

# Leading SAFe®

Thriving in the Digital Age  
with Business Agility

SAFe® Course – Attending this course gives learners access to the SAFe Agilist exam and related preparation materials.

5.1.1



# Welcome to the course!

# Make the Most of

# Your Learning



## Access the SAFe Community Platform

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



## Prepare Yourself

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



## Become a Certified SAFe Professional

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



## Access SAFe Content and Tools

Access professional development resources and toolkits.



## Collaborate with Your Team

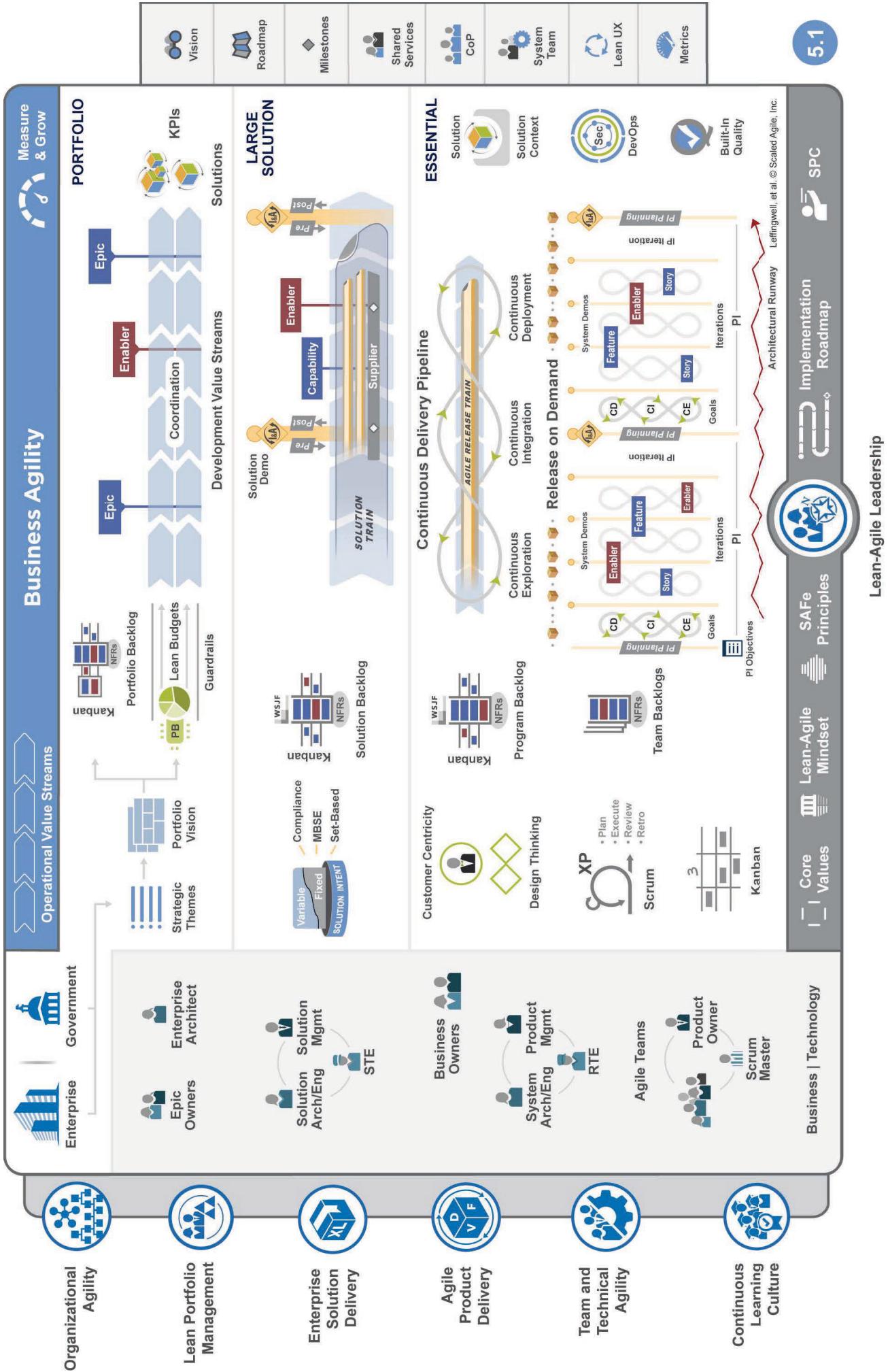
Choose from hundreds of collaboration templates to easily set up events like PI Planning and work in real time with your team and others—all with SAFe Collaborate.

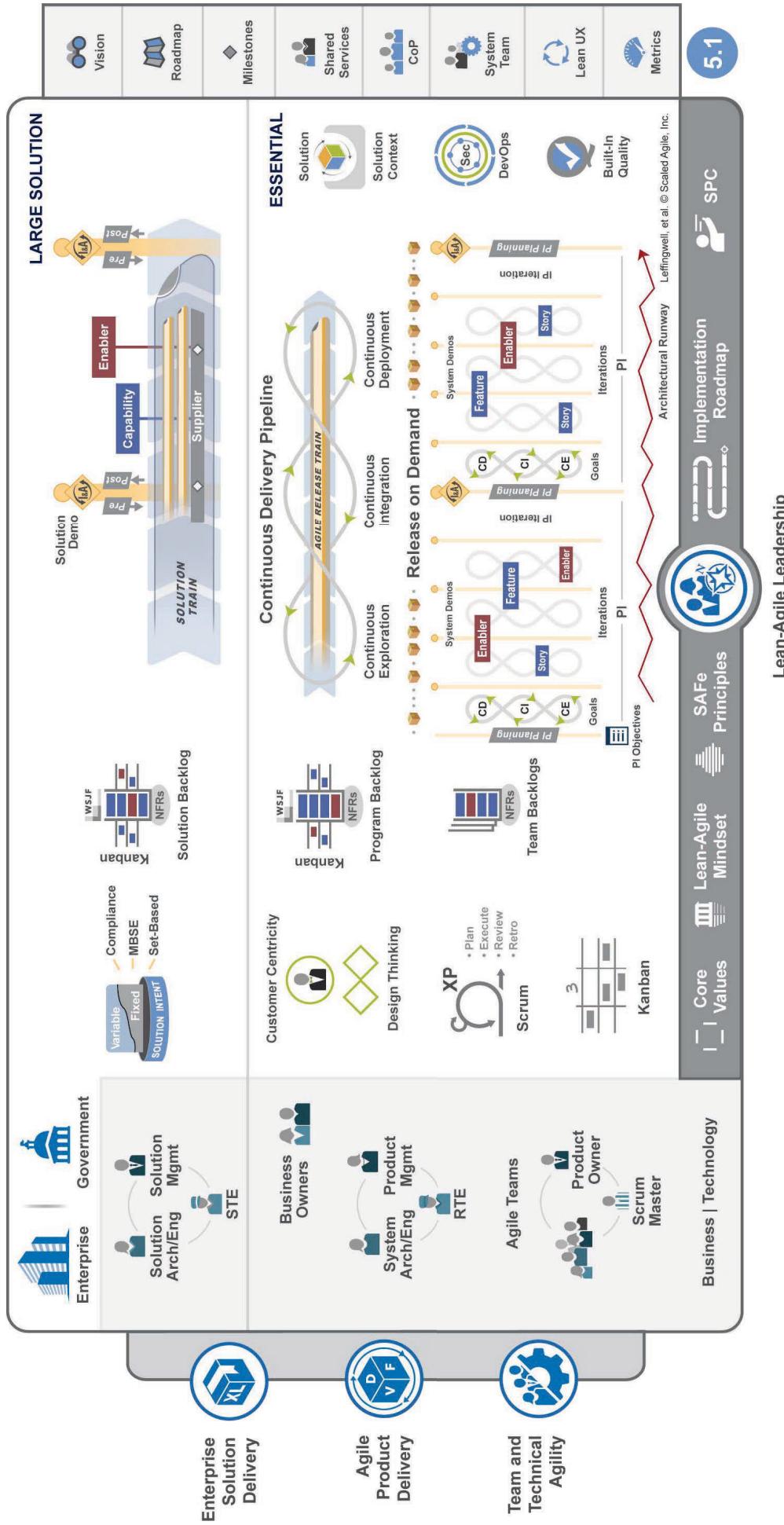


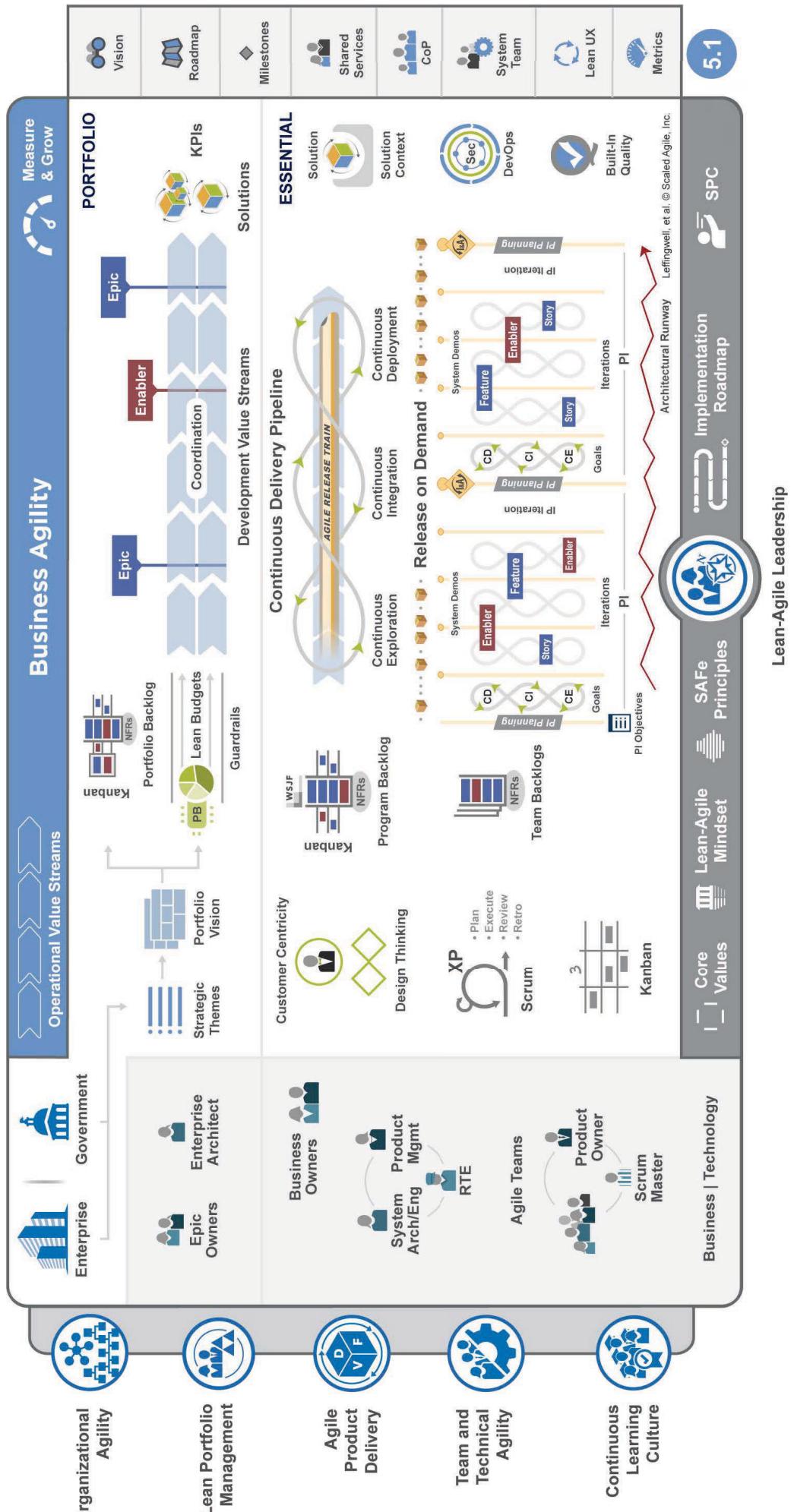
## Showcase SAFe Credentials

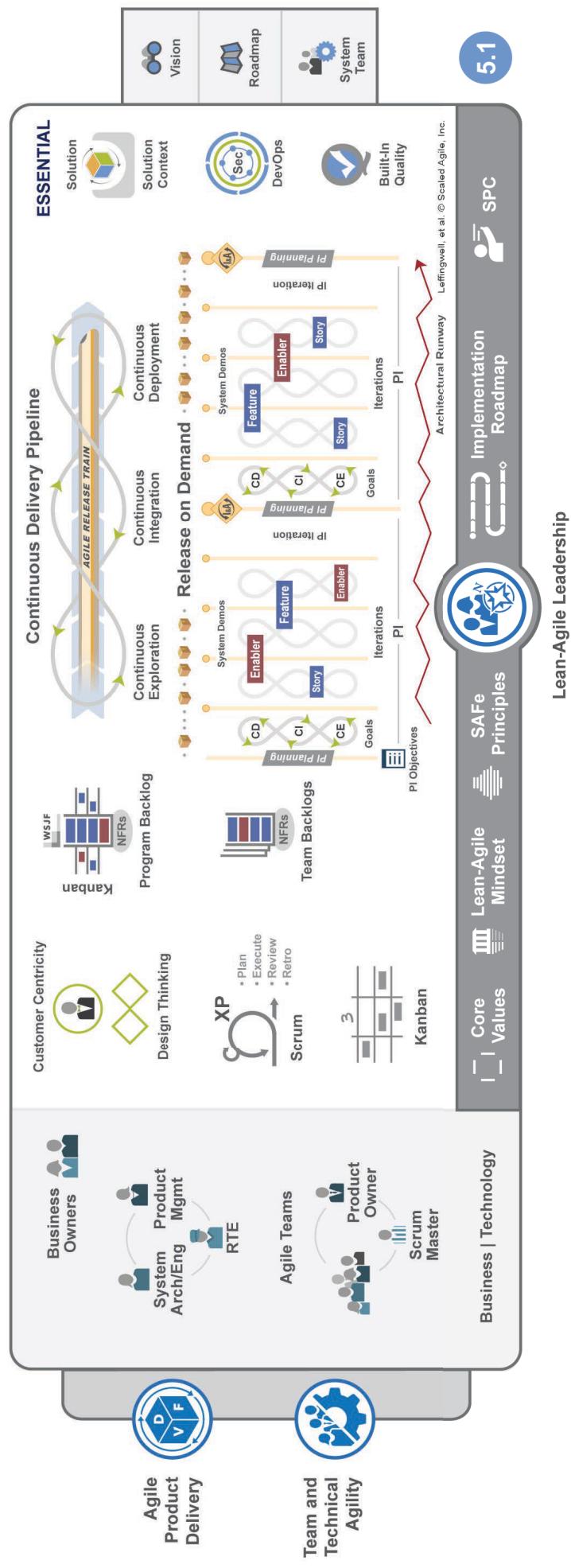
Display your digital badge to promote your SAFe capabilities and proficiencies throughout your career.

[community.scaledagile.com](https://community.scaledagile.com)











## Enterprise Solution Delivery

- Apply Lean system engineering to build really big systems
- Coordinate and align the full supply chain
- Continually evolve live systems



Lean System and  
Solution Engineering

## Lean Portfolio Management

- Align strategy, funding, and execution
- Optimize operations across the portfolio
- Lightweight governance empowers decentralized decision-making



Continually Evolve  
Live Systems

## Agile Product Delivery

- The customer is the center of your product strategy
- Develop on cadence and release on demand
- Continuously explore, integrate, deploy, and innovate



Customer  
Centricity  
& Design Thinking



DevOps and the Continuous  
Delivery Pipeline



Release on Demand



Customer  
Centricity

## Organizational Agility

- Create an enterprise-wide, Lean-Agile mindset
- Lean out business operations
- Respond quickly to opportunities and threats



Lean Business  
Operations

Strategy Agility

## Team And Technical Agility

- High-performing, cross-functional Agile teams
- Business and technical teams build business solutions
- Quality business solutions delight customers



Agile Teams



Teams of  
Agile Teams

## Lean-Agile Leadership

- Inspire others by modeling desired behaviors
- Align mindset, words, and actions to Lean-Agile values and principles
- Actively lead the change and guide others to the new way of working



Leading by Example



Mindset & Principles

## Continuous Learning Culture

- Everyone in the organization learns and grows together
- Exploration and creativity are part of the organization's DNA
- Continuously improving solutions, services, and processes is everyone's responsibility

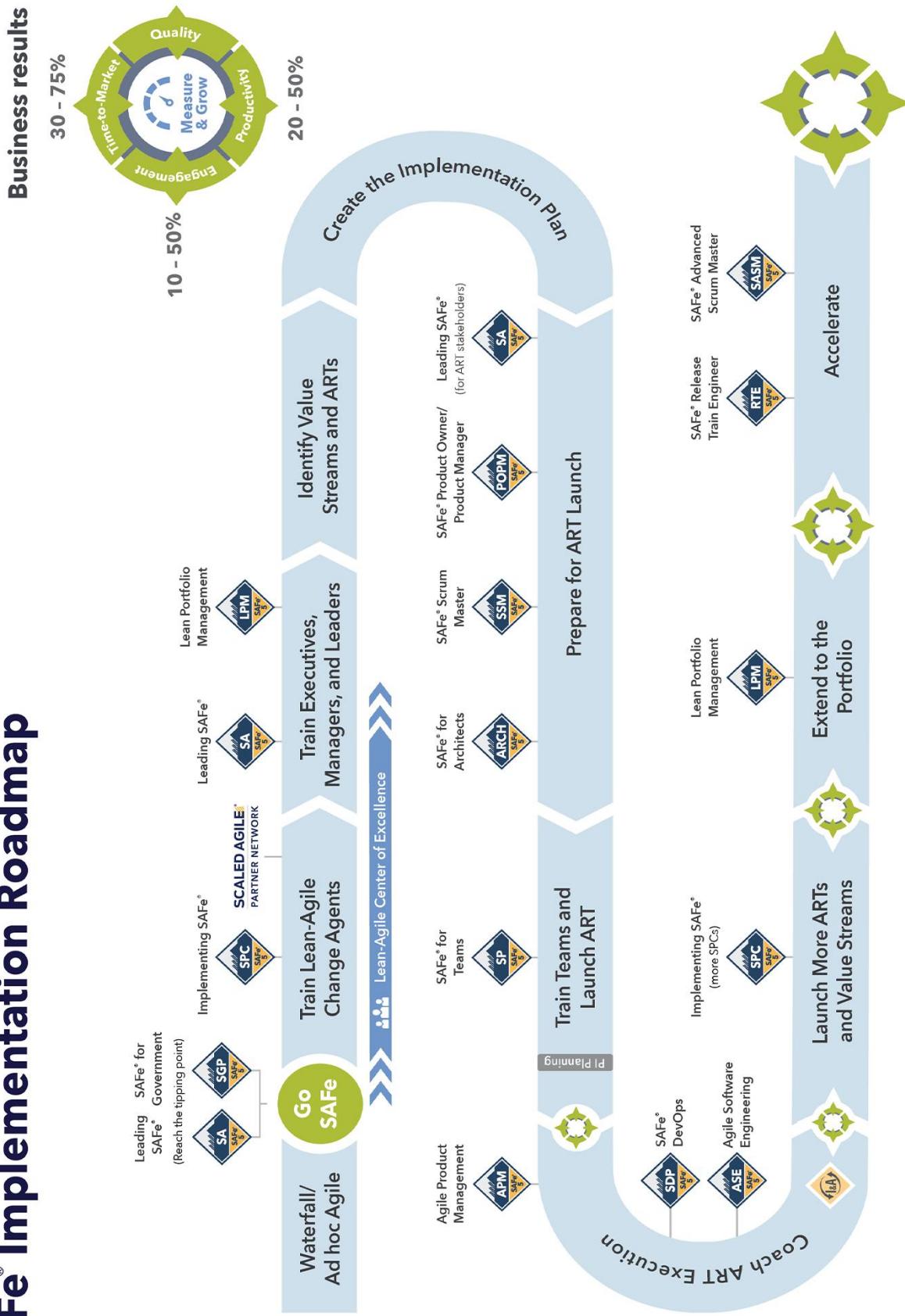


Innovation  
Culture



Learning  
Organization

# SAFe® Implementation Roadmap



# 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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# Privacy Notice

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

# Leading SAFe®

## Thriving in the Digital Age with Business Agility

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



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5.1.1

## Logistics

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



## Discussion: Introductions

Duration  
5 min

- ▶ **Step 1:** Introduce yourself to your group
- ▶ **Step 2:** Share something you know about SAFe and the role of the Lean-Agile leader



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1-3

## Course outline

- ▶ Lesson 1: Thriving in the Digital Age with Business Agility
- ▶ Lesson 2: Becoming a Lean-Agile Leader
- ▶ Lesson 3: Establishing Team and Technical Agility
- ▶ Lesson 4: Building Solutions with Agile Product Delivery
- ▶ Lesson 5: Exploring Lean Portfolio Management
- ▶ Lesson 6: Leading the Change
- ▶ Lesson 7: Practicing SAFe

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## Activity: Course outline overview

Duration  
5 min

- ▶ **Step 1:** Review the course outline
- ▶ **Step 2:** Place a dot on the topics that are most relevant to you. You have three votes in total.

