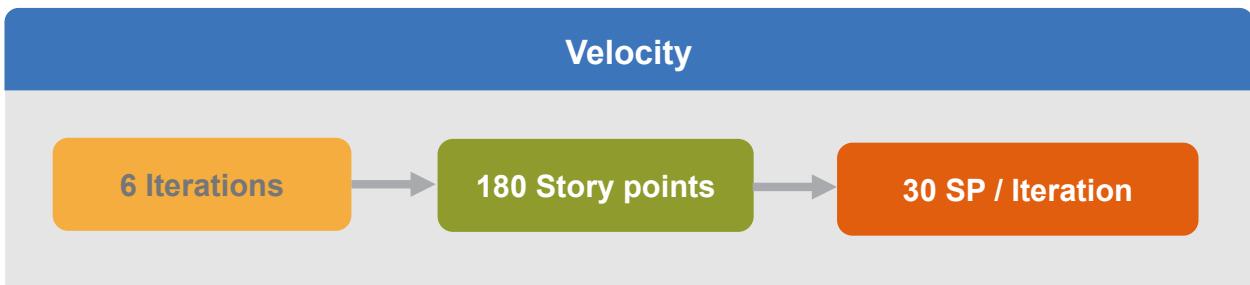
**SCALED AGILE®** © Scaled Agile, Inc.

3-38



## Simulation: Using historical data to calculate velocity

Establish velocity by looking at the average output of the last Iterations



SCALED AGILE® © Scaled Agile, Inc.

3-39



## Simulation: Calculate your capacity

Calculating Iteration capacity:

- ▶ For every full-time Agile Team member contributing to Solution development, give the team 8 points; adjust for those who are part-time.
- ▶ Subtract 1 point for every team member's vacation day and holiday.
- ▶ Find a small Story that would take about a half-day to develop and a half-day to test and validate. Call it a 1-point Story.
- ▶ Estimate every other Story relative to that 1.

### Example:

A seven-person team composed of three developers, two testers, one PO, and one Scrum Master

Exclude the PO, Scrum Master, and time off from the calculation

Calculated capacity:  
 $5 \times 8 \text{ points} = 40 \text{ points per Iteration}$

SCALED AGILE® © Scaled Agile, Inc.

3-40

## The Scrum Master's role in team breakout #1

Best practices	Common anti-patterns
Ensure the team has a draft plan to present	No plan or partial plan at the end of the timebox
Identify as many risks and dependencies as possible for the management review	Too much time is spent analyzing each Story
Secure subject matter experts and ART stakeholders as needed by the team	Shared Scrum Masters and Product Owners are not available enough
Facilitate the coordination with other teams for dependencies	Part-time Scrum Masters don't have time to plan as part of the team

SCALED AGILE® © Scaled Agile, Inc.

3-41

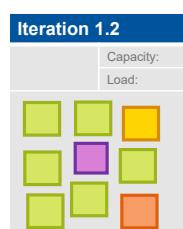


## Activity: Team breakout #1

Duration  
50 min

You will be planning a short PI with two Iterations with your teams.

- ▶ **Step 1:** Calculate and enter the capacity for each Iteration (two weeks per Iteration)
  - The first Iteration starts Monday
  - Use your real availability
- ▶ **Step 2:** Estimate the Stories using Story points
- ▶ **Step 3:** Load the Stories into the Iterations
- ▶ **Step 4:** Write the PI Objectives using clear statements
- ▶ **Step 5:** Identify the uncommitted objectives
- ▶ **Step 6:** Identify any ART PI Risks and dependencies



**PI Objectives**

PI Objectives	BV	AV

**Risks**


SCALED AGILE® © Scaled Agile, Inc.

3-42



## Activity: Coach Sync

Duration  
5 min

- ▶ **Step 1:** The teams observe the Coach Sync, which is conducted by the RTE
- ▶ **Step 2:** Choose a Scrum Master to provide the team's current status and address the questions from the RTE
- ▶ **Step 3:** The RTE holds a meet-after following the sync (limited to one or two topics for the simulation)

**Note:** Coach Sync questions are on the following slide



## Activity: Coach Sync

Coach Sync Questions	Team 1
Have you identified the capacity for each Iteration of the PI?	
Have you identified most of the Stories for the first two Iterations and begun estimating?	
Have you begun resolving dependencies with other teams?	
Are you discussing tradeoffs and conflicting priorities with your Business Owners?	
Have you identified any ART PI Risks?	
Will you be ready to start writing PI Objectives in the next 15 minutes?	
Is there anything you need to discuss with other Scrum Masters? If so, stay for the meet-after.	



## Activity: Draft plan review

Duration  
10 min

- ▶ **Step 1:** The teams will present summaries of their first two Iterations and one or more draft PI Objectives.
- ▶ **Step 2:** Make sure to include the following:
  - Capacity and load for each Iteration
  - Draft PI Objectives
  - ART PI Risks and impediments

SCALED AGILE® © Scaled Agile, Inc.

3-45

## Management review and problem-solving

At the end of day one, management meets to make adjustments to the scope and objectives based on the day's planning.

### Common questions:

- ▶ What did we learn?
- ▶ Where do we need to adjust Vision, scope, team assignments, or anything else?
- ▶ Where are the bottlenecks?
- ▶ What Features must be de-scoped?
- ▶ What decisions must we make between now and tomorrow to address these issues?



Photo used with permission from Hybris Software.

SCALED AGILE® © Scaled Agile, Inc.

3-46

## 3.3 Final plans and business value

SCALED AGILE® © Scaled Agile, Inc.

3-47

### Activities during day 2

Day 1		Day 2	
Business context	8:00–9:00	Planning adjustments	8:00–9:00
Product/Solution Vision	9:00–10:30	Team breakouts	9:00–11:00
Architecture Vision and development practices	10:30–11:30	Final plan review and lunch	11:00 –1:00
Planning context and lunch	11:30–1:00	ART PI Risks	1:00–2:00
Team breakouts	1:00–4:00	PI confidence vote	2:00–2:15
Draft plan review	4:00–5:00	Plan rework if necessary	2:15–???
Management review and problem solving	5:00–6:00	Planning retrospective and moving forward	After commitment

3-48

## Make planning adjustments

- ▶ Based on the previous day's management review and problem-solving meeting, adjustments are discussed
- ▶ Possible changes:
  - Business priorities
  - Adjustment to Vision
  - Changes to the scope
  - Realignment of work and teams



SCALED AGILE® © Scaled Agile, Inc.

3-49

## Team breakout #2

Based on new knowledge and a good night's sleep, teams work to create their final plans.

- ▶ In the second team breakout, Business Owners circulate and assign business value to PI Objectives from low (1) to high (10)
- ▶ Teams finalize the PI plan
- ▶ Teams also consolidate ART PI Risks, impediments, and dependencies
- ▶ Uncommitted objectives provide the capacity and guard band needed to increase the reliability of cadence-based delivery

Objectives for PI 1	BV	AV
1. Show routing calculations between the five most frequent destinations	10	
2. Navigate autonomously from distribution center to the most frequent destination	8	
3. Parallel park for a delivery	7	
4. Return to the distribution center after delivery	10	
5. Include traffic data in route planning	7	
6. Recall a delivery that is already in progress	7	
<b>Uncommitted Objectives</b>		
7. Spike: Reduce GPS signal loss by 25%	2	
8. Demonstrate real-time rerouting to avoid delays (e.g., accident, construction)	5	

SCALED AGILE® © Scaled Agile, Inc.

3-50



## Activity: Setting business value

Duration  
7 min

The instructor will demonstrate assigning business value for one team's objectives.

- ▶ **Step 1:** Bring the Business Owners to one team's draft plans
- ▶ **Step 2:** The Business Owners will set value on a scale of 1 – 10 for each identified objective
- ▶ **Step 3:** Observe the discussion that would take place, illustrating the larger purposes and thought processes around assigning business value

Objectives for PI 1	BV	AV
1. Show routing calculations between the 5 most frequent destinations	10	
2. Navigate autonomously from distribution center to the most frequent destination	8	
3. Parallel park for a delivery	7	
4. Return to the distribution center after delivery	10	
5. Include traffic data in route planning	7	
6. Recall a delivery that is already in progress	7	
<b>Uncommitted Objectives</b>		
7. Spike: Reduce GPS signal loss by 25%	2	
8. Demonstrate real-time rerouting to avoid delays (e.g., accident, construction)	5	

SCALED AGILE® © Scaled Agile, Inc.

3-51



## Discussion: Facilitating team breakout #2

Duration  
5 min

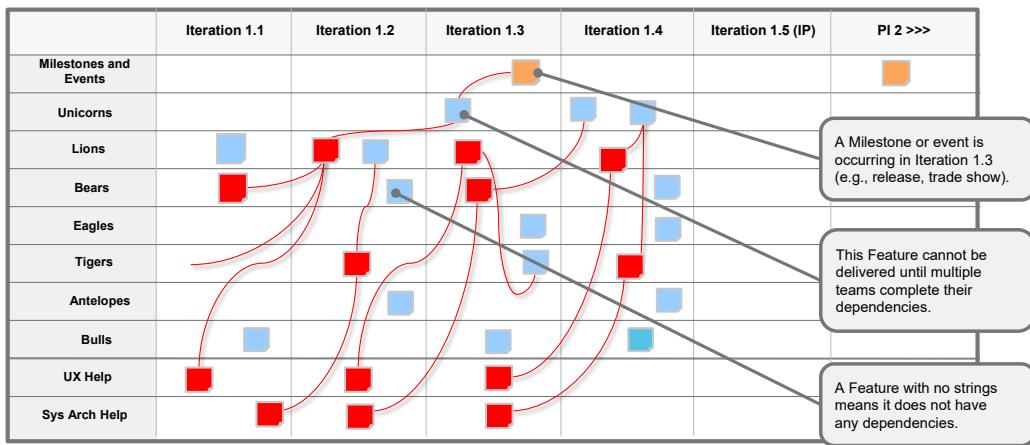
**Scenario:** During the second team breakout, the Business Owners come to your team. The team has picked up several items meant to reduce technical debt and build a testing automation infrastructure. As the Business Owners are from the business side of the Enterprise, they rank all of these objectives as four or lower. You can see that the team becomes upset.

- ▶ **Step 1:** As a class, discuss the following:
  - What can the Scrum Master do?
  - How can the Scrum Master help avoid this problem before it happens?

SCALED AGILE® © Scaled Agile, Inc.

3-52

## ART planning board: Feature delivery, dependencies, and Milestones



ART Planning Board Legend:



Red strings (or lines for digital boards) are used to connect a Feature or Milestone to one or more dependencies. Sometimes a dependency has its own dependency (see Lions in Iteration 1.2).

SCALED AGILE® © Scaled Agile, Inc.

3-53

## 3.4 Final plan review and PI Objectives

SCALED AGILE® © Scaled Agile, Inc.

3-54

## Final plan review

Teams and Business Owners peer-review all final plans.

### Final plan review agenda

1. Changes to capacity and load
2. Final PI Objectives with business value
3. ART PI Risks and impediments
4. Q&A session



3-55

SCALED AGILE® © Scaled Agile, Inc.

