

SAFe® Scrum Master

Applying the Scrum Master Role within a SAFe
Enterprise

5.0.1

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



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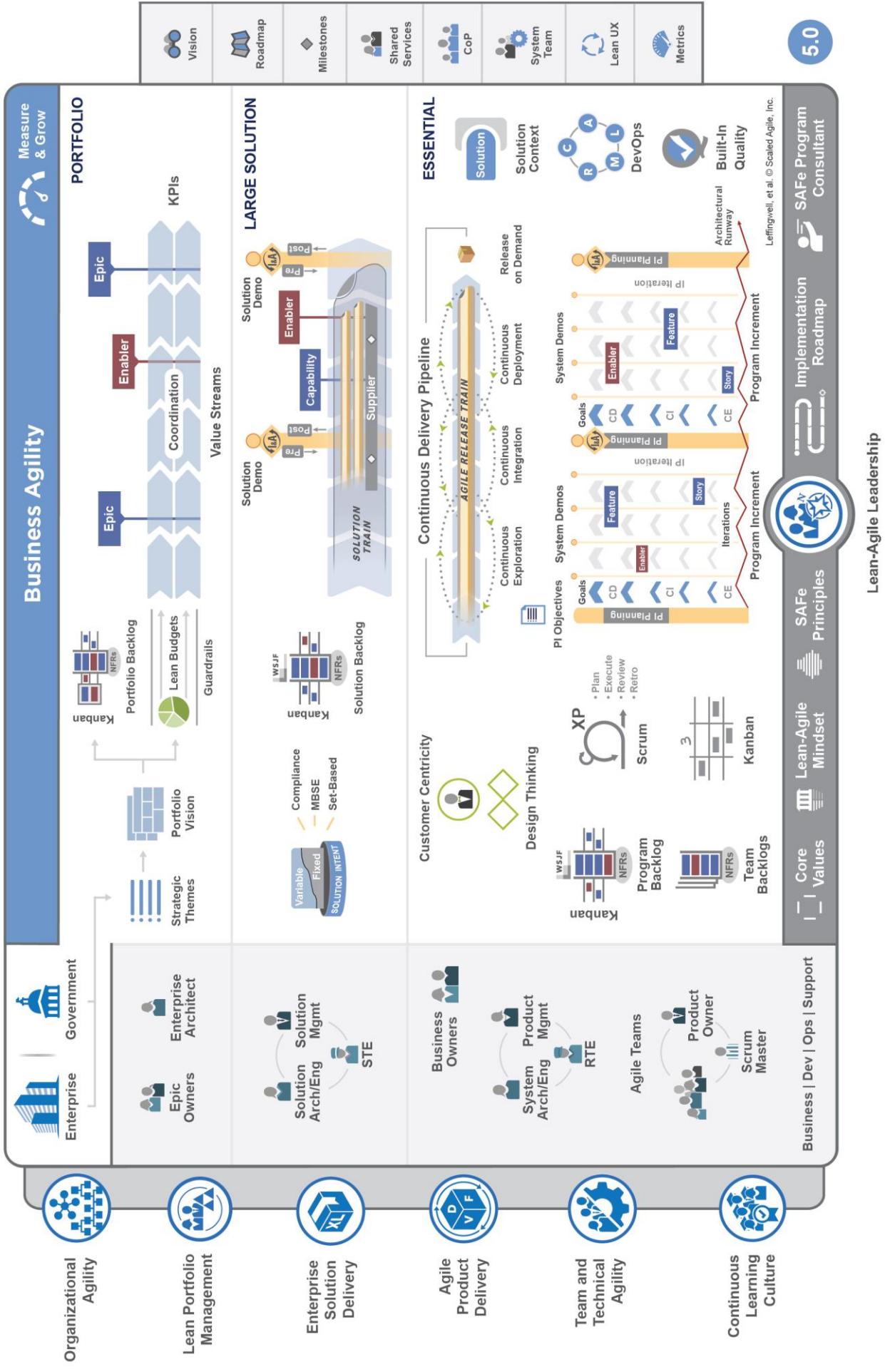
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SAFe® for Lean Enterprises

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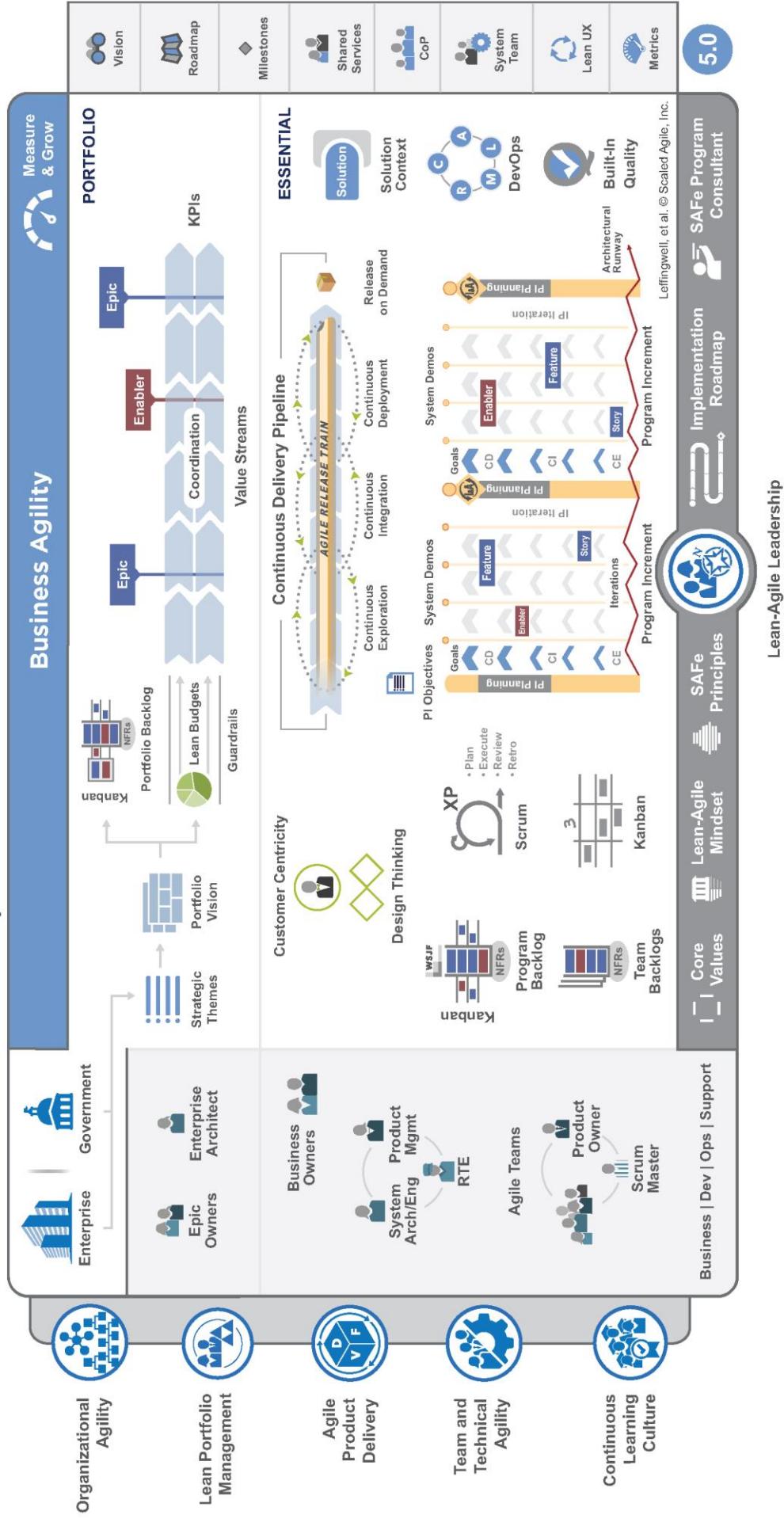


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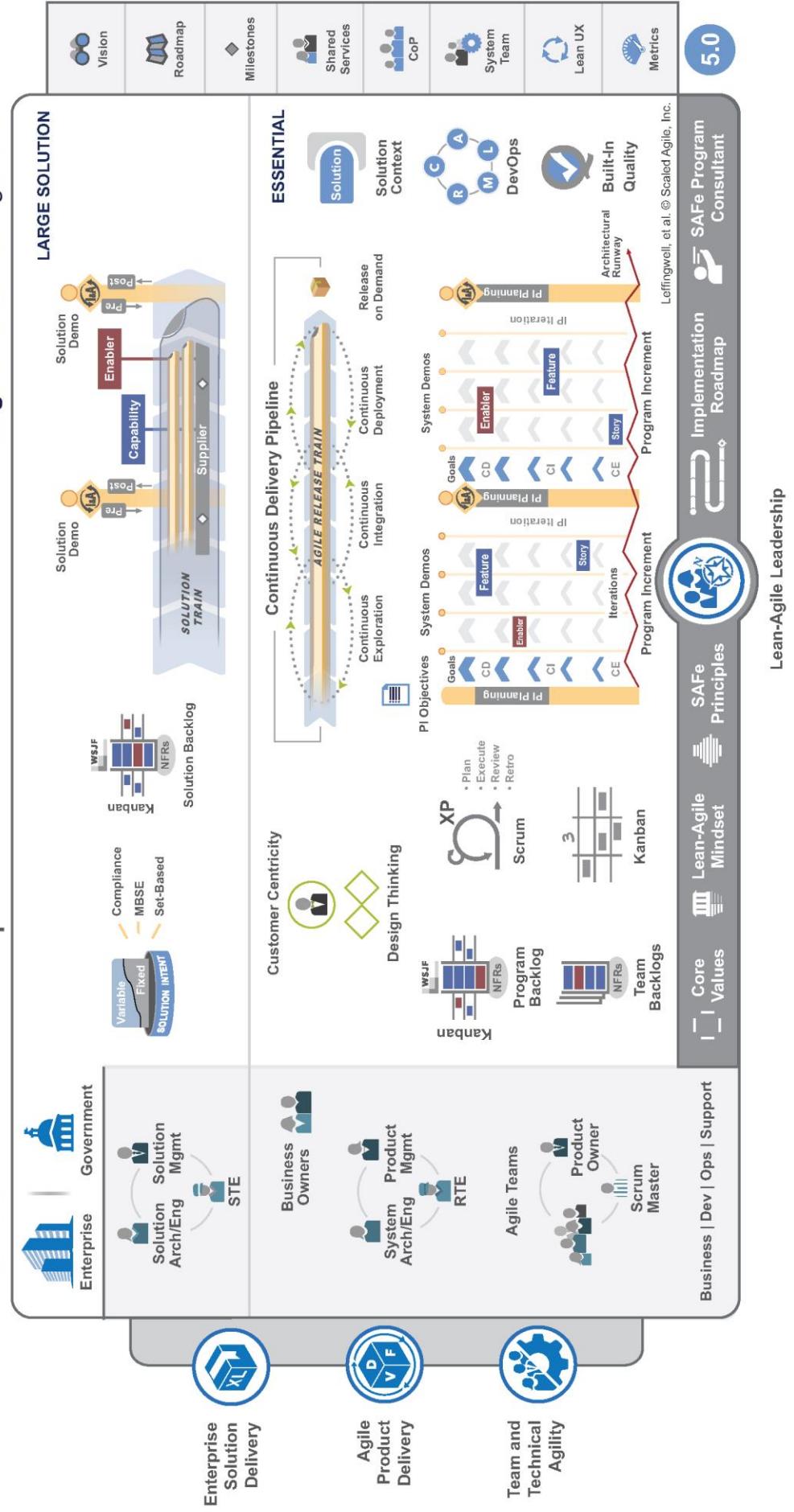
Portfolio Configuration