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## Activity: Access the Class Page

Duration  
5 min

- ▶ **Step 1:** Navigate to the Class Page on the SAFe Community Platform
- ▶ **Step 2:** Select Learn, then My Classes, then Leading SAFe
- ▶ **Step 3:** Click on the link to Download the Leading SAFe Digital Workbook

The screenshot shows the SAFe Community platform interface. The top navigation bar includes links for Home, Learn, Implement, Measure, Connect, Teach, Partner, and Support. A dropdown menu under the Learn link is open, showing options like Getting Started, My Learning (which is highlighted with a red box), My Classes, Media Library, Rule Based Learning, and Training and Events Calendar. Below this, a sidebar titled 'My Classes' lists 'Media Library', 'Rule Based Learning', and 'Training and Events Calendar'. At the bottom of the page, there is a button labeled 'Go to my learning plan.' followed by a link: 'SAFe Collaborate Activities Link' and 'Download the Leading SAFe (5.1) workbook (PDF)'.



Visit the Leading SAFe class page to download the workbook.  
<https://bit.ly/Community-MyClasses>

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# Lesson 1

## Thriving in the Digital Age with Business Agility

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



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### Lesson Topics

- 1.1** Thriving in the digital age
- 1.2** SAFe as an operating system for Business Agility
- 1.3** The Seven Core Competencies of Business Agility



## Learning objectives

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

- ▶ Describe what is necessary to thrive in the digital age
- ▶ Recognize SAFe as an operating system for Business Agility
- ▶ Summarize the seven core competencies of Business Agility

## 1.1 Thriving in the digital age

“

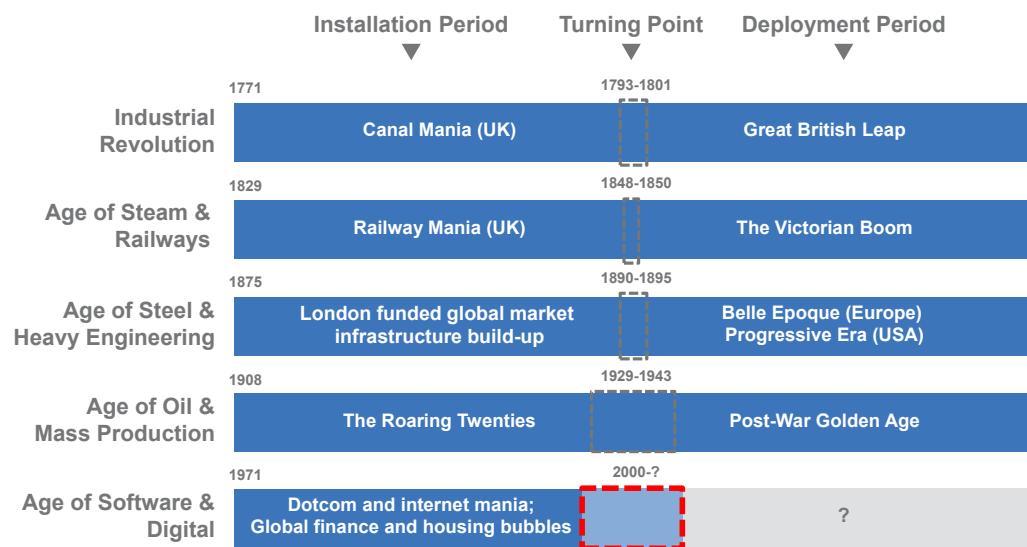
Those who master large-scale software delivery will define the economic landscape of the 21<sup>st</sup> century.

—Mik Kersten



1-11

## Five technological revolutions



Adapted from Technological Revolutions and Financial Capital, Carlota Perez

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1-12

## Production capital follows financial capital

- ▶ **Installation Period** – New technology and financial capital combine to create a ‘Cambrian explosion’ of new market entrants, disrupting entire industries from the previous age
- ▶ **Turning Point** – Existing businesses either master the new technology or decline and become relics of the last age
- ▶ **Deployment Period** – Production capital of the new technological giants start to take over



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1-13

## What stage are we in?

- ▶ "BMW Group's CEO expects that in their future more than half of its research and development staff will be software developers." (Mik Kersten, *Project to Product*)
- ▶ The market cap of Tesla (\$464B market cap, \$24B revenue) now exceeds the market cap of Ford (\$33B market cap, \$156B revenue) at a 14:1 value ratio (November 2020)
- ▶ Apple is now the biggest watchmaker in the world (Investopedia 2019)

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## Competing in the age of software

“

The problem is not with our organizations realizing that they need to transform; the problem is that organizations are using managerial frameworks and infrastructure models from past revolutions to manage their businesses in this one.

—Mik Kersten

1-15

## Rethinking the organization

“

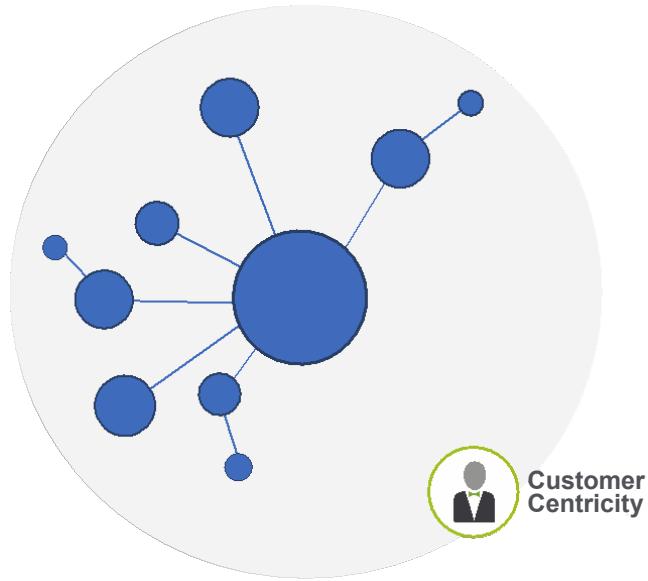
The world is now changing at a rate at which the basic systems, structures, and cultures built over the past century cannot keep up with the demands being placed on them.

—John P. Kotter



1-16

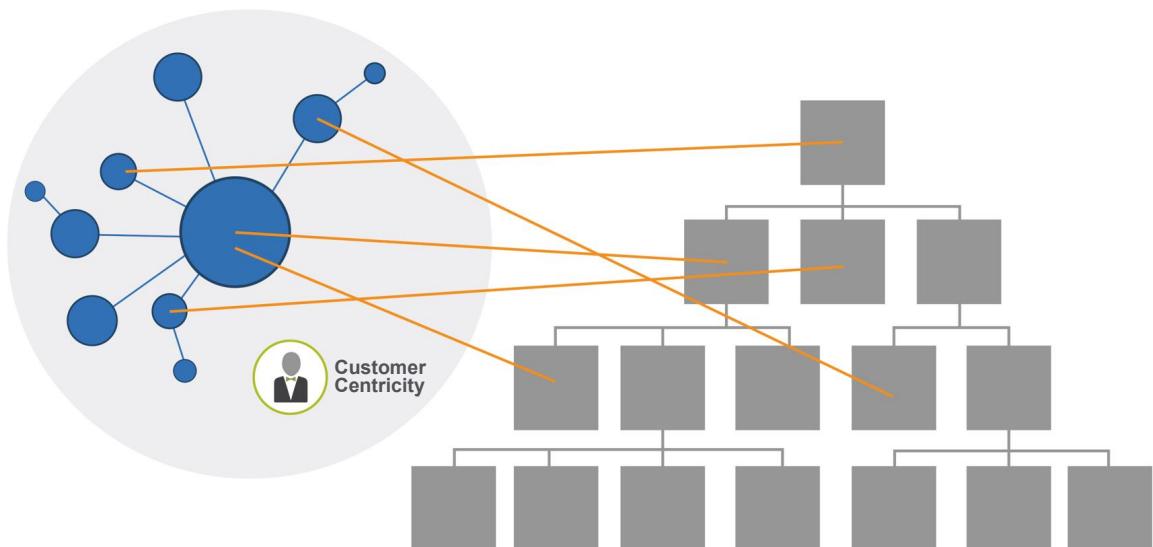
We started with a network



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1-17

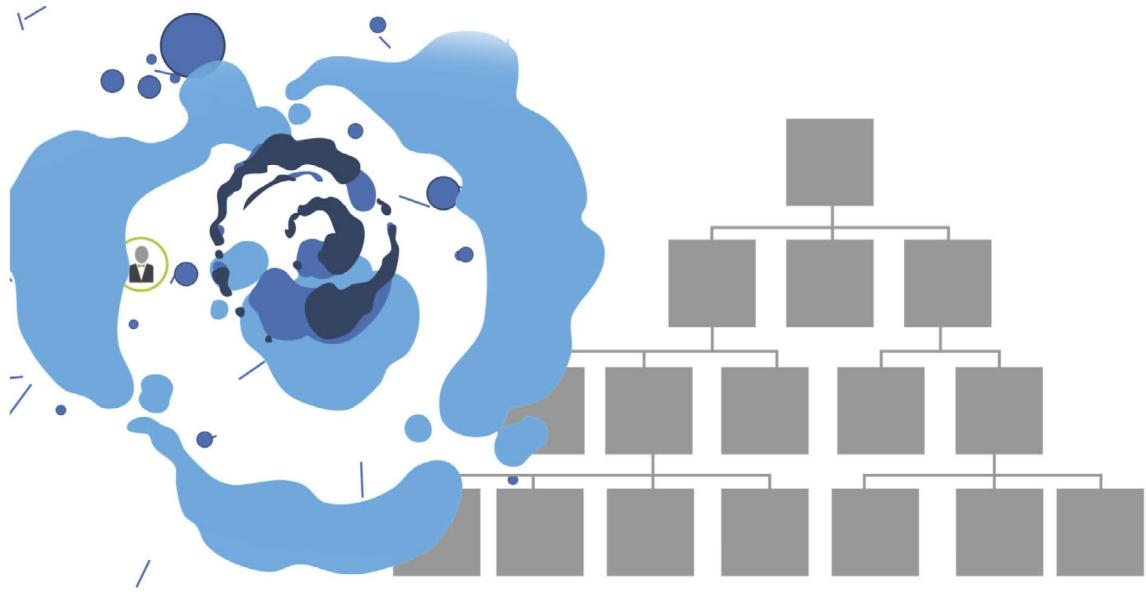
We added hierarchy for stability and execution



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1-18

Guess what happens?



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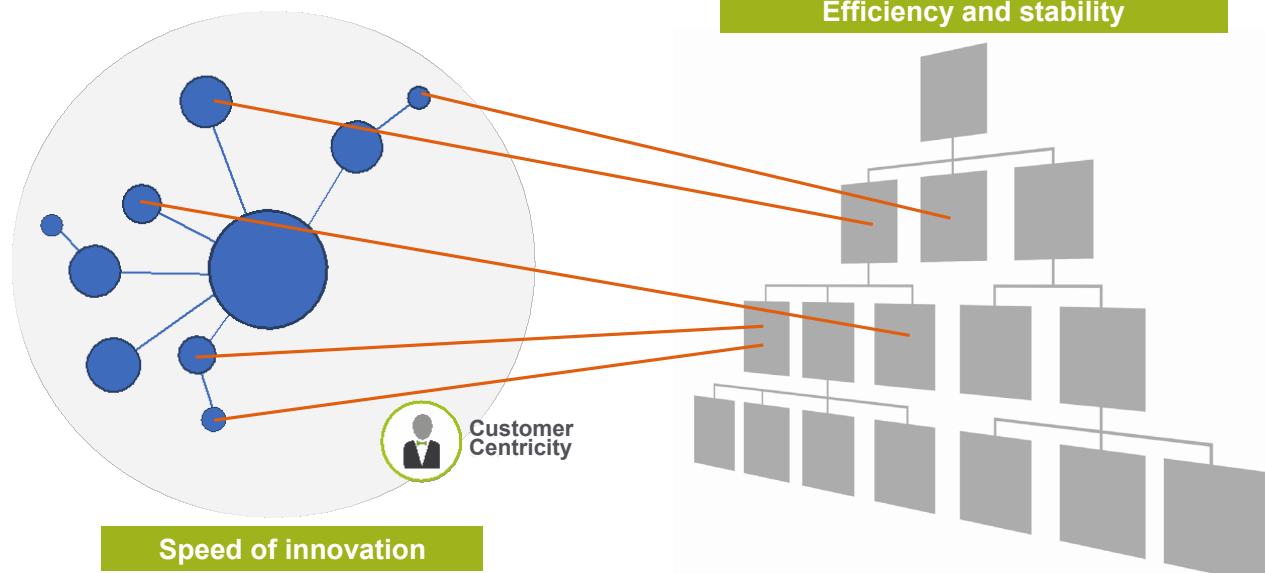
“

The solution is not to trash what we know and start over but instead to reintroduce a second system—one which would be familiar to most successful entrepreneurs.

—John P. Kotter

1-20

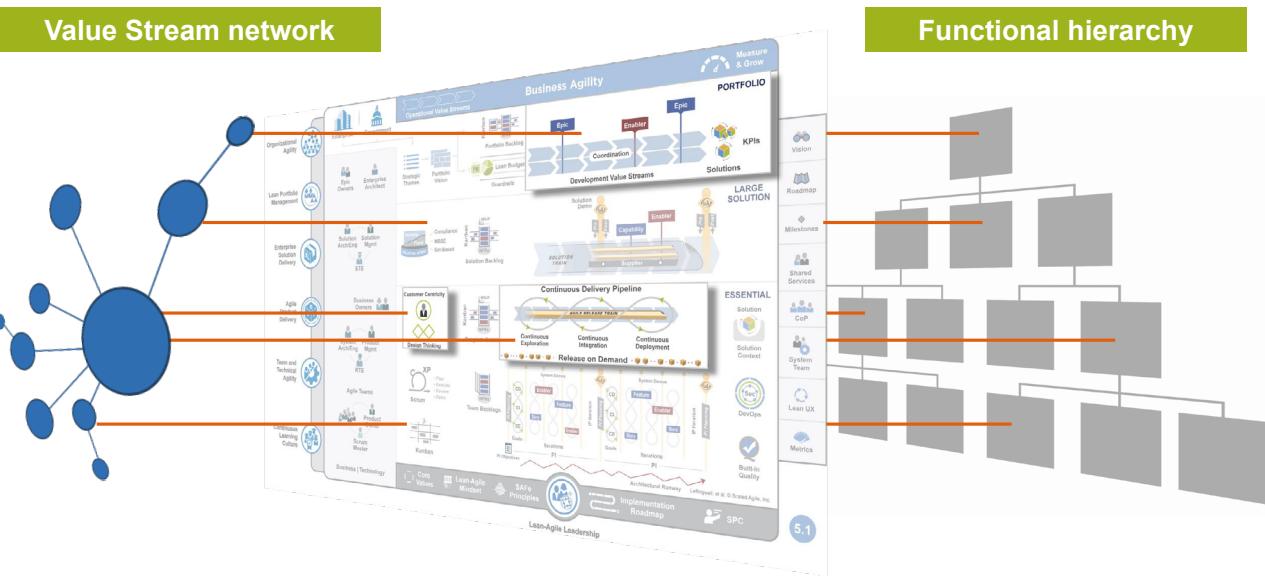
## We need a dual operating system for Business Agility



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1-21

## And we have just such an operating system at our fingertips



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## 1.2 SAFe as an operating system for Business Agility

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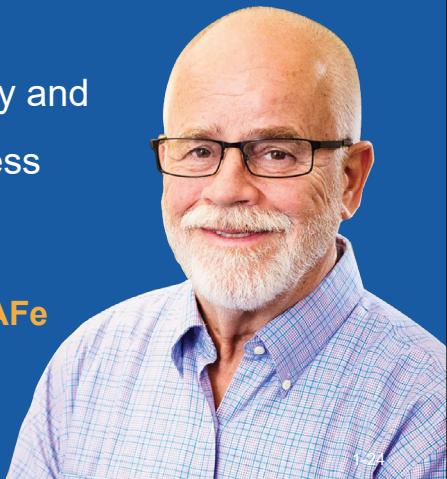
1-23

*Every business is a software business now.*



Achieving a state of **Business Agility** means that the entire organization—*not just development*—is engaged in continually and proactively delivering innovative business solutions faster than the competition.

—**Dean Leffingwell, Creator of SAFe**



1-24

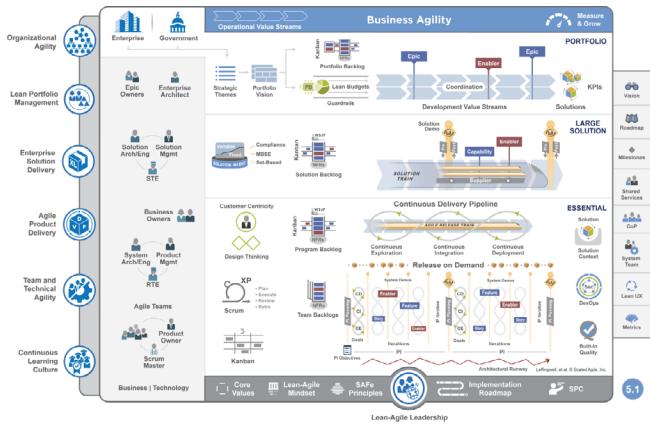
Business Agility requires technical agility **and** a business-level commitment to product and Value Stream thinking.

*And it requires that **everyone involved in delivering business solutions** uses Lean and Agile practices.*



1-25

SAFe® 5 for Lean Enterprises is a knowledge base of proven, integrated principles, practices, and competencies for achieving Business Agility by implementing Lean, Agile, and DevOps at scale.



<https://www.scaledagileframework.com/>

1-26

## Why SAFe?

SAFe's business benefits are derived directly from case studies written by SAFe customers.

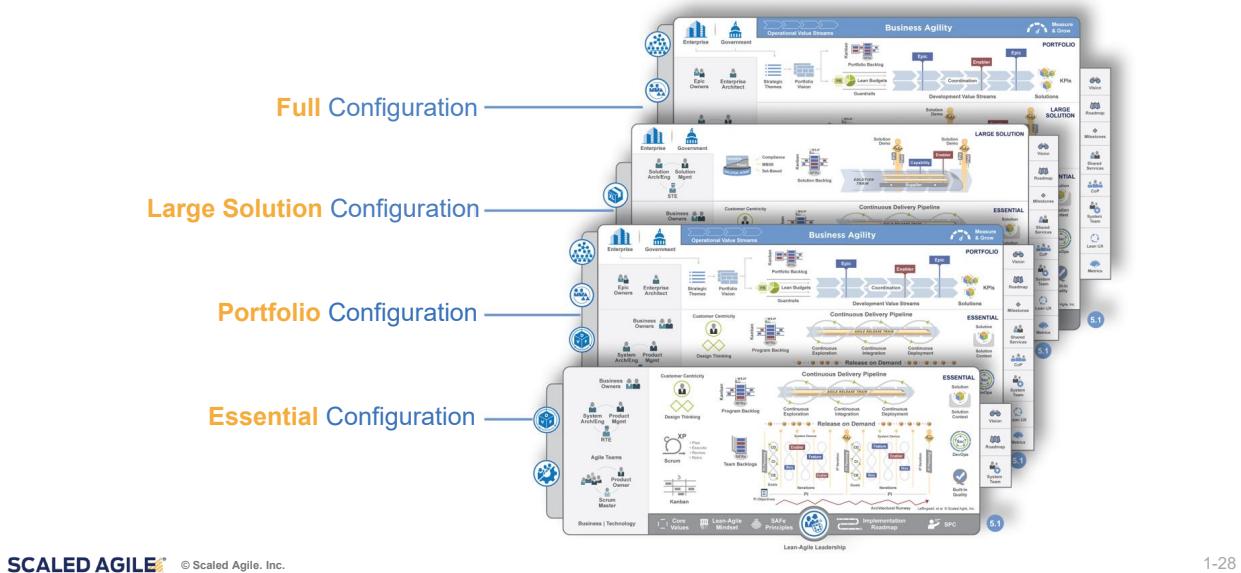


Typical results from <https://scaledagile.com/insights-customer-stories/>

1-27

## SAFe configurations

Four configurations provide the right solution for each Enterprise.



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# SAFe: Roots, past, present, and future

2011

Field experience at Enterprise scale

Now...