## Building the final plan

- ▶ Final plans are reviewed by all teams
- ▶ Business Owners are asked whether they accept the plan
- ▶ If so, the plan is accepted
- ▶ If not, the plan stays in place, and the team continues planning after the review

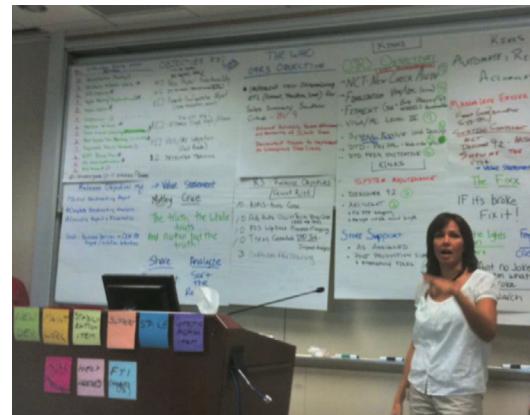


Photo of final plan presentation. Photo courtesy of Discount Tire Corporation.

SCALED AGILE® © Scaled Agile, Inc.

3-56

## Addressing ART PI Risks

After all the plans have been presented, the remaining ART PI Risks and impediments are discussed and categorized.

ROAMing risks:

- ▶ **Resolved** - Addressed; no longer a concern
- ▶ **Owned** - Someone has taken responsibility
- ▶ **Accepted** - Nothing more can be done, and if the risk occurs, the release may be compromised
- ▶ **Mitigated** – The team has a plan to adjust as necessary



SCALED AGILE® © Scaled Agile, Inc.

3-57



### Activity: Manage ART PI risks

Duration  
10 min

The instructor will demonstrate ROAMing one to two risks for one team.

- ▶ **Step 1:** Pick one to two risk examples.
- ▶ **Step 2:** Read them in front of all teams and stakeholders.
- ▶ **Step 3:** Ask if anyone can own, help mitigate, or resolve the risks. Otherwise, accept it as-is.
- ▶ **Step 4:** Put each risk into a corresponding quadrant of the ROAM sheet for the ART.



SCALED AGILE® © Scaled Agile, Inc.

3-58

## Confidence vote: Team and ART

Once ART PI Risks have been addressed, a confidence vote is taken by each team and the ART.

### A commitment with two parts:

1. Teams agree to do everything in their power to meet the agreed-to objectives
2. In the event that objectives are not achievable, teams agree to escalate immediately so that corrective action can be taken



SCALED AGILE® © Scaled Agile, Inc.

3-59

## Run a PI Planning Retrospective

The PI Planning event will evolve over time. Ending with a retrospective will help continuously improve it.

The image consists of two parts. On the left is a slide with a blue header containing three white dots. The main content area has a white background with a blue border at the top. It is titled "The PI Planning Retrospective" and contains the following list:

- 1.What went well
- 2.What didn't
- 3.What we can do better next time

An orange arrow points from the bottom right of the slide to the right, where there is a photograph of a whiteboard. The whiteboard has handwritten notes under the heading "WHAT WENT WELL".

- RISK MANAGEMENT
- PARTICIPATION - ALL TEAMS TOGETHER
- VISUAL FIRST!
- HANDED OVER RONIN CHARTER
- COLLOCATING PI MEETINGS
- WITH UNDERPINNING/PLAN ACTION

On the far right of the whiteboard, there is another section with handwritten notes:

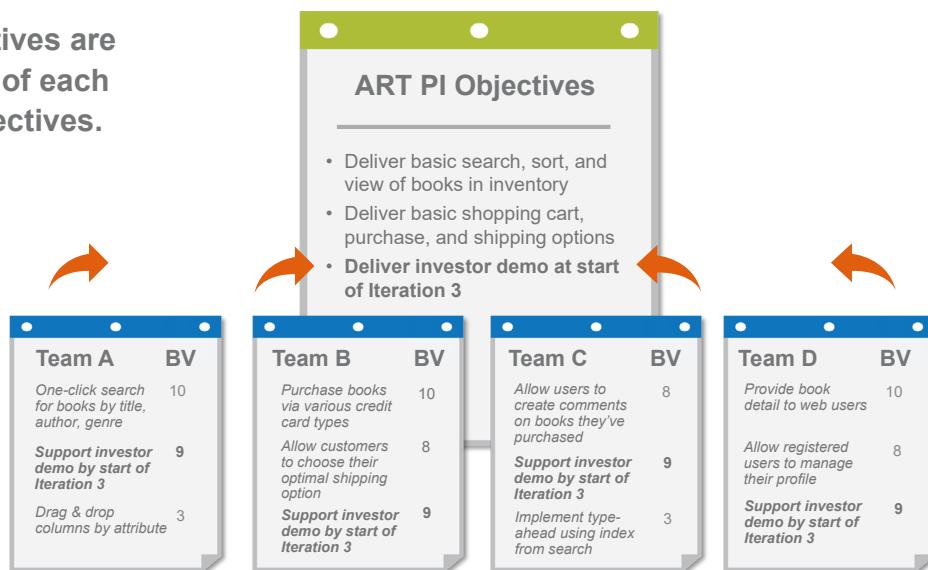
- WHAT DIDN'T GO WELL
- SHALLOW SWIM MEETINGS
- TEAM ISSUES CLOUDY OUTLOOK
- PI MEETINGS NOT SCHEDULED

SCALED AGILE® © Scaled Agile, Inc.

3-60

## RTE takeaway: integrated PI Objectives

**ART PI Objectives** are the synthesis of each team's PI Objectives.



SCALED AGILE® © Scaled Agile, Inc.

3-61

## Discussion: Simulation debriefing



- ▶ **Step 1:** Think about your experience during the PI Planning simulation.
- ▶ **Step 2:** Share the most exciting moments and some new insights. What have you learned?



SCALED AGILE® © Scaled Agile, Inc.

3-62

## 3.5 Facilitating PI Planning

SCALED AGILE® © Scaled Agile, Inc.

3-63



Video: PI Planning with distributed teams

Duration  
2 min

**SAFe®**  
**at Travelport**   
**PI Planning with Distributed Teams**

<https://bit.ly/Video-PIDistributed>

SCALED AGILE® © Scaled Agile, Inc.

3-64

## Distributed planning meetings: Distributed teams

- ▶ If members on the same team are distributed:
  - Establish more planning overlap time for intra-team collaboration
  - Have more *intra-* and *inter-*team checkpoints and synchronization
  - Consider the non-ideal situation of concurrent planning (someone may stay up all night!)
- ▶ If an ART has distributed whole teams:
  - Team planning is easier; however, dependency management with other component teams becomes more complex
  - Have more inter-team checkpoints and synchronization
  - Leverage a centralized ART Planning Board

### Case Study

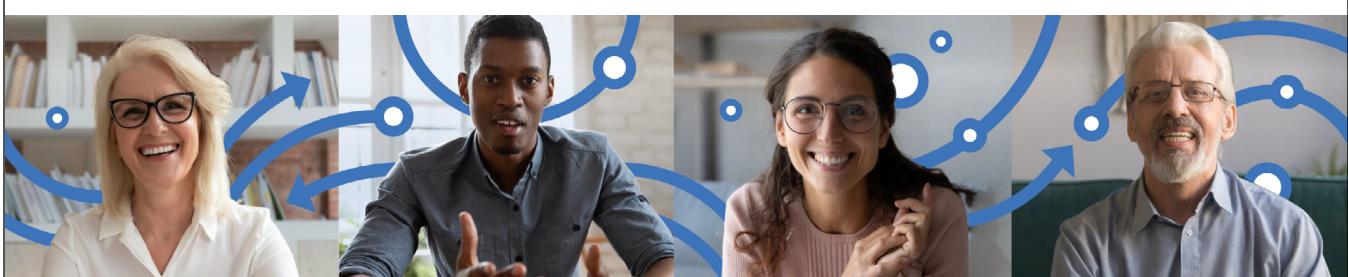


<https://bit.ly/Community-InfogainCaseStudy>

## Guidance for distributed planning meetings

May require more preparation and facilitation

- ▶ Have a dedicated facilitator and tech support person at each location
- ▶ Test audio, video, and presentation-sharing connectivity, and then test it again
- ▶ Have a common understanding of how plans will be shared (Video, Wiki, Email, PowerPoint, etc.)
- ▶ Establish team-based audio/video communication for breakout sessions



## Respect for people and culture

- ▶ Have clear working agreements to be respectful and compromise when it comes to time zone differences
- ▶ Following the Lean principle to respect people and cultures, avoid asking teams to stay up all night
- ▶ Avoid asking teams to commit to their PI Objectives in a sleep-deprived state
- ▶ Consider extending the PI Planning agenda to accommodate multiple time zones.



SCALED AGILE® © Scaled Agile, Inc.

3-67



## Discussion: Facilitating PI Planning

Duration  
5 min

- ▶ **Step 1:** With the class, discuss:
  - What challenges do you see coming up during PI Planning?
  - How can you, in the role of the Scrum Master, help solve these challenges?
- ▶ **Step 2:** Share your ideas

SCALED AGILE® © Scaled Agile, Inc.

3-68

## The Scrum Master's role in PI Planning

Best practices	Common anti-patterns
Maintain the timebox	Pressure is put on the team to overcommit
Make sure the team builds a plan they can commit to	Team under commits due to fear of failure
Ensure that the team is honest in their confidence vote	Overplanning ahead of time to make PI Planning more efficient
Facilitate coordination with other teams but don't do it for the team	The plan, rather than the alignment, becomes the goal
Act as a request buffer for a team that has a lot of dependencies	
Manage the ART Planning Board	
Facilitate the retrospective	

SCALED AGILE® © Scaled Agile, Inc.

3-69



## Action Plan: Being a Scrum Master during PI Planning event

Duration  
5 min

- ▶ **Step 1:** Locate the Scrum Master Action Plan section in your workbooks
- ▶ **Step 2:** Reflect on your role as a Scrum Master during PI Planning
  - Think about a Feature for your team
  - What approaches might you take to break the Feature into Stories?
  - What other steps will you take to prepare your team for PI Planning?
  - What tools or resources on the Class Page will help you prepare for PI Planning?
- ▶ **Step 3:** Share one of your insights with the class



SCALED AGILE® © Scaled Agile, Inc.