Lean-Agile Leadership

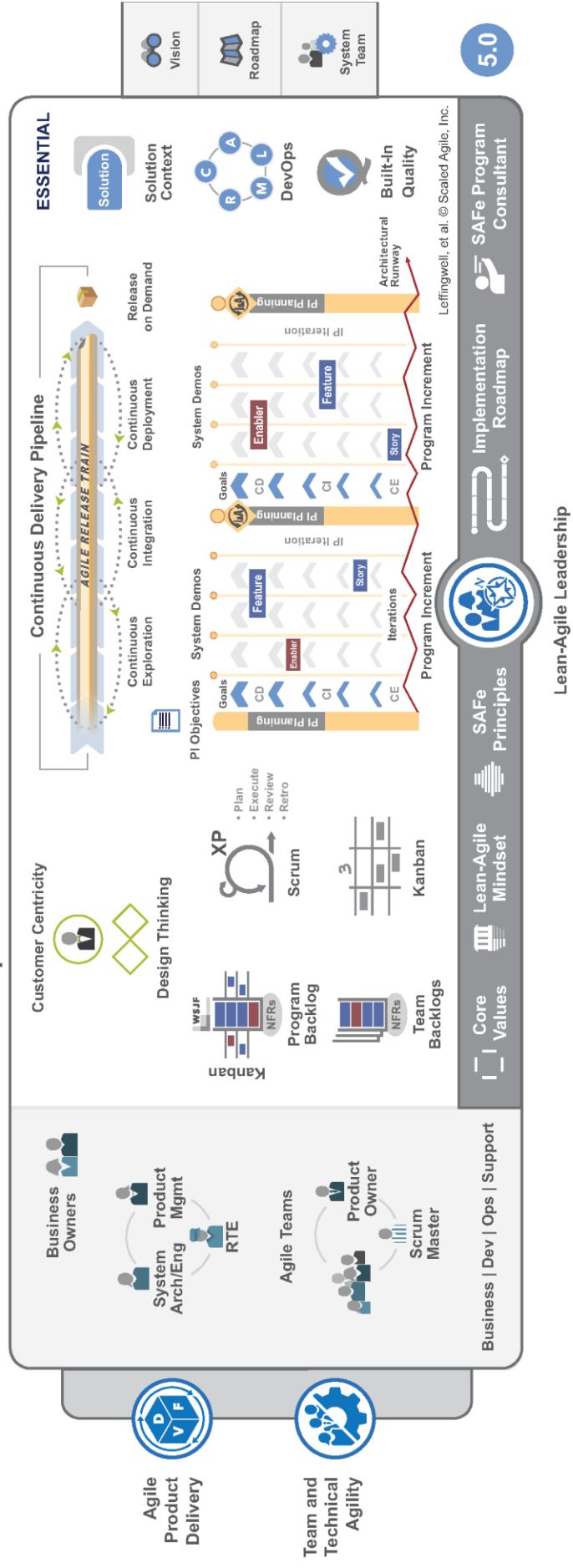
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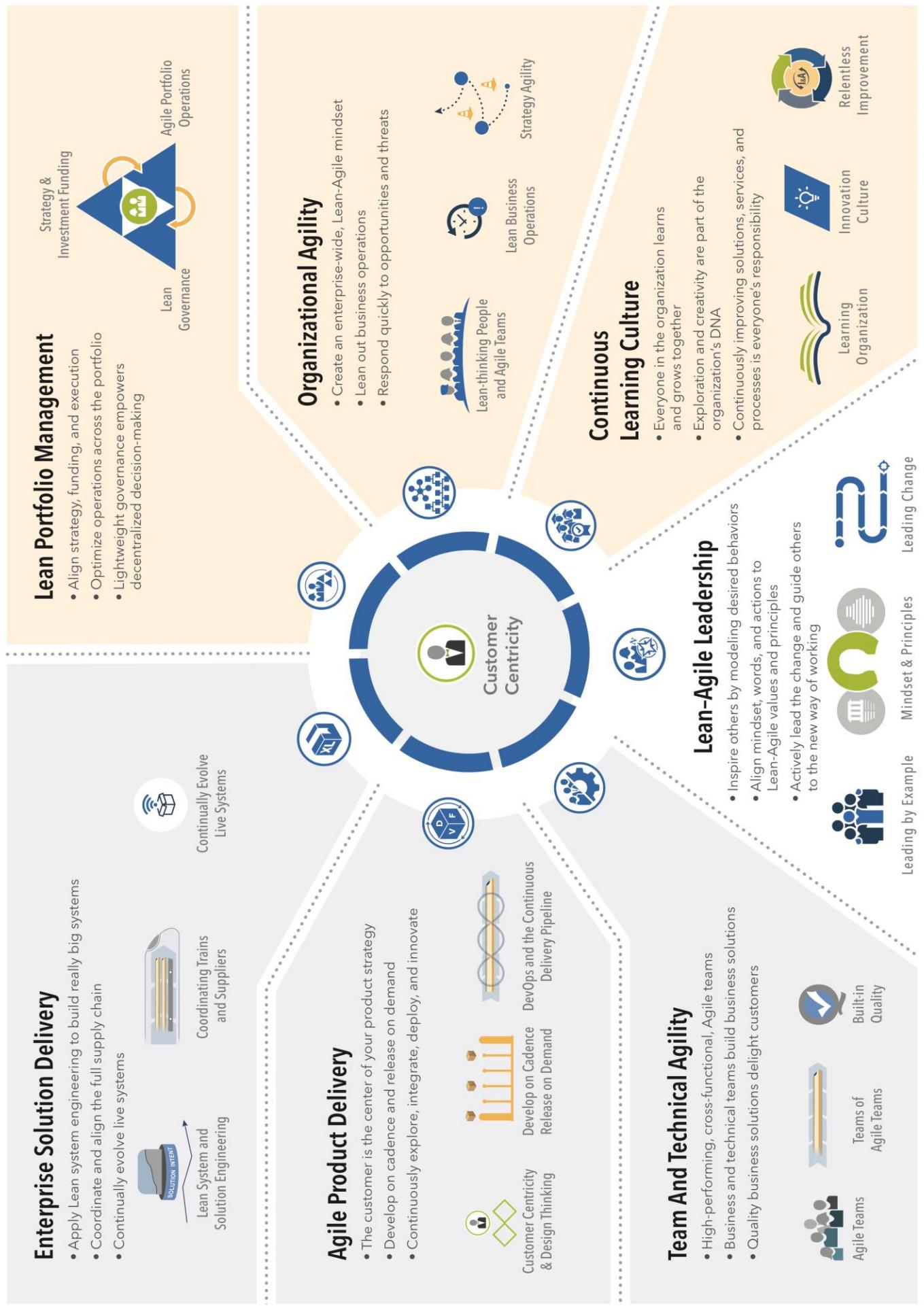
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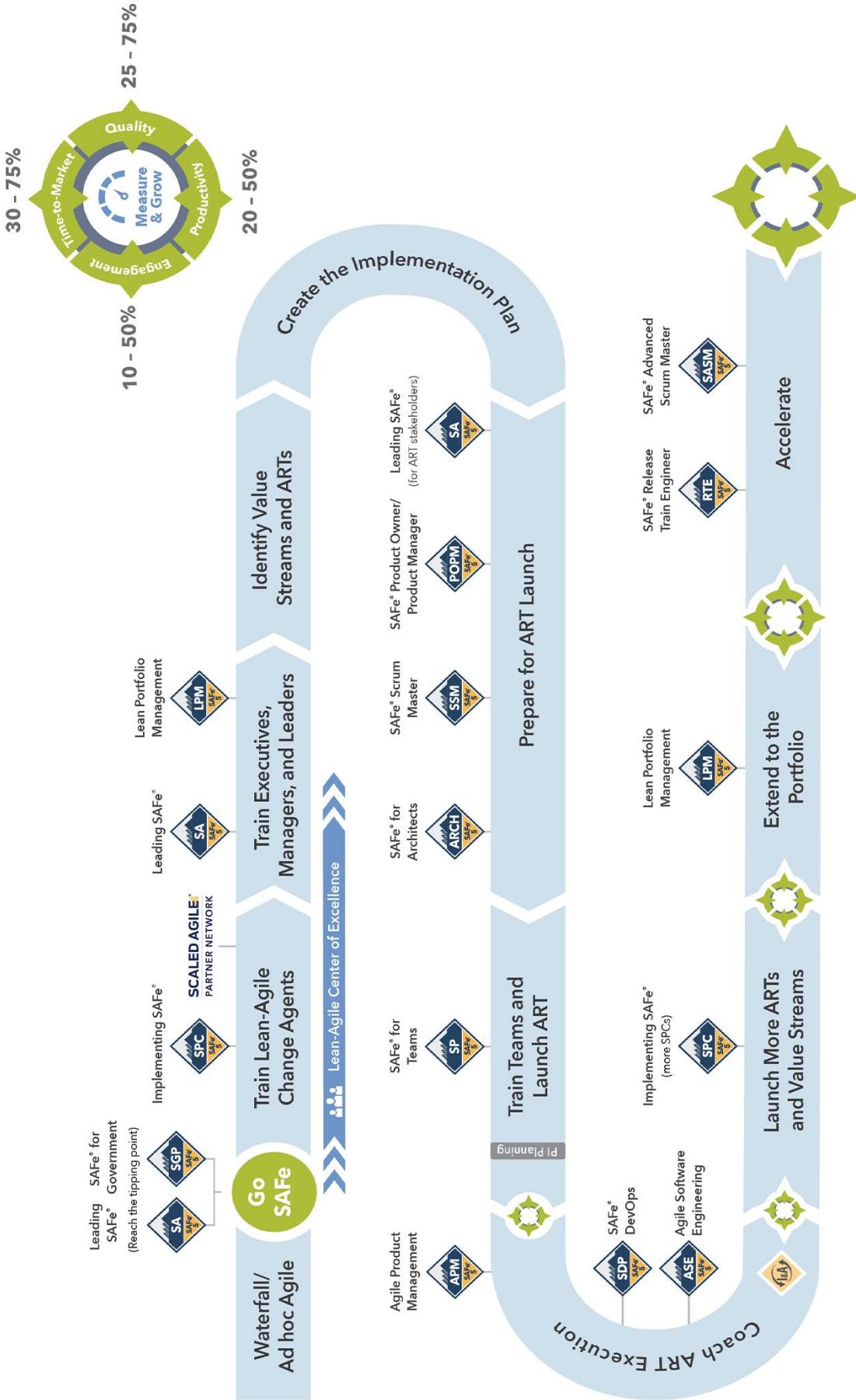
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SAFe® Implementation Roadmap

Business results



SAFe® Courses and Certifications

Course	Description	Certification
Leading SAFe®	Thriving in the Digital Age with Business Agility	 with SAFe® 5 Agilist Certification
Implementing SAFe®	Achieving Business Agility with the Scaled Agile Framework	 with SAFe® 5 Program Consultant Certification
SAFe® for Government	Applying Lean-Agile Practices in the Public Sector with SAFe®	 with SAFe® 5 Government Practitioner Certification
Lean Portfolio Management	Aligning Strategy with Execution	 with SAFe® 5 Lean Portfolio Manager Certification
SAFe® Product Owner/Product Manager	Delivering Value through Effective Program Increment Execution	 with SAFe® 5 Product Owner/Product Manager Certification
Agile Product Management	Using Design Thinking to Create Valuable Products in the Lean Enterprise	 with SAFe® 5 Agile Product Manager Certification
SAFe® Scrum Master	Applying the Scrum Master Role within a SAFe® Enterprise	 with SAFe® 5 Scrum Master Certification
SAFe® Advanced Scrum Master	Advancing Scrum Master Servant Leadership with SAFe®	 with SAFe® 5 Advanced Scrum Master Certification
SAFe® Release Train Engineer	Facilitating Lean-Agile Program Execution	 with SAFe® 5 Release Train Engineer Certification
SAFe® for Architects	Architecting for Continuous Value Flow with SAFe®	 with SAFe® 5 Architect Certification
SAFe® DevOps	Optimizing Your Value Stream	 with SAFe® 5 DevOps Practitioner Certification
SAFe® for Teams	Establishing Team Agility for Agile Release Trains	 with SAFe® 5 Practitioner Certification
Agile Software Engineering	Enabling Technical Agility for the Lean Enterprise	 with SAFe® 5 Agile Software Engineer Certification

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Digital Workbook User Guide

Frequently Asked Questions

Q: How can I take notes in my digital workbook?

A: After each lesson, there is a notes page that allows you to type notes directly into the workbook. At the end of the workbook, there is an action plan which also has fields that allow you to type notes. Remember to save your workbook to your personal computer to save any content you may have added.

If you open the digital workbook with a product like Adobe Acrobat, there are functions that allow you to add your own text boxes, add bookmarks, highlight text, and add comments. Remember to save your workbook to your personal computer to save any content you may have added.

Q: What other features are included in the digital workbook?

A: Action plan slides are clickable and will take you to the action plan at the end of the workbook. All videos have a hyperlink directly below the slide that will take you to the correct URL. If you click on assets in the front matter, you will be taken to ScaledAgileFramework.com resources like the Implementation Roadmap and course certification pages.

Q: How do I fill out the action plan in my digital workbook?

A: To add text to a blue text field, click within the blue box and type. Remember to save your workbook to your personal computer to save any content you may have added.

Q: Is my digital workbook saved on the community platform?

A: The original digital workbook file will always be available to you in your Learning Plan on the SAFe Community Platform. However, any text or content added to your digital workbook must be saved on your personal computer. Remember to save your workbook to your personal computer to save any content you may have added.

Q: Can I share my digital workbook with my coworkers?

A: No. You cannot share your digital workbook. It is for personal use only, so you may not reproduce or distribute it.

Q: Can I print the digital workbook?

A: Yes. You may print the digital workbook for your personal use. The file is in full color, so if you'd prefer to print the workbook in black and white only, make sure to adjust your printing preferences.

SAFe® Scrum Master

Applying the Scrum Master Role within a SAFe Enterprise

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Logistics

- ▶ Course meeting times
- ▶ Breaks
- ▶ Eliminate distractions
- ▶ Ask questions
- ▶ Be patient
- ▶ Working agreements

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Course goals

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

- ▶ Describe scrum in a SAFe Enterprise
- ▶ Facilitate scrum events
- ▶ Facilitate effective Iteration execution
- ▶ Support effective Program Increment execution
- ▶ Support relentless improvement
- ▶ Coach Agile Teams for maximum business results
- ▶ Support DevOps implementation

Course map

- ▶ 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: Becoming a Certified SAFe Scrum Master



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

Learning Objectives:

- 1.1 Examine basic Agile development concepts
- 1.2 Explore scrum basics
- 1.3 Position an Agile Team in a SAFe Enterprise



SAFe® Course Attending this course gives students access to the SAFe Scrum Master exam and related preparation materials

1.1 Examine basic Agile development concepts

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Activity: Too much work in process (WIP)



- ▶ **Step 1:** When the instructor says, “Go,” write the numbers 1 to 26 as many times as you can until the instructor says, “Stop”
- ▶ **Step 2:** When the instructor says, “Go,” write the letters A to Z as many times as you can until the instructor says, “Stop”
- ▶ **Step 3:** When the instructor says “Go,” write number/letter pairs (i.e., 1A, 2B, 3C) as many times as you can until the instructor says, “Stop”



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Work in Process Notes



Enter your notes below:

1.1 Examine basic Agile development concepts



Discussion: Too much Work in Process (WIP)



► **Step 1:** In your group, discuss:

- How many numbers did you write down? How many letters? How many number/letter pairs?

► **Step 2:** Share with the class:

- How many active projects are you currently juggling?
- How much of your day is actually spent adding value versus running from meeting to meeting?

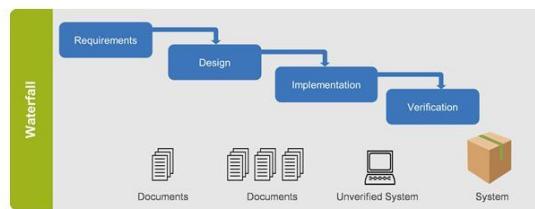
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Agile and waterfall development

► Waterfall development

- Too much WIP
- Frequent context switching
- Increased overhead
- Delivery of value at the end



► Agile development

- Reduced and visualized WIP
- Incremental development
- Early and continuous value delivery

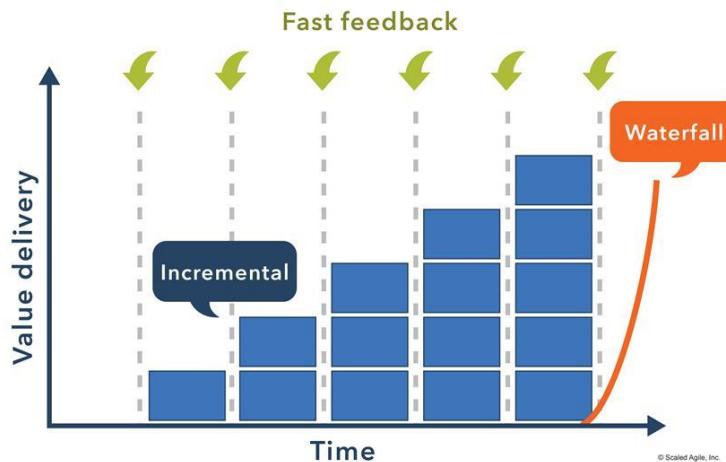


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1.1 Examine basic Agile development concepts

Agile development: Deliver value incrementally



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Agile frameworks

Agile Development

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

Agile Frameworks

- SAFe
- Scrum
- Crystal
- Kanban
- eXtreme Programming (XP)
- Feature-Driven Development

Practices

- timeboxing
- user stories
- daily stand-up
- frequent demos
- test-driven development
- information radiators
- retrospectives
- continuous integration

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Activity: Manifesto for Agile software development



- **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	responding to change
2) Working software over _____	individuals and interactions
3) Customer collaboration over _____	comprehensive documentation
4) _____ over following a plan	contract negotiations

Agile Manifesto value statements



Type the complete four Agile Manifesto value statements by adding the appropriate phrases:

1.1 Examine basic Agile development concepts

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

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

 agilemanifesto.org

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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.
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.

 agilemanifesto.org/principles.html

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The Agile Manifesto Principles

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.
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.

 agilemanifesto.org/principles.html



Discussion: Adopting Agile principles and practices

Prepare
3 min

Share
2 min

- ▶ **Step 1:** Pair with someone you haven't met yet and 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 Explore scrum basics

The roots of scrum

The ‘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,”
Harvard Business Review, January 1986

Scrum values

The three pillars of scrum, *transparency, inspection, adaptation*, and support the scrum values.