Lean product development | Agile development | DevOps | Systems thinking

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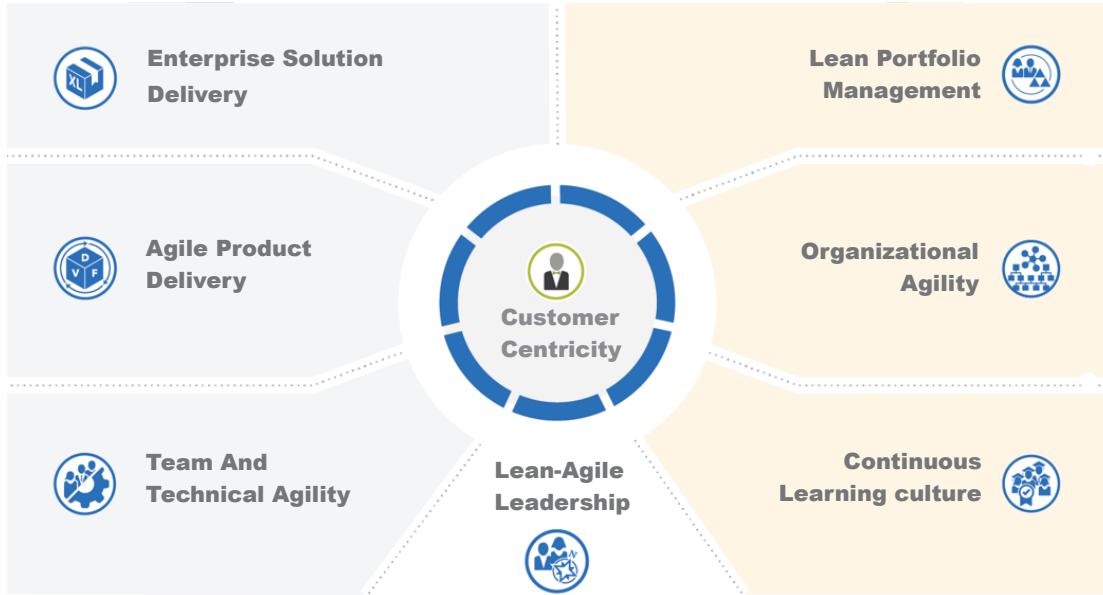
1-29

## 1.3 The Seven Core Competencies of Business Agility

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1-30

# The Seven Core Competencies of Business Agility



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1-31



## Team and Technical Agility

- ▶ High-performing, cross-functional Agile Teams
- ▶ Teams of business and technical teams build Solutions
- ▶ Quality business Solutions delight Customers

### Agile Teams



### Teams of Agile Teams

AGILE RELEASE TRAIN

### Built-In Quality



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1-32



## Agile Product Delivery

- ▶ The Customer is the center of your product strategy
- ▶ Decouple the release of value from the development cadence
- ▶ Continuously explore, integrate, deploy, and release

### Customer Centricity and Design Thinking



### Develop on cadence and release on demand



### DevOps and the Continuous Delivery Pipeline



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1-33



## Enterprise Solution Delivery

- ▶ Apply Lean system engineering practices to build really big systems
- ▶ Coordinate and align the full supply chain
- ▶ Continue to enhance value after release

### Lean System and Solution Engineering



### Coordinate Trains and Suppliers



### Continually Evolve Live Systems



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## Lean Portfolio Management

- ▶ Align strategy, funding, and execution
- ▶ Optimize operations across the portfolio
- ▶ Lightweight governance empowers decentralized decision-making



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1-35



## Organizational Agility

- ▶ Create an enterprise-wide, Lean-Agile mindset
- ▶ Map and continuously improve business processes
- ▶ Respond quickly to opportunities and threats

### Lean-thinking People and Agile Teams



### Lean Business Operations



### Strategy Agility



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1-36



## Continuous Learning Culture

- ▶ Everyone in the organization learns and grows together
- ▶ Exploration and creativity are part of the organization's DNA
- ▶ Continuously improving Solutions, services, and processes is everyone's responsibility

### Learning Organization



### Innovation Culture



### Relentless Improvement



## Lean-Agile Leadership

- ▶ Inspire others by modeling desired behaviors
- ▶ Align mindset, words, and actions to Lean-Agile values and principles
- ▶ Actively lead the change and guide others to the new way of working

### Leading by Example



### Mindset & Principles



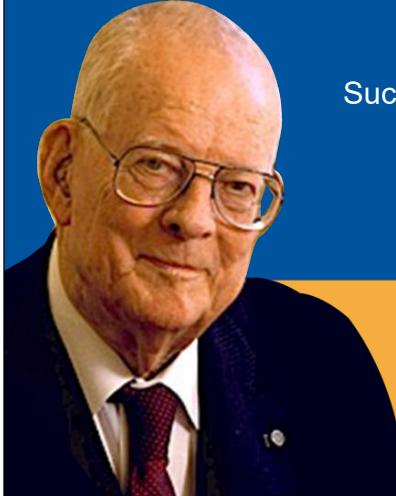
### Leading Change



## The management challenge

“

It is not enough that management commit themselves to quality and productivity, they must know what it is they must do.



Such a responsibility cannot be delegated.

—W. Edwards Deming

*... and if you can't come, send no one”*

—W. Edwards Deming, Vignette from *Out of the Crisis*

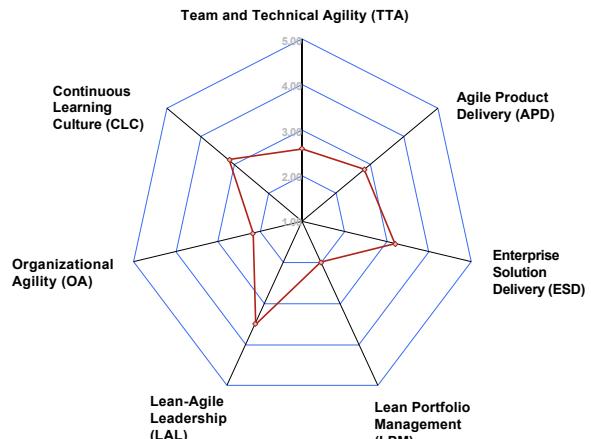
1-39

## Measure and Grow toward Business Agility

Measure and Grow is the way each portfolio evaluates their progress toward Business Agility and determines their next improvement steps:

1. Create a high-level summary using the **Business Agility assessment**
2. Go deeper with the **Seven Core Competency assessments**
3. Analyze results and identify opportunities to improve

### Business Agility Assessment



Access the Online Assessments: <https://bit.ly/Community-MeasureAndGrow>

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1-40

## Lesson review

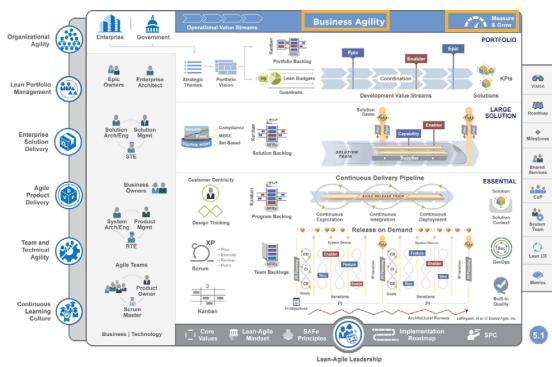
In this lesson you:

- ▶ Described what is necessary to thrive in the digital age
- ▶ Recognized SAFe as an operating system for Business Agility
- ▶ Explored the seven core competencies of Business Agility

## Articles used in this lesson

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

- ▶ “SAFe for Lean Enterprises”  
<https://www.scaledagileframework.com/safe-for-lean-enterprises/>
- ▶ “Business Agility”  
<https://www.scaledagileframework.com/business-agility/>
- ▶ “Measure and Grow”  
<https://www.scaledagileframework.com/measure-and-grow/>



## Continue your SAFe journey with the following resources

<p>Watch this 18-minute video to hear <i>Why SAFe?</i> is the world's most widely used framework for Business Agility: <a href="https://bit.ly/Video-WhySAFe">https://bit.ly/Video-WhySAFe</a></p>	<p>Watch this three-minute video to learn how to <i>Navigate the Big Picture</i>, exploring the various elements of SAFe: <a href="https://bit.ly/Video-NavigatingTheBigPicture">https://bit.ly/Video-NavigatingTheBigPicture</a></p>
<p>Watch this five-minute video to review the Seven Core Competencies of the Lean Enterprise: <a href="https://bit.ly/Video-SAFeOverviewin5Minutes">https://bit.ly/Video-SAFeOverviewin5Minutes</a></p>	<p>Run the SAFe Business Agility Assessment to create the urgency for change: <a href="https://bit.ly/Community-MeasureAndGrow">https://bit.ly/Community-MeasureAndGrow</a></p>

## Lesson notes

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

## Lesson 2

# Becoming a Lean-Agile Leader

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



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### Why Lean-Agile Leadership?

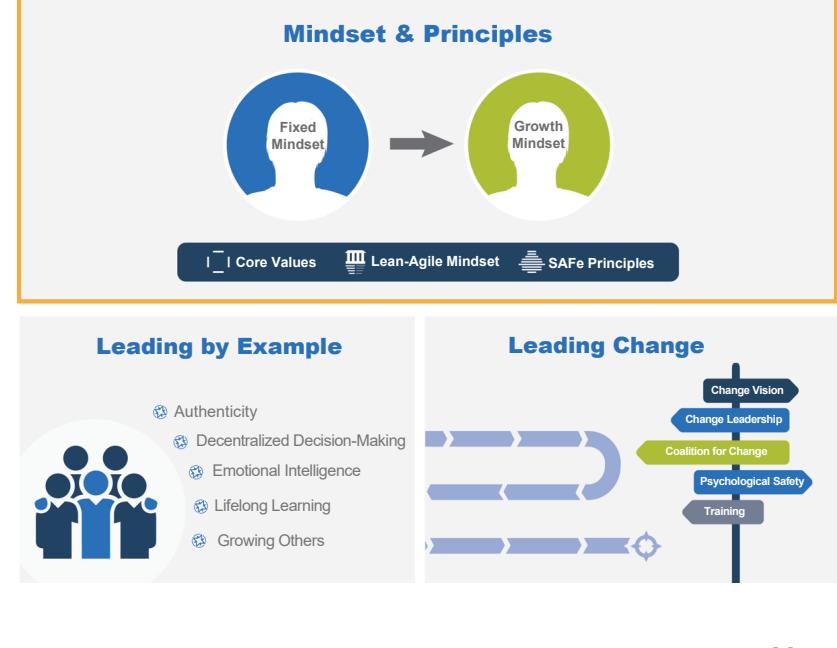
An organization's managers, executives, and other leaders are responsible for the adoption, success, and ongoing improvement of Lean-Agile development and the competencies that lead to Business Agility. Only they have the authority to change and continuously improve the systems that govern how work is performed.



## Lesson Topics

**2.1** The Lean-Agile Mindset

**2.2** Lean and Agile at scale with the SAFe Principles



2-3

## Learning objectives

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

- ▶ Embrace the Lean-Agile Mindset
- ▶ Apply the SAFe Lean-Agile Principles

## 2.1 The Lean-Agile Mindset

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2-5

### Exemplifying SAFe core values

#### Alignment

- ▶ Communicate the mission, vision, and strategy
- ▶ Provide briefings and participate in PI Planning
- ▶ Participate in backlog review and preparation
- ▶ Organize around Value Streams
- ▶ Constantly check for understanding

#### Transparency

- ▶ Visualize all relevant work
- ▶ Take ownership and responsibility for errors
- ▶ Admit your own mistakes
- ▶ Support others who acknowledge and learn from their mistakes—never punish the messenger

#### Built-in Quality

- ▶ Refuse to accept low-quality work
- ▶ Support investments in technical debt reduction
- ▶ Ensure UX, architecture, operations, security, compliance, and others are part of the flow of work

#### Program Execution

- ▶ Participate as an active Business Owner
- ▶ Celebrate high quality and predictably delivered PIs
- ▶ Aggressively remove impediments and demotivators

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2-6



## Action Plan: Exemplifying SAFe's core values

Duration  
5 min

- ▶ **Step 1:** Individually choose one of SAFe's four core values: Alignment, Transparency, Built-In Quality, or Program Execution
- ▶ **Step 2:** In your group, discuss how you can exemplify that core value in your organization
- ▶ **Step 3:** Write down one example in the Action Plan in your workbook

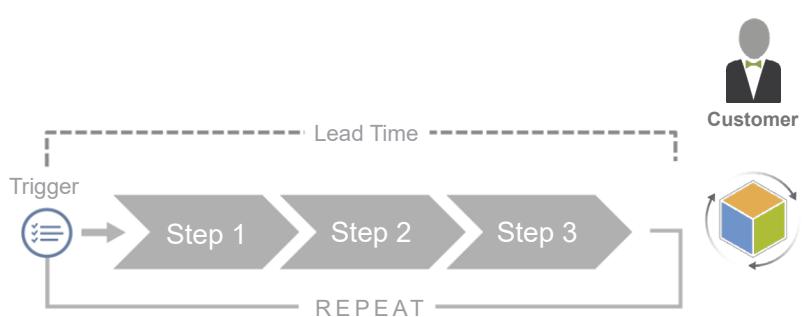


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2-7

## Lean thinking

- ✓ Precisely specify value by product
- ✓ Identify the Value Stream for each product
- ✓ Make value flow without interruptions
- ✓ Let the Customer pull value from the producer
- ✓ Pursue perfection



*Lean Thinking: Banish Waste and Create Wealth in your Corporation*, James Womack and Daniel Jones

2-8



## Exemplifying SAFe's core values

## SAFe House of Lean

The Lean thinking mindset is embodied in the SAFe House of Lean



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2-9

## Value

Achieve the shortest sustainable lead time with:

- ▶ The best quality and value to people and society
- ▶ High morale, safety, and Customer delight



*There is only one boss. The customer.  
And he can fire everybody in the company.*

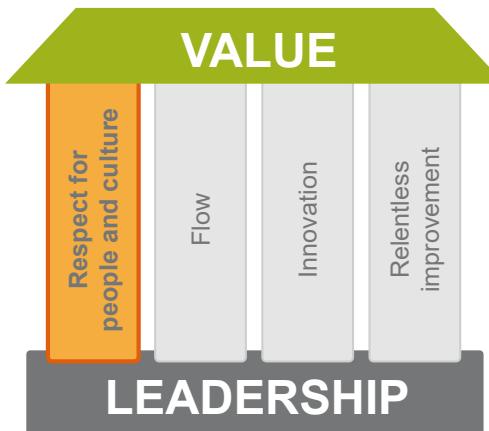
—Sam Walton

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2-10

## Respect for people and culture

- ▶ Generative culture
- ▶ People do all the work
- ▶ Your Customer is whoever consumes your work
- ▶ Build long-term partnerships based on trust
- ▶ To change the culture, you have to change the organization



*Culture eats strategy for breakfast.*

—Peter Drucker

## Flow

- ▶ Optimize sustainable value delivery
- ▶ Build in quality
- ▶ Understand, exploit, and manage variability
- ▶ Move from projects to products



*Operating a product development process near full utilization is an economic disaster.*

—Don Reinertsen

## Innovation

- ▶ Innovative people
- ▶ Provide time and space for innovation
- ▶ Go see
- ▶ Experimentation and feedback
- ▶ Innovation riptides
- ▶ Pivot without mercy or guilt



*Innovation comes from the producer.*

—W. Edwards Deming

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2-13

## Relentless improvement

- ▶ A constant sense of danger
- ▶ Optimize the whole
- ▶ Problem-solving culture
- ▶ Base improvements on facts
- ▶ Reflect at key Milestones



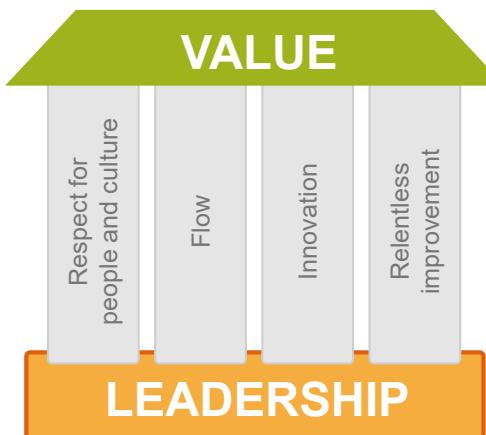
*Those who adapt the fastest win.*

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2-14

## Leadership

- ▶ Lead by example
- ▶ Adopt a growth mindset
- ▶ Exemplify the values and principles of Lean-Agile and SAFe
- ▶ Develop people
- ▶ Lead the change
- ▶ Foster psychological safety



*People are already doing their best;  
the problems are with the system. Only  
management can change the system.*

—W. Edwards Deming

2-15

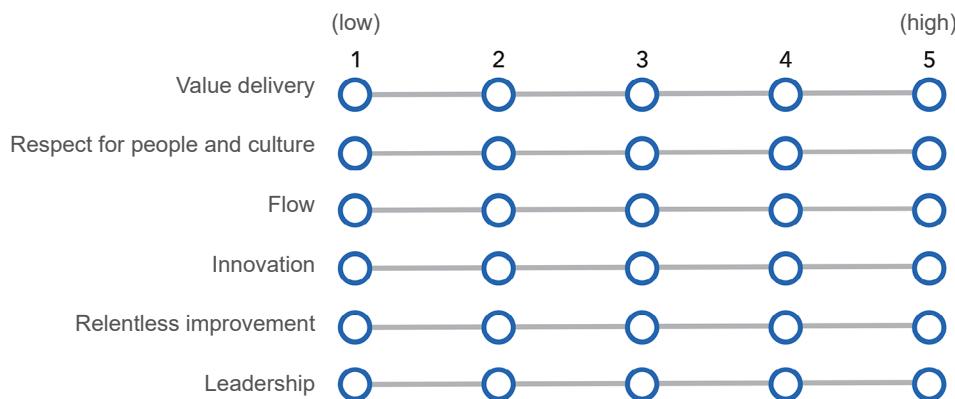
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### Activity: Assessing a Lean mindset

Duration  
5 min

- ▶ **Step 1:** Assess where your organization stands in embracing a Lean mindset.
- ▶ **Step 2:** Discuss the results of the self-assessment. Do you have similar low or high scores?



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2-16

# Assessing a Lean Mindset



## Notes



## Action Plan: Improving the Lean-Agile mindset

Prepare  
5 min

Share  
3 min

- ▶ **Step 1:** Select one of the lowest scores in the assessment.
- ▶ **Step 2:** Brainstorm one to three actions you could take to improve this area.
- ▶ **Step 3:** Share your ideas with your group. Give and receive constructive suggestions on how the ideas offered can improve the mindset scores.
- ▶ **Step 4:** Write down one idea in your Action Plan and be prepared to share.



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## The Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others do it.  
Through this work we have come to value:

**Individuals and interactions** over processes and tools  
**Working software** over comprehensive documentation  
**Customer collaboration** over contract negotiation  
**Responding to change** over following a plan

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

<http://agilemanifesto.org/>

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## Improving the Lean-Agile mindset

## 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.

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## The Agile Manifesto principles

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

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## The Agile Manifesto principles

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



### Activity: Agile principles at scale



- ▶ **Step 1:** Review the principles behind the Agile Manifesto
- ▶ **Step 2:** Select one principle per group
- ▶ **Step 3:** Categorize as:
  - Works as is
  - Not applicable
  - Requires rethinking for scale
- ▶ **Step 4:** Share your findings with the class

# The Principles of the Agile Manifesto

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.
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.