3-70



## Action Plan

Being a Scrum Master  
during PI Planning event

## Lesson review

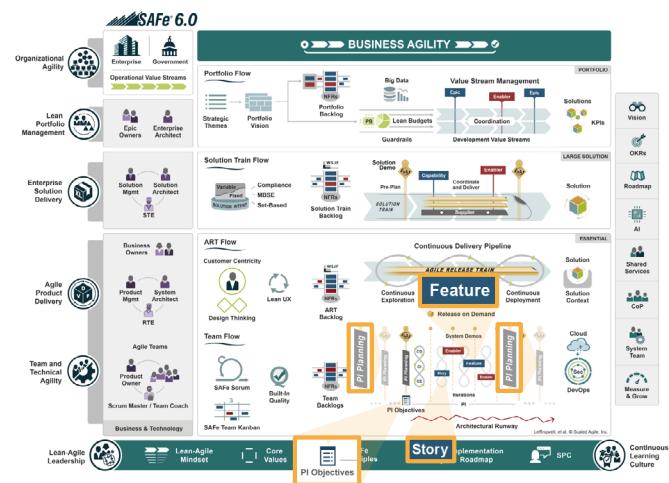
In this lesson you:

- ▶ Participated in a simulated PI Planning event
- ▶ Created and reviewed simulated draft PI plans
- ▶ Reviewed the simulated final plans
- ▶ Committed to a set of PI Objectives

## Articles used in this lesson

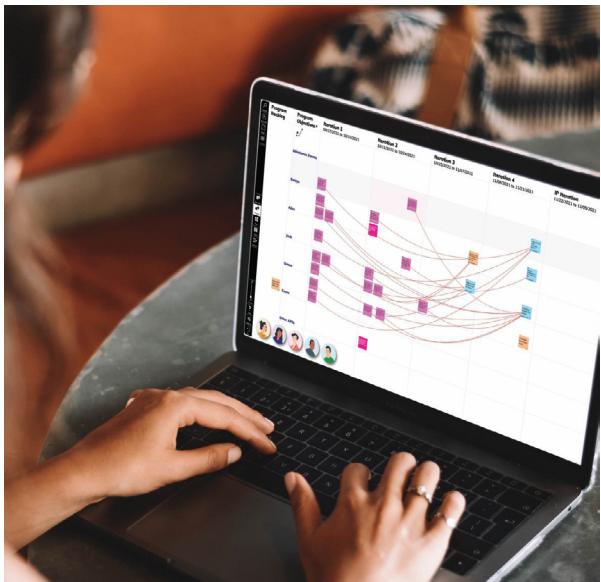
Read these Framework articles to learn more about topics covered in this lesson

- ▶ “PI Planning”  
<https://www.scaledagileframework.com/pi-planning/>
- ▶ “PI Objectives”  
<https://www.scaledagileframework.com/pi-objectives/>
- ▶ “Feature”  
<https://www.scaledagileframework.com/features-and-capabilities/>
- ▶ “Story”  
<https://www.scaledagileframework.com/story/>





**piplanning.io** is now a part of SAFe®



### A modern way to conduct PI Planning

With **piplanning.io**, collaborating virtually feels like being together in front of the same board. Empower SM/TCs to lead remote PI Planning events that ensure alignment and focus across all teams.

- ▶ **RTE Cockpit** streamlines PI Planning prep and includes a strong team breakout experience
- ▶ **Dependency Management** visualizes your requirements with easy-to-follow link options
- ▶ **Capacity Allocation** balances new Features versus technical debt with one click

Try it today at [scaledagile.com/piplanning](https://scaledagile.com/piplanning)

SCALED AGILE® © Scaled Agile, Inc.

4-73

## Continue your SAFe journey with the following resources:

Watch the two videos in this playlist to learn more about the two different types of stories. <a href="https://bit.ly/Video-StoriesPlaylist">https://bit.ly/Video-StoriesPlaylist</a>	Download the “SAFe PI Planning Toolkit” for resources to support preparation, coordination, and communication to guide an ART through its PI Planning event. <a href="https://bit.ly/Community-ToolkitsandTemplates">https://bit.ly/Community-ToolkitsandTemplates</a>
Share the “SAFe ART Planning Board” Collaborate template with your ART to easily coordinate and execute a distributed or virtual PI Planning event. <a href="https://bit.ly/Template-ProgramBoard">https://bit.ly/Template-ProgramBoard</a>	Share the “Team Boards” Collaborate template with your ART to help teams visualize their work and goals during PI Planning. <a href="https://bit.ly/Template-TeamBoard">https://bit.ly/Template-TeamBoard</a>
Use the “Writing SMART Objectives” guide to help your team write strong PI objectives during PI Planning. <a href="https://bit.ly/Community-SMARTObjectivesPDF">https://bit.ly/Community-SMARTObjectivesPDF</a>	Watch this three-minute video, <i>Assigning Business Value during PI Planning</i> , to learn how SAFe prescribes the assigning of business value for easier decentralized decision-making. <a href="https://bit.ly/Video-AssigningBVPIPlanning">https://bit.ly/Video-AssigningBVPIPlanning</a>

SCALED AGILE® © Scaled Agile, Inc.

3-74

## References

Cohn, Mike. *Agile Estimating and Planning*. Pearson Education, Inc.: Upper Saddle River, 2006. 56-59.

Jeffries, Ron. "Essential XP: Card, Conversation, Confirmation." Ron Jeffries. August 30, 2001.  
<https://ronjeffries.com/xprog/articles/expcardconversationconfirmation>.

Wake, Bill. "INVEST in Good Stories, and SMART Tasks." XP123. August 17, 2003.  
<https://xp123.com/articles/invest-in-good-stories-and-smart-tasks>.

# Lesson notes

Enter your notes below. If using a digital workbook, save your PDF often so you don't lose any of your notes.

# Lesson 4

## Facilitating Iteration Execution

**SAFe® Course** - Attending this course gives learners access to the SAFe® Scrum Master exam and related preparation materials.



### Lesson Topics

- 4.1 Plan the Iteration
- 4.2 Track the Iteration progress
- 4.3 Refine the backlog
- 4.4 Facilitate the Iteration Review
- 4.5 Facilitate relentless improvement
- 4.6 Support DevOps and Release on Demand



## Learning objectives

At the end of this lesson you should be able to:

- ▶ Plan the Iteration
- ▶ Facilitate a Team Sync
- ▶ Track the Iteration progress
- ▶ Discuss backlog refinement
- ▶ Facilitate the Iteration Review
- ▶ Explain the CALMR approach for DevOps and Release on Demand

## 4.1 Plan the Iteration



## Video: How to run an effective Iteration Planning meeting

Duration  
5 min



<https://bit.ly/Video-IterationPlanning>

SCALED AGILE® © Scaled Agile, Inc.

4-5

## Iteration Planning flow

- Iteration Planning Agenda**
1. Establish capacity
  2. Story analysis and estimation
  3. Tasking Stories (optional)
  4. Develop Iteration Goals
  5. Commit to the Iteration Goals

### Iteration Planning

- **Timebox:** Four hours or less
- This event is **by** and **for** the team
- SMEs may attend as required

SCALED AGILE® © Scaled Agile, Inc.

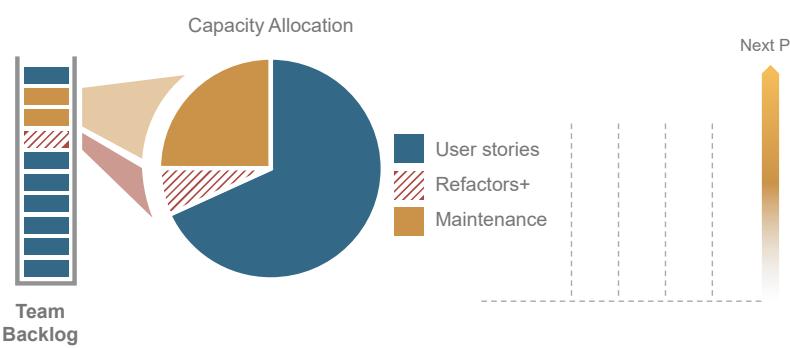
4-6

## Establishing capacity

- ▶ Team applies capacity allocation to the Team Backlog
- ▶ Team quantifies capacity to perform work in the upcoming Iteration
- ▶ Each team member determines their availability, acknowledging time off and other potential duties
- ▶ In collaboration with the teams, the PO selects the highest priority backlog items for each ‘slice’ of the capacity allocation to implement in an Iteration

## Capacity allocation for a healthy balance

- ▶ By defining capacity allocation, the PO doesn’t need to prioritize unlike things against each other
- ▶ Once the capacity allocation is set, the PO and team can prioritize like things against each other



### Capacity allocation

- Helps alleviate velocity degradation due to technical debt
- Keeps existing Customers happy with bug fixes and enhancements
- Can change at Iteration or PI boundaries

## Story analysis and estimating

- ▶ The Product Owner presents Stories in order of priority
- ▶ Each Story
  - Is discussed and analyzed by the team
  - Has its acceptance criteria defined and refined
  - Is estimated
- ▶ The process continues until the estimation of the Stories has reached the capacity of the team



SCALDED AGILE® © Scaled Agile, Inc.

4-9

## Tasking Stories

Many teams break their Stories into tasks and forecast them in hours to better understand their capacity and capabilities.

Team members discuss:

- ▶ Who would be the best person to accomplish it?
- ▶ Approximately how long would it take?
- ▶ What dependencies might it have with other Stories?

SCALDED AGILE® © Scaled Agile, Inc.

4-10

## Iteration Goals

Iteration Goals provide clarity, commitment, and management information. They serve three purposes.



Align team members to a common purpose



Align teams to common PI Objectives and manage dependencies



Provide transparency and management information

### Iteration Goals example

1. Finalize and push last name search and first name morphology
2. Index 80% of remaining data
3. Other Stories:
  - Establish search replication validation protocol
  - Refactor artifact dictionary schema

## Commit to the Iteration goals

Team commitments are not just to the work. Teams are committed to other teams, the ART, and the stakeholders.

### A team meets its commitment:

By doing everything they said they would do,

- or -

By immediately raising the concern if it isn't feasible to do so.

#### Commitment

Too rigid of a commitment can lead to burnout, inflexibility, and quality problems.



#### Adaptability

Too little commitment can lead to unpredictability and lack of focus on results.



## Activity: Iteration Planning



- ▶ **Step 1:** Select one group member to play the Scrum Master role.
- ▶ **Step 2:** Review the Team Backlog in your workbook.
- ▶ **Step 3:** As a team, plan how you will execute an Iteration.
- ▶ **Step 4:** Working as an Agile Team, plan how you will execute your Iteration. The Scrum Master should facilitate the meeting.
- ▶ **Step 5:** Outline your Iteration Goals.

## The Scrum Master's role in Iteration Planning

Best practices	Common anti-patterns
Maintain the timebox	Delve too deeply into technical discussions
Ensure that the team commits to the Iteration Goals	Create an unrealistic commitment
Verify that the PO or other stakeholders don't influence the team to overcommit	Have the exact same capacity and load
Challenge the team to exceed their previous accomplishments	Focus from the Scrum Master on the technical role rather than the facilitator's role
Ensure that the improvement items from the retrospective are put into action	Under-commit due to fear of failure
Ensure time is allocated for technical debt activities	Reserve no time for support activities

# Iteration Planning

Team Backlog			
No.	Size	Req.	Backlog Item
1		X	Estimate the number of slides in this course.
2			Calculate the square root of 54,289 without a computer or calculator.
3			Add the following numbers with a calculator and be sure the answer is correct: 1, 2, 3, 5, 8, 13, 20, 40, 100.
4			Accurately count the number of slides in the course.
5			Introduce yourself to every person on your Scrum team and write down their children's names.
6			Add the following numbers without a calculator and be certain the answer is correct: 1, 2, 3, 5, 8, 13, 21, 40, 100.
7		X	Calculate how tall your Scrum Team is when each member is stacked vertically.
8			Write a program, without Excel, that accepts 10 numbers from a user and displays the total as each number is entered.
9			Calculate the distance between the two members of the team who live furthest apart.
10			Calculate the total number of letters in everyone's name on the team.
11			Estimate the snowfall in Oulu, Finland this winter in centimeters.
12			Estimate the number of words in the workbook without using an automated word count.
13			Estimate the cubic meters of snowfall in Oulu, Finland this winter.
14			Obtain an accurate count of the number of words in the course workbook without using an automated word count.
15		X	Create a list of all the team members' names, and their children's names, in reverse alphabetical order.