Scrum Values

Courage



Commitment



Focus



Respect



Openness



Discussion: Scrum values create transparency

Prepare



Share



- ▶ **Step 1:** As a team, 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:** Share with the class:
 - How does scrum's focus on transparency compare to typical waterfall projects?



Courage



Commitment



Focus



Respect



Openness

Scrum and SAFe terminology

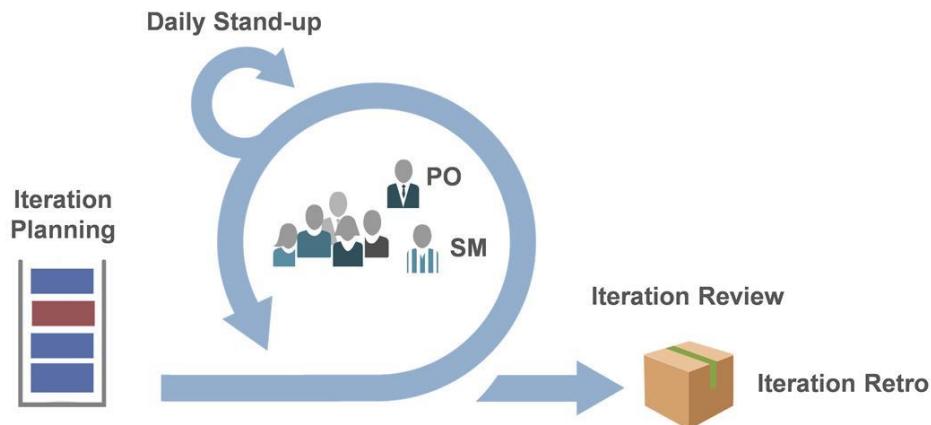
Scrum	SAFe
Sprint Planning	Iteration Planning
Sprint Review	Iteration Review
Sprint Retrospective	Iteration Retrospective
Sprint Goals	Iteration Goals
Sprint Backlog	Iteration Backlog
Daily Scrum	Daily Stand-up (DSU)
Increment	Team Increment
The Scrum Team	Agile Team

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Teams execute Iterations with scrum

Scrum is built on transparency, inspection, and adaptation.

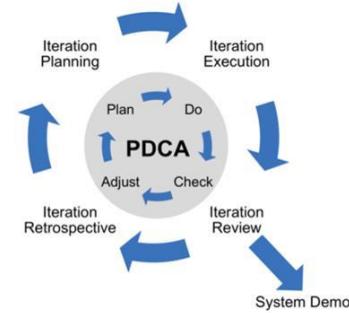


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Iteration basics

- ▶ **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:** The goal is to deliver working software/hardware at the end of each Iteration.
- ▶ Avoid adding scope once the Iteration has begun



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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.
- ▶ User Stories and Enabler Stories 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 team's Product Owner
 - Represents opportunities, not commitments
 - Contains User and Enabler Stories



Team
Backlog



Product
Owner

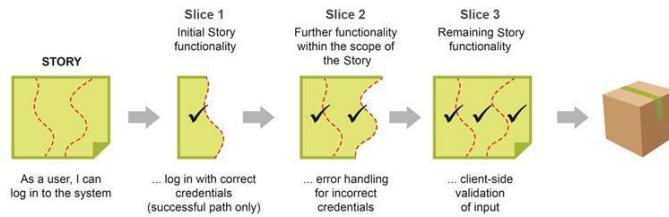
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Foundation for incremental development

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



1.3 Position an Agile Team in a SAFe Enterprise

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The world's leading framework for Enterprise agility

SAFe® for Lean Enterprises is a knowledge base of proven, integrated principles, practices, and competencies for Lean, Agile, and DevOps.

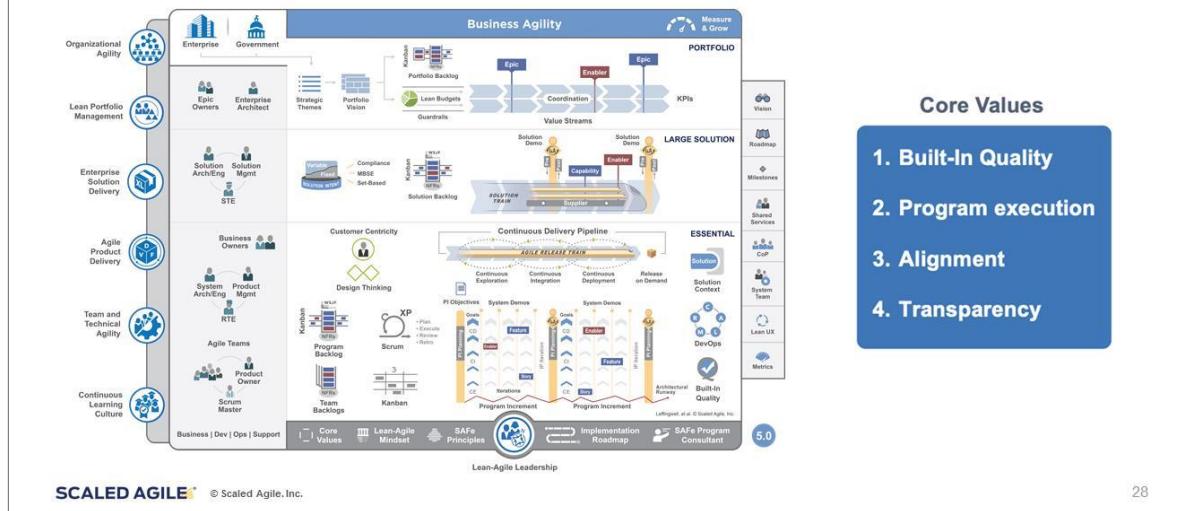
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1.3 Position an Agile Team in a SAFe Enterprise

The Scaled Agile Framework® (SAFe)

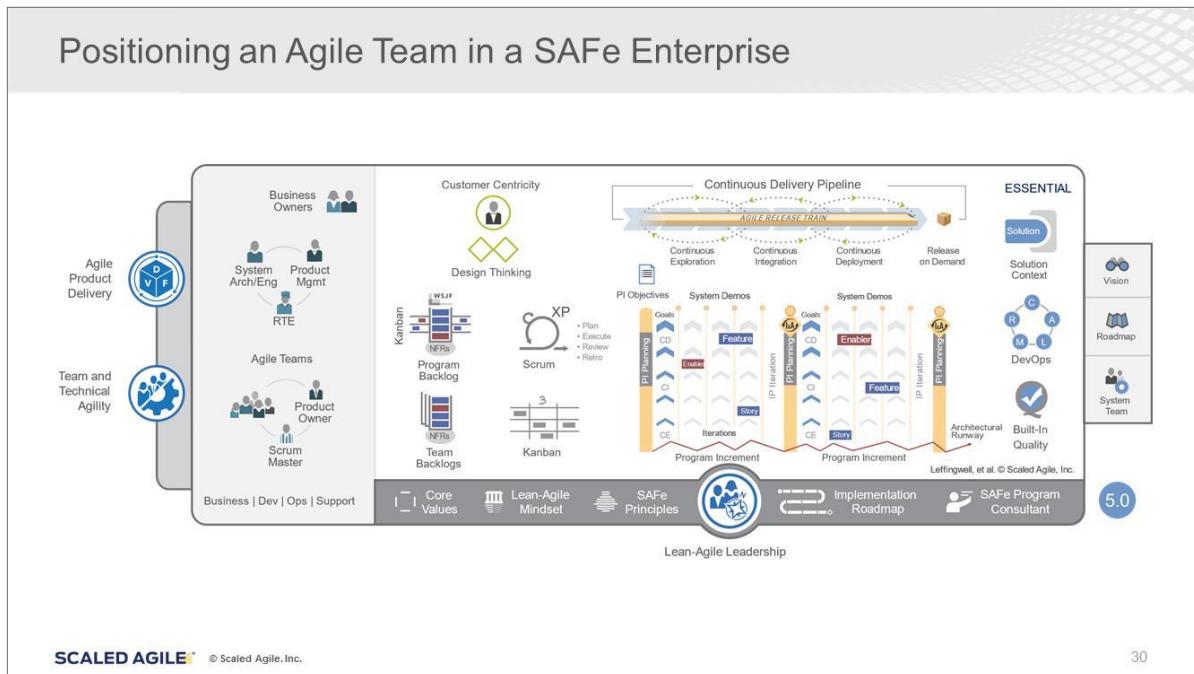
SAFe synchronizes alignment, collaboration, and delivery for large numbers of teams.



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 Visualize and limit WIP, reduce batch sizes, and manage queue lengths
 - #7 Apply cadence, synchronize with cross-domain planning
 - #8 Unlock the intrinsic motivation of knowledge workers
 - #9 Decentralize decision-making
 - #10 Organize around value

1.3 Position an Agile Team in a SAFe Enterprise



What are Agile Teams?

- ▶ Agile Teams are cross-functional, self-organizing entities that can define, build, and test, and where applicable deploy, increments of value
- ▶ Optimized for communication and delivery of value
- ▶ Deliver value every two weeks



Roles and responsibilities on the Agile Team



Agile Team

- Create and refine Stories and acceptance criteria
- Define, build, test, and deliver Stories
- Develop and commit to team PI Objectives and Iteration plans
- Five to eleven members

Scrum Master

- Coaches the Agile Team and facilitates team meetings
- Removes impediments and protects the team from outside influence
- Attends scrum of scrum meetings

Product Owner

- Creates, prioritizes and accepts Stories
- Acts as the Customer for team questions
- Works with Product Management to plan Program Increments (PI)

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Nothing beats an Agile Team ...

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

Built-in Quality practices

- Lean and Agile principles and practices
- Behavior-driven development (BDD)
- eXtreme Programming (XP)
- Code quality
- Design patterns and practices
- Agile modeling



Agile Team applies Built-In Quality

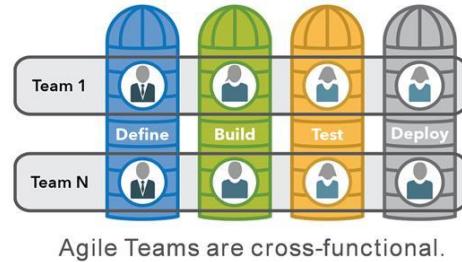
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... except a team of Agile Teams

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 their work at periodic, largely face-to-face PI Planning events
- ▶ Develop on cadence and Release on Demand



The Agile Release Train (ART)

- ▶ Each ART is a virtual organization of 5 – 12 teams (typically 50 – 125 people) that plan, commit, develop, and deploy together.
- ▶ Agile Release Trains align teams to a common business and technology mission to deliver a continuous flow of value.



ART events

Event	Time box	Value
PI Planning	2 days	Teams commit to a set of objectives to be delivered in the PI
ART 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 event	½ day	The ART reviews and improves its process before the next PI



Taking Action: Focus on promoting and coaching transparency



- ▶ **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?
- ▶ **Step 3:** Share one of your insights with the class





SAFe® Scrum Master Action Plan

Lesson 1: Introducing Scrum in SAFe



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?

Lesson review

In this lesson you:

- ▶ Examined basic Agile development concepts
- ▶ Explored the basics of scrum
- ▶ Positioned an Agile Team in a SAFe Enterprise

Lesson 1 notes



Enter your notes below:

Reminder: 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

Learning Objectives:

- 2.1 Examine the responsibilities of the Scrum Master role
- 2.2 Explore the characteristics of an effective Scrum Master
- 2.3 Build high-performing teams
- 2.4 Facilitate effective team events
- 2.5 Coach the Agile Team using powerful questions
- 2.6 Collaborate with other teams
- 2.7 Resolve team conflicts



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2.1 Examine the responsibilities of the Scrum Master role

2.1 Examine the responsibilities of the Scrum Master role

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Discussion: The role of the Scrum Master in SAFe



- ▶ **Step 1:** Read the Scrum Master article
 - Option 1: Go to <https://v5.scaledagileframework.com/scrum-master/>
 - Option 2: Read the article in your workbook
- ▶ **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

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Scrum Master

Details

The Scrum Master role is a unique Agile team member who spends much of her time helping other team members communicate, coordinate, and cooperate; generally, this person assists the team in meeting their delivery goals. The Scrum Master is a servant leader who enables teams to self organize, self-manage, and deliver via effective Lean-Agile practices. The Scrum Master supports and enforces the Scrum process and other rules that the team has agreed. The Scrum Master also helps the team coordinate with other teams on the Agile Release Train (ART) and communicates status to management as needed.

Responsibilities

An effective Scrum Master is a team-based servant leader who:

- ▶ Exhibits Lean-Agile leadership - Exhibits the behaviors of a Lean-Agile Leader with a Lean-Agile Mindset. Helps the team embrace SAFe Core Values, adopt and apply SAFe Principles, and implement SAFe practices.
- ▶ Supports the team rules – The rules of an Agile Team are lightweight, but they are rules nonetheless, and the Scrum Master is responsible for reinforcing them. These may include the rules of Scrum, Built-In Quality practices from Extreme Programming (XP), Work in Process (WIP) limits from Kanban, and any other process rules the team has agreed.
- ▶ Facilitates the team's progress toward team goals – The Scrum Master is trained as a team facilitator and is continuously engaged in challenging the old norms of development to improve performance in the areas of quality, predictability, flow, and velocity. They help the team focus on daily and Iteration Goals in the context of current Program Increment (PI) Objectives.
- ▶ Leads team efforts in relentless improvement – Helps the team improve and take responsibility for their actions; facilitates the team retrospective. Teaches problem-solving techniques and helps the team become better problem-solvers for themselves.
- ▶ Facilitates meetings – Facilitates all team meetings, including (where applicable) the Daily Stand-up, Iteration Planning, Iteration Review, and Iteration Retrospective.
- ▶ Supports the Product Owner – The Scrum Master helps the Product Owner in their efforts to manage the backlog and guide the team while facilitating a healthy team dynamic with respect to priorities and scope.
- ▶ Eliminates impediments – Many blocking issues will be beyond the team's authority or may require support from other teams. The Scrum Master actively addresses these issues so that the team can remain focused on achieving the objectives of the Iteration.
- ▶ Promotes SAFe quality practices – SAFe provides guidance to assist the teams in constantly improving the quality of their deliverables and meeting the Definition of Done (DoD). The Scrum Master helps foster the culture of technical discipline and craftsmanship that is the hallmark of effective Agile teams.