Source: Principles behind the Agile Manifesto: <https://agilemanifesto.org/principles.html>

# The Principles of the Agile Manifesto

Principles	Works as is	Not Applicable	Requires rethinking at scale
1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference for the shorter timescale.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Business people and developers must work together daily throughout the project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Working software is the primary measure of progress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Continuous attention to technical excellence and good design enhances agility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Simplicity—the art of maximizing the amount of work not done—is essential.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. The best architectures, requirements, and designs emerge from self-organizing teams.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Notes

## 2.2 Lean and Agile at scale with the SAFe Principles

### 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

## Why focus on the principles?

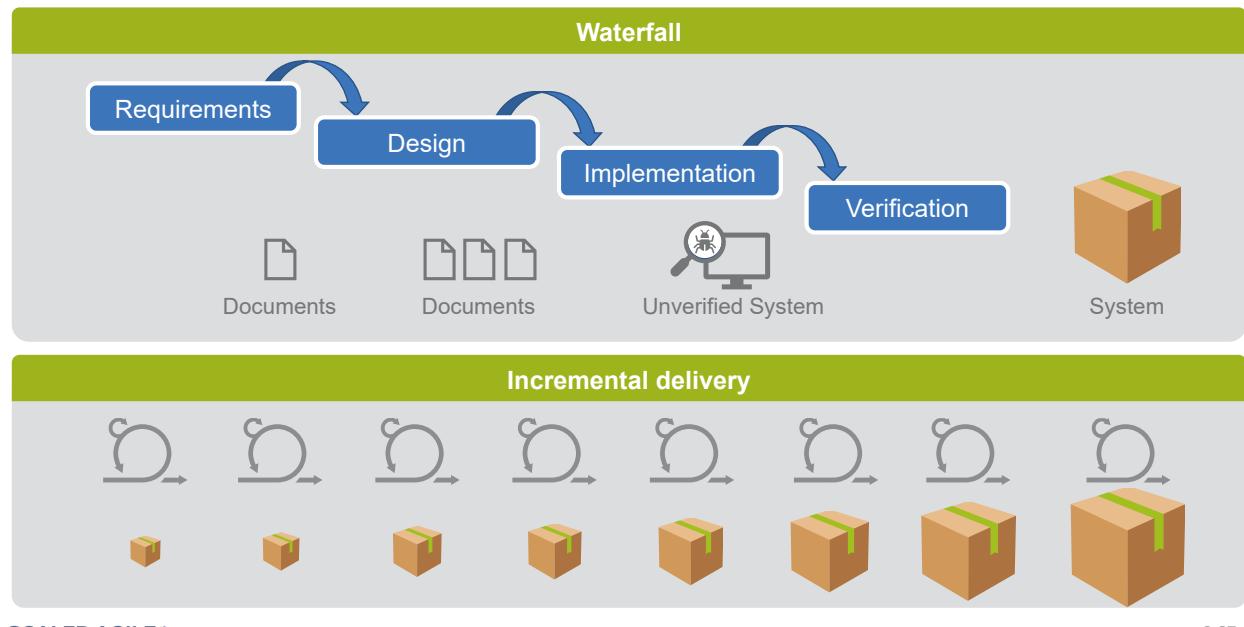
*A common disease that afflicts management the world over is the impression that "Our problems are different." They are different to be sure, but the principles that will help to improve the quality of products and services are universal in nature.*

*—W. Edwards Deming*

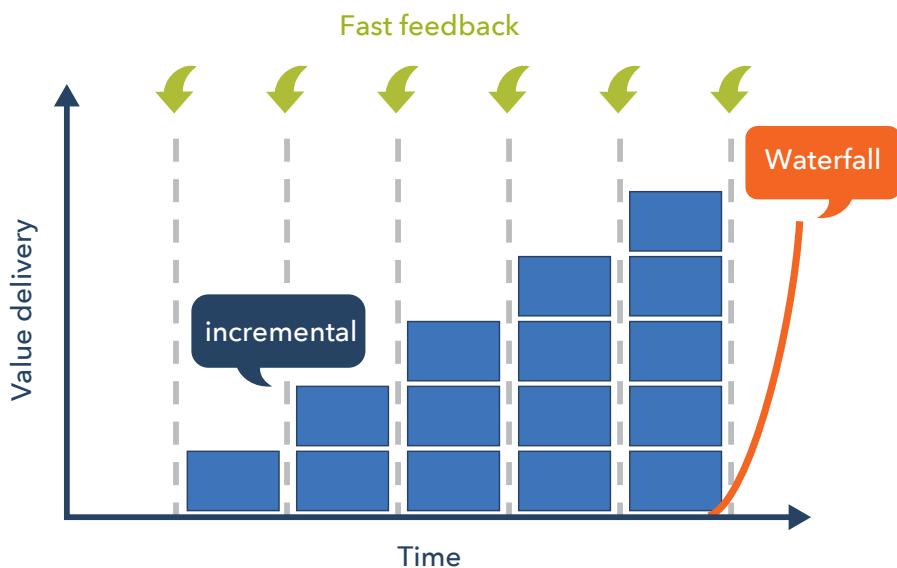
- ▶ A Lean-Agile transformation will deliver substantial benefits
- ▶ However, it is a significant change, and every implementation is different
- ▶ Leaders should understand why the practices work; it's part of 'knowing what it is they must do'
- ▶ If a practice needs to change, understanding the principles will assure the change moves the Enterprise in the right direction

## #1 Take an economic view

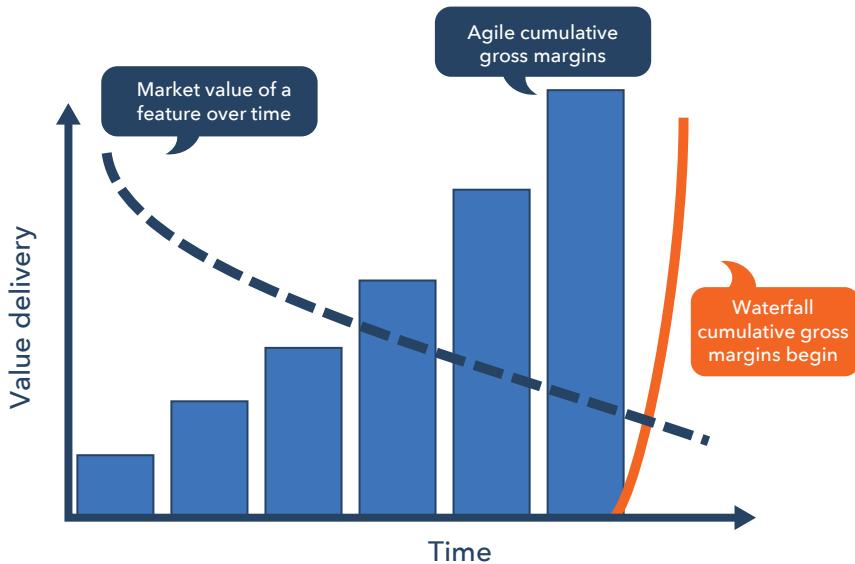
## Agile economics: Deliver early and often



## Deliver value incrementally



## Early delivery has higher value



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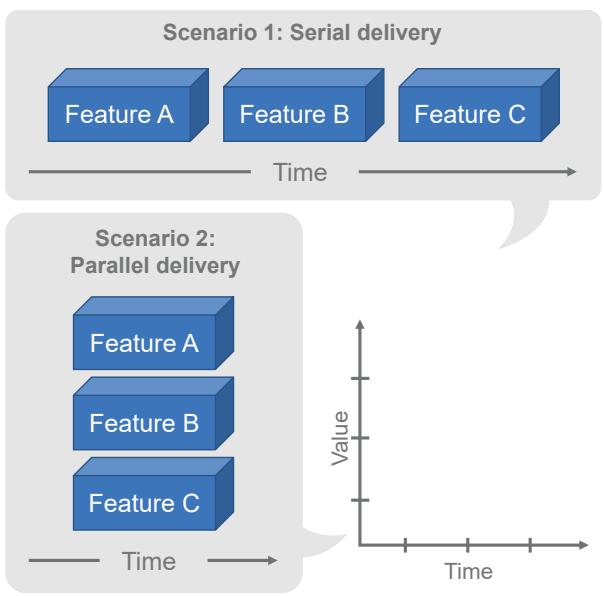
2-29



### Activity: Accelerating value delivery



- ▶ **Step 1:** Consider that your backlog has three Features. Each will take the entire team one month to complete and delivers one unit of value.
- ▶ **Step 2:** Plot the value delivery of serial and simultaneous/parallel implementation scenarios for delivering the Features.
  - **NOTE:** Assume 20% task switching overhead for each team member in Scenario 2: Parallel delivery
  - **HINT:** Plot the serial case first



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2-30

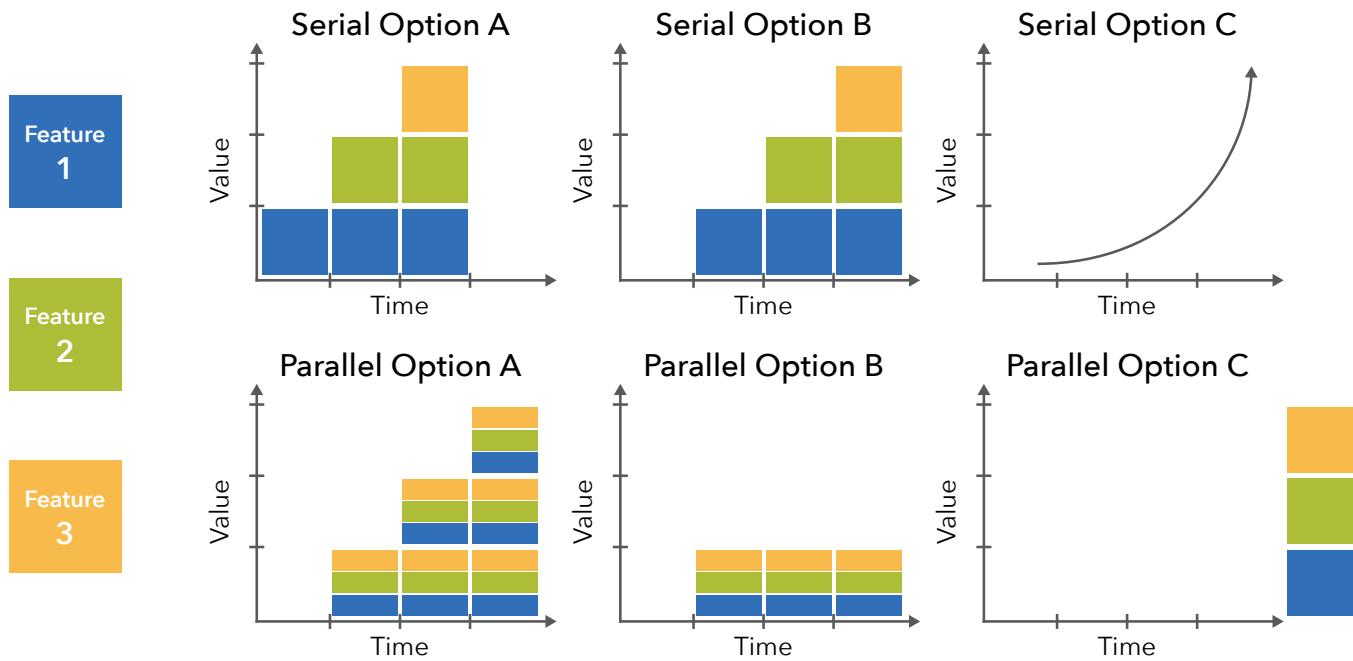
# Agile Manifesto Principles at Scale

**Instructions:** In your groups, discuss the graphs for the serial and parallel approaches. Be prepared to discuss with the class. Consider these questions:

For the serial approach, which graph is correct?

For the parallel approach, which graph is correct?

Which approach will deliver more value?

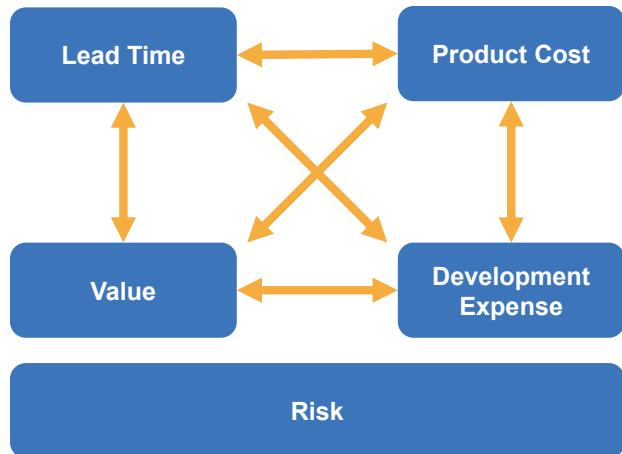


## Notes

## Solution economic trade-offs

Understanding trade-off parameters:

- ▶ Sequence jobs for maximum benefit
- ▶ Do not consider money already spent
- ▶ Make economic choices continuously
- ▶ Empower local decision making
- ▶ If you only quantify one thing, quantify the cost of delay



## #2 Apply systems thinking

**“**

**A system must be managed. It will not manage itself.**

*Left to themselves, components become selfish, independent profit centers and thus destroy the system...*

*The secret is cooperation between components toward the aim of the organization.*

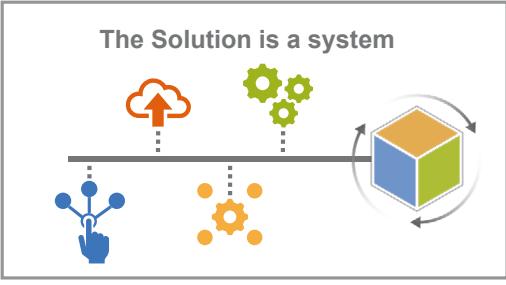
—W. Edwards Deming

2-33

## Attributes of systems thinking

The Solution and the Enterprise are both affected by the following:

- ▶ Optimizing a component does not optimize the system
- ▶ For the system to behave well as a system, a higher-level understanding of behavior and architecture is required
- ▶ The value of a system passes through its interconnections
- ▶ A system can evolve no faster than its slowest integration point



The Solution is a system



The Enterprise building the system is a system too

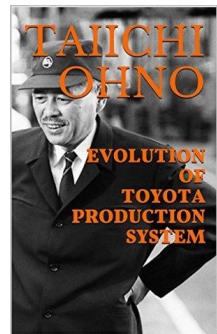
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2-34

## Optimize the full Value Stream

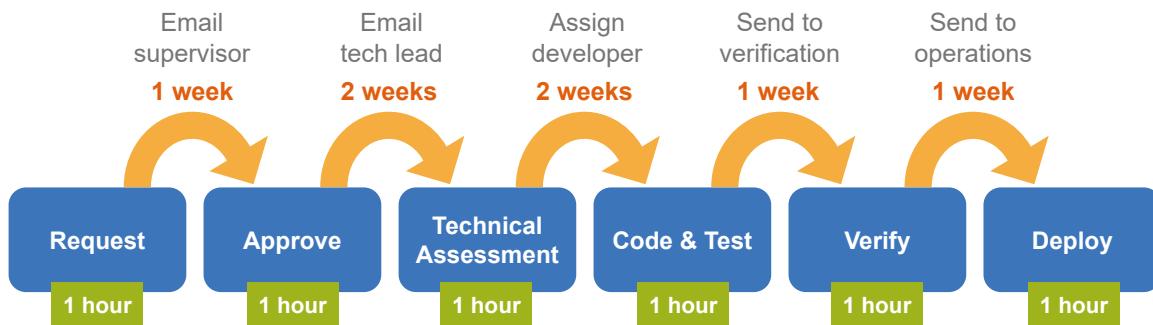
*All we are doing is looking at the timeline from when the customer gives us an order to when we collect the cash. And we are reducing the timeline by reducing the non-value-added wastes.*

—Taiichi Ohno



- ▶ Most problems with your process will surface as *delays*
- ▶ Most of the time spent getting to market is a result of these delays
- ▶ Reducing delays is the fastest way to reduce time to market

## Focus on the delays!



6 hours of value...

...delivered in 7 weeks

$$\frac{1 \text{ day}}{49 \text{ days}} = 2\% \text{ Flow Efficiency}$$



## Discussion: Identifying delays



- ▶ **Step 1:** Identify three delays from your context and write them down.
- ▶ **Step 2:** Write down what you think might be some potential causes for the delays.
- ▶ **Step 3:** Consider how systems thinking relates to finding possible solutions for the delays. Who is ultimately responsible for the optimization of the full Value Stream?
- ▶ **Step 4:** Share your insights with the class.

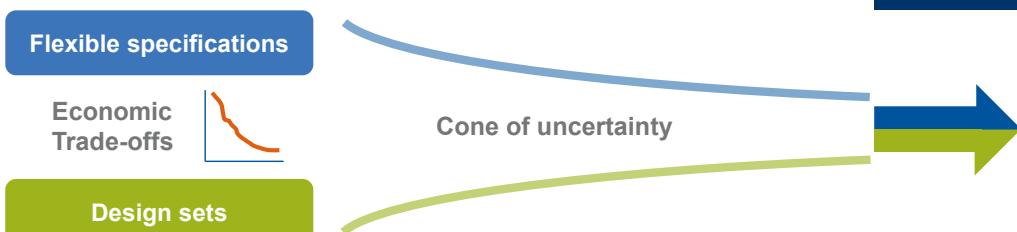
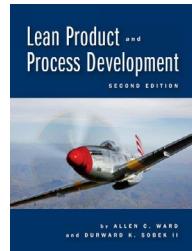
## #3 Assume variability; preserve options

## Development occurs in an uncertain world

*Aggressively evaluate alternatives. Converge specifications and solution set.*

—Allen Ward

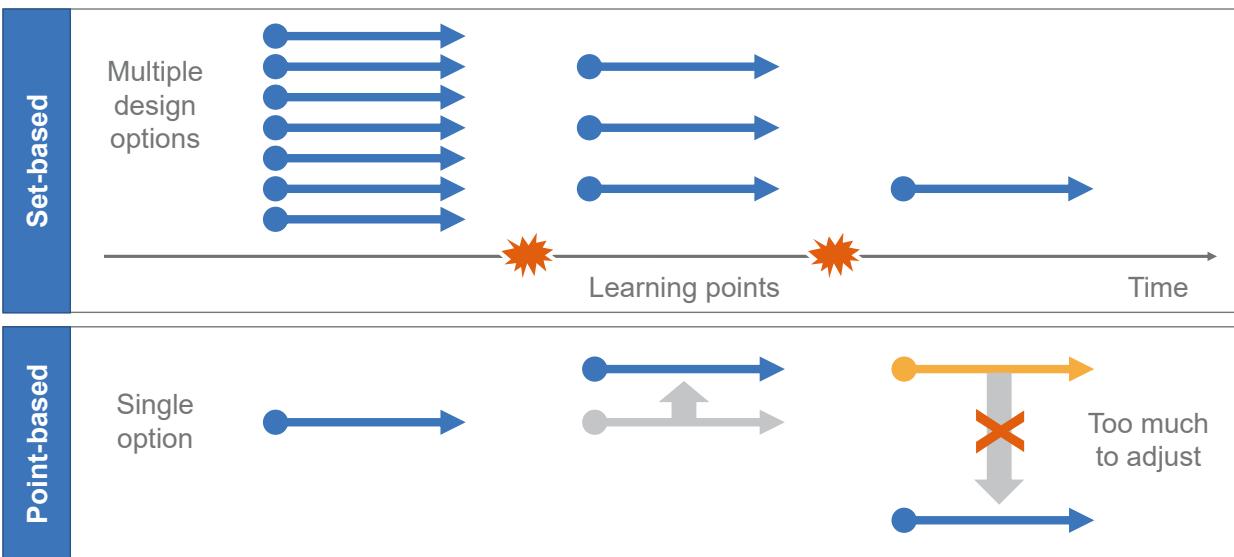
- ▶ You cannot possibly know everything at the start
- ▶ Requirements must be flexible to make economic design choices
- ▶ Designs must be flexible to support changing requirements
- ▶ Preservation of options improves economic results



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## Apply a set-based approach



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## #4 Build incrementally with fast, integrated learning cycles

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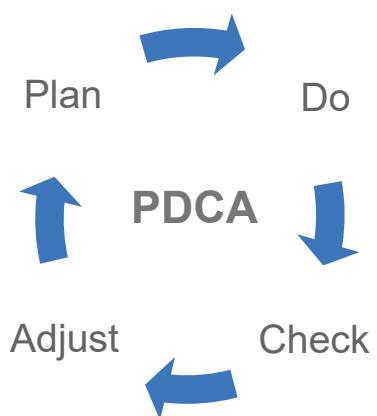
### Apply fast learning cycles

Fast feedback accelerates knowledge.

- ▶ Improves learning efficiency by decreasing the time between action and effect
- ▶ Reduces the cost of risk-taking by truncating unsuccessful paths quickly
- ▶ Is facilitated by small batch sizes
- ▶ Requires increased investment in development environment

**The shorter the cycles, the faster the learning.**

### The iterative learning cycle

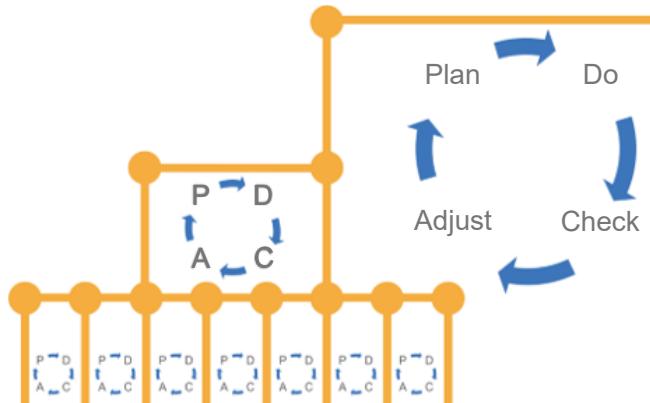


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## Integration points control product development

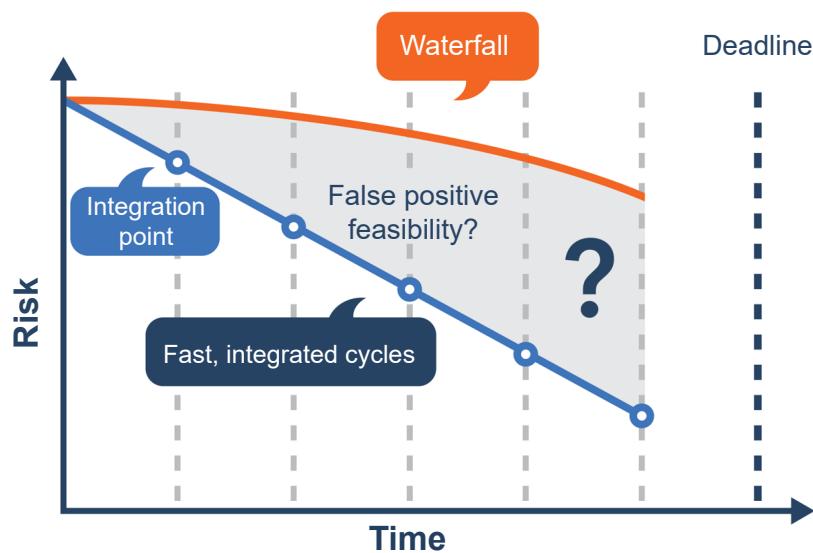
- ▶ Integration points accelerate learning
- ▶ Development can proceed no faster than the slowest learning loop
- ▶ Improvement comes through synchronization of design loops and faster learning cycles



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## Integration points reduce risk



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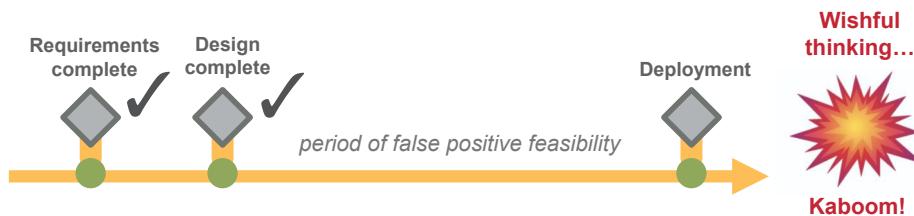
2-44

## #5 Base milestones on objective evaluation of working systems

### The problem of phase-gate milestones

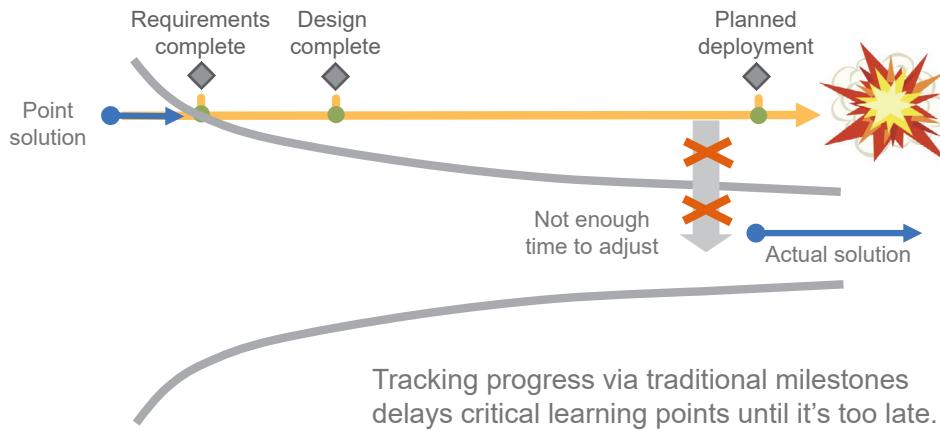
*There was in fact no correlation between exiting phase gates on time and project success... the data suggested the inverse might be true. —Dantar Oosterwal, Lean Machine*

- ▶ They force design decisions too early; this encourages false-positive feasibility.
- ▶ They assume a ‘point’ Solution exists and can be built correctly the first time.
- ▶ They create huge batches and long queues, and they centralize requirements and design in program management.