## 4.2 Track the Iteration progress

SCALED AGILE® © Scaled Agile, Inc.

4-15



Video: How to run an effective Team Sync

Duration  
5 min



<https://bit.ly/Video-DailyStandUp>

SCALED AGILE® © Scaled Agile, Inc.

4-16

## Communication and synchronization with the Team Sync

### Basic Team Sync agenda

Each person answers:

1. What did I do yesterday to advance the Iteration Goals?
2. What will I do today to advance the Iteration Goals?
3. Are there any impediments that will prevent the team from meeting the Iteration Goals?

### The meet-after agenda

1. Review topics captured on the meet-after board
2. Involved parties discuss, and uninvolved people may leave

## Team Sync anti-patterns

Poor Team Syncs may be a symptom of a deeper problem that requires a more systematic approach. Potential root causes:

- ▶ Poor collaboration of the team members during the Iteration (for example, Vijay does not know and doesn't care about what Ken is working on and vice versa)
- ▶ Lack of collective ownership
- ▶ Infrequent verification and integration during the Iteration (for example, we are working on something, and we think it's good, but we don't know because we haven't tested it)
- ▶ Perpetual, unresolved conflict within the team



## Activity: Facilitating the Team Sync



- ▶ **Step 1:** Choose a Scrum Master and have them read your team project.
- ▶ **Step 2:** Pick up a secret identity card. Don't show it to others.
- ▶ **Step 3:** Run a Team Sync, playing your role as assigned by the card.
  - If the Scrum Master calls you on your specific behavior, you can stop.
- ▶ **Step 4:** Share your experience with the class:
  - Scrum Master, how was it for you?
  - Team members, what insights do you have for the Scrum Master?
  - How can we deal with these behaviors when they come up in Team Sync?

### Secret Identity Card



You're the grumpy Product Owner. You're constantly disappointed with the team's progress and take the opportunity to mention that you think they can and should do more.

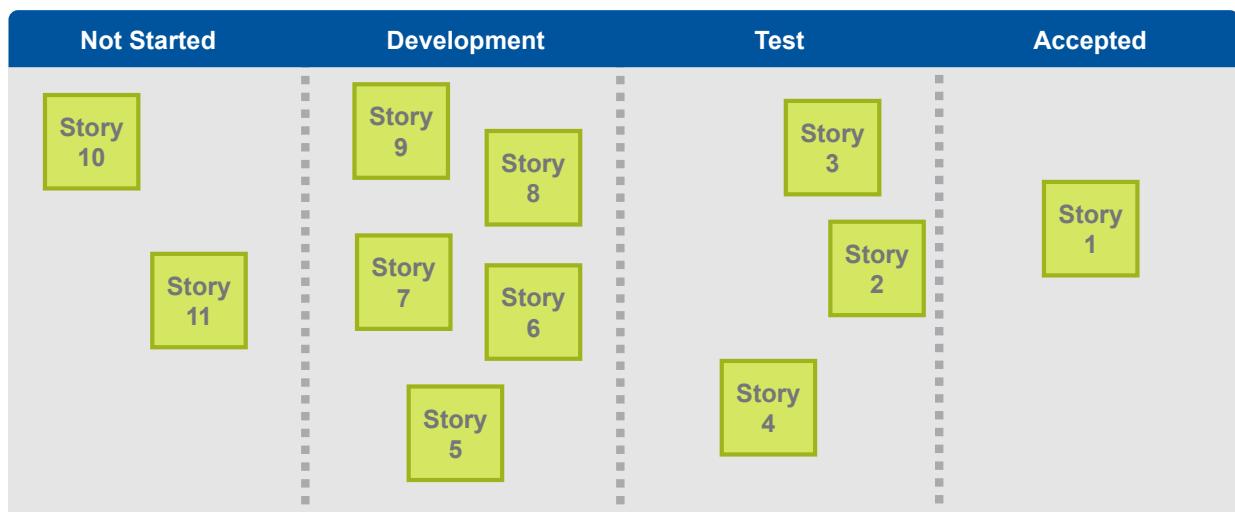
### Secret Identity Card



You're the over domineering guest. You have no direct role on the team. You should tell the team that you're a guest. Try to ask a lot of questions and generally hog the attention.

## An example from the field

How is this team doing? How do you know that?



# Facilitating the Team Sync

Instructions: Use the space withing each secret identify card on this page to guess who is playing which identify during the mock Team Sync.

## Secret Identity Card



### Secret Identity: Curious Developer

You're an overly curious developer, and you have a follow up question to every statement of every team member.

**Who am I?**

## Secret Identity Card



### Secret Identity: Shy Team Member

You're the shy person on the team, you only say the minimum necessary. Try using one word sentences and short words. Only talk when directly asked.

**Who am I?**

## Secret Identity Card



### Secret Identity: Grumpy Product Owner

You're the grumpy Product Owner. You're constantly disappointed with the team's progress and take the opportunity to mention that you think they can and should do more.

**Who am I?**

## Secret Identity Card



### Secret Identity: Busy Team Member

You're too busy to be in the daily meeting. Constantly engaged with your mobile device and barely paying attention to what others are saying.

**Who am I?**

## Secret Identity Card



### Secret Identity: Domineering Guest

You're the over domineering guest. You have no direct role on the team. You should tell the team that you're a guest. Try to ask a lot of questions and generally hog the attention.

**Who am I?**

## Secret Identity Card



### Secret Identity: Team Member in a Hurry

You have to leave early. Excuse yourself midway through the meeting and leave. You may stay nearby to listen, but may not participate.

**Who am I?**

## Visualize to increase understanding

Now how do you think they are doing?



SCALED AGILE® © Scaled Agile, Inc.

4-21



### Activity: WIP improvement opportunities

Duration  
8 min

- ▶ **Step 1:** Referring to the example in the previous slides, discuss the effect of a three-story WIP constraint on the ‘development’ and ‘test’ categories.
- ▶ **Step 2:** Consider this scenario: You’re a developer. You just finished Story 6. What would you do if:
  - There is no WIP constraint?
  - A three-Story WIP constraint is in place?
- ▶ **Step 3:** Which scenario has the highest throughput?

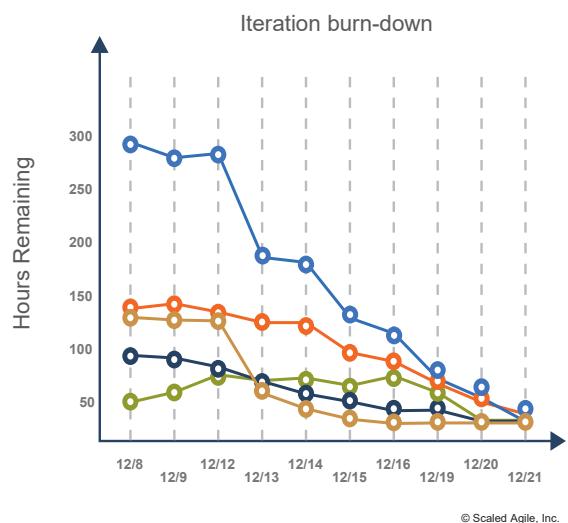


SCALED AGILE® © Scaled Agile, Inc.

4-22

## Iteration burn-down

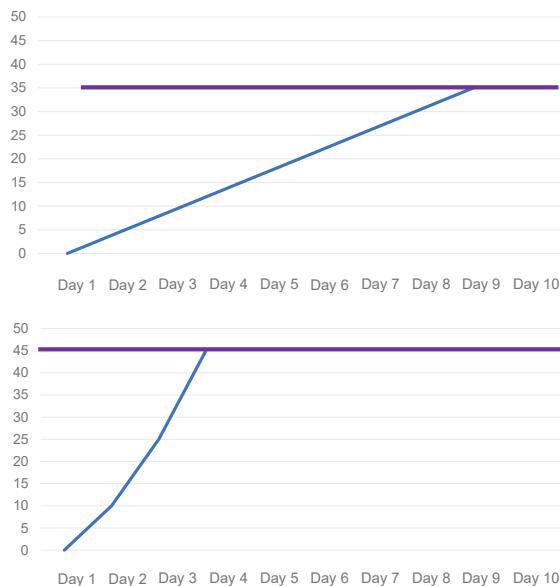
- ▶ Many Scrum teams use Iteration burn-down charts
- ▶ Burn-downs count the remaining effort (Stories, tasks, etc.)
- ▶ Burn-down charts provide several other challenges:
  - Focus on tasks completed versus Stories completed
  - Hard to distinguish between work added and work not done
- ▶ SAFe recommends using burn-up charts and cumulative flow diagrams (CFD) over burn-down charts



SCALED AGILE® © Scaled Agile, Inc.

4-23

## Example burn-up charts



SCALED AGILE® © Scaled Agile, Inc.

4-24



## Activity: Iteration Execution



- ▶ **Step 1:** Working in your groups, select team members to play the role of the Scrum Master and a Product Owner. The rest of the team will be developers.
  - Important: As a Scrum Master, ensure you are available to the team. As a PO, refer to the “Acceptance Criteria for POs Only” handout from the instructor.
- ▶ **Step 2:** Execute the Iteration you planned earlier by completing as many backlog items as possible.
- ▶ **Step 3:** Share your experience with the class.

SCALED AGILE® © Scaled Agile, Inc.

4-25

## The Scrum Master’s role in tracking Iteration progress

Best practices	Common anti-patterns
Facilitate mid-PI re-planning	Team gets no input from Coach Sync
Encourage the team to point out as early as possible if they think they will miss Iteration Goals or PI Objectives. Communicate to and from the Coach Sync	Teams are unwilling to change or add objectives mid-PI
Encourage the use of engineering practices	Scrum Master does all the synchronization, so the team is incapable of doing it themselves
Make sure defects are not pushed to the IP Iteration	
Facilitate preparation for the next PI	
Support release activities	

SCALED AGILE® © Scaled Agile, Inc.

4-26

## 4.3 Refine the backlog

SCALED AGILE® © Scaled Agile, Inc.

4-27



Video: How to run an effective Backlog Refinement

Duration  
5 min



**How to Run an Effective Backlog Refinement**

<https://bit.ly/Video-RunningBacklogRefinement>

SCALED AGILE® © Scaled Agile, Inc.