2.1 Examine the responsibilities of the Scrum Master role

- ▶ Builds a high-performing team – Focuses on ever-improving team dynamics and performance. Helps the team manage interpersonal conflicts, challenges, and opportunities for growth. Escalates people problems to management where necessary, but only after internal team processes have failed to resolve the issue; helps individuals and teams through personnel changes.
- ▶ Protects and communicates – Communicates with management and outside stakeholders; helps protect the team from uncontrolled expansion of work.
- ▶ Responsibilities on the train – The Scrum Master helps coordinate inter-team cooperation and helps the team operate well on the train.
- ▶ Coordinates with other teams – The Scrum Master is typically the representative in the Scrum of Scrums (SoS) meeting, and they pass information from that meeting back to the team (see Program Increment for more details). They often coordinate with the System Team, User Experience, Architecture, and Shared Services. It is important to note, however, that the responsibility for inter-team coordination cannot be delegated entirely to the Scrum Master; every team member shares responsibility in that regard.
- ▶ Facilitates preparation and readiness for ART events – Assists the team in preparation for ART activities, including PI Planning, System Demos, and the Inspect and Adapt.
- ▶ Supports estimating – Guides the team in establishing normalized estimates and helps the team understand how to estimate Features and Capabilities.

Sourcing the Role

The Scrum Master can be a part-time or full-time role, depending on the size of the team, the context, and other responsibilities. However, at Enterprise scale, it can be a challenge to sell the need for a full-time Scrum Master for each Agile team. After all, if the enterprise is organizing 100 new teams, it probably isn't economically or politically practical to take 100 full-time development team members and assign them to these new duties—duties that don't include development or testing. Nor is it economically viable to hire a full- or part-time consultant for each team to help them learn and master the new methods. That could kill the transformation before it even gets started, and before the teams have had a chance to prove the value of the role.

Therefore, SAFe takes a pragmatic approach and assumes, in general, that the Scrum Master is a part-time role. During initial SAFe adoption, however, the job may be more intensive. At this stage, the organization may find it beneficial to bring external consultants on board to coach the teams while they become experienced in Scrum and SAFe. These outside consultant Scrum Masters will often coach multiple teams in the organization.

Learn More

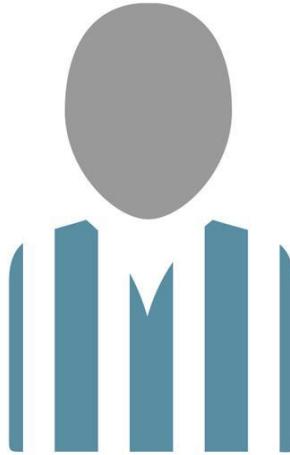
[1] www.scrumalliance.org.

[2] Leffingwell, Dean. Agile Software Requirements: Lean Requirements Practices for Teams, Programs, and the Enterprise. Addison-Wesley, 2011.

2.1 Examine the responsibilities of the Scrum Master role

How a Scrum Master supports an Agile Team

- ▶ Facilitates team events
- ▶ Is a servant leader
- ▶ Protects the team
- ▶ Coaches the team and improves processes
- ▶ Removes impediments to the team's progress
- ▶ Fosters adoption of Agile technical practices
- ▶ Assists the PO in preparing and refining the backlog for PI and Iteration Planning



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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 in the ART PI Planning events
- ▶ Works with the teams throughout each Iteration and PI
- ▶ Participates in the scrum of scrums
- ▶ Fosters normalized estimating within the team
- ▶ Helps teams operate under architectural and portfolio governance, system integration, and System Demos



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2.1 Examine the responsibilities of the Scrum Master role

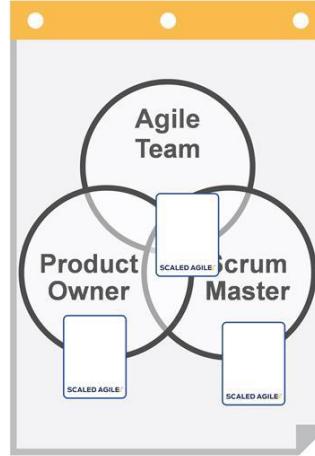


Activity: Scrum responsibilities

Prepare
8 min

Share
2 min

- ▶ **Step 1:** With your team, draw the following Venn diagram or refer to the 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



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2.2 Explore the characteristics of an effective Scrum Master

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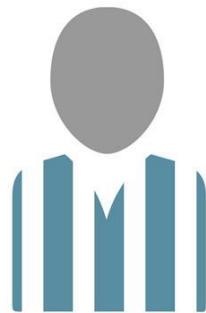
44



Discussion: Effective Scrum Master in SAFe



- ▶ **Step 1:** Pair with someone you haven't met
- ▶ **Step 2:** Discuss what traits and attributes you think an effective Scrum Master needs
- ▶ **Step 3:** Share with the class



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2.2 Explore the characteristics of an effective Scrum Master

Act as a servant leader

- ▶ Listens to and supports team members in problem identification and decision-making
- ▶ Understands and empathizes with others
- ▶ Encourages and supports the personal development of each individual
- ▶ Persuades rather than uses authority
- ▶ Thinks beyond day-to-day activities
- ▶ Seeks to help without diminishing the commitment of others
- ▶ Is open and appreciates openness in others



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Servant leadership

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

Good leaders must first become good servants.

— Robert Greenleaf, father of Servant Leadership

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2.2 Explore the characteristics of an effective Scrum Master

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">As a good facilitator, encourages everyone to express their opinionsIs attentive to hesitant behavior and body language during daily stand-up meetings, retrospectives, and planningHelps the team identify positive and negative changes during retrospectives
Understands and empathizes with others	<ul style="list-style-type: none">Shares in celebrating every successful demo; feels bad about Iteration failures
Encourages and supports the personal development of each individual	<ul style="list-style-type: none">Encourages team learningFosters collaborative practices: side-by-side programming, Continuous Integration, collective code ownership, short design sessions, specification workshopsEncourages rotation in technical areas of concern: functionality, components/layers, role aspectsFacilitates team decision-making rather than making decisions for the team
Persuades rather than uses authority	<ul style="list-style-type: none">Asks questions that encourage the team to look at decisions from new perspectivesArticulates facts; helps the team see things they may have overlooked; helps them rethink

Scrum Master as servant leader

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



Activity: A day in the life of a Scrum Master



- ▶ **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?



SAFe® Scrum Stories

Madison Fisher

SCALED AGILE®
Provider of SAFe®

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Video link: <https://vimeo.com/327099615>

2.3 Build high-performing teams

Common attributes of high-performing teams

- ▶ Self-organizing
- ▶ Effective decision-making
- ▶ Open and clear communication
- ▶ Valued 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
- ▶ Fun with work and each other

2.3 Build high-performing teams





Discussion: Building a high-performing team

Prepare
3 minShare
2 min

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

- Have you ever been on a high-performing team?
- What was it like?

► **Step 2:** Watch the video and share with the class:

- As a Scrum Master, what are some actions you can take in order to build a high-performing team?
- How would you sustain a high-performing team?



SAFe® Scrum Stories
Sam Ervin
SALEd AGILE®
Provider of SAFe

SALEd AGILE® © Scaled Agile, Inc.



Video link: <https://vimeo.com/332689224/dc44214627>

2.4 Facilitate effective team events

2.4 Facilitate effective team events

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Team events: Overview

Event	Approximate 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
Daily Stand-Up	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

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2.4 Facilitate effective team events

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 the agenda to deep discussion
- ▶ Such meetings add almost no value
- ▶ Ineffective meetings can (and should) be fixed



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Running successful meetings

- ▶ Prepare for every meeting, no matter how short
- ▶ Communicate a clear purpose and agenda
- ▶ Identify a directly responsible individual (DRI) for maintaining agenda/action items
- ▶ Expect participants to know why they are attending, what contributions they will make, and 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



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2.4 Facilitate effective team events

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



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Discussion: Worst or best meeting ever



- ▶ **Step 1:** In your group share a personal experience about:
 - The worst meeting you have attended or facilitated or
 - The best meeting you have ever had
- ▶ **Step 2:** Discuss with your group and outline
 - One reason for why the meeting was bad or
 - One reason for what made the meeting great
- ▶ **Step 3:** Share with the class



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2.5 Coach the Agile Team using powerful questions

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Coaching with powerful questions

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



A problem well-stated is half-solved.

- Charles Kettering

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Shift towards new behaviors

Coaching sometimes requires a shift from old behaviors to new ones.

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

Source: Lyssa Adkins, Coaching Agile Teams

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 were guaranteed?



Activity: Powerful questioning



- ▶ **Step 1:** The people in your group are the team. Select one person to play the role of the Scrum Master.
- ▶ **Step 2:** The team 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?

2.6 Collaborate with other teams

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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 teams' daily stand-ups, demos, or planning when important issues arise
- ▶ Work with the System Architect to better manage dependencies with other teams



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Discussion: Actively engage with other Scrum Masters

Prepare
1 min

Share
4 min

- ▶ **Step 1:** Watch the video
- ▶ **Step 2:** 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 scrum of scrums
 - Coordinate the implementation of program 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



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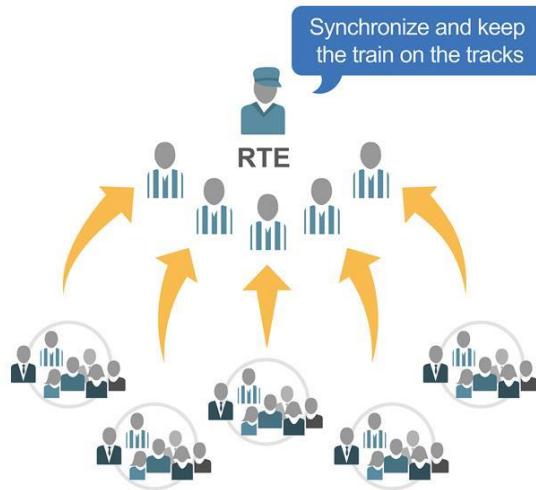


Video link: <https://vimeo.com/326584404/9b0a6b08b8>

Scrum of scrums (SoS)

ARTs continuously coordinate dependencies through a scrum of scrums (SoS).

- ▶ The SoS is a meeting for Scrum Masters and the Release Train Engineer to gain visibility into team progress and program impediments
- ▶ It is typically held twice per week
- ▶ It is timeboxed but is followed by a meet-after for problem-solving



2.7 Resolve team conflicts

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Role Play: Dysfunction in action

Prepare
8 min

Share
2 min

- ▶ **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. The rest play 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?

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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.

Teams produce results

- ▶ Teams are far more productive than the same number of individuals
- ▶ Face-to-face communication is extremely efficient
- ▶ Teams work best when not interrupted
- ▶ Products are more robust when a team has all of 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



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: *Five Dysfunctions of a Team*, Patrick Lencioni

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SAFe helps address the five dysfunctions

Inattention to Results

Results are empirically reviewed at the end of every iteration and PI. Team 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 the 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.

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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



Source: Adapted from The Arbinger Institute's *The Anatomy of Peace*

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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

In any system that is brought together for a purpose, there is no such thing as real conflict, only unexamined assumptions.

— E. Goldratt's Theory of Constraints

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Video: Quick Tips for Conflict Resolution

Duration
2 min

QUICK TIPS

Conflict Resolution

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Video link: <https://vimeo.com/336122035/9760518057>

Working agreements facilitate conflict management

Working Agreements: Example

- ▶ 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 at all times avoid blocking my team from moving forward
- ▶ Whether or not the team decision coincides with mine, I will do my best to support it



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Achieving consensus

- ▶ Define why reaching consensus is important in this situation.
- ▶ Let people exchange thoughts. Begin with someone who disagrees and then ask someone who agrees to give his or her 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 consensus or decide consensus is not possible. If consensus isn't possible, make a majority decision and clarify that everyone will support this decision.

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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.

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Team Conflict

Scene 1

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.



Taking Action: 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?
- ▶ **Step 3:** Share one of your insights with the class





Lesson 2: Characterizing the Role of the Scrum Master



Scrum Master

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?

Lesson review

In this lesson you:

- ▶ Examined the responsibilities of the Scrum Master role
- ▶ Discussed the characteristics of an effective Scrum Master
- ▶ Explored how to build high-performing teams
- ▶ Explored how to facilitate effective SAFe team events
- ▶ Practiced coaching the Agile Team using powerful questions
- ▶ Discussed ways to collaborate with other teams
- ▶ Practiced resolving team conflict

Lesson 2 notes



Enter your notes below:

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

Lesson 3

Experiencing PI Planning

Learning Objectives:

- 3.1 Prepare to experience PI Planning
- 3.2 Create and review draft PI plans
- 3.3 Finalize plans and establish business value
- 3.4 Review final plans and commit to a set of PI Objectives
- 3.5 Facilitate an effective PI Planning



SAFe® Course Attending this course gives students access to the SAFe Scrum Master exam and related preparation materials

3.1 Prepare to experience PI Planning

3.1 Prepare to experience PI Planning

Video: PI Planning

Duration
2 min

SAFe®
at Travelport
The Power of PI Planning

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Provider of SAFe®

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Video link: <https://vimeo.com/356905724/60d2ba24bf>

3.1 Prepare to experience PI Planning

PI Planning

Cadence-based PI Planning meetings are the heartbeat of the Agile Enterprise.

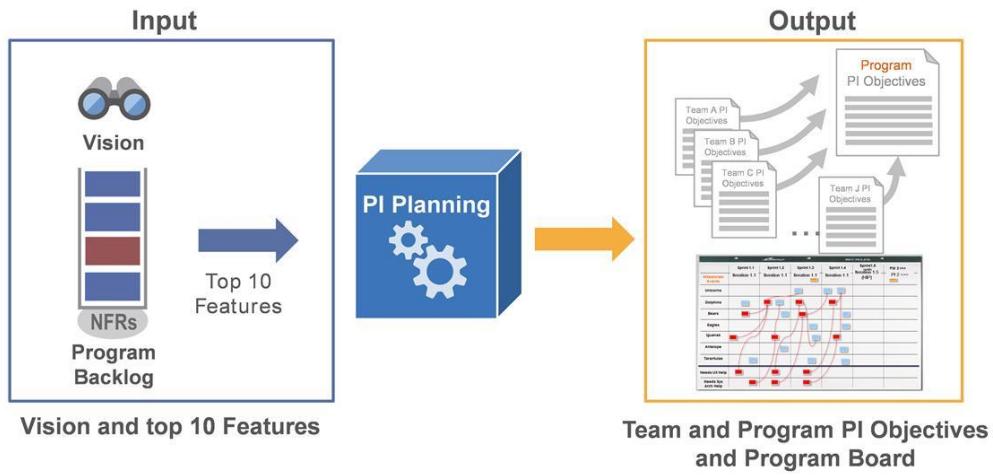
- ▶ Two days every 8 – 12 weeks (10 weeks is typical)
- ▶ Everyone attends in person if at all possible
- ▶ Product Management owns Feature priorities
- ▶ Agile Teams own Story planning and high-level estimates
- ▶ Architect/Engineering and UX work as intermediaries for governance, interfaces, and dependencies



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The PI Planning process



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What is a Feature?