## The problem of phase-gate milestones

Phase gates fix requirements and designs too early, making adjustments too late and costly as new facts emerge.

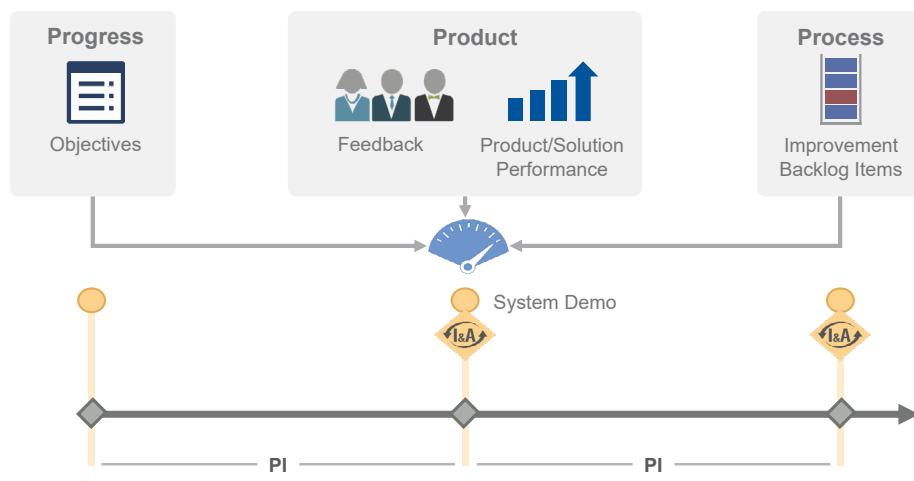


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2-47

## Apply objective Milestones

Program Increment (PI) System Demos are orchestrated to deliver objective progress, product, and process Metrics.

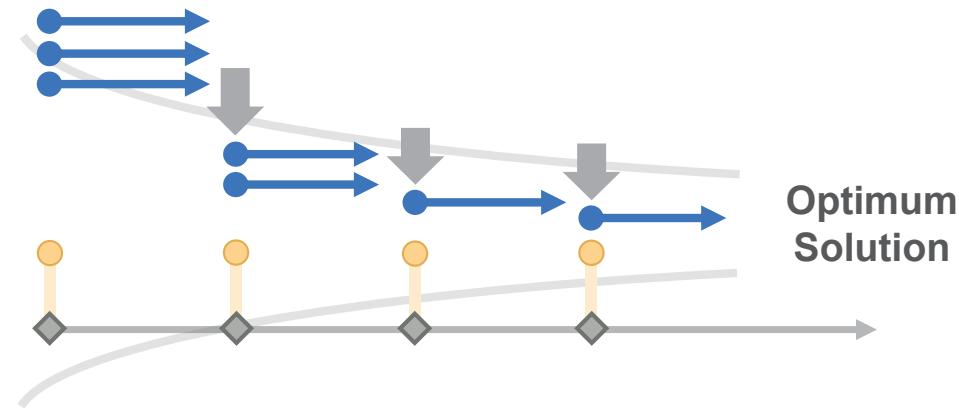


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2-48

## Iterate to the optimum Solution

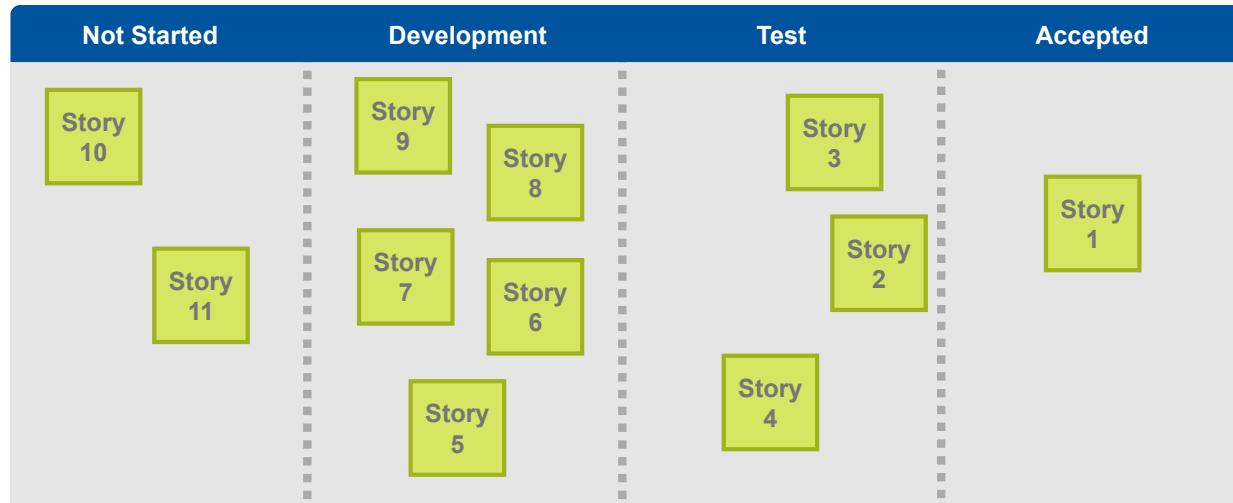
Objective Milestones facilitate learning and allow for continuous, cost-effective adjustments towards an optimum Solution.



## #6 Visualize and limit WIP, reduce batch sizes, and manage queue lengths

## An example from the field

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

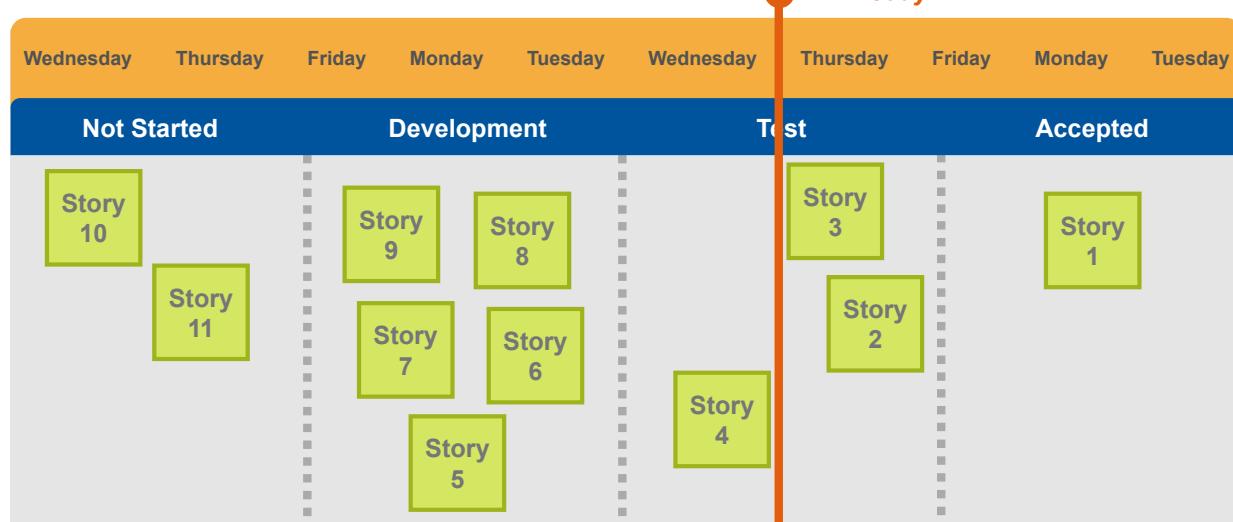


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## Visualize to increase understanding

Now how do you think they are doing?



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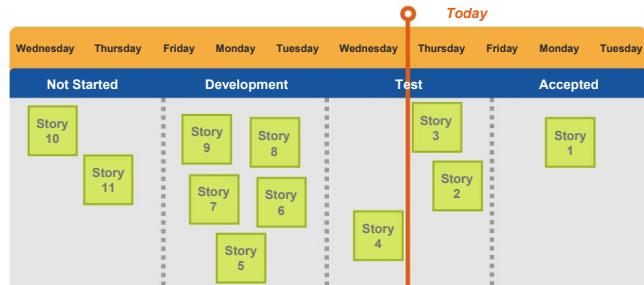
2-52



## Activity: WIP improvement opportunities



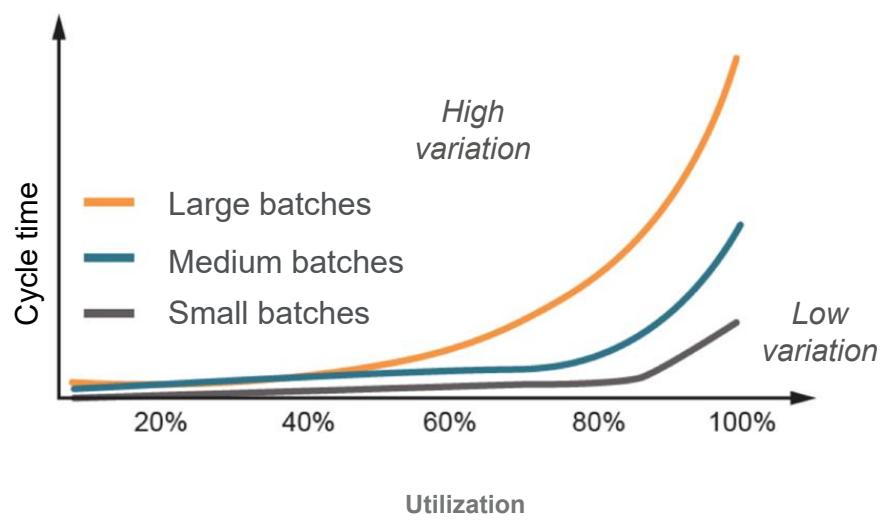
- ▶ **Step 1:** Referring to the *Team Board* example, discuss the effect of a three-story WIP constraint on Development and Test.
- ▶ **Step 2:** Consider this scenario: You're a developer. You just finished Story 6. What would you do if:
  - There is no WIP constraint
  - The three-Story WIP constraint is in place
- ▶ **Step 3:** Which scenario has the highest throughput?



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2-53

## Reduce batch size for higher predictability



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## Activity: Experience a large batch size

Duration  
5 min

- ▶ **Step 1:** Create groups of five people with 10 coins per group. Designate one person as the timekeeper. The remaining four people will be processing the coins.
- ▶ **Step 2:** Person by person process each coin.
- ▶ **Step 3:** Pass all coins at the same time to the next person, who repeats step two until all four people are done
- ▶ **Step 4:** The timekeeper stops the timer and records the total time



<https://bit.ly/Video-LargeBatchPart1>

Optional 1:20 video demonstrating this exercise: part 1 of 3

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## Activity: Experience a small batch size

Duration  
5 min

- ▶ **Step 1:** Ensure that the timekeeper is ready to start the timer
- ▶ **Step 2:** This time, each person processes one coin at a time and immediately passes each coin to the next person
- ▶ **Step 3:** The timekeeper will stop the timer when the last person flips the last coin and records the result



Optional 18 sec video demonstrating this exercise: part 2 of 3

<https://bit.ly/Video-SmallBatchPart2>



Optional 19 sec video demonstrating this exercise: part 3 of 3

<https://bit.ly/Video-BatchOverviewPart3>

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## The importance of small batches

- ▶ Large batch sizes increase variability
- ▶ High utilization increases variability
- ▶ **Severe project slippage is the most likely result**



- ▶ Small batches go through the system faster with lower variability
- ▶ The most important batch is the handoff batch



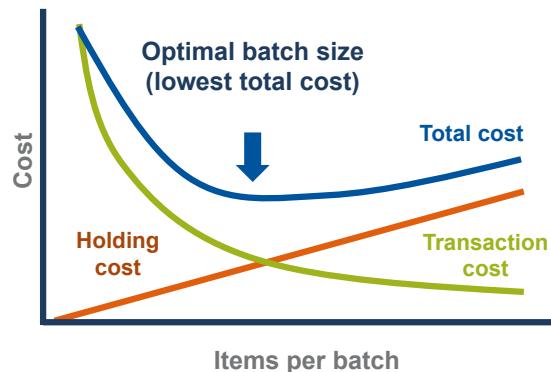
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2-57

## Finding optimal batch size

Optimal batch size is an example of a U-curve optimization.

- ▶ Total costs are the sum of holding costs and transaction costs
- ▶ Higher transaction costs make optimal batch size bigger
- ▶ Higher holding costs make optimal batch size smaller



Principles of Product Development Flow, Don Reinertsen

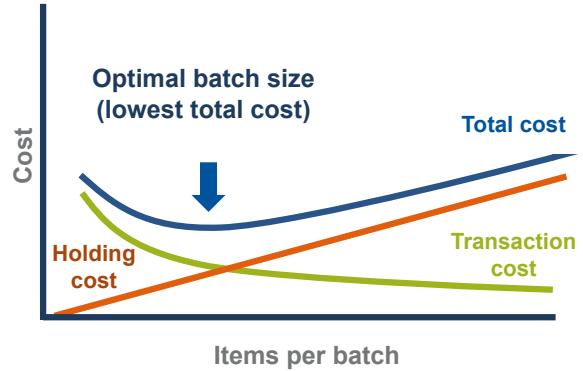
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## Reducing optimal batch size

Reducing transaction costs reduces total costs and lowers optimal batch size.

- ▶ Reducing batch size:
  - Increases predictability
  - Accelerates feedback
  - Reduces rework
  - Lowers cost
- ▶ Batch size reduction probably saves **twice** what you would think



*Principles of Product Development Flow*, Don Reinertsen

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Video: Formula 1 Pit Stops: 1950 and Today

Duration  
2 min



<https://bit.ly/Video-Formula1PitStops>

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2-60

## Manage queue lengths

### Email from a client service organization:

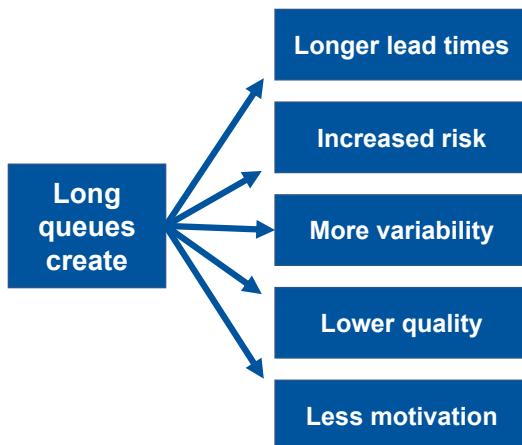
*Thank you for contacting us.*



*We are experiencing increased volumes and apologize in advance for the delay.*

*Our goal is to contact you within...*

### Long queues: All bad



*Principles of Product Development Flow, Don Reinertsen*

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## Reduce queue lengths

- ▶ Understand Little's Law
  - Faster processing time decreases wait
  - Shorter queue lengths decrease wait
- ▶ Control wait times by controlling queue lengths:
  - WIP limits, small batches, defer commitments

$$W_q = \frac{L_q}{\lambda}$$

Average wait time = average queue length divided by average processing rate

**Example** – Given an average processing speed of 10 Features per quarter and a committed set of 30 Features, a new Feature will experience an approximate wait time of:

$$\frac{\text{30 items}}{\text{10 items/Quarter}} = \text{3 Quarters}$$

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# #7 Apply cadence, synchronize with cross-domain planning

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## Cadence and synchronization

### Cadence

- ▶ Converts unpredictable events into predictable occurrences and lowers cost
- ▶ Makes waiting times for new work predictable
- ▶ Supports regular planning and cross-functional coordination
- ▶ Limits batch sizes to a single interval
- ▶ Controls injection of new work
- ▶ Provides scheduled integration points

### Synchronization

- ▶ Causes multiple events to happen simultaneously
- ▶ Facilitates cross-functional trade-offs
- ▶ Provides routine dependency management
- ▶ Supports full system integration and assessment
- ▶ Provides multiple feedback perspectives

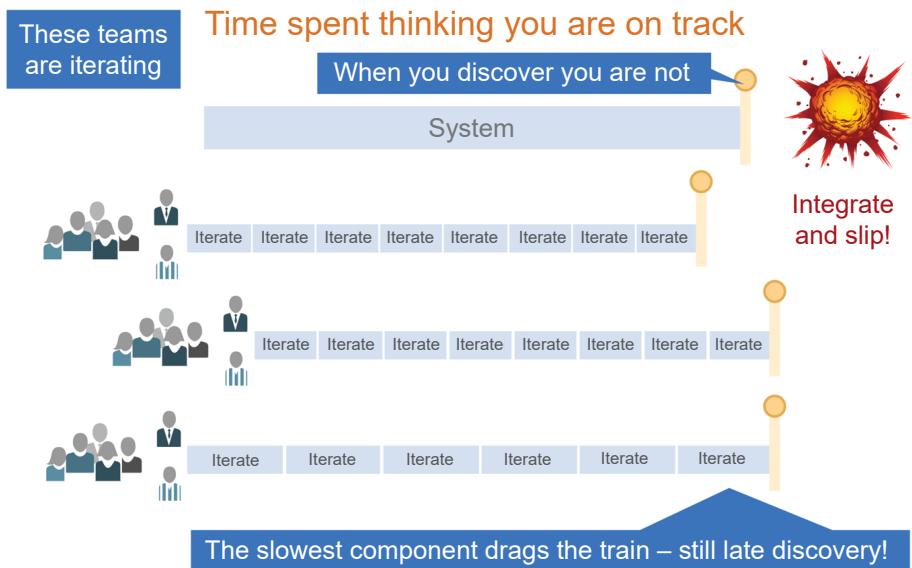
**Note:** Delivering on cadence requires scope or capacity margin

**Note:** To work effectively, design cycles must be synchronized

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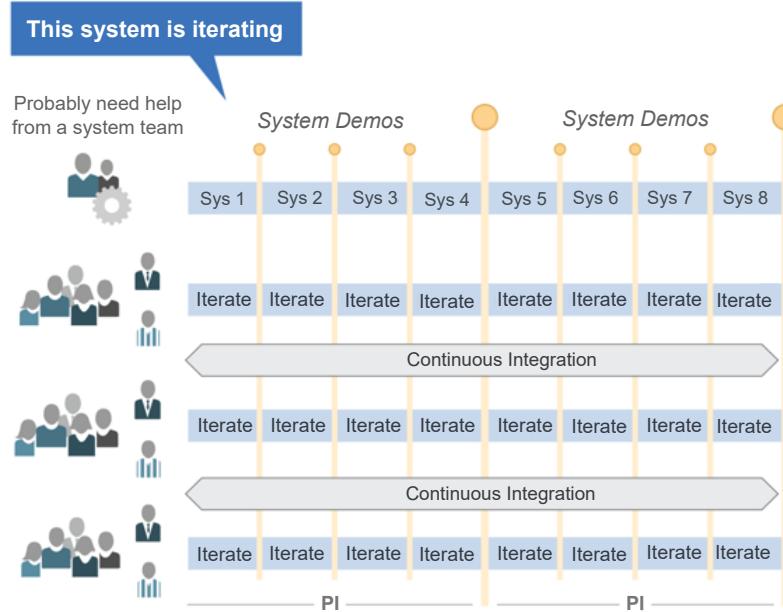
## Cadence without synchronization is not enough



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## Synchronize to assure delivery

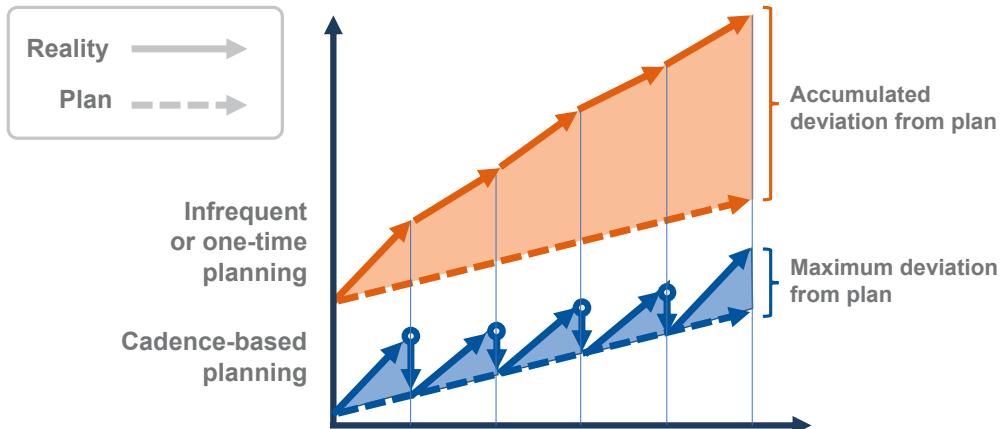


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2-66

## Control variability with planning cadence

Cadence-based planning limits variability to a single interval.