4-28



## Discussion: Backlog refinement



- ▶ **Step 1:** As a group, discuss the split in responsibility for backlog refinement between the Product Owner and the Scrum Master:
  - How can you, as the Scrum Master, help facilitate this process?
  - A common problem is that the Agile Teams spend too much time refining Stories. How would you facilitate finding a solution to this problem?
  - What should the Scrum Master do if a Story does not have acceptance criteria?
- ▶ **Step 2:** Share with the class

## The Backlog Refinement Event

- ▶ **Timebox:** 1 – 2 hours per Iteration.
- ▶ **Purpose:** Provides time to identify dependencies and issues that could impact the next Iteration. Ensures that there is a ready backlog for Iteration Planning.
- ▶ **Attendees:**
  - Agile Team members are in attendance and actively engaged; subject matter experts (SMEs) and other teams' members are invited as needed.
  - Scrum Master or Product Owner facilitates.

## Sample Backlog refinement agenda

### Sample Backlog Refinement Workshop Agenda

1. The PO presents the set of candidate Stories for the next Iteration
2. The team discusses whether the set of candidate Stories should be reduced or increased; Stories are added or removed
3. The PO guides the team through the candidate Stories one by one:
  - a) The team discusses each Story, estimates it, and splits it if necessary
  - b) The PO clarifies or supplements the acceptance criteria
  - c) The team identifies dependencies on other teams
4. Action items are summarized for all Stories that still require external input or action

## The Scrum Master's role in backlog refinement

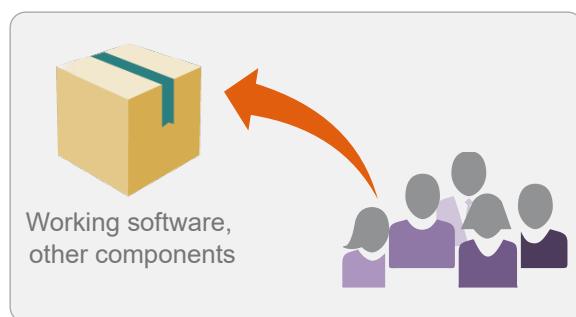
Best practices	Common anti-patterns
Maintain the timebox	Arriving to the Iteration with non-ready Stories
Maintain the right level of a deep backlog vs a full set of specified Stories for two Iterations	Not doing the backlog refinement consistently
Make sure all the team members participate	Team sees Stories for the first time during Iteration or PI Planning
Invite the right subject matter experts	Feature estimations impact Story estimation
Hold the event at regular intervals	

## 4.4 Facilitate the Iteration Review

### The Iteration Review

- ▶ Provides the true measure of progress by showing working software functionality, hardware components, etc.
- ▶ Teams demonstrate every Story, spike, refactor, and NFR
- ▶ Attended by the Team and its stakeholders

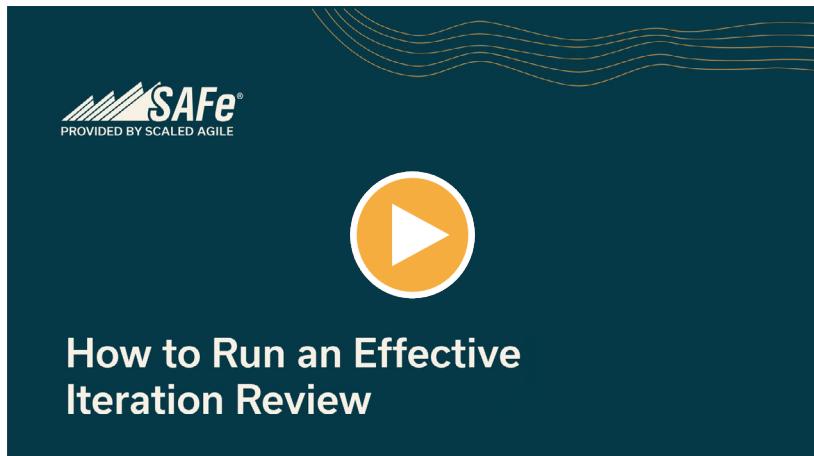
Demonstrating a working, tested team increment





## Video: How to run an effective Iteration Review

Duration  
5 min



<https://bit.ly/Video-IterationReview>

SCALED AGILE® © Scaled Agile, Inc.

4-35

## Iteration Review Guidelines

- ▶ **Timebox:** 1–2 hours. More frequent Story reviews can take place during the Iteration.
- ▶ **Preparation:** Review preparation should be limited to 1–2 hours. Minimize presentation. Work from the repository of Stories.
- ▶ **Attendees:**
  - Agile Team members are in attendance and actively engaged; SMEs and other teams' members are invited as needed.
  - The Product Owner invites key stakeholders. If a major stakeholder cannot attend, the PO should follow up individually.
  - Facilitated by the Scrum Master.

SCALED AGILE® © Scaled Agile, Inc.

4-36

## Sample Iteration Review agenda

1. Review business context and Iteration Goals
2. Demo and solicit feedback on each Story, spike, refactor, and non-functional requirement (NFR)
3. Discuss Stories not completed and why
4. Identify risks, impediments
5. Revise Team Backlog and Team PI Objectives as needed

## Two views from the Iteration Review

The Iteration Review provides the team and other stakeholders two views into the ART and Solution, based on a working system:

### How we did in the Iteration:

- ▶ Did we meet the goal?
- ▶ Story-by-Story review

### How we're doing in the PI:

- ▶ Review of PI Objectives
- ▶ Review of remaining PI scope; reprioritizing if needed

**Pro Tip:** You don't have to wait for the Iteration Review to demo completed work. Demo things as they're finished so the team can get feedback and adjust as needed.

## The Scrum Master's role in the Iteration Review and System Demo

Best practices	Common anti-patterns
Consider how and what to demo in Iteration Planning	A lot of time is spent preparing for the demo
Make sure the right participants are present	Demo is mainly talk/slides as opposed to working software and/or hardware
Ensure that the team celebrates its accomplishments and that stakeholders acknowledge them	PO sees things for the first time in the System Demo
Make sure different team members have the opportunity to demo	System Demo is not done because 'the Iteration Review is enough'
Ensure that the team is ready for the System Demo and coordinates with the System Team	Team members are not invited to the System Demo to save time
	Demos that are not interesting or relevant to ART stakeholders

SCALED AGILE® © Scaled Agile, Inc.

4-39

## 4.5 Facilitate relentless improvement

SCALED AGILE® © Scaled Agile, Inc.

4-40

## Relentless improvement

Agile Teams continuously adapt to new circumstances and improve value delivery methods.

- ▶ Understand where you are
- ▶ Foster the culture of improving everywhere
- ▶ Use retrospectives as summary points, not as limitations
- ▶ Support continuous learning
- ▶ Actively engage with other Scrum Masters to drive improvement on the ART



SCALED AGILE® © Scaled Agile, Inc.

4-41



### Video: How to run an effective Iteration Retrospective

Duration  
4 min



<https://bit.ly/Video-IterationRetro>

SCALED AGILE® © Scaled Agile, Inc.

4-42

## Improving everywhere

Ask questions to reflect and address every area that surfaces as a constraint to the team's performance.

### Example

Move from manual to automated testing

Communication with remote teams, subject matter experts, etcetera

The team's skill set

Preparing and running the demo

Nonfunctional requirements (NFR) testing

More efficient and disciplined design sessions

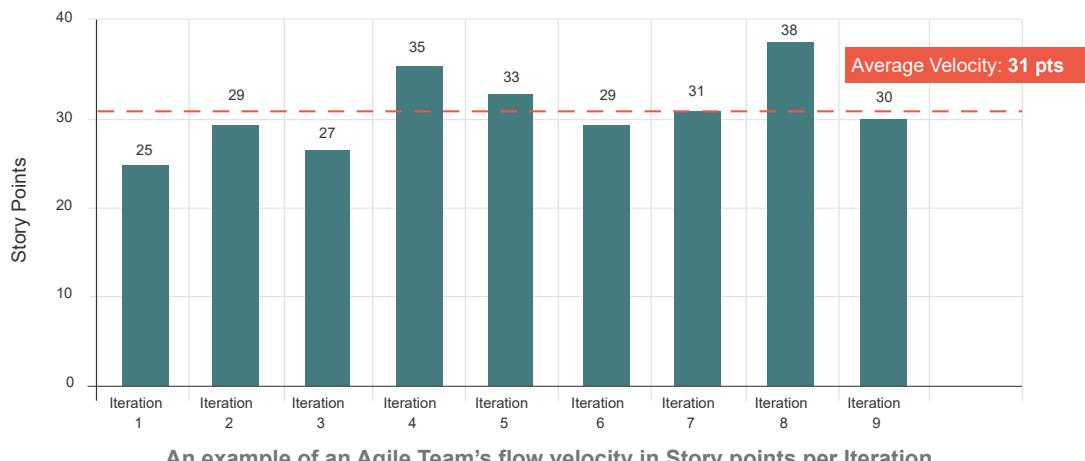
## Measuring progress

- ▶ Teams decide which Metrics are relevant to them and use the current values and trends as input to their retrospectives.
- ▶ Teams might include additional Flow Metrics such as flow velocity, flow load, or flow distribution.
- ▶ Each Agile Team gathers the Iteration Metrics they've agreed to collect. This occurs in the quantitative part of the team retrospective.

## Flow velocity

Flow velocity measures the number of backlog items completed in a given timeframe

Velocity Chart



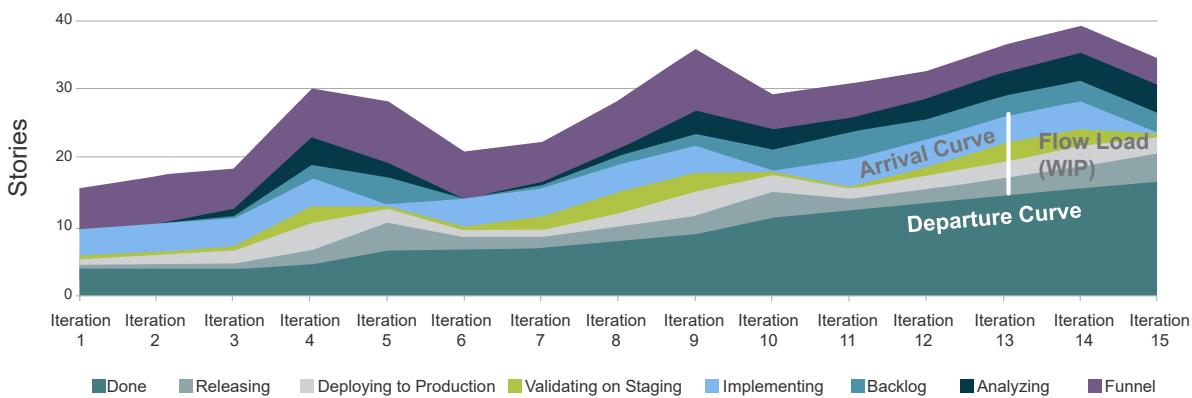
An example of an Agile Team's flow velocity in Story points per Iteration

SCALED AGILE® © Scaled Agile, Inc.