- ▶ Feature is an industry standard term familiar to marketing and Product Management
- ▶ Fits in one Program Increment for one ART
- ▶ Includes acceptance criteria
- ▶ Describes larger system behaviors that fulfill users' needs
- ▶ Expressed in plain language in a simple feature and benefit (FAB) matrix

Feature: In-service software update

Benefit Hypothesis:

- Significantly reduced planned downtime

Acceptance Criteria:

- Nonstop routing availability
- Automatic and manual update support
- Rollback capability
- Support through existing admin tools
- All enabled services are running after the update



Activity: Feature writing



- ▶ **Step 1:** Consider the following: Your team is tasked with coming up with 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



3.1 Prepare to experience PI Planning

How are Features implemented?

- ▶ During PI Planning, Features are broken down into smaller Stories.
- ▶ Stories are a short description for a small piece of desired functionality, written in the user's language
- ▶ They fit in one Iteration for one team

Business Feature:

Sound Simulation

Benefit hypothesis:
Improve the realism
of the ride

User Stories:

As a rider, I want to hear acceleration, braking, skidding, and crashing sounds so that I will feel immersed in the ride experience.

Enabler Stories:

Test the two optional sound systems in the ride tunnel so we can select a system.

As a radar operator, I want to hear indicator sounds as we approach obstacles so that I can react better.

Record or buy some realistic sounds so we can test them with actual users.

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User stories: Focus on the user

User stories are:

- ▶ Short descriptions of a small piece of desired functionality, written in the user's language
- ▶ 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 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.

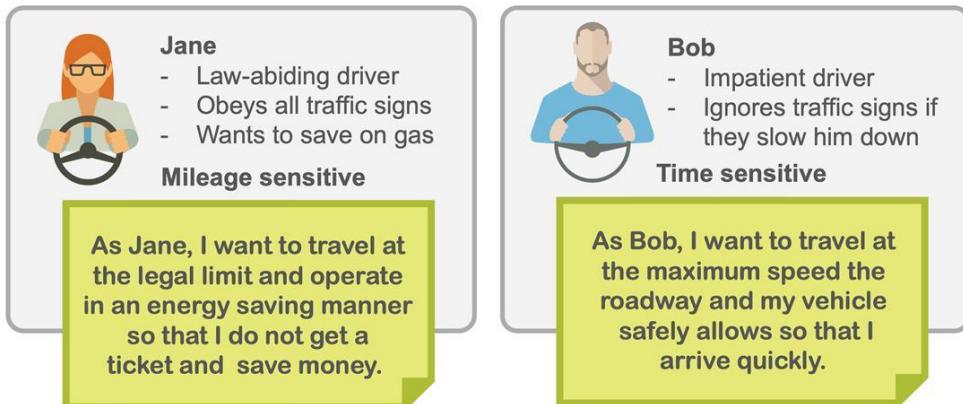
As the Finance Department, we want to print receipts only for drivers who request them so that we save on paper.

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Using personas to better understand users

Personas are detailed fictional characters acting as a representative user.



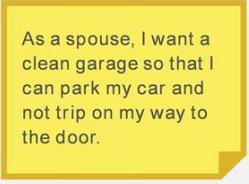
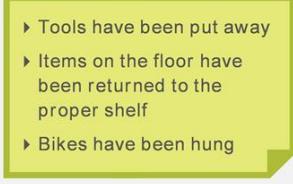
INVEST in a good Story

- ▶ Write Stories that can be developed separately
- ▶ Write Stories in which scope can be negotiated
- ▶ Write Stories that are valuable to the Customer
- ▶ Write Stories that can be estimated
- ▶ Write Stories that can fit in an Iteration
- ▶ Write Stories that are testable

- | | |
|----------|--------------------|
| I | Independent |
| N | Negotiable |
| V | Valuable |
| E | Estimable |
| S | Small |
| T | Testable |

3.1 Prepare to experience PI Planning

Writing good stories: The 3Cs

Card	Conversation	Confirmation
Written on a card or in the tool and may annotate with notes 	The details are in a conversation with the Product Owner 	Acceptance criteria confirm the Story correctness 

Source: 3 Cs coined by Ron Jeffries

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Acceptance criteria and acceptance tests

Acceptance criteria

- ▶ Provide the details of the Story from a testing point of view
- ▶ Define acceptable behavior

Acceptance tests

- ▶ Derive from acceptance criteria
- ▶ Define specific pass/fail behavior

Story Acceptance Criteria

Given car is moving
When speed is set
Then speed is close to set speed

Story Acceptance Test

Given car is moving at 10 mph
When speed is set to 30 mph
Then car is at 29 mph in less than 5 seconds
And car speed is no lower than 29 mph and no higher than 31 mph

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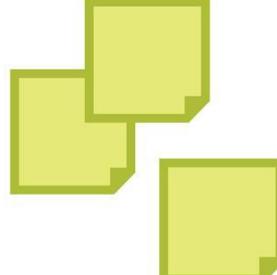
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Activity: Story writing

Prepare 8 min
Share 2 min

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



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Enabler Stories

May include any of the following:

- ▶ Refactoring and spikes
- ▶ Building or improving infrastructure
- ▶ Verification of system qualities

Feature
Sound Simulation
Benefit: Improve the realism of the ride

User Stories

As a rider, I want to hear acceleration, braking, skidding, and crashing sounds so that the ride is more realistic.

As a radar operator, I want to hear varying sounds based on obstacle type and distance so that I can better react to obstacles.

Enabler Stories

Test the two optional sound systems in the ride tunnel so we can select a system.

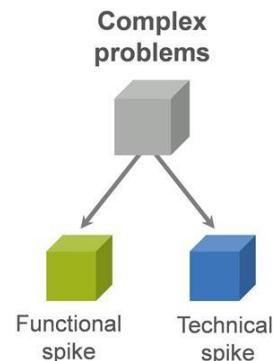
Record or buy realistic sounds for the ride so that we can use them.

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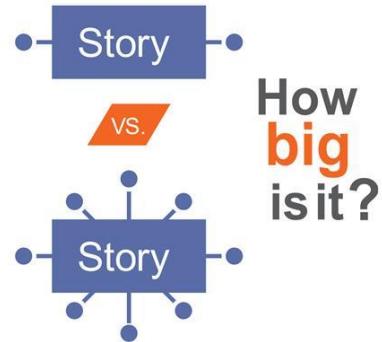
Spikes and refactors

- ▶ 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



Estimate Stories with relative Story points

- ▶ 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.



Guidance: Compared with other Stories, an 8-point Story should take relatively four times longer than a 2-point Story.

Apply Estimating Poker for fast, relative estimating

- ▶ Estimating Poker combines expert opinion, analogy, and disaggregation for quick but reliable estimates
- ▶ All team members participate



Steps

- 1 Each estimator gets a deck of cards
- 2 A job is read
- 3 Estimators privately select cards
- 4 Cards are turned over
- 5 Estimators discuss differences
- 6 Estimators re-estimate

Mike Cohn, *Agile Estimating and Planning*, 2005

Estimation is a whole-team exercise

- ▶ Increases accuracy by including all perspectives
- ▶ Builds understanding
- ▶ Creates shared commitment



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

The Scrum Master's role in facilitating estimations

Best approaches	Common anti-patterns
Encourage everyone to participate	Pressure by stakeholders to lower estimations
Ensure relative estimates are used	Only a few people participate
Focus the discussion around the contested items	Not using the adjusted Fibonacci scale
Identify subject matter experts who need to be present	
Keep time spent estimating Stories to a minimum	

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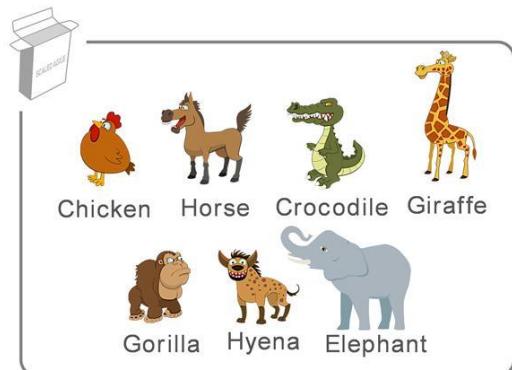


Activity: Facilitating estimation



Use Estimating Poker to relatively estimate the mass of a set of animals.

- ▶ **Step 1:** Pick a person on the team to be in the role of a Scrum Master to facilitate the estimation.
- ▶ **Step 2:** Working as a team, identify the smallest animal and mark it as 1. Estimate the remaining animals using values 1, 2, 3, 5, 8, 13, 20, 40, and 100.
- ▶ **Step 3:** Scrum Masters from each team share their experiences.



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Relative Size Estimating

Think in relative sizing of these animals. Which one would be smallest? Mark it as 1.

At your table, you will find a deck of Estimating Poker cards. As a team, use the cards to estimate the remainder of the animals.

If you identify the Hyena as 1. How would you relatively estimate the horse for example?



3.2 Create and review draft PI plans

3.2 Create and review draft PI plans

Video: PI Planning in Action

Duration
3 min

Introduction to PI Planning

A Quick Overview



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 Video link: <https://vimeo.com/361407444/407333b725>

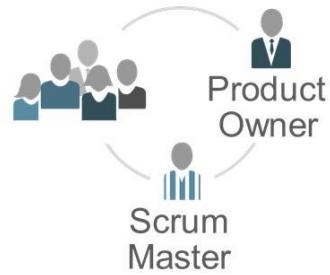
3.2 Create and review draft PI plans



Activity: Identify team names and roles for the PI Planning simulation

Prepare
2 min

- ▶ **Step 1:** Your group is your team. Create a team name.
- ▶ **Step 2:** Name a Scrum Master for your team (it can be the same person you chose for facilitating the estimation).
- ▶ **Step 3:** Name 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.



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Activity: Identify ART roles for the PI Planning simulation

Duration
2 min

- ▶ **Step 1:** Get excited about the upcoming PI simulation!
- ▶ **Step 2:** Make sure all ART roles have been assigned.

Simulation role	Assigned to
Executive	Volunteer
Product Manager	Volunteer
System Architect, UX and Development Manager	Volunteer

Example: Your Instructor will be the RTE, a volunteer will be the Product Manager, etc.

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What is PI Planning?

Program Increment (PI) Planning is a cadence-based, face-to-face event that serves as the heartbeat of the Agile Release Train (ART), aligning all the teams on the ART to a shared mission and Vision.

The Agile Manifesto states, “The most efficient and effective method of conveying information to and within a development team is a face-to-face conversation.”

SAFe takes this to the next level with PI planning, a routine, face-to-face event, with a standard agenda that includes a presentation of business context and vision followed by team planning breakouts—where the teams create their Iteration plans and objectives for the upcoming PI.

In the next few hours you will be immersed in a PI Planning simulation. With your teams, you will estimate your starting velocity and you will plan a short Program Increment with two iterations. You will get to observe a Scrum of Scrums event and you will present a summary of your team’s draft PI Objectives.

Later, your trainer will demonstrate how business value is assigned to the objectives, how program risks are managed and you will recognize the value of the confidence vote. Get excited!

There is no magic in SAFe . . . except maybe for PI Planning. - Dean Leffingwell

3.2 Create and review draft PI plans

Simulation: Why are we here?

RTE

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.

PI Planning Agenda

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This slide is titled "Simulation: Why are we here?". It features a character labeled "RTE" pointing towards a box containing the text "Alignment to a common mission" and a quote about the purpose of the event. To the right is a "PI Planning Agenda" icon. The bottom left corner includes the Scaled Agile logo and the number 108.

Simulation: Day 1 agenda

PI Planning Agenda
DAY 1

Presented by RTE

Time	Activity	Icon	Description
8:00 - 9:00	Business Context	Green circle	State of the business and upcoming objectives
9:00 - 10:30	Product/Solution Vision	Two blue circles	Vision and prioritized Features
10:30 - 11:30	Architecture Vision and development practices	Interlocking circles	Architecture, common frameworks, etc. Agile tooling, engineering practices, etc.
11:30 - 1:00	Planning context and lunch	Facilitator icon	Facilitator explains planning process
1:00 - 4:00	Team breakouts	Four squares icon	Teams develop draft plans and identify risks and impediments Architects and Product Managers circulate
4:00 - 5:00	Draft plan review	Document icon	Teams present draft plans, risks, and impediments
5:00 - 6:00	Management review and problem solving	Yellow circle icon	Adjustments made based on challenges, risks, and impediments

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This slide is titled "Simulation: Day 1 agenda". It shows a "PI Planning Agenda" for "DAY 1" and indicates it is "Presented by RTE". The agenda is listed in a table with time, activity, icon, and description columns. The activities include Business Context, Product/Solution Vision, Architecture Vision and development practices, Planning context and lunch, Team breakouts, Draft plan review, and Management review and problem solving.