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## Synchronize with cross-domain planning

*Future product development tasks can't be predetermined. Distribute planning and control to those who can understand and react to the end results.*

—Michael Kennedy, *Product Development for the Lean Enterprise*

- ▶ Everyone plans together at the same time
- ▶ Requirements and design emerge
- ▶ Management sets the mission with minimum constraints
- ▶ Important decisions are accelerated
- ▶ Teams take responsibility for their own plans



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2-68

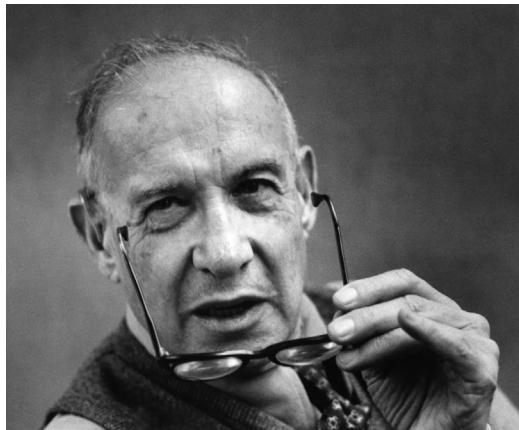
## #8 Unlock the intrinsic motivation of knowledge workers

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2-69

### On managing knowledge workers

*Workers are knowledge workers if they know more about the work they perform than their bosses.*  
—Peter Drucker



Used with permission from The Drucker Institute at Claremont Graduate University

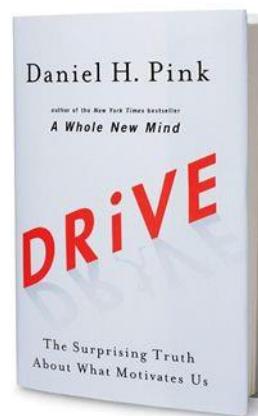
- ▶ Workers themselves are most qualified to make decisions about how to perform their work.
- ▶ The workers must be heard and respected for management to lead effectively.
- ▶ Knowledge workers must manage themselves. They need autonomy.
- ▶ Continuing innovation must be part of the work, the tasks, and the responsibilities of knowledge workers.

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## Unlocking intrinsic motivation with autonomy, mastery, and purpose

- ▶ **Autonomy** is the desire to be self-directed and have control over what we work on, how we do our work, and who we work with
- ▶ **Mastery** is the urge to get better at what we do and improve our personal and team skills
- ▶ **Purpose** is the desire to do something that matters and has meaning



## #9 Decentralize decision-making



## Video: Greatness by David Marquet

Duration  
10 min



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

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## Decentralize decision-making

Define the economic logic behind a decision; empower others to make the changes.

Centralize	Decentralize everything else
<ul style="list-style-type: none"><li>▶ <b>Infrequent</b> – Not made very often and usually not urgent <b>(Example:</b> Internationalization strategy)</li><li>▶ <b>Long-lasting</b> – Once made, highly unlikely to change <b>(Example:</b> Common technology platform)</li><li>▶ <b>Significant economies of scale</b> – Provide large and broad economic benefit <b>(Example:</b> Compensation strategy)</li></ul>	<ul style="list-style-type: none"><li>▶ <b>Frequent</b> – Routine, everyday decisions <b>(Example:</b> Team and Program Backlog)</li><li>▶ <b>Time critical</b> – High cost of delay <b>(Example:</b> Point release to Customer)</li><li>▶ <b>Requires local information</b> – Specific and local technology or Customer context is required <b>(Example:</b> Feature criteria)</li></ul>

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2-74



## Activity: Decentralize decision-making

Prepare  
3 min

Share  
2 min

- ▶ **Step 1:** Consider three significant decisions you are currently facing. Write them in the table provided in your workbook.
- ▶ **Step 2:** Rate each decision based on the frequency, time criticality, and economies of scale, assigning a value of 0, 1, or 2.
- ▶ **Step 3:** Add the total values: 0 – 3 centralize and 4 – 6 decentralize.

Decision	Frequent? Y=2 N=0	Time-critical? Y=2 N=0	Economies of scale? Y=0 N=2	Total

## Keys to practicing decentralized decision-making

- ▶ Openly discuss how decisions are made and explore opportunities to move authority for those decisions closer to where the work is performed.
- ▶ Establish a decision-making framework that equips knowledge workers with the information to make good decisions.
- ▶ Provide clarity on organizational objectives, coach effective problem-solving, and provide opportunities to exercise and cultivate decision-making abilities.
- ▶ Take responsibility for making and communicating strategic decisions—those that are infrequent, long lasting, and have significant economies of scale. Decentralize all other decisions.

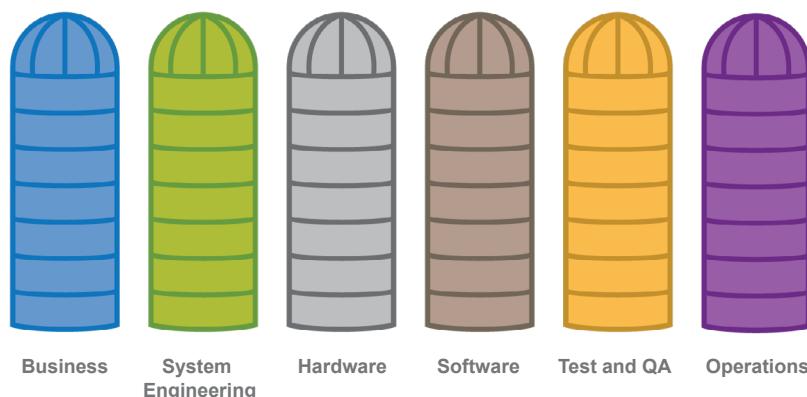
# Decentralize Decision-Making

Decision	Frequent? Y=2 N=0	Time-critical? Y=2 N=0	Economies of scale? Y=0 N=2	Total

## Notes

## #10 Organize around value

### Value doesn't follow silos



- ▶ Value delivery is inhibited by handoffs and delays
- ▶ Political boundaries can prevent cooperation
- ▶ Silos encourage geographic distribution of functions
- ▶ Communication across silos is difficult

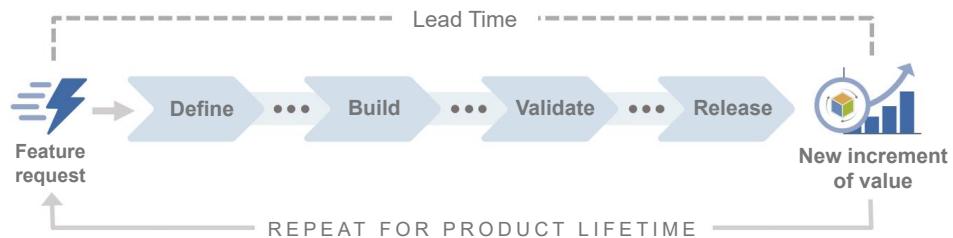
Management challenge: Connect the silos

## Instead, organize around Development Value Streams

*The aim of development is in fact the creation of profitable operational value streams.*

—Allen C. Ward

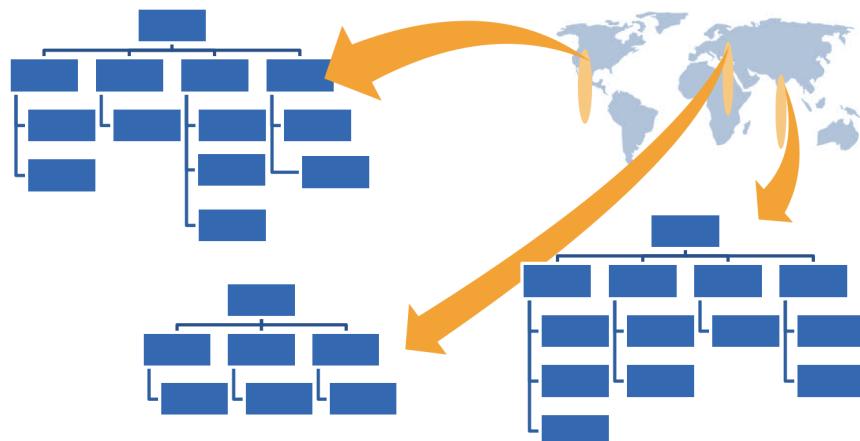
- ▶ Includes activities from recognizing an opportunity through release and validation
- ▶ Contains the steps, the flow of information and material, and the people who develop the Solutions used by the Operational Value Streams



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2-79

## Value at scale is distributed

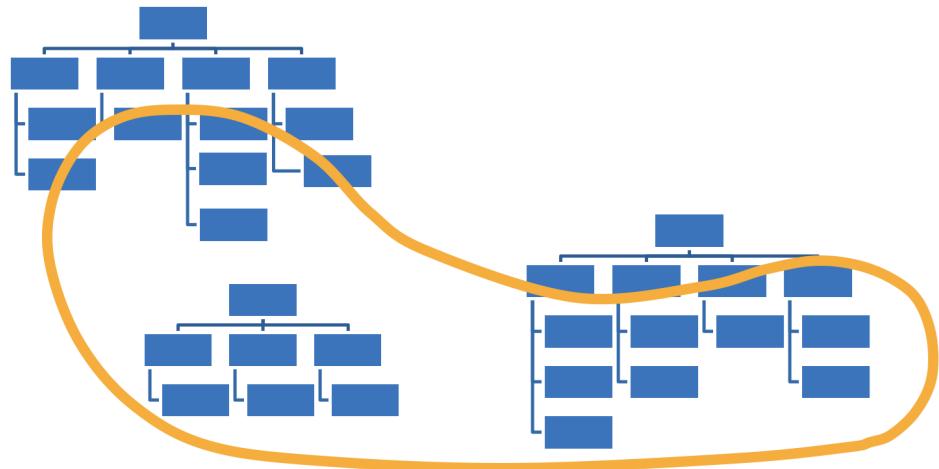


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2-80

Value flows across organizational boundaries

Identify the Value Streams within which to build one or more Agile Release Trains.



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2-81

Principles are great, but ...

“

*Clarity on how to think, without clarity on how to act, leaves people unmoved.*

—Daniel Pink

... it's time to put this thinking to work.  
**Let's start doing.**

2-82



## Action Plan: Advocating for SAFe Principles

Prepare  
5 min

Share  
3 min

- ▶ **Step 1:** Individually identify three actions you can take to model and advocate SAFe Principles in your Enterprise.
- ▶ **Step 2:** Write them down in your Action Plan.
- ▶ **Step 3:** In your group, share some of the insights you gained from SAFe Principles.



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2-83

## Lesson review

In this lesson you:

- ▶ Explored the Lean-Agile Mindset
- ▶ Applied Lean and Agile at scale with the SAFe Principles

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2-84

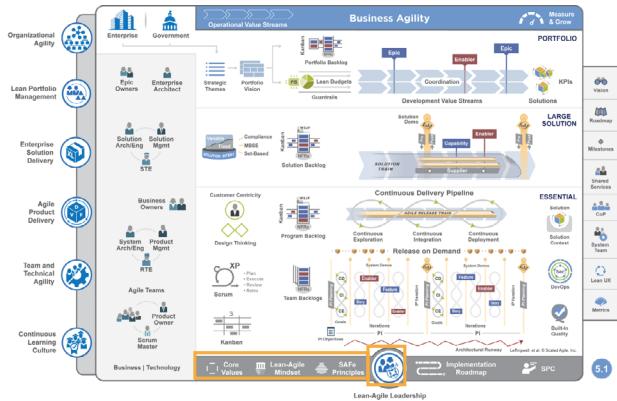


## Advocating for SAFe Principles

## Articles used in this lesson

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

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



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2-85

## Continue your SAFe journey with the following resources

Review the *SAFe Core Values*  
E-learning:  
<https://bit.ly/Community-GettingStarted>

Review the *SAFe Lean-Agile Principles* E-Learning:  
<https://bit.ly/Community-GettingStarted>

Review the *Lean-Agile Mindset*  
E-Learning:  
<https://bit.ly/Community-GettingStarted>

Watch this one-minute video, *How Batch Size Affects Delivery Speed*, which demonstrates how smaller batches enable faster delivery:  
<https://bit.ly/Video-BatchandDeliverySpeed>

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2-86

## Lesson notes

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

# Lesson 3

## Establishing Team and Technical Agility

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



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### Why Team and Technical Agility

Agile Teams and teams of Agile Teams create and support the business Solutions that deliver value to the Enterprise's Customers. Consequently, an organization's ability to thrive in the digital age is entirely dependent on the ability of its teams to deliver Solutions that reliably meet a Customer's needs.

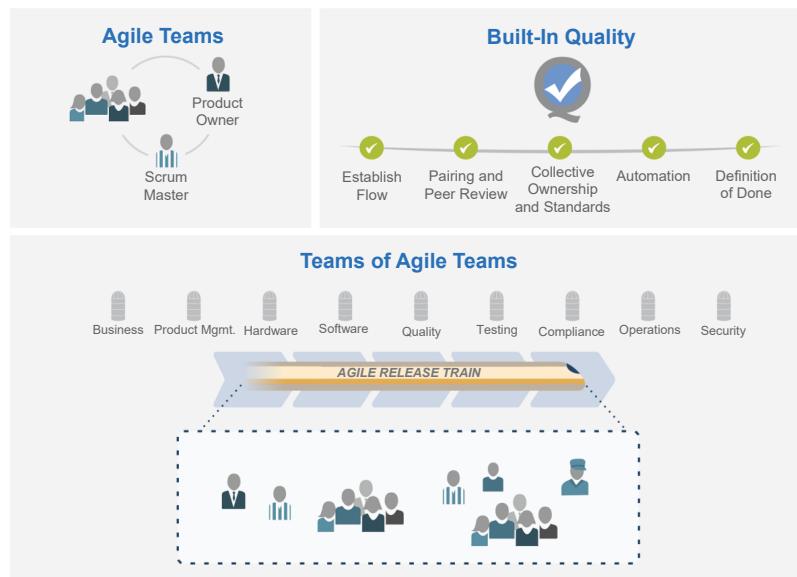


## Lesson Topics

**3.1** Forming cross-functional Agile Teams

**3.2** Built-In Quality

**3.3** Organizing Agile Release Trains around the flow of value



3-3

## Learning objectives

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

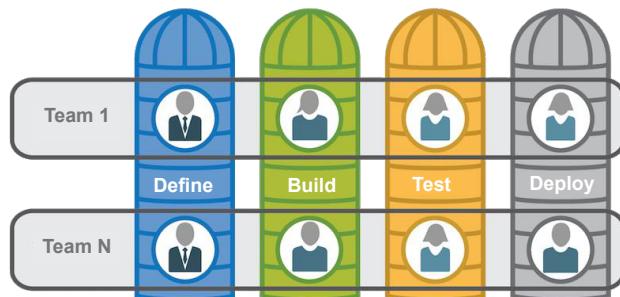
- ▶ Prepare to form cross-functional Agile Teams
- ▶ Describe Built-in Quality practices
- ▶ Recommend organizing around value with Agile Release Trains (ARTs)

## 3.1 Forming cross-functional Agile Teams

### Build cross-functional Agile Teams

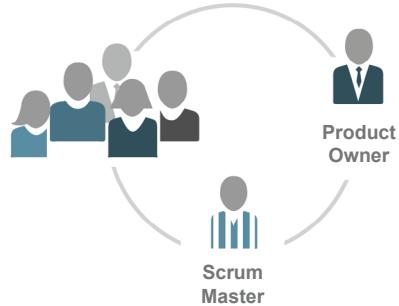
Agile Teams are cross-functional, self-organizing entities that can define, build, test, and where applicable, deploy increments of value.

- ▶ Optimized for communication and delivery of value
- ▶ Deliver value every two weeks
- ▶ Contain two specialty roles:
  - Scrum Master
  - Product Owner



## Responsibilities of the Agile Team

- ▶ Five to eleven team members
- ▶ Create and refine Stories and acceptance criteria
- ▶ Define, build, test and deploy Stories
- ▶ Build quality in to each increment of the solution.
- ▶ Develop and commit to team PI Objectives and Iteration Goals



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3-7

## Agile Teams have two speciality roles



### Scrum Master

- Coaches the Agile Team in self-management
- Helps the team focus on creating increments of value each Iteration
- Facilitates the removal of impediments to the team's progress
- Ensures that all team events take place, are productive and kept within the timebox



### Product Owner

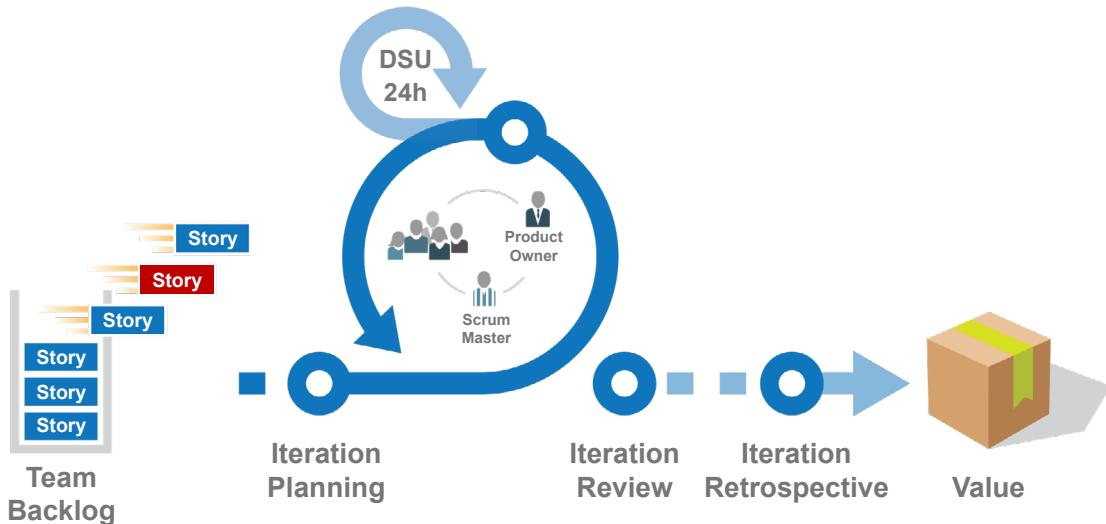
- Contributes to the Vision and Roadmap
- Acts as the Customer for team questions
- Creates, clearly communicates and accepts Stories
- Prioritizes the Team Backlog

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3-8

## Teams execute Iterations with Scrum

Scrum is built on transparency, inspection, adaptation, and short learning cycles.

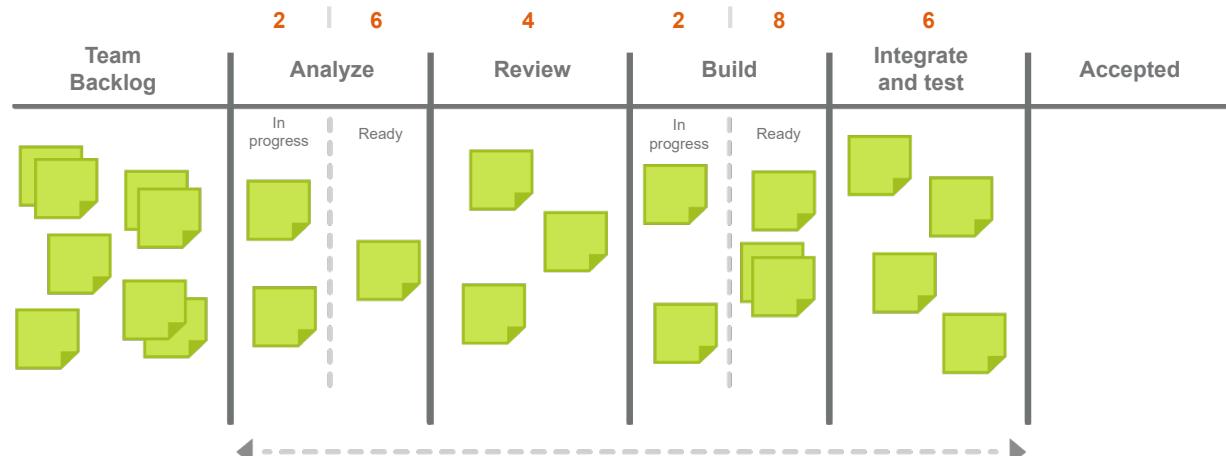


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3-9

## Teams visualize flow with Kanban

Kanban visualizes and optimizes the flow of work through the system.