4-45

## Flow load

Flow load indicates how many items are currently in the system



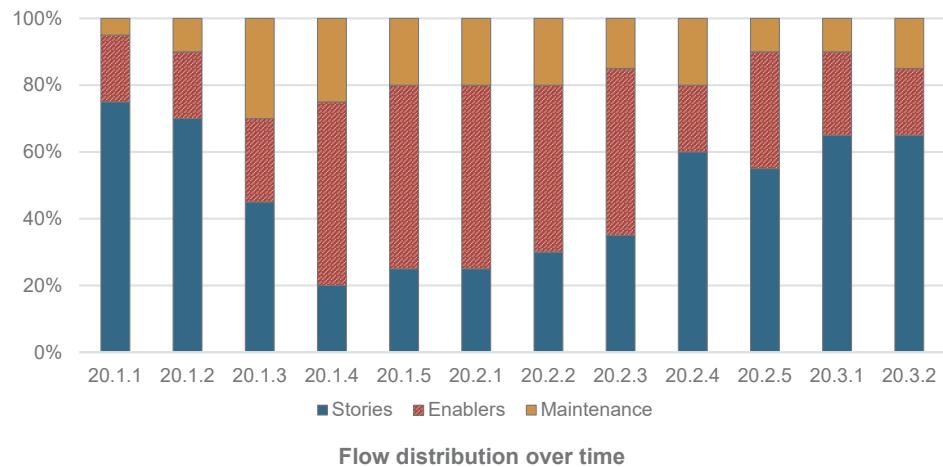
Visualizing flow load with a cumulative flow diagram

SCALED AGILE® © Scaled Agile, Inc.

4-46

## Flow distribution

Measures the amount of each type of work in the system over time



SCALED AGILE® © Scaled Agile, Inc.

4-47

## Sample Iteration Metrics

Functionality	Iteration 1	Iteration 2	Quality
Velocity planned			Unit test coverage %
Flow velocity			# Defects
# Stories planned			# New test cases
# Stories accepted			# New test cases automated
% Stories accepted			Total tests
Flow distribution – Enablers %			Total % tests automated
Flow distribution – Stories %			# Refactors
Flow distribution – Maintenance %			

SCALED AGILE® © Scaled Agile, Inc.

4-48

## Iteration Retrospective

- ▶ **Timebox:** An hour or less.
- ▶ **Preparation:** Pick 1–2 things that can be done better or preserved and target these for the next Iteration. Enter improvement items into the Team Backlog.
- ▶ **Attendees:**
  - Agile Team members are in attendance and actively engaged; no other stakeholders should be invited.
  - Facilitated by the Scrum Master.

## Sample Iteration Retrospective agenda

### Part 1: Quantitative

1. Review the improvement backlog items targeted for this Iteration. Were they all accomplished?
2. Did the team meet the goals (yes/no)?
3. Collect and review the agreed-upon Iteration Metrics.

### Part 2: Qualitative

1. What went well?
2. What didn't?
3. What can we do better next time?
4. What can we preserve?

## Creative Iteration Retrospectives

Create three columns and have an open discussion

Has someone helped you or helped the team? Show appreciation

Write one word to describe the iteration

Individually write sticky notes and then find patterns as a group

Rate the iteration on a scale of 1 – 5 and then brainstorm how to make the next iteration a 5



### Activity: Tune and adjust



- ▶ **Step 1:** Working in your groups, run the Boat retrospective to assess this course so far. Select one team member to play the role of the Scrum Master.
- ▶ **Step 2:** Draw a speedboat with an anchor on your retro board. By the anchor, draw the things that slow the class down (impediments).
- ▶ **Step 3:** Around the propellers, draw things that propel the class forward.
- ▶ **Step 4:** Present your board to the class and discuss how your class can tune and adjust:
  - What's working well (what are the propelling forces)?
  - What isn't working (what are the anchors)?
  - What can we do better next time (how can we tune and adjust)?



## The Scrum Master's role in the improvement

Best practices	Common anti-patterns
Encourage improvement between retrospectives	The only focus is on what to improve and not what to preserve
Coach the team on problem-solving techniques	Focus on problems that are outside of the team's control
Make sure the entire team has a voice in the retrospective	Failure to achieve results
Ensure that the team agrees on actionable improvement items	Inviting people outside the team (especially management) to the retrospective

SCALED AGILE® © Scaled Agile, Inc.

4-53

## 4.6 Support DevOps and Release on Demand

SCALED AGILE® © Scaled Agile, Inc.

4-54



## Video: What is DevOps?

Duration  
2 min

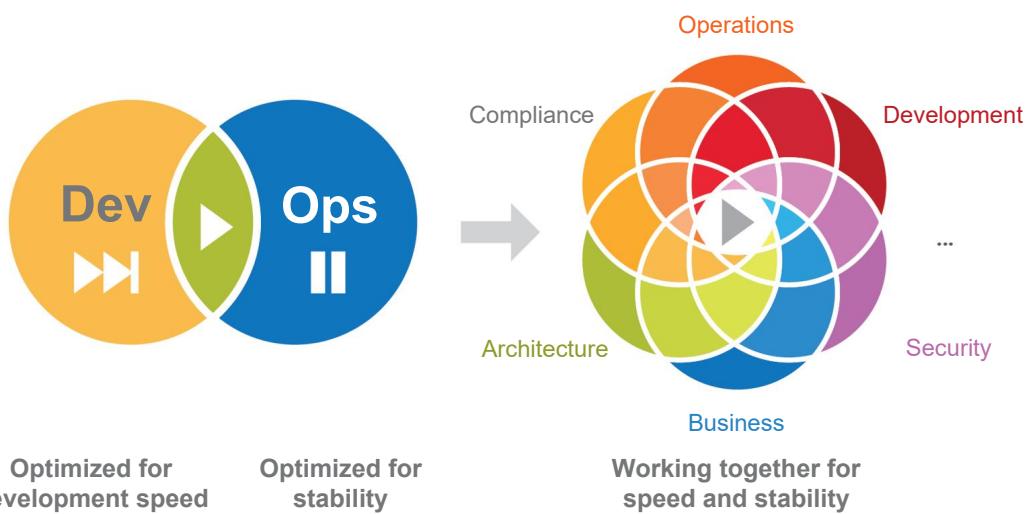


<https://bit.ly/Video-WhatisDevOps>

SCALED AGILE® © Scaled Agile, Inc.

4-55

## Maximize speed and stability

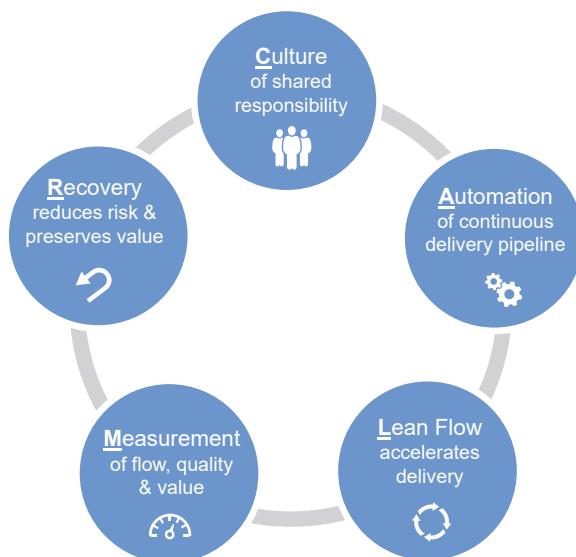


SCALED AGILE® © Scaled Agile, Inc.

4-56

## A CALMR approach to DevOps

C	<b>Culture</b>	Establish a culture of shared responsibility for development, deployment, and operations.
A	<b>Automation</b>	Automate the Continuous Delivery Pipeline (CDP).
L	<b>Lean flow</b>	Keep batch sizes small, limit WIP, and provide extreme visibility.
M	<b>Measurement</b>	Measure the flow through the pipeline. Implement full-stack telemetry.
R	<b>Recovery</b>	Architect and enable low-risk releases. Establish fast recovery, fast reversion, and fast fix-forward.



SCALED AGILE® © Scaled Agile, Inc.

4-57



### Activity: Supporting DevOps and Release on Demand



- ▶ **Step 1:** Consider the five elements necessary for DevOps: culture, automation, Lean flow, measurement, and recovery. What might be some challenges associated with them?
- ▶ **Step 2:** Draw the CALMR approach, and for three to five of the elements, write:
  - As a Scrum Master, how would you support each element?
  - What tools and techniques can you use to support the team in applying those elements?
- ▶ **Step 3:** Share with the class.

SCALED AGILE® © Scaled Agile, Inc.

4-58



## Action Plan: Facilitating Iteration Execution

Duration  
5 min

- ▶ **Step 1:** Locate the Scrum Master Action Plan section in your workbook
- ▶ **Step 2:** Add some techniques for planning and reviewing the Iteration by reflecting on the following:
  - How will you measure and track Iteration progress?
  - What techniques will you use for facilitating the events during the Iteration?
  - What tools and resources on the Class Page will help you facilitate the Iteration?
  - What practices will you use to avoid anti-patterns?
- ▶ **Step 3:** Share one of your insights with the class



SCALED AGILE® © Scaled Agile, Inc.

4-59

## Lesson review

### In this lesson you:

- ▶ Planned the Iteration
- ▶ Facilitated a Team Sync
- ▶ Tracked the Iteration progress
- ▶ Discussed backlog refinement
- ▶ Facilitated the Iteration Review
- ▶ Explained the CALMR approach for Dev Ops and Release on Demand

SCALED AGILE® © Scaled Agile, Inc.

4-60



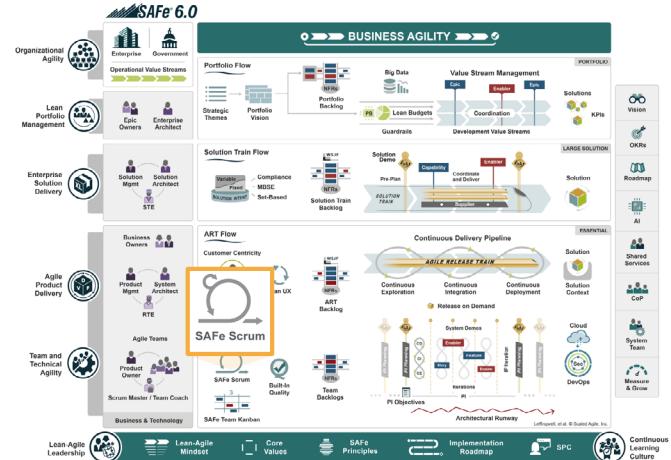
# Action Plan

## Facilitating Iteration Execution

## Articles used in this lesson

Read these Framework articles to learn more about topics covered in this lesson

- ▶ “Iteration Planning”  
<https://www.scaledagileframework.com/iteration-planning/>
- ▶ “Iteration Execution”  
<https://www.scaledagileframework.com/iteration-execution/>
- ▶ “Iteration Review”  
<https://www.scaledagileframework.com/iteration-review/>
- ▶ “Iteration Retrospective”  
<https://www.scaledagileframework.com/iteration-retrospective/>



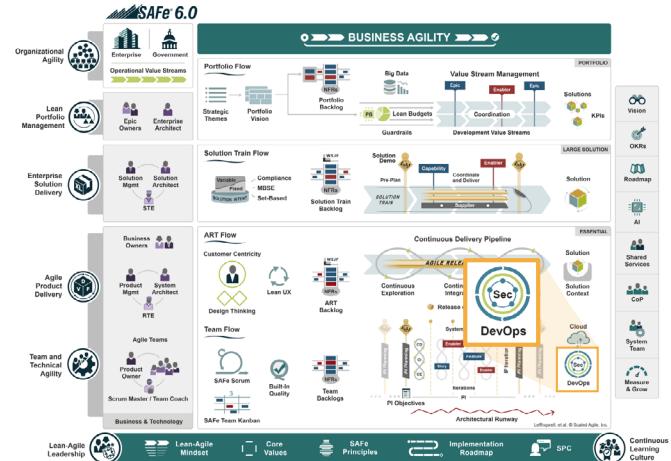
SCALED AGILE® © Scaled Agile, Inc.