3.2 Create and review draft PI plans

Simulation: Day 2 agenda



Presented by RTE

Time	Activity	Icon	Description
8:00 > 9:00	Planning adjustments		▶ Planning adjustments made based on previous day's management meeting
9:00 > 11:00	Team breakouts		▶ Teams develop final plans and refine risks and impediments ▶ Business Owners circulate and assign business value to team objectives
11:00 > 1:00	Final plan review and lunch		▶ Teams present final plans, risks, and impediments
1:00 > 2:00	Program risks		▶ Remaining program-level risks are discussed and ROAMed
2:00 > 2:15	PI confidence vote		▶ Team and program confidence vote
2:15 > ???	Plan rework if necessary		▶ If necessary, planning continues until commitment is achieved
After commitment	Planning retrospective and moving forward		▶ Retrospective ▶ Moving forward ▶ Final instructions

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Simulation: Briefings



Executive Product Manager System Architect



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3.2 Create and review draft PI plans



Simulation: Planning guidance



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



Product Owners: You have the content authority to make decisions at the user Story level



Scrum Masters: Your responsibility is to manage the timebox, the dependencies, and the ambiguities



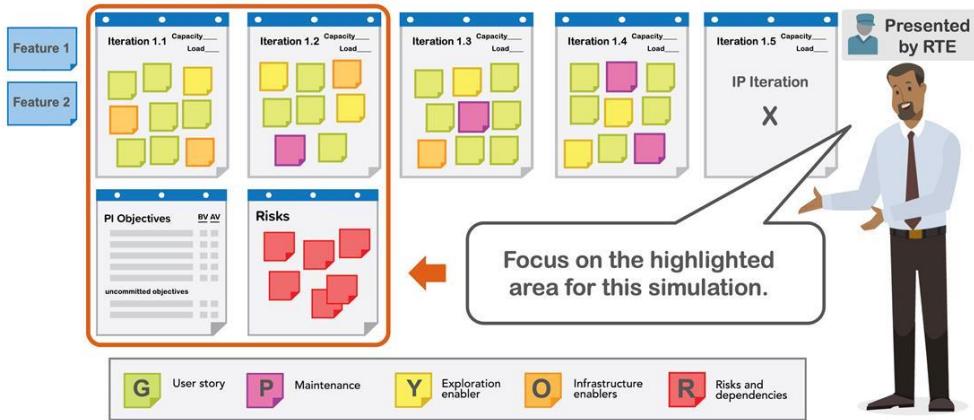
Agile Team: Your responsibility is to define users Stories, plan them into the Iteration, and work out interdependencies with other teams

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Simulation: Planning requirements



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Align to a mission with PI Objectives

- ▶ Objectives are business summaries of what each team intends to deliver in the upcoming PI.
- ▶ They often map directly to the 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

	Business Value	Actual Value
Objectives for PI 1		
Structured location and validation of locations		
● Navigate autonomously from distribution center to top 5 most frequent destinations		
● Park at 1 building that requires parallel parking		
● Reduce GPS signal loss by 25%		
● Build and demonstrate proof of concept for next generation vehicle navigation systems		
Uncommitted Objectives		
● Spike: conduct hijack testing of the vehicle sensors		

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Maintain predictability with uncommitted objectives

Uncommitted objectives help improve the predictability of delivering business value.

- ▶ They are planned and aren't 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, encourage them to move it to uncommitted
- ▶ If an item has many unknowns, consider moving it to uncommitted and put in early spikes
- ▶ Uncommitted objectives do count in velocity/capacity.

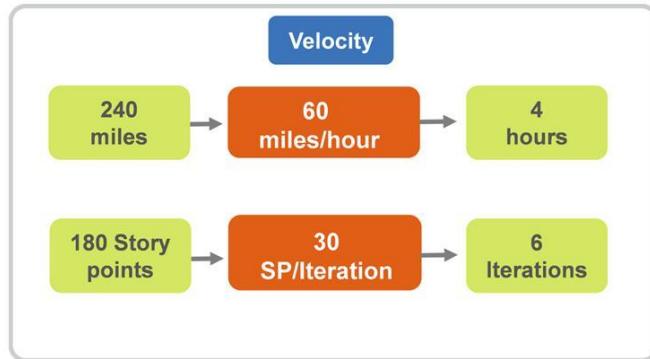
Objectives for PI 1
Uncommitted Objectives
Spike: Conduct hijack testing of the vehicle sensors
Enabler: Improve LMS integration with Salesforce

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Simulation: Using historical data to calculate velocity



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



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 part-timers).
- ▶ Subtract 1 point for every team member 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.
- ▶ Estimate every other Story relative to that one.

Example:

A 7-person team composed of 3 developers, 2 testers, 1 Product Owner, and 1 Scrum Master

Exclude The Scrum Master, Product Owner, and vacation time from the calculation

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



Activity: Calculate your capacity

Duration
5 min

- ▶ **Step 1:** Review the example on the previous slide
- ▶ **Step 2:** Calculate your own capacity for the next two, 2-week Iterations
 - The first Iteration starts Monday
 - Use your real availability
- ▶ **Step 3:** Make sure you have your team's capacity calculated

Estimating velocity and calculating capacity: A brief introduction

Agile teams use story points to relatively estimate user stories in story points. With relative estimating, the size (effort) for each backlog item is compared to other stories. For example, an eight-point story is four times the effort as a two-point story. The team's velocity for an iteration is equal to the sum of all the stories completed in the prior iteration. Knowing a team's velocity assists with planning and helps limit Work in Process (WIP)—teams don't take on more stories than their prior velocity would allow. Velocity is also used to estimate how long it takes to deliver Features or Epics, which are also forecasted in story points.

Keep in mind, velocity is based on historical data of the team's completed story points. For the purpose of this PI Planning simulation you will calculate your iteration capacity using the process described on the previous slide, since velocity is not established yet.

Velocity and Capacity

What is Velocity?

The team's velocity for an iteration is equal to the sum of the points for all the completed stories that met their Definition of Done (DoD). As the team works together over time, their historical trend of average completed story points per iteration builds a reliable picture of the team's velocity.

3.2 Create and review draft PI plans

What is Capacity?

Capacity is the portion of the team's velocity that is actually available for any given iteration. Vacations, training, and other events can make team members unavailable to contribute to an iteration's goals for some portion of the iteration. This decreases the maximum potential velocity for that team for that iteration.

Example:

Assuming a six-person team composed of three developers, two testers, and one PO, with no vacations or holidays, the estimated initial velocity = 5×8 points = 40 points/iteration. (Note: Adjusting a bit lower may be necessary if one of the developers and testers is also the Scrum Master.) Using this example, and knowing the number of people on your team (at your table) estimate initial velocity.

Iteration 1 Team Capacity

Iteration 2 Team Capacity

3.2 Create and review draft PI plans

The Scrum Master's role in team breakout #1

Best approaches	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 program 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

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Activity: Team breakout #1

Duration
45 min

Create a draft PI Plan

- ▶ **Step 1:** Setup the team area. Enter the capacity for each Iteration.
- ▶ **Step 2:** Pick up a Feature from the Product Manager.
- ▶ **Step 3:** Estimate the Stories using Story Points.
- ▶ **Step 4:** Load the Stories into the Iterations.
- ▶ **Step 5:** Write the PI Objectives using clear statements.
- ▶ **Step 6:** Identify the uncommitted objectives.
- ▶ **Step 7:** Identify any program risks and dependencies.



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Story Points

As a Scrum Master, remind the team that when estimating stories to consider that a story point is a singular number that represent:

- ▶ Volume: how much is there?
- ▶ Complexity: how hard is it?
- ▶ Knowledge: what do we know?
- ▶ Uncertainty: what's not known?

Compared with other Stories an 8-point Story should take relatively 4 times longer than a 2-point Story.

PI Objectives: Objectives are business summaries of what each team intends to deliver in the upcoming PI. They often map directly to the Features in the backlog, but not always.

Uncommitted Objectives: Uncommitted objectives are used to identify work that can be variable within the scope of a PI. Uncommitted objectives are not the way for stakeholders to load the teams with more work than they can do. It's not extra stuff to do, just in case time permits.



Activity: Scrum of scrums (SoS) sync

Duration: 5 min

- ▶ **Step 1:** Observe the SoS sync, conducted by the RTE
- ▶ **Step 2:** Each team's Scrum Master provides the team's current status and addresses the questions from the RTE
- ▶ **Step 3:** The RTE holds a meet-after after the sync (limited to 1 – 2 topics for the simulation)

SoS Sync Questions	Team 1	Team 2
Have you identified the capacity for each Iteration in 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 trade-offs and conflicting priorities with your Business Owners?		
Have you identified any program 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		

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Activity: Draft plan review

Duration
10 min

- ▶ **Step 1:** Present the summary of your team's first two Iterations and one or more draft PI Objectives
- ▶ **Step 2:** Make sure that you have included the following:
 - Capacity and load for each Iteration
 - Draft PI Objectives
 - Program risks and impediments

Management review and problem-solving

At the end of day 1, management meets to make adjustments to scope and objectives based on the day's planning.

Common questions during the management review:

- ▶ What did we just learn?
- ▶ Where do we need to adjust? Vision? Scope? Team assignments?
- ▶ Where are the bottlenecks?
- ▶ What features must be de-scoped?
- ▶ What decisions must we make between now and tomorrow to address these issues?



3.3 Finalize plans and establish business value

3.3 Finalize plans and establish business value

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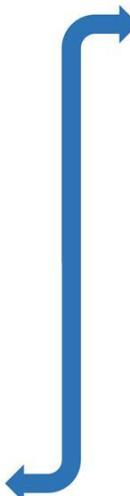
Activities during day 2

Day 1

8:00 ▶ 9:00	Business Context	
9:00 ▶ 10:30	Product/Solution Vision	
10:30 ▶ 11:30	Architecture Vision and development practices	
11:30 ▶ 1:00	Planning context and lunch	
1:00 ▶ 4:00	Team breakouts	
4:00 ▶ 5:00	Draft plan review	
5:00 ▶ 6:00	Management review and problem solving	

Day 2

8:00 ▶ 9:00	Planning adjustments	
9:00 ▶ 11:00	Team breakouts	
11:00 ▶ 1:00	Final plan review and lunch	
1:00 ▶ 2:00	Program risks	
2:00 ▶ 2:15	PI confidence vote	
2:15 ▶ ???	Plan rework if necessary	
After commitment	Planning retrospective and moving forward	



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 scope
 - Realignment of work and teams



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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 Program Increment plan
- ▶ Teams also consolidate program risks, impediments, and dependencies
- ▶ Uncommitted objectives provide the capacity and guard band needed to increase cadence-based delivery reliability

Team A	PI Objectives	BV
Proof of concept with mock sounds	10	
Help with radar POC	4	
Decide to create or buy engine noises	3	
Uncommitted		
Proof of concept with real sounds	7	

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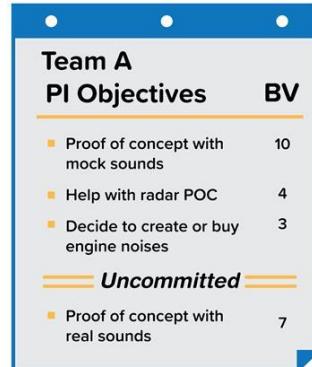


Activity: Setting business value

Duration
10 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



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Discussion: Facilitating team breakout #2

Duration
5 min

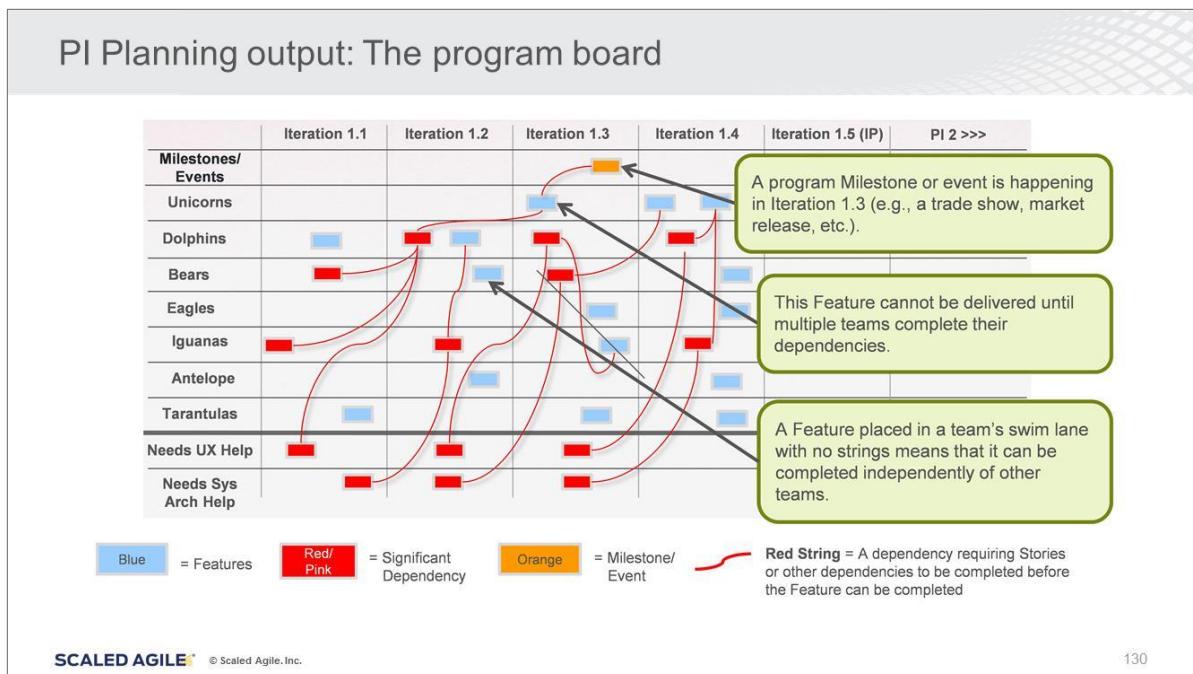
Scenario: During the second team breakout, the Business Owners come to your team. The team has picked up several items that are meant to reduce technical debt and build a testing automation infrastructure. As the Business Owners are from the business side of the Enterprise, they rank all of these objectives as 4 or lower. You can see that the team becomes upset.

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

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3.3 Finalize plans and establish business value



3.4 Review final plans and commit to a set of PI Objectives

3.4 Review final plans and commit to a set of PI Objectives

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Final plan review

Teams and Business Owners peer-review all final plans.



Final plan review

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3.4 Review final plans and commit to a set of PI Objectives

Building the final plan

- ▶ Final plans are collected at the front of the room
- ▶ Final plans are reviewed by all teams
- ▶ Business Owners are asked whether they accept the plan
- ▶ If so, the team's plan and program risk sheet are brought to the front of the room
- ▶ If not, the plans stay in place, and the team continues planning after the review



A team's final plan

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Addressing program risks

After all plans have been presented, remaining program risks and impediments are discussed and categorized.

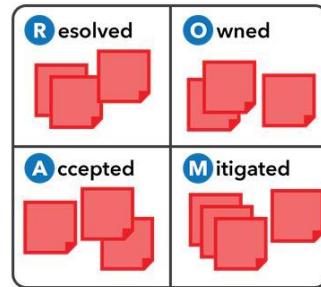
ROAMing risks:

Resolved - Has been addressed. No longer a concern.

Owned - Someone has taken responsibility.

Accepted - Nothing more can be done. If risk occurs, release may be compromised.

Mitigated - Team has plan to adjust as necessary.



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3.4 Review final plans and commit to a set of PI Objectives

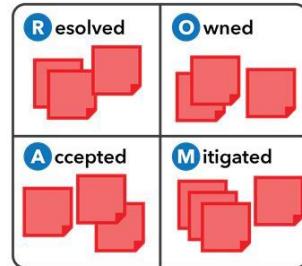


Activity: Manage program risks

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 as is.
- ▶ **Step 4:** Put each risk into a corresponding quadrant of the ROAM sheet for the program.