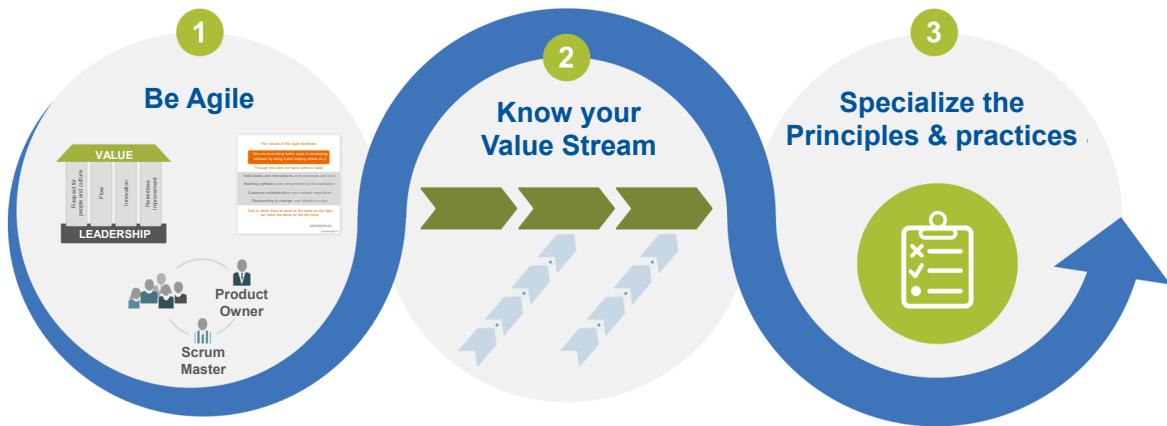


Average WIP and duration are measured from the point work is pulled from the backlog until it is accepted.

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## Extend into the business with Agile business teams



Agile Team maturity cycle

<https://www.scaledagileframework.com/business-and-technology/>

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3-11



### Activity: Identify team names and roles

Duration  
3 min

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



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3-12

## 3.2 Built-in Quality

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3-13

### Build quality in

*You can't scale crappy code (or hardware, or anything else).*

*— Dean Leffingwell*

- ▶ Ensures that every increment of the Solution reflects quality standards
- ▶ Is required for high, sustainable development velocity
- ▶ Agile quality practices apply to every team, whether business or technology:
  - Establish flow
  - Peer review and pairing
  - Collective ownership and standards
  - Automation
  - Definition of done

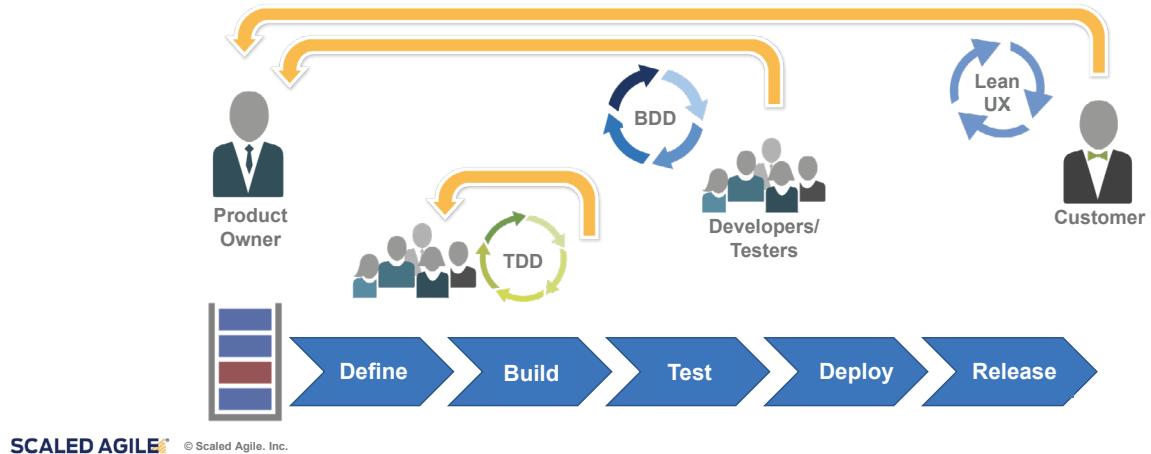


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3-14

## Built-in Quality practices for software teams

Include software quality practices (most inspired by XP) like, Agile testing, behavior-driven development, test-driven development, refactoring, code quality, and Agile architecture.

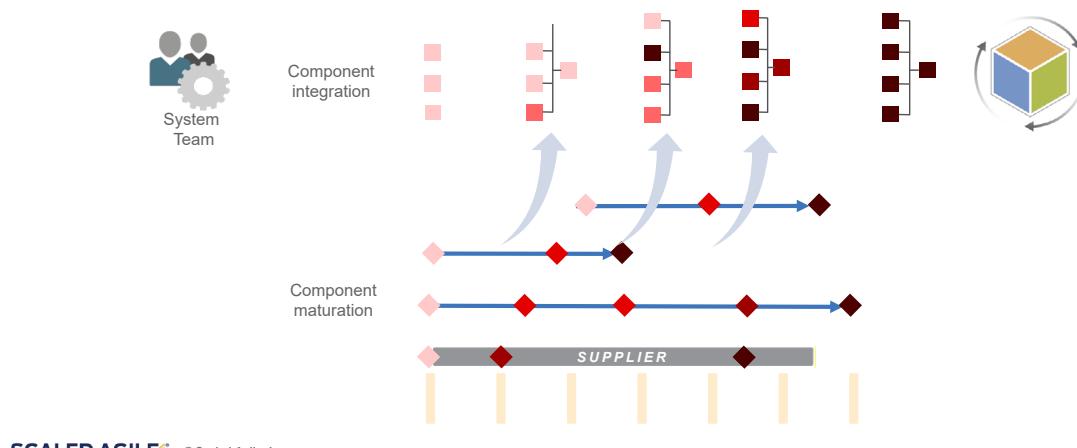


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3-15

## Built-in Quality practices for hardware teams

Support hardware quality with exploratory, early iterations, frequent system-level integration, design verification, Model-Based Systems Engineering (MBSE), and set-based design.



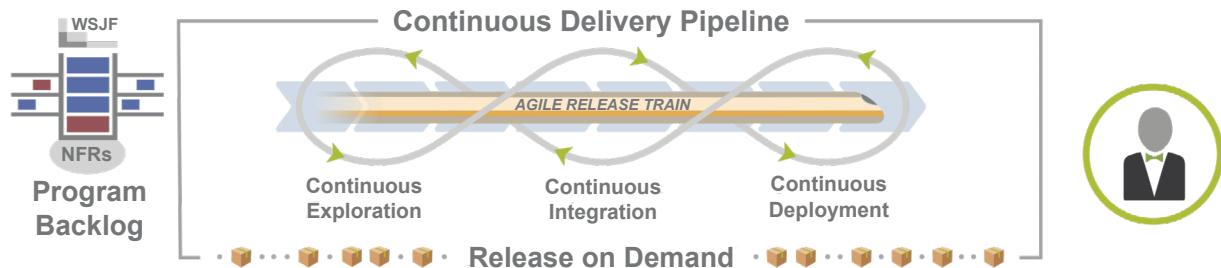
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3-16

## 3.3 Organizing Agile Release Trains around the flow of value

### Agile Release Trains (ARTs)

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



## ARTs are cross-functional

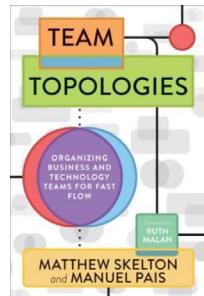


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3-19

## Teams on the ART are organized for flow

- Stream-aligned team** – organized around the flow of work and has the ability to deliver value directly to the Customer or end user.
- Complicated subsystem team** – organized around specific subsystems that require deep specialty skills and expertise.
- Platform team** – organized around the development and support of platforms that provide services to other teams.
- Enabling team** – organized to assist other teams with specialized capabilities and help them become proficient in new technologies.



More information in the Advanced Topic Article:

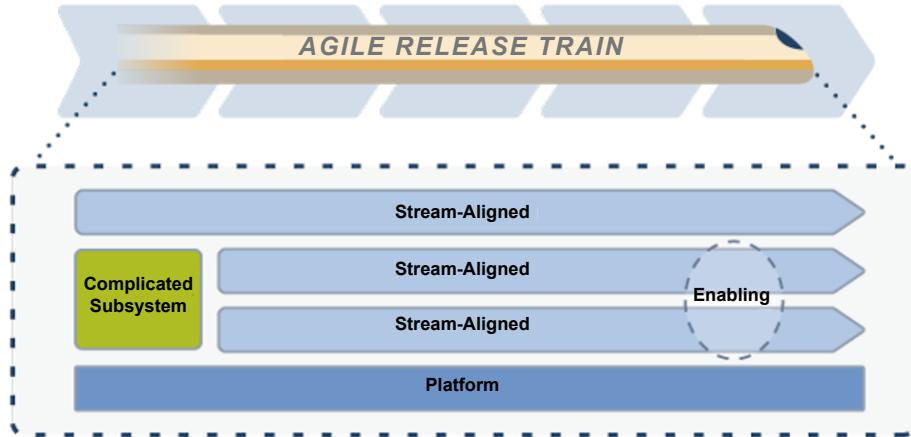
<https://www.scaledagileframework.com/organizing-agile-teams-and-arts-team-topologies-at-scale/>

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3-20

## ARTs are organized to deliver value continuously

Consider the necessary interactions between the teams and organize to maximize flow.



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3-21

## Roles on the Agile Release Train



**Release Train Engineer** acts as the Chief Scrum Master for the train.



**Product Management** owns, defines, and prioritizes the Program Backlog.



**System Architect/Engineering** provides architectural guidance and technical enablement to the teams on the train.



The **System Team** provides processes and tools to integrate and evaluate assets early and often.



**Business Owners** are key stakeholders on the Agile Release Train.

AGILE RELEASE TRAIN

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3-22

## Lesson review

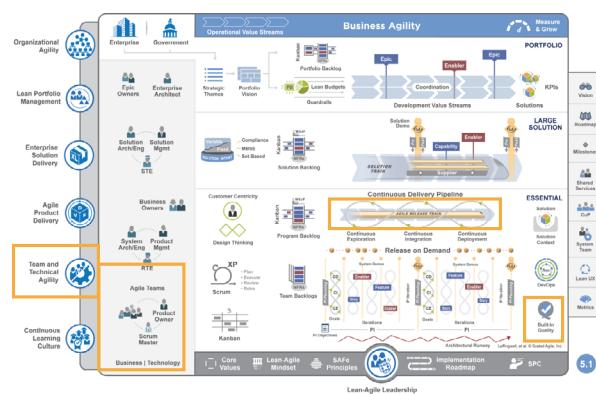
In this lesson you:

- ▶ Discussed how to form cross-functional Agile Teams
- ▶ Reviewed built-in quality practices
- ▶ Explored how to organize Agile Release Trains (ARTs) around the flow of value

## Articles used in this lesson

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

- ▶ “Team and Technical Agility”  
<https://www.scaledagileframework.com/team-and-technical-agility/>
- ▶ “Built-In Quality”  
<https://www.scaledagileframework.com/built-in-quality/>
- ▶ “Agile Teams”  
<https://www.scaledagileframework.com/agile-teams/>
- ▶ “Agile Release Train”  
<https://www.scaledagileframework.com/agile-release-train/>



## Continue your SAFe journey with the following resources

Review the <i>Agile Basics</i> E-Learning: <a href="https://bit.ly/Community-GettingStarted">https://bit.ly/Community-GettingStarted</a>	Run an <i>Agile Team Charter Workshop</i> from the Team Formation Toolkit to create the foundation for successful teams in SAFe: <a href="https://bit.ly/Community-ToolkitsandTemplates">https://bit.ly/Community-ToolkitsandTemplates</a>
Apply the guidance from the advanced topic article, “Organizing Agile Teams and ARTs”: <a href="https://www.scaledagileframework.com/organizing-agile-teams-and-arts-team-topologies-at-scale/">https://www.scaledagileframework.com/organizing-agile-teams-and-arts-team-topologies-at-scale/</a>	Review the Built-in Quality technical practices in the <i>Agile Software Engineering Vlog</i> series: <a href="https://bit.ly/Playlist-SoftwareEngineering">https://bit.ly/Playlist-SoftwareEngineering</a>
Facilitate effective <i>Team Events</i> using the following tools and guidance: <a href="https://bit.ly/Community-SAFeARTandTeamEvents">https://bit.ly/Community-SAFeARTandTeamEvents</a>	Run a <i>Team and Technical Agility Assessment</i> to identify improvement opportunities: <a href="https://bit.ly/Community-MeasureAndGrow">https://bit.ly/Community-MeasureAndGrow</a>

## Lesson notes

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

## Lesson 4

# Building Solutions with Agile Product Delivery

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



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## Why Agile Product Delivery?

In order to achieve Business Agility, Enterprises must rapidly increase their ability to deliver innovative products and services. To be sure that the Enterprise is creating the right Solutions for the right Customers at the right time, they must balance their execution focus with a Customer focus.



4-2

## Lesson Topics

**4.1** Customer Centricity and Design Thinking

**4.2** Prioritizing the Program Backlog

**4.3** PI Planning

**4.4** Develop on Cadence; Release on Demand

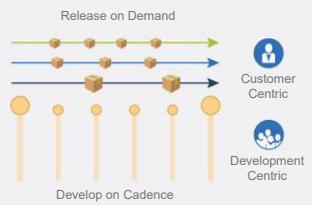
**4.5** Building a Continuous Delivery Pipeline with DevOps

### Customer Centricity



### Design Thinking

### Develop on Cadence, Release on Demand



### DevOps and the Continuous Delivery Pipeline



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4-3

## Learning objectives

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

- ▶ Express the benefits of a Customer-centric culture
- ▶ Practice applying Design Thinking
- ▶ Prioritize the Program Backlog with weighted shortest job first (WSJF)
- ▶ Participate in a PI Planning event
- ▶ Explain the need to Develop on Cadence; Release on Demand
- ▶ Justify the need to build and maintain a Continuous Delivery Pipeline with DevOps

## 4.1 Customer Centricity and Design Thinking

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4-5



### Discussion: Customer Centricity

Prepare  
5 min

Share  
2 min

- ▶ **Step 1:** Discuss as a group:
  - Why is it important to maintain focus on the Customer?
  - What are some of the characteristics of a Customer-centric Enterprise?
- ▶ **Step 2:** Be prepared to share with the class.



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4-6

## Why Customer Centricity?

Customer-centric Enterprises deliver whole-product Solutions that are designed with a deep understanding of Customer needs.



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4-7

## Customer Centricity is a mindset

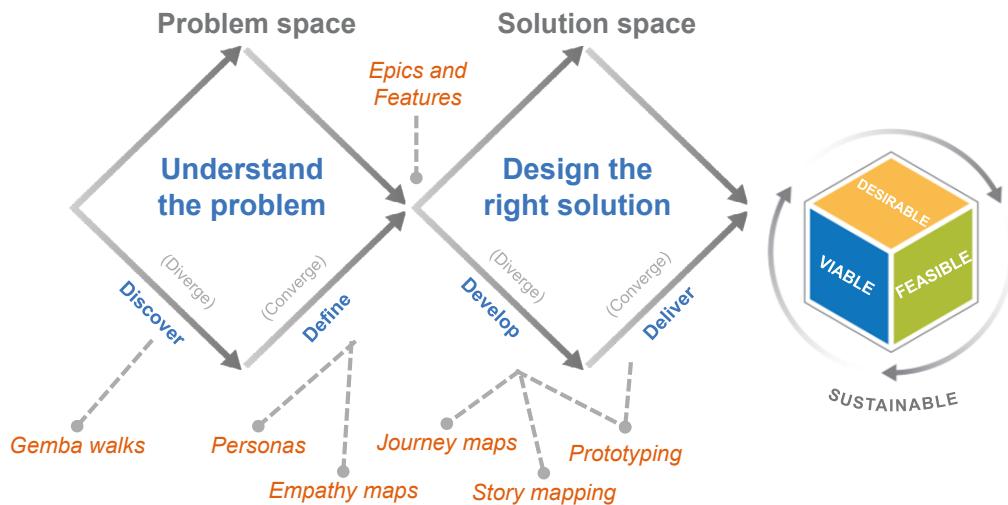
Whenever a customer-centric Enterprise makes a decision, it fully considers the effect it will have on its end users.



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4-8

## What is Design Thinking?



Design Thinking is a clear and continuous understanding of the target market, Customers, the problems they are facing, and the jobs to be done.

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4-9

## Use personas to understand Customers

Personas are fictional characters that represent the different people who might use your product. Personas:

- Convey the problems they're facing in context and key triggers for using the product
- Capture rich, concise information that inspires great products without unnecessary details



### Cary the Consumer

Age: 36

Location: Reno, Nevada, USA

Time in App: 10 minutes

*"I'm a working dad with three children ages 3, 6, and 10. I'm also in a band, which means I want to spend as much time as possible with my kids and my band. I need my package delivered on time so that I can maximize time with my family."*

I like technology! I have an iPhone, iPad, and nice home Wi-Fi setup	I am not home on some weekends	I'd rather order online than dial the phone and talk to somebody
My wife also works during the week, so she doesn't have much spare time to help	Text is my favorite form of communication with suppliers	I don't own a computer, only tablets and phones.

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4-10

## Use empathy maps to identify with Customers

- ▶ The empathy map is a tool that helps teams develop deep, shared understanding and empathy for the Customer
- ▶ Use it to design better user experiences and Value Streams



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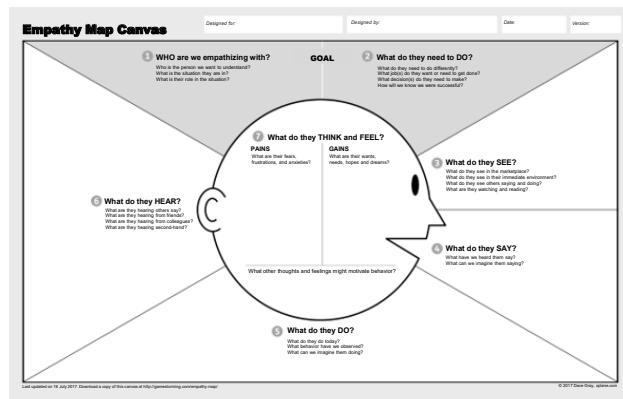
4-11



### Activity: Empathy mapping

Prepare 10 min Share 5 min

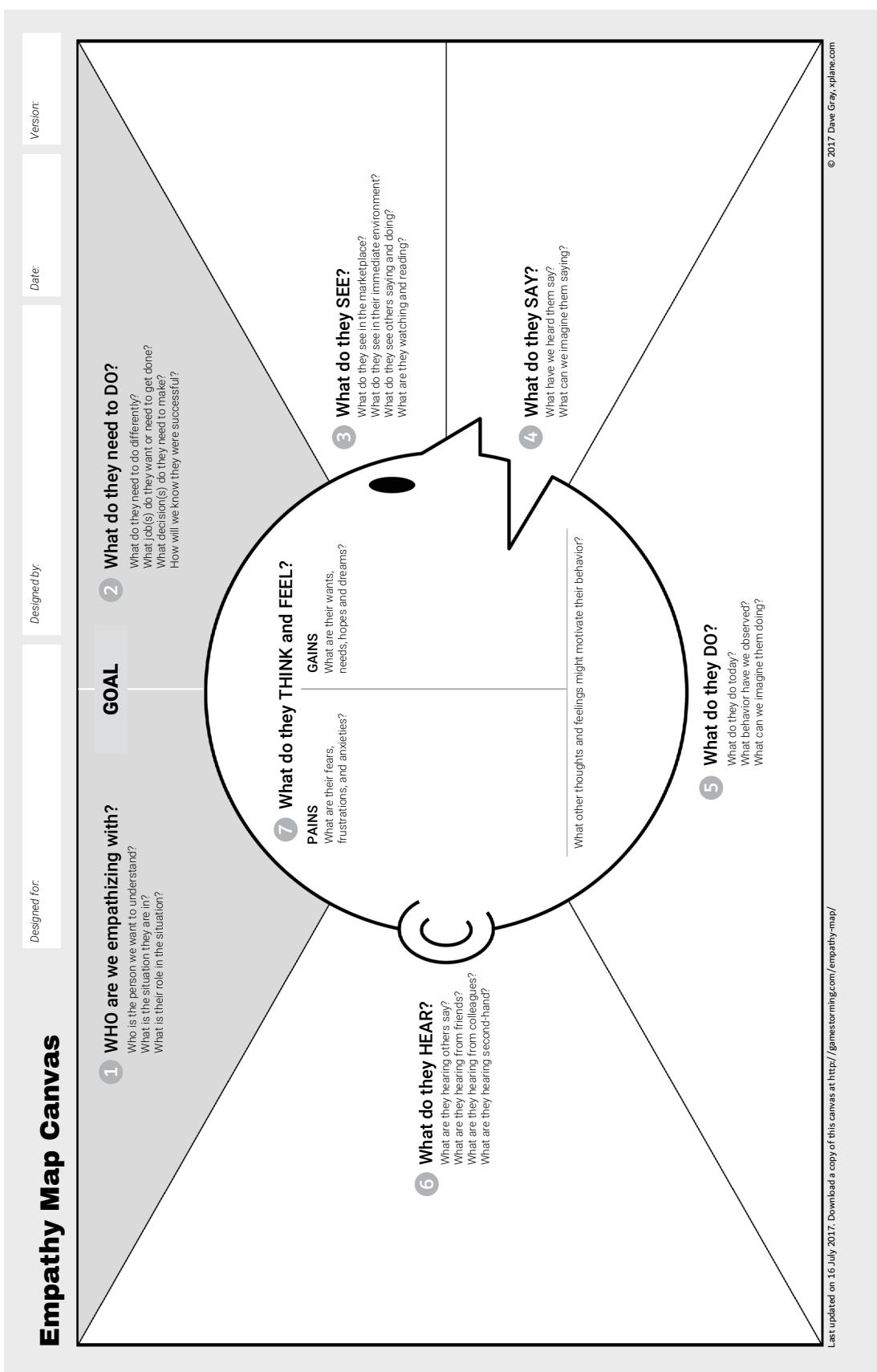
- ▶ **Step 1:** In your group, create an empathy map using the example in your workbook or the template provided.
- ▶ **Step 2:** Select a user or Customer of a product or service from one of the companies at your table.
- ▶ **Step 3:** Following the sequence of numbers, fill in each section of the empathy map.
- ▶ **Step 4:** Discuss with your group how the empathy map can inform Solution development. Be prepared to share your insights with the class.