4-61

## Articles used in this lesson

Read these Framework articles to learn more about topics covered in this lesson

- ▶ “DevOps”  
<https://www.scaledagileframework.com/devops/>
- ▶ “CALMR”  
<https://www.scaledagileframework.com/calmr/>



SCALED AGILE® © Scaled Agile, Inc.

4-62

## Continue your SAFe journey with the following resources:

Watch this one-minute video, <i>Quick Tips: Make Team Sync Fun!</i> for helpful thoughts on bringing fun into your team events. <a href="https://bit.ly/Video-MakeDSUFun">https://bit.ly/Video-MakeDSUFun</a>	Use the “Start, Stop, Continue, I Wish” Collaborate template to run a team retrospective that combines two retrospective techniques – ‘Start, Stop, Continue’ and ‘I Wish.’ <a href="https://bit.ly/Template-StartStopContinuelWish">https://bit.ly/Template-StartStopContinuelWish</a>
Use the “Retrospective Voyage” Collaborate template with your team to run an engaging retrospective to identify the best and worst moments of the Iteration. <a href="https://bit.ly/Template-RetrospectiveVoyage">https://bit.ly/Template-RetrospectiveVoyage</a>	Use the “Plus Minus Delta” Collaborate template to run a fast and simple retrospective with your team. <a href="https://bit.ly/Template-PlusMinusDelta">https://bit.ly/Template-PlusMinusDelta</a>
Download the “SAFe Remote ART Toolkit” for additional tools and guides for releasing value with distributed or remote teams. <a href="https://bit.ly/Community-ToolkitsandTemplates">https://bit.ly/Community-ToolkitsandTemplates</a>	Download the “SAFe Iteration Execution Toolkit” for a set of tools and guides for facilitating significant Iteration events. <a href="https://bit.ly/Community-ToolkitsandTemplates">https://bit.ly/Community-ToolkitsandTemplates</a>

## Continue your SAFe journey with the following resources:

Download the “Complete Guide to Team Syncs for Facilitators” for a guide to planning, running, and getting creative with your Team Syncs. <a href="https://bit.ly/Community-FGDailyStand-Up">https://bit.ly/Community-FGDailyStand-Up</a>	Download the “Complete Guide to Backlog Refinement for Facilitators” for guidance on how to plan and execute the backlog refinement event for your team. <a href="https://bit.ly/Community-FGBacklogRefinement">https://bit.ly/Community-FGBacklogRefinement</a>
Use the “Complete Guide to Iteration Planning for Facilitators” to prepare for, conduct, and introduce creativity to your next Iteration Planning event. <a href="https://bit.ly/Community-FGIterationPlanning">https://bit.ly/Community-FGIterationPlanning</a>	Use the “Complete Guide to Iteration Retrospective for Facilitators” for guidance on planning, running, and improving upon retrospectives with your team. <a href="https://bit.ly/Community-FGRetrospective">https://bit.ly/Community-FGRetrospective</a>
Download the “Complete Guide to Iteration Review for Facilitators” to help prepare for and execute your Iteration Review events. <a href="https://bit.ly/Community-FGIterationReview">https://bit.ly/Community-FGIterationReview</a>	

# Lesson notes

Enter your notes below. If using a digital workbook, save your PDF often so you don't lose any of your notes.

# Lesson 5

## Finishing the PI

**SAFe® Course** - Attending this course gives learners access to the SAFe® Scrum Master exam and related preparation materials.



### Lesson Topics

**5.1** Coach the IP Iteration

**5.2** Prepare the team for the Inspect & Adapt event



## Learning objectives

At the end of this lesson you should be able to:

- ▶ Explore how to coach the IP Iteration
- ▶ Discuss the six steps of the problem-solving workshop
- ▶ Discuss how to prepare the team for the Inspect & Adapt event

## 5.1 Coach the IP Iteration

## Innovation and Planning (IP) Iteration

Facilitate reliability, PI readiness, planning, and innovation

- ▶ **Innovation:** Opportunity for innovation, hackathons, and infrastructure improvements
  - ▶ **Planning:** Provides for cadence-based planning
  - ▶ Estimating **guard band** for cadence-based delivery

“Provide sufficient capacity margin to enable cadence.”

—Donald G. Reinertsen, *The Principles of Product Development Flow*

SCALED AGILE<sup>®</sup> © Scaled Agile, Inc.

5-5

## Example IP Iteration calendar

© Scaled Agile, Inc.

5-6

## Without the IP Iteration...

- ▶ Lack of delivery capacity buffer impacts predictability
- ▶ Little innovation; the tyranny of the urgent
- ▶ Technical debt grows uncontrollably
- ▶ People burn out
- ▶ No time for teams to plan, demo, or improve together



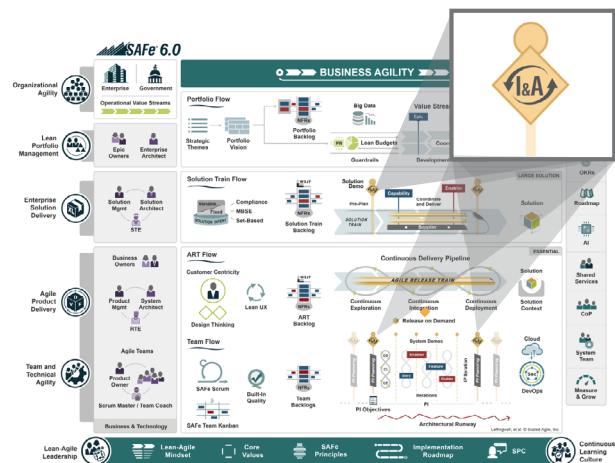
## 5.2 Prepare the team for the Inspect & Adapt event

## Improving results with the Inspect & Adapt event

- ▶ Three parts of Inspect & Adapt:

1. The PI System Demo
2. Quantitative and qualitative measurement
3. Problem-solving workshop

- ▶ Timebox: 3 – 4 hours per PI
- ▶ Attendees: Teams and stakeholders



SCALED AGILE® © Scaled Agile, Inc.

5-9

## PI System Demo

- ▶ At the end of the PI, teams demonstrate the current state of the Solution to the appropriate stakeholders
- ▶ Often led by Product Management, POs, and the System Team
- ▶ Attended by Business Owners, stakeholders, Product Management, RTE, Scrum Masters, and teams
- ▶ Timebox: 45–60 minutes



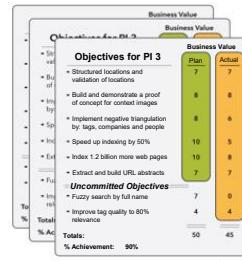
SCALED AGILE® © Scaled Agile, Inc.

5-10

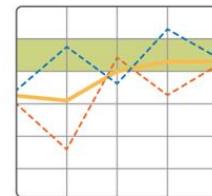
## Team performance assessment

- ▶ All teams' PI Objectives assigned a business value between 1 and 10
- ▶ Review and rate your PI achievements:
  - Consider how well you did against your stated objectives, including timeliness, content, and quality
  - Rate performance on a scale between zero and the planned business value
- ▶ Average these across all objectives and give yourself an ART percent achievement score
- ▶ Suggested timebox: 45–60 minutes

Team PI Performance Report



ART Predictability Measure



SCALED AGILE® © Scaled Agile, Inc.

5-11

## Team PI performance report

- ▶ The planned total does not include uncommitted objective points
- ▶ Actual total includes uncommitted objectives
- ▶ Percent achievement equals actual total divided by planned total
- ▶ A team can achieve greater than 100% (as a result of uncommitted objectives achieved)
- ▶ Effort required for uncommitted objectives is included in the load (not extra work the team does on weekends)
- ▶ Individual team totals are rolled up into the ART predictability report

Objectives for PI 3

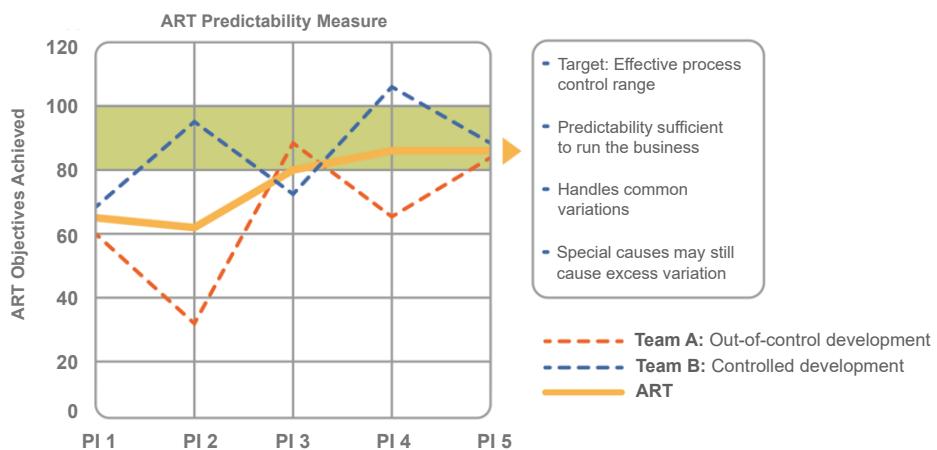
	Plan	Actual
Structured locations and validation of locations	7	7
Build and demonstrate a proof of concept for context images	8	8
Implement negative triangulation by: tags, companies and people	8	6
Speed up indexing by 50%	10	5
Index 1.2 billion more web pages	10	8
Extract and build URL abstracts	7	7
<b>Uncommitted Objectives</b>		
Fuzzy search by full name	7	0
Improve tag quality to 80% relevance	4	4
<b>Totals</b>	<b>50</b>	<b>45</b>
<b>% Achievement:</b>	90%	

SCALED AGILE® © Scaled Agile, Inc.

5-12

## Measure ART Predictability

The report compares actual business value achieved against planned business value.



SCALED AGILE® © Scaled Agile, Inc.