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Confidence vote: Team and program

After dependencies are resolved and risks are addressed, a confidence vote is taken by the team and program.

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 fact patterns dictate that it is simply not achievable, teams agree to escalate **immediately** so that corrective action can be taken



No confidence



Little confidence



Good confidence



High confidence



Very high confidence

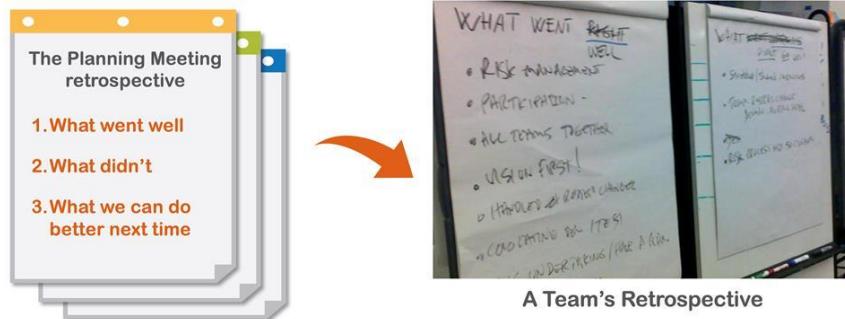


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Run a planning meeting retrospective

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



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RTE takeaway: Integrated PI Objectives

Program PI objectives
are the synthesis of each
team's PI objectives.

Program PI Objectives

- Deliver basic search, sort, and view of books in inventory
- Deliver basic shopping cart, purchase, and shipping options

Deliver investor demo at start of Iteration 3

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

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

Team C	BV
Allow users to create comments on books they've purchased	8
Support investor demo by start of Iteration 3	9

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

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3.4 Review final plans and commit to a set of PI Objectives



Discussion: Simulation debriefing

Duration
10 min

- ▶ **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?



3.5 Facilitate an effective PI Planning event

3.5 Facilitate an effective PI Planning

Video: PI Planning event: Distributed Teams

Duration
4 min



SAFe®
at Travelport
PI Planning with Distributed Teams

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Video link: <https://vimeo.com/356905542/2dca13969f>



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

The Scrum Master's role in PI Planning

Best approaches	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	Over planning ahead of time to make it more efficient loses the essence of PI Planning
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 program board	
Facilitate the retrospective	

Action Plan: Being a Scrum Master during PI Planning event

Share 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?
- ▶ **Step 3:** Share one of your insights with the class

The diagram illustrates the process of action planning. It features a document titled 'Action plan' with a checklist icon, and a summary icon labeled 'Action plan' with a checklist icon. A curved arrow points from the summary icon back towards the document, indicating a feedback loop or review process.

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Lesson 3: Experiencing PI Planning



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?

Lesson review

In this lesson you:

- ▶ Experienced PI Planning
- ▶ Created and reviewed draft PI Plans
- ▶ Finalized plans and established business value
- ▶ Reviewed final plans and committed to a set of PI Objectives
- ▶ Explored the Scrum Master's role in facilitating effective PI Planning

Lesson 3 notes



Enter your notes below:

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

Lesson 4

Facilitating Iteration Execution

Learning Objectives:

- 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



SAFe® Course Attending this course gives students access to the SAFe Scrum Master exam and related preparation materials

4.1 Plan the Iteration

 Video: Running an Effective SAFe Iteration Planning Meeting

Duration
5 min



Running an Effective
SAFe® Iteration Planning Meeting

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 Video link: <https://vimeo.com/299054038/ae429609f1>

Iteration planning flow

1 Establishing capacity



2 Story analysis and estimating



3 Detailing Stories



4 Developing Iteration goals



5 Committing to Iteration goals



Iteration Planning

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

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
- ▶ The PO in collaboration with the teams select the highest priority backlog items for each ‘slice’ of the capacity allocation to implement in an Iteration

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



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Detailing Stories

Detailing Stories is mostly used by new teams. Team members discuss:

- ▶ Who would be the best person to accomplish it
- ▶ How long would it take to accomplish, approximately
- ▶ What are the dependencies it may have to other Stories



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Iteration goals

- ▶ Iteration goals provide clarity, commitment, and management information.
- ▶ They serve three purposes:
- ▶ Align team members to a common purpose
- ▶ Align Agile Teams to PI Objectives and manage dependencies
- ▶ Provide continuous 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

A team meets its commitment:

By doing everything they said they would do,

- or -

in the event that it is not feasible, they must immediately raise the concern

Commitment

Too much holding to a commitment can lead to burnout, inflexibility, and quality problems.



Adaptability

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

Team commitments are not just to do the work.

They are committed to other teams, the program, and the stakeholders.



Activity: Iteration Planning

Duration
10 min

- ▶ **Step 1:** Select a Scrum Master for your team
- ▶ **Step 2:** Review the Team Backlog in your workbook
- ▶ **Step 3:** As a team, plan how you will execute an Iteration
- ▶ **Step 4:** As a Scrum Master, facilitate the Iteration planning for the team
- ▶ **Step 5:** Outline your Iteration plan

4.1 Plan the Iteration

Team Backlog

No.	Size	Req.	Backlog Item
1		x	Estimate the number of slides in the 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.

The Scrum Master's role in Iteration Planning

Best approaches	Common anti-patterns
Maintain timebox	Delving too deep into technical discussions
Ensure that the team commits to the Iteration goals	Commitment is unrealistic
Verify that the PO or other managers don't influence the team to overcommit	Capacity and load are exactly the same
Challenge the team to exceed their previous accomplishments	Scrum Master is more focused on a technical role than a facilitator's role
Ensure that improvement items from the retrospective are put into effect	The team under commits due to fear of failure
Ensure time is allocated for technical debt activities	No time is reserved for support activities

4.2 Track the Iteration progress

4.2 Track the Iteration progress

 Video: Running an Effective SAFe Daily Stand-up

Duration
5 min



Running an Effective
SAFe® Daily Stand-up

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 Video link: <https://vimeo.com/289123257/0de749d63e>

Daily stand-up patterns

Basic daily stand-up meeting 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 the Scrum Master wrote on the meet-after board.
2. Involved parties discuss, unininvolved people leave.

Daily stand-up anti-patterns

Poor daily stand-ups 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 (e.g., Vijay does not know and doesn't care about what Ken is working on and vice versa)
- ▶ Lack of collective code ownership
- ▶ Infrequent verification and integration during the Iteration (e.g., we are working on something, and we think it's good)
- ▶ Perpetual, unresolved conflict within the team



Activity: Facilitating the daily stand-up

Prepare
5 minShare
2 min

- ▶ **Step 1:** Choose a Scrum Master and have him/her read your team project
- ▶ **Step 2:** Pick up a secret identity card but don't show it to others
- ▶ **Step 3:** Run a daily stand-up 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 those behaviors when they come up in daily stand-up meetings?



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Guess the Identity at DSU

Instructions: Use the space within each secret identify card on this page to guess who is playing which identity during the mock DSU.

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

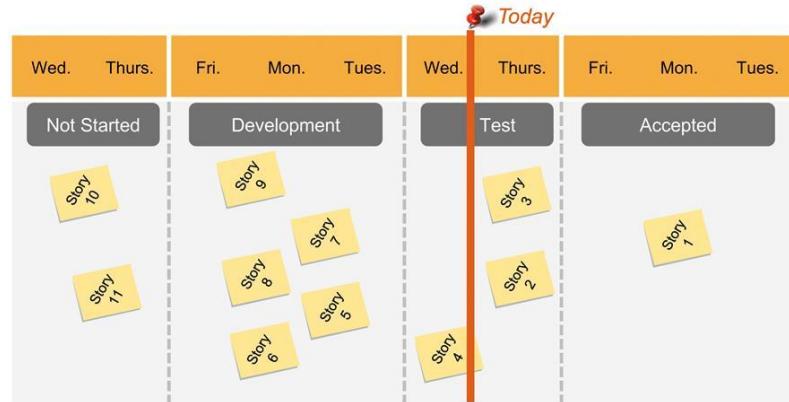
You have to leave early. Excuse yourself midway through the meeting and leave. You may stay nearby to listen, but may not participate.

Who am I?

4.2 Track the Iteration progress

Using the team board to track progress

The board acts as a big visible information radiator (BViR).



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

Setting WIP limits

WIP limits match demand to capacity and improve the flow of work. When a step reaches its WIP limit no more work is pulled into that step.



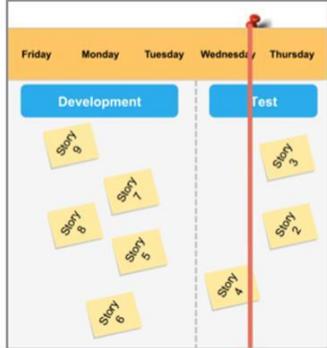
4.2 Track the Iteration progress



Activity: Work in process (WIP) constraints

Prepare 3 min Share 3 min

- ▶ **Step 1:** Considering the big visible information radiator (BHIR), discuss:
 - What would be the effect of a 3-Story WIP constraint on development and testing?
- ▶ **Step 2:** Consider the scenario: You're a developer and you just finished Story 6. What would you do if:
 - There is no WIP constraint?
 - The 3-Story WIP constraint is in place?
 - Which scenario has the highest throughput?



Friday Monday Tuesday Wednesday Thursday

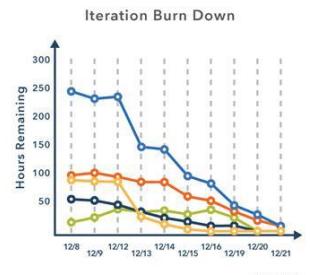
Development Test

Story 9
Story 8
Story 7
Story 5
Story 6
Story 4
Story 3
Story 2

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Iteration burn-down

- ▶ Many scrum teams use Iteration burn-down charts
- ▶ Burn-downs count the remaining effort (Stories, tasks, etc.)
- ▶ As we don't advocate tasks in SAFe, we prefer burn-ups and CFDs
- ▶ Burn-down charts provide several other challenges:
 - Focus on tasks completed vs Stories completed
 - Hard to distinguish between work added and not done



Iteration Burn Down

Hours Remaining

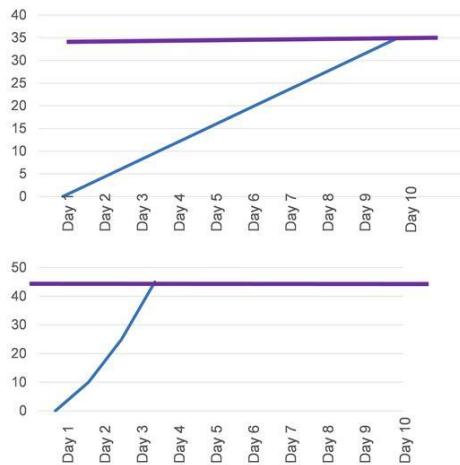
12/8 12/9 12/12 12/13 12/14 12/15 12/16 12/19 12/20 12/21

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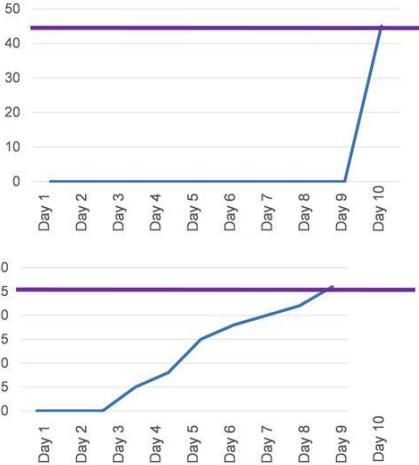
4.2 Track the Iteration progress

Example burn-up charts



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Activity: Iteration Execution



- ▶ **Step 1:** Execute the Iteration that you planned earlier by completing as many backlog items as possible
- ▶ **Step 2:** Select a Scrum Master and a Product Owner
 - Important: As a Scrum Master, ensure you are available to the team. As a PO make, sure to refer to the “Acceptance Criteria for Product Owners Only” handout from the instructor.
- ▶ **Step 3:** Share your experience with the class

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4.2 Track the Iteration progress

The Scrum Master's role in tracking Iteration progress

Best approaches	Common anti-patterns
Facilitate mid-PI re-planning	Team gets no input from scrum of scrums
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 scrum of scrums	Teams are unwilling to change or add objectives mid-PI
Encourage the use of engineering practices	Scrum Master does all of 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	

4.3 Refine the Backlog

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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 are spending 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

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The backlog refinement event

- ▶ Timebox: 1 – 2 hours weekly
- ▶ Helps the team reconsider new Stories prior to Iteration planning
- ▶ Provides time to identify dependencies and issues that could impact the next Iteration
- ▶ Ensures that we have a ready backlog for Iteration Planning
- ▶ Agile Team members are in attendance and actively engaged; subject matter experts and other teams' members are invited as needed

Sample Backlog Refinement Event 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 approaches	Common anti-patterns
Maintain timeboxes	Arriving to the Iteration with non-ready Stories
Maintain the right level of a deep backlog vs ready backlog 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

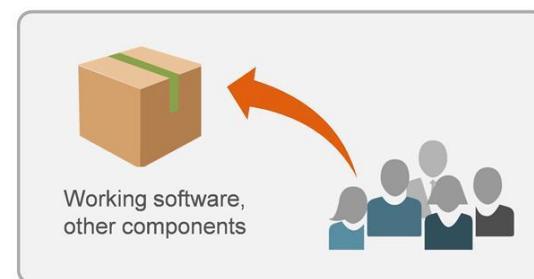
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The Iteration Review

- ▶ Provides the true measure of progress by showing working software functionality, hardware components, etc.
- ▶ Preparation for the review starts with planning
- ▶ Teams demonstrate every Story, spike, refactor, and NFR
- ▶ Attendees are the team and its stakeholders

Demonstrating a working, tested team increment



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Video: Run an Effective SAFe Iteration Review Meeting

Duration
5 min

The video thumbnail features a blue background with the title 'How to Run an Effective SAFe® Iteration Review Meeting' in white. Below the title is the Scaled Agile logo and the text 'Provider of SAFe®'. A large orange play button icon is centered on the thumbnail.

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Video link: <https://vimeo.com/309353242/e486372f18>

Iteration Review guidelines

- ▶ **Timebox:** 1 to 2 hours.
- ▶ **Preparation:** Review preparation should be limited to 1 to 2 hours. Minimize presentation. Work from the repository of Stories.
- ▶ **Attendees:** If a major stakeholder cannot attend, the Product Owner should follow up individually.