5-13



Video: Inspect & Adapt: Problem-solving workshop and root cause analysis

Duration  
9 min



SAFe®  
PROVIDED BY SCALED AGILE

Inspect  
and Adapt:  
Problem Solving  
Workshop and Root  
Cause Analysis

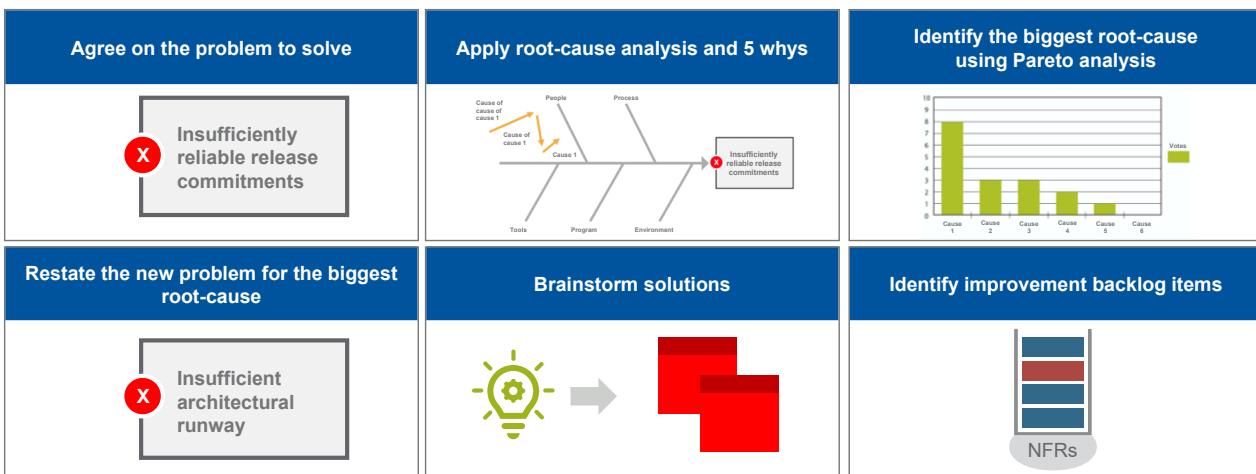
<https://bit.ly/Video-ProblemSolvingWorkshop>

SCALED AGILE® © Scaled Agile, Inc.

5-14

## The problem-solving workshop overview

After a short retrospective, teams systematically address the larger impediments limiting velocity using root cause analysis.



SCALED AGILE® © Scaled Agile, Inc.

5-15

## The Scrum Master's role in Inspect & Adapt (I&A)

Best practices	Common anti-patterns
Facilitate the team's preparation for the PI System Demo	Only the PO presents in the PI System Demo
Provide team data	No actionable improvement Features are created
Facilitate one of the teams in the problem-solving workshop	Improvement items don't enter the PI Planning process
Help the RTE make sure improvement items are included during the PI	Scrum Master is more focused on the technical role than the facilitator's role
If using ad hoc teams for the I&A, then Scrum Masters may be participants rather than facilitators	Improvement items are not demoed in the PI System Demo

SCALED AGILE® © Scaled Agile, Inc.

5-16



## Action Plan: Finishing the PI

Duration  
5 min

- ▶ **Step 1:** Locate the Scrum Master Action Plan section in your workbooks
- ▶ **Step 2:** Add more tools and techniques to your Action Plan by reflecting on the following:
  - Why is the IP Iteration important, and how will you coach for an innovative IP Iteration?
  - How will you prepare for the PI System Demo?
  - How will you plan for the problem-solving workshop?
  - What tools and resources on the Class Page will you use to facilitate the Inspect & Adapt workshop?
- ▶ **Step 3:** Share one of your insights with the class



SCALED AGILE® © Scaled Agile, Inc.

5-17

## Lesson review

In this lesson you:

- ▶ Explored how to coach the IP Iteration
- ▶ Discussed the six steps of the problem-solving workshop
- ▶ Discussed how to prepare the team for the Inspect & Adapt event

SCALED AGILE® © Scaled Agile, Inc.

5-18



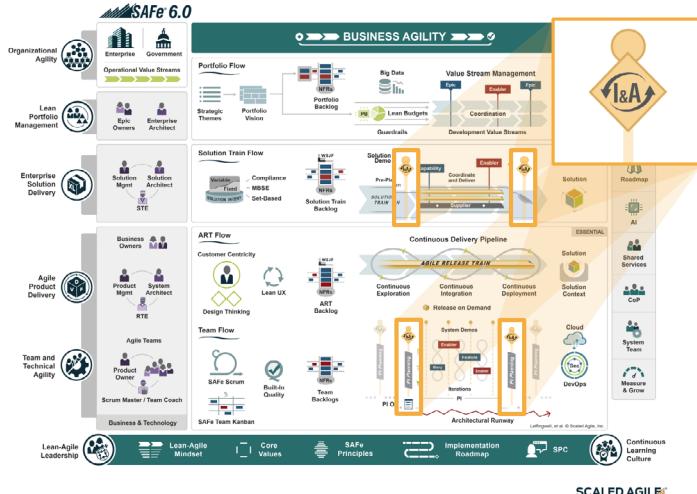
# Action Plan

## Finishing the PI

## Articles used in this lesson

Read these Framework articles to learn more about topics covered in this lesson

- ▶ “Innovation and Planning Iteration”  
<https://www.scaledagileframework.com/innovation-and-planning-iteration/>
- ▶ “Inspect & Adapt”  
<https://www.scaledagileframework.com/inspect-and-adapt/>



## Continue your SAFe journey with the following resources:

Watch this two-minute video, *Scrum Master Quick Tips: Don't Forget to Enjoy Your Wins* to get thoughts on celebrating in your role and with your team.  
<https://bit.ly/Video-EnjoyYourWins>

Download and use the “Facilitator’s Guide to Distributed I&A,” to ensure thorough preparation and smooth execution for a distributed I&A problem-solving workshop.  
<https://bit.ly/Community-FGlandA>

Watch this three-minute video, *Assessing Actual Value Achieved at the End of the PI*, to reinforce your understanding of the process of assigning actual business value and why it is important.  
<https://bit.ly/Video-AssessingBusinessValue>

Watch this five-video series “Playlist: Inspect & Adapt Series” to learn more about each step of the Inspect & Adapt event and why they matter.  
<https://bit.ly/Video-InspectandAdapt>

## Continue your SAFe journey with the following resources:

<p>Use the “Root Cause Analysis and Problem-Solving Board” Collaborate Template to run an Inspect &amp; Adapt problem-solving workshop with your team.</p> <p><a href="https://bit.ly/Template-RootCause">https://bit.ly/Template-RootCause</a></p>	<p>Listen to this 15-minute podcast episode, “Scrum Master Tips and Tricks, Part One” to hear a discussion of how to coach teams in remote, in-person, and hybrid environments.</p> <p><a href="https://bit.ly/Podcast-SMTipsandTricks1">https://bit.ly/Podcast-SMTipsandTricks1</a></p>
<p>Listen to this 22-minute podcast episode, “Scrum Master Tips and Tricks, Part Two” to hear a discussion about managing timeboxes, the importance of communication and trust within teams, and awesome Scrum Master tips.</p> <p><a href="https://bit.ly/Podcast-SMTipsandTricks2">https://bit.ly/Podcast-SMTipsandTricks2</a></p>	<p>Download and share the “SAFe PI Execution Toolkit” with your ART to give guidance around the successful delivery of key ART activities and events, including the Inspect &amp; Adapt event.</p> <p><a href="https://bit.ly/Community-ToolkitsandTemplates">https://bit.ly/Community-ToolkitsandTemplates</a></p>

## References

Reinertsen, Donald G. *The Principles of Product Development Flow: Second Generation of Lean Product Development*. Redondo Beach: Celeritas 2009. 178.

# Lesson notes

Enter your notes below. If using a digital workbook, save your PDF often so you don't lose any of your notes.

# Lesson 6

## Practicing SAFe

**SAFe® Course** - Attending this course gives learners access to the SAFe Release Train Engineer exam and related preparation materials.

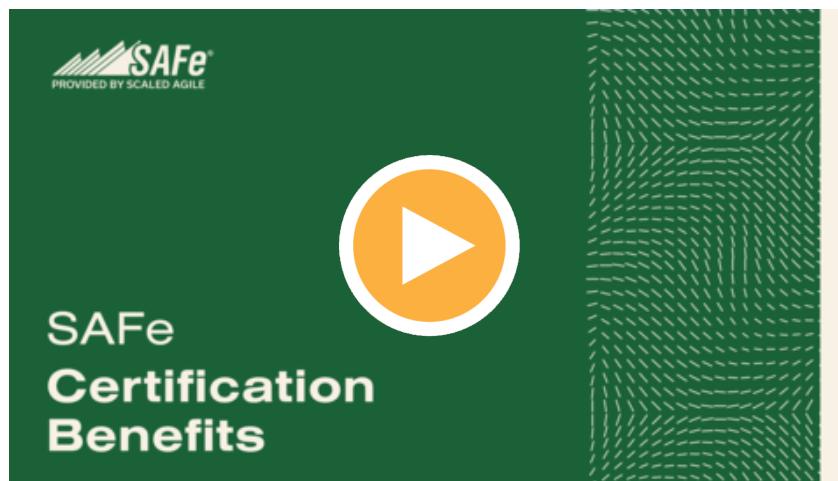


SCALED AGILE®



Video: SAFe Certification Benefits

Duration  
3 min



<https://bit.ly/Video-SAFeCertificationBenefits>

SCALED AGILE® © Scaled Agile, Inc.

8-2

## The Learning Plan is YOUR path to certification

Next Steps:



Download the workbook and access the  
[exam study guide](#) and [practice test](#)



Take the [Certification Exam](#) and showcase your  
[Digital Badge](#) to get recognized as a Certified  
SAFe Professional

## Feedback is a gift

Help us improve by  
completing the Course  
Feedback Survey





## Activity: My Learning Plan

Duration  
7 min

- ▶ **Step 1:** Individually, navigate to your learning plan via:
  - <https://safe.scaledagile.com/>
- ▶ **Step 2:** In your Learning Plan, navigate to and complete the course feedback survey. The survey results will remain anonymous to the instructor.
- ▶ **Step 3:** After completing the survey, review the rest of the certification prep materials. Take special note of your exam deadline and plan your timeline to prepare for and complete the exam!



## Video: Welcome to SAFe Studio

Duration  
3 min



<https://bit.ly/Video-WelcomeSAFeStudio>

## SAFe Studio Resources



Online Learning



Videos



Toolkits



My SAFe Events



SAFe FAQs



SAFe Assessments



SAFe Forums

SCALED AGILE® © Scaled Agile, Inc.

8-7



### Activity: SAFe Studio Exploration

Duration  
7 min

- ▶ **Step 1:** Using the sidebar navigation, explore each area of SAFe Studio to locate the following:
  - Identify a video about a SAFe event you're curious to learn more about
  - Select an online learning of interest
- ▶ **Step 2:** Navigate to the SAFe Forum and make a post. You could introduce yourself, ask a question from the class parking lot, or respond to a post from another SAFe Studio user.

SCALED AGILE® © Scaled Agile, Inc.

8-8



**Good luck on your  
SAFe Practice  
with SAFe Studio**

<https://safe.scaledagile.com/>

™

# Lesson notes

Enter your notes below. If using a digital workbook, save your PDF often so you don't lose any of your notes.

# SAFe Glossary



## SAFe Glossary:

Visit the Scaled Agile Framework site ([www.scaledagileframework.com/glossary/](http://www.scaledagileframework.com/glossary/)) to download glossaries translated into other languages.