Sample Iteration Review Agenda

1. Review business context and Iteration goals
2. Demo and solicit feedback for each story, spike, refactor, and NFR
3. Discuss Stories not completed and why
4. Identify risks and impediments
5. Revise Team Backlog and team PI Objectives as needed

Two views from the Iteration review

The Iteration review provides two views into the program, based on a working system:

- ▶ 1. How we did in the Iteration
- ▶ 2. How we are doing in the PI

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 and reprioritizing if necessary

The Scrum Master's role in the Team and System Demos

Best approaches	Common anti-patterns
Begin to 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 Team Demo
Make sure different team members have the opportunity to demo	System Demo is not done because 'the Team Demo 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

4.5 Facilitate relentless improvement

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Relentless improvement

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

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



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Video: How to Run an Effective SAFe Iteration Retrospective

Duration
4 min



How to Run an Effective SAFe® Iteration Retrospective

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Video link: <https://vimeo.com/289517223/5216eafdf0>

Improving everywhere

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

Examples
Move from manual to automated testing
Communication with remote teams, subject matter experts, etc.
The team's skill set
Preparing and running the demo
Nonfunctional requirements (NFR) testing
More efficient and disciplined design sessions

Iteration metrics

Functionality	Iteration 1	Iteration 2	Quality and test automation
# Stories (loaded at beginning of Iteration)			% SC with test available/test automated
# accepted Stories (defined, built, tested, and accepted)			Defect count at start of Iteration
% accepted			Defect count at end of Iteration
# not accepted (not achieved within the Iteration)			# new test cases
# pushed to next Iteration (rescheduled in next Iteration)			# new test cases automated
# not accepted: deferred to later date			# new manual test cases
# not accepted: deleted from backlog			Total automated tests
# added (during Iteration; should typically be 0)			Total manual tests
			% tests automated
			Unit test coverage percentage

Iteration Retrospective

- ▶ **Timebox:** 1 to 1.5 hours.
- ▶ **Attendees:** Just the Agile Team.
- ▶ **Preparation:** Pick 1 – 2 things that can be done better or preserved in the next Iteration. Enter improvement items into the Team Backlog

At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

— Agile Manifesto

Sample 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 to Iteration print Metrics

Part 2: Qualitative

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

Prepare
10 min

Share
5 min

Use a sailboat as a metaphor for the team. Just like the sailboat, there are things that slow our team down and things that propel it forward.

- ▶ **Step 1:** Draw a sailboat with an anchor. By the anchor, draw the things that slow the team down (impediments).
- ▶ **Step 2:** Around the sails, draw things that propel the team forward.
- ▶ **Step 3:** Present your poster to the class and discuss how your team 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 approaches	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
Retrospective: <ul style="list-style-type: none"> • Start by reviewing the results of the previous retrospective • Make sure each person speaks • Make sure the event ends with actionable improvement backlog items. • Write down what people are saying exactly • Take program concerns to the RTE 	Failure to achieve results
	Inviting people outside the team (especially management) to the retrospective

4.6 Support DevOps and Release on Demand

Video: What is DevOps?

Duration
1 min

The video thumbnail features a portrait of Morgan Campbell, a man with a mustache, wearing a dark shirt. To his right, the text 'What is DevOps? with Morgan Campbell' is displayed in large, bold, white font against a yellow background.

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Video link: <https://vimeo.com/342037390/3a25026214>

What is DevOps?

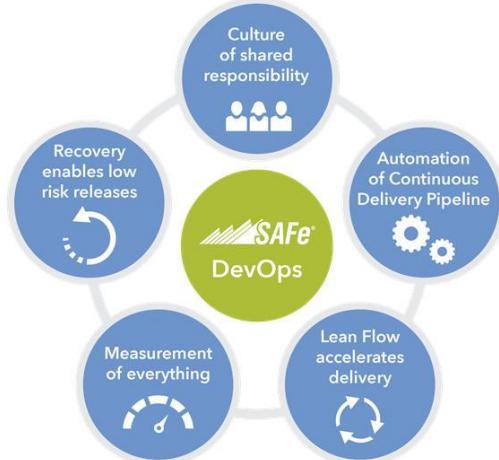


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DevOps enables continuous delivery and Release on Demand

- ▶ **Culture** Establish a culture of shared responsibility for development, deployment, and operations.
- ▶ **Automation** Automate the Continuous Delivery Pipeline.
- ▶ **Lean flow** Keep batch sizes small, limit WIP, and provide extreme visibility.
- ▶ **Measurement** Measure the flow through the pipeline. Implement application telemetry.
- ▶ **Recovery** Architect and enable low risk releases. Establish fast recovery, fast reversion, and fast fix-forward.



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Activity: Supporting DevOps and Release on Demand

Prepare
10 min

Share
5 min

- ▶ **Step 1:** Think about the five concepts 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 concepts write:
 - As a Scrum Master, how would you support each concept?
 - What are some of the tools and techniques you can use to support the team applying those concepts?
- ▶ **Step 3:** Share with the class



Taking Action: 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:
 - How will you measure and track iteration progress?
 - What techniques will you use for facilitating the events during the iteration?
 - What approaches will you use to avoid anti-patterns?
- ▶ **Step 3:** Share one of your insights with the class





Lesson 4: Facilitating Iteration Execution



How will you measure and track iteration progress?

What techniques will you use for facilitating the events during the iteration?

What approaches will you use to avoid anti-patterns?

Lesson review

In this lesson you:

- ▶ Planned the Iteration
- ▶ Tracked the Iteration progress
- ▶ Refined the backlog
- ▶ Explored how to facilitate the Iteration Review
- ▶ Discussed how to relentlessly improve
- ▶ Discussed ways for supporting DevOps and Release on Demand

Lesson 4 notes



Enter your notes below:

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

Lesson 5

Finishing the PI

Learning Objectives:

- 5.1 Coach the IP Iteration
- 5.2 Prepare the team for the Inspect and Adapt event



SAFe® Course Attending this course gives students access to the SAFe Scrum Master exam and related preparation materials

5.1 Coach the IP Iteration

Innovation and Planning Iteration

Provide sufficient capacity margin to enable cadence.

— Don Reinertsen,
Principles of Product
Development Flow

Definitions

Innovation: Opportunity for innovation spikes, hackathons, and infrastructure improvements

Planning: Provides for cadence-based planning and is an estimating guard band for cadence-based delivery

Common anti-patterns

Planning work for the IP Iteration in PI Planning

Leaving testing or bug fixing to the IP Iteration

Leaving integration of the whole system to the IP Iteration

Example IP Iteration calendar

Monday	Tuesday	Wednesday	Thursday	Friday
1	2	3	4	5
Buffer for leftover work				
Final verification and validation, and documentation (if releasing)				
Innovation				
PI planning readiness				
8	9	10	11	12
Innovation continues	Continuing education	PI planning		Optional time for distributed planning
PI planning readiness	Inspect & Adapt Event	Business context Product / solution vision Architecture vision and development practices Planning requirements and lunch Team breakouts Draft plan review Management review and problem-solving	Planning adjustments Team breakouts Final plan review and lunch Program risks PI confidence vote Plan rework if necessary Planning retrospective and moving forward	

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Without the IP Iteration ...

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



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5.2 Prepare the team for the Inspect and Adapt event

5.2 Prepare the team for the Inspect and Adapt event

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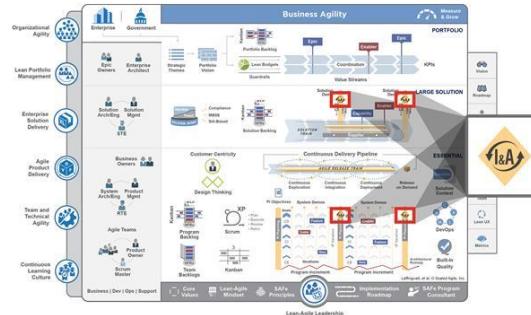
Improving results with Inspect and Adapt event

Three parts of Inspect and Adapt:

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

Timebox: 3 – 4 hours per PI

Attendees: Teams and stakeholders



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5.2 Prepare the team for the Inspect and Adapt event

1. 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, ART stakeholders, Product Management, RTE, Scrum Masters, and teams



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Program performance reporting

As part of the PI System Demo, teams compare planned vs actual business value.

- ▶ Teams meet with their Business Owners to self-assess the business value they achieved for each objective
- ▶ Each team's planned vs actual business value is then rolled up to the program predictability measure.

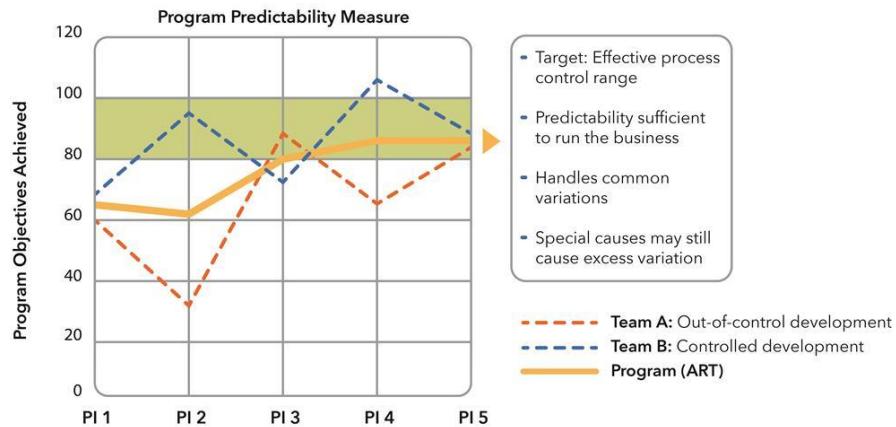
Objectives for PI 3		Business Value	
		Plan	Actual
▪ Structured locations and validation of locations		7	7
▪ Build and demonstrate a proof of concept for context images		8	8
▪ Implement negative triangulation by: tags, companies and people		8	6
▪ Speed up indexing by 50%		10	5
▪ Index 1.2 billion more web pages		10	8
▪ Extract and build URL abstracts		7	7
Uncommitted Objectives			
▪ Fuzzy search by full name		7	0
▪ Improve tag quality to 80% relevance		4	4
Totals:		50	45
% Achievement:		90%	

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2. Quantitative measurement

The PI predictability measure shows whether achievements fall into an acceptable process control band.



5.2 Prepare the team for the Inspect and Adapt event

 Video: Inspect & Adapt: The Problem-Solving Workshop and Root Cause Analysis

Duration
 8 min



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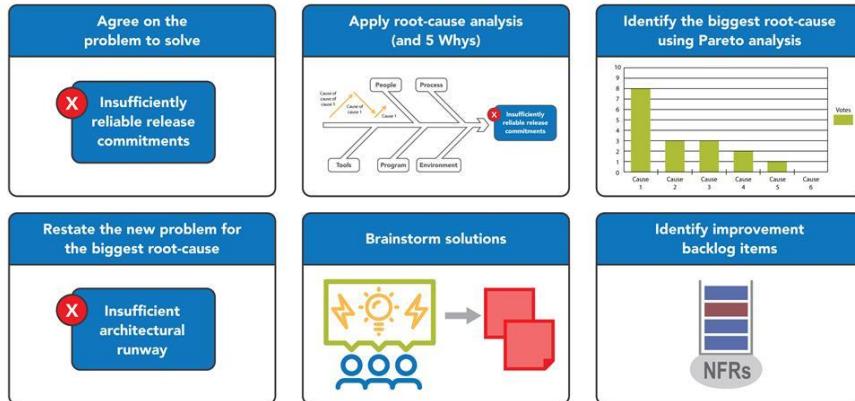
203

 Video link: <https://vimeo.com/351693849/062b04103d>

5.2 Prepare the team for the Inspect and Adapt event

3. The problem-solving workshop

Teams conduct a short retrospective, then systematically address the larger impediments that are limiting velocity.



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The Scrum Master's role in Inspect and Adapt

Best approaches

- Facilitate the team preparation for the PI System Demo
- Provide data
- Facilitate one of the teams in the problem-solving workshop
- Help the RTE make sure improvement items are included during the PI
- If using ad hoc teams for the I&A, then Scrum Masters may be participants rather than facilitators

Common anti-patterns

- Only the PO presents in the PI System Demo
- No actionable improvement Features are created
- Improvement items don't enter the PI Planning process
- Improvement items are not demoed in the PI System Demo

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Taking Action: 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?
- ▶ **Step 3:** Share one of your insights with the class





SAFe® Scrum Master Action Plan

Lesson 5: Finishing the PI

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	
7. Reduce GPS signal loss by 25%		5	
Uncommitted Objectives			
8. Demonstrate real-time rerouting to avoid delays (e.g., accident, construction)		5	

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?

Lesson review

In this lesson you:

- ▶ Explored how to coach the IP Iteration
- ▶ Discussed how to prepare the team for the Inspect and Adapt event

Lesson 5 notes



Enter your notes below:

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

Lesson 6

Becoming a Certified SAFe Scrum Master

Learning Objectives:

6.1 Becoming a Certified SAFe Scrum Master



SAFe® Course Attending this course gives students access to the SAFe Scrum Master exam and related preparation materials

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 your trainer enablement plan to teach SAFe instructor-led courses.



Collaborate in real time with your team and others

Choose from ready-made templates to easily set up events like PI Planning and retrospectives—all with SAFe Collaborate.



Showcase SAFe Credentials

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



Video: Become a Certified SAFe Professional

Duration
3 min

Continue to build on the foundation of SAFe learning you began in class by studying and taking the certification exam.

Earning this certification demonstrates and establishes your new knowledge.

Certification details at:

<https://bit.ly/2zCu2pa>



Video link: <https://vimeo.com/307578726>



About SAFe certification: <https://www.scaledagile.com/certifications/about-safe-certification/>

6.1 Becoming a Certified SAFe Scrum Master



Video: Welcome to the SAFe Community Platform

Duration
5 min

Want to learn more about the next steps on your SAFe Journey?

Access the SAFe Community Platform and discover all the SAFe resources available for your use!



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Video link: <https://vimeo.com/286920560>

Certification Exam Sample Questions

These sample questions provide examples of the format and type of questions to expect on the exam (these are not the actual exam questions). Performance on the sample questions is NOT an indicator of the performance on the exam, and it should NOT be considered an assessment tool. A web-enabled version of the sample questions are now available in a flashcard style format (internet required). Use the link below to access the sample question bank and begin preparing for certification.

To get started:

1. Click the link below
2. A browser window will open with the sample questions site
3. Click "Start"
4. Use the left-side menu to scroll and select your course
5. Click "Start" to access the sample questions



Sample questions: <http://bit.ly/3aqpP4O>

Lesson 6 notes



Enter your notes below:

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

Appendix 1

Glossary



SAFe Glossary:

Visit the Scaled Agile Framework site
(<https://v5.scaledagileframework.com/glossary/>) to download glossaries
translated into other languages