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4-12

# Empathy Map Canvas



# Empathy Mapping

## Instructions:

**Step 1:** Select a user customer of a product or service from one of your companies in your group.

**Step 2:** Following the sequence of numbers, fill in each section of the empathy map in the spaces below.

**Step 3:** Discuss with your group how the empathy map can inform Solution development. Be prepared to share with the class.



#1

**GOAL: WHO** are we empathizing with?

Who is the person we want to understand?

What is the situation they are in?

What is their role in the situation?

# Empathy Mapping

#2

## GOAL: What do they need to DO?

What do they need to do differently?

What job(s) do they want or need to get done?

What decision(s) do they need to make?

How will we know we were successful?

#3

## What do they SEE?

What do they see in the marketplace?

What do they see in their immediate environment?

What do they see others saying and doing?

What are they watching and reading?

# Empathy Mapping

#4

## What do they SAY?

What have we heard them say?

What can we imagine them saying?

#5

## What do they DO?

What do they do today?

What behavior have we observed?

What can we imagine them doing?

# Empathy Mapping

#6

## What do they *HEAR*?

What are they hearing others say?

What are they hearing from friends?

What are they hearing from colleagues?

What are they hearing second-hand?

#7

## What do they *THINK* and *FEEL*?

### PAINS

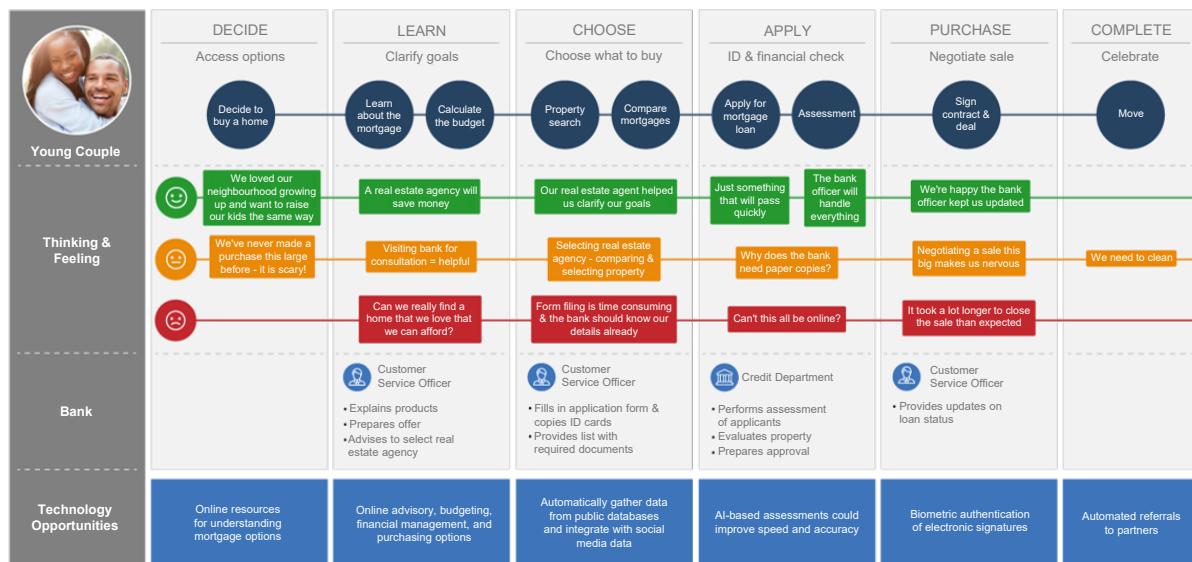
What are their fears, frustrations and anxieties?

### GAINS

What are their wants, needs, hopes and dreams?

What other thoughts and feelings might motivate their behavior?

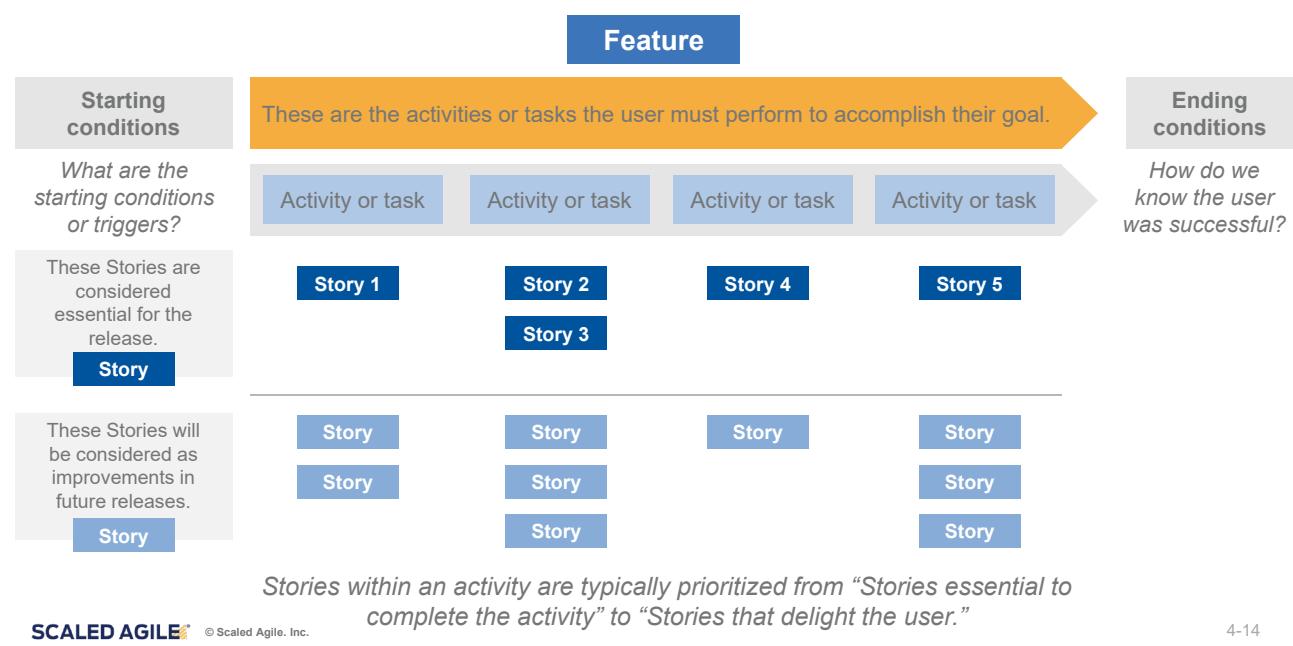
## Use journey maps to design the end-to-end Customer experience



Customer journey map (mortgage loan)

4-13

## Use Story maps to capture workflows



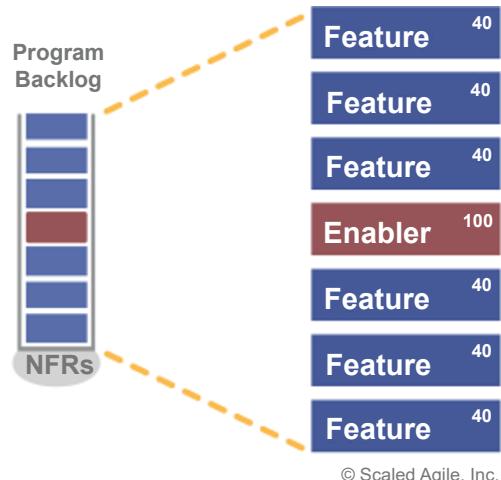
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4-14

## 4.2 Prioritizing the Program Backlog

### Features are managed through the Program Backlog

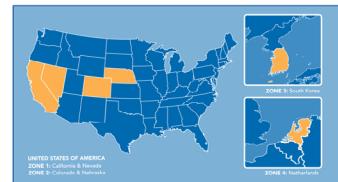
The Program Backlog is the holding area for upcoming Features that will address user needs and deliver business benefits for a single Agile Release Train (ART).



## Vision aligns everyone on the product's direction

The Vision is a description of the future state of the product

- ▶ How will our product solve our Customer's problems?
- ▶ What Features does it have?
- ▶ How will it differentiate us?
- ▶ What nonfunctional requirements does it deliver?



## Features represent the work for the Agile Release Train

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

### **Multi-factor authentication**

#### **Benefit hypothesis**

Enhance user security via both password and a device

#### **Acceptance criteria**

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

#### **Example Feature**



## Activity: Describe three Features



- ▶ **Step 1:** Individually identify three Features from your context
- ▶ **Step 2:** In your workbook, write down the Features and the benefit hypothesis for these Features
- ▶ **Step 3:** Choose one of the Features and write down some acceptance criteria for it

**Feature:**  
Multi-factor authentication

**Benefit Hypothesis:**  
Enhance user security via both password and a device

## Features are implemented by Stories

- ▶ Stories are small increments of value that can be developed in days and are relatively easy to estimate
- ▶ Story user-voice form captures role, activity, and goal
- ▶ Features fit in one PI for one ART; Stories fit in one Iteration for one team

**Business Feature**

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

**Enabler Story**

Determine how to calculate the shipping costs

Enabler Stories represent different types of work, such as: *Exploration, Architecture, Infrastructure, Compliance*.

**User Story**

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

# Describe Three Features

**Feature:** Multi-factor authentication

**Benefit Hypothesis:** Enhance user security via both password and a device.

**Feature:**

**Benefit Hypothesis:**

**Feature:**

**Benefit Hypothesis:**

**Feature:**

**Benefit Hypothesis:**

## 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.

### How big is it?



**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 members participate



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

Source: Mike Cohn, *Agile Estimating and Planning*

## Estimation is a whole-team exercise

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



The whole team estimates Stories

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

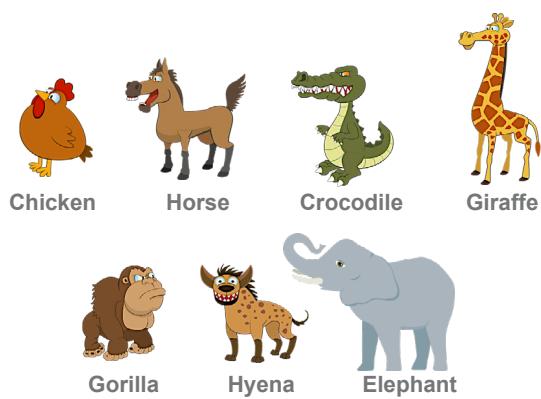


### Activity: Relative size estimating



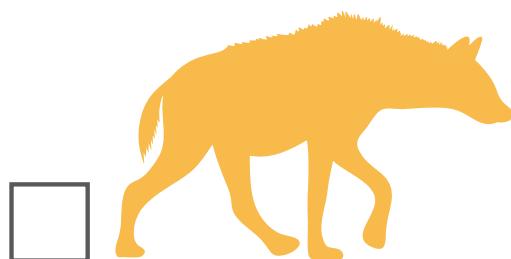
Use estimating poker to relatively estimate the mass of a set of animals.

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

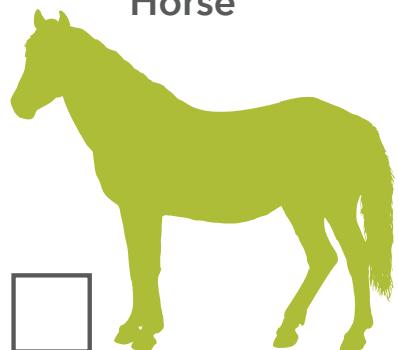


# Relative Size Estimating

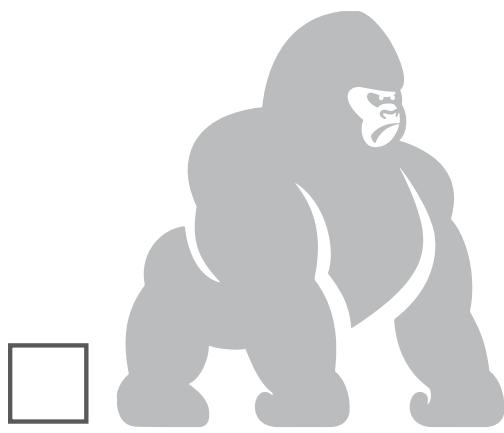
Hyena



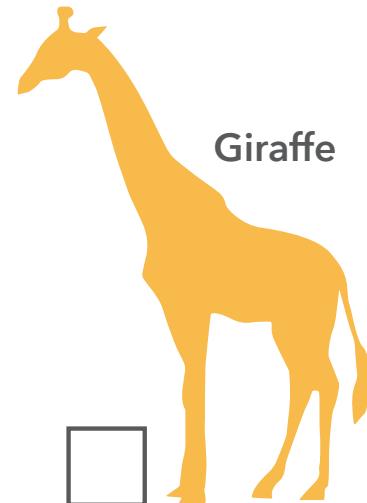
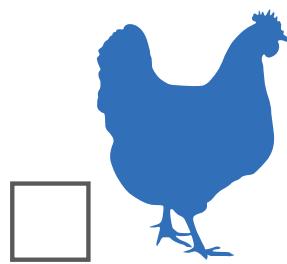
Horse



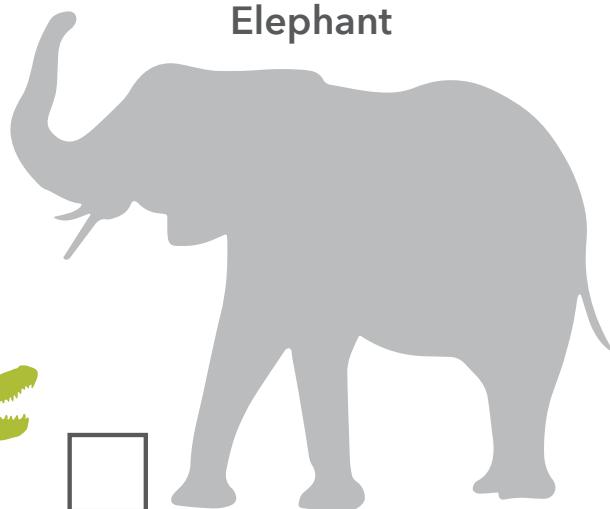
Gorilla



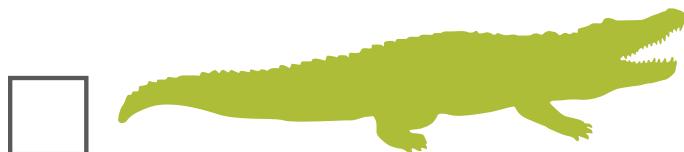
Chicken



Elephant



Crocodile



## Prioritize Features for optimal ROI

In a flow system, **job sequencing** is the key to improving economic outcomes.

To prioritize based on Lean economics, we need to know two things:

- ▶ The cost of delay (CoD) in delivering value
- ▶ What is the cost to implement the valuable thing?



*If you only quantify one thing, quantify the cost of delay. —Donald G. Reinertsen*



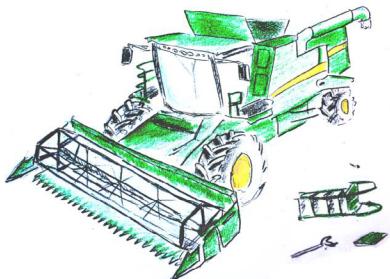
Video: Calculating WSJF to Prioritize the Program Backlog



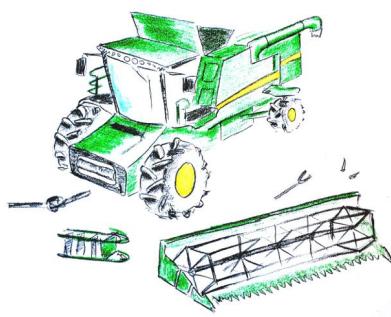
<https://bit.ly/Video-CalculatingWSJF>

## Example with equal CoD: Which job first?

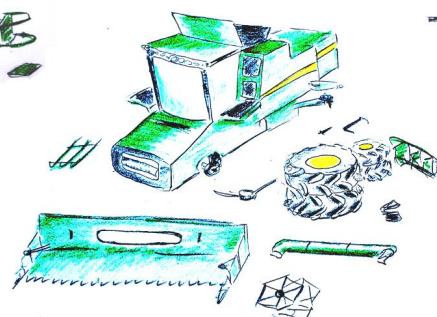
A \$\$\$, 1 day



B \$\$\$, 3 days



C \$\$\$, 10 days

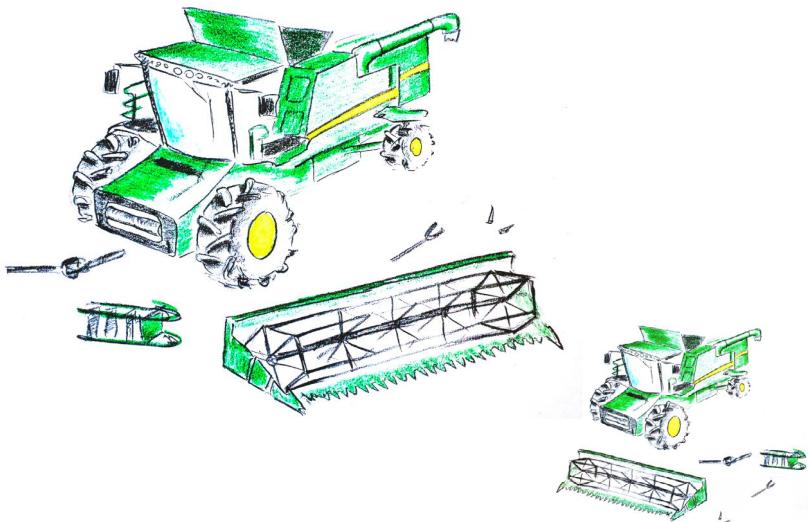


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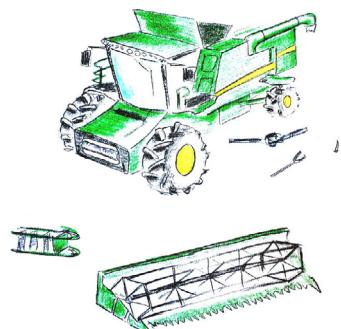
4-27

## Example with equal duration: Which job first?

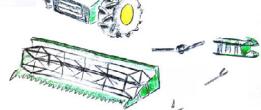
A \$\$\$\$, 3 days



B \$\$\$, 3 days



C \$, 3 days

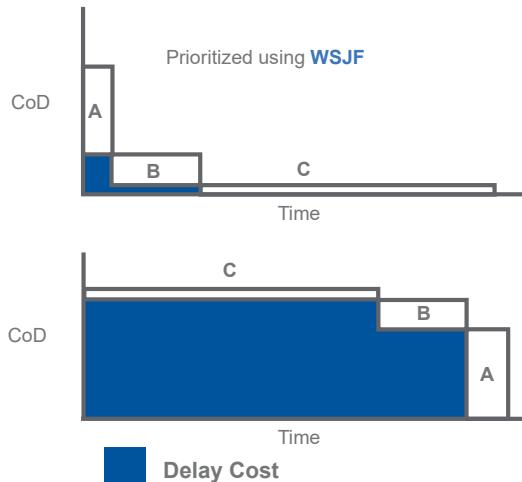


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4-28

## General case: Any cost of delay (CoD) and duration

In the general case, give preference to jobs with shorter duration and higher CoD, using weighted shortest job first (WSJF):



$$\text{WSJF} = \frac{\text{Cost of delay}}{\text{Job duration (Job size)}}$$

Feature	Duration	CoD	WSJF
A	1	10	10
B	3	3	1
C	10	1	0.1

## Components of cost of delay

### User-Business Value



#### Relative value to the Customer or business

- They prefer this over that
- Revenue impact?
- Potential penalty or other negative impact?

### Time Criticality



#### How user/business value decays over time

- Is there a fixed deadline?
- Will they wait for us or move to another Solution?
- What is the current effect on Customer satisfaction?

### Risk Reduction & Opportunity Enablement (RR&OE)



#### What else does this do for our business

- Reduce the risk of this or future delivery?
- Is there value in the information we will receive?
- Enable new business opportunities?

## Calculate WSJF with relative estimating

In order to calculate WSJF, teams need to estimate cost of delay and duration

- ▶ For duration, use job size as a quick proxy
- ▶ Relative estimating is a quick technique to estimate job size and relative value
- ▶ WSJF stakeholders: Business Owners, Product Managers, Product Owners, and System Architects

$$\text{WSJF} = \frac{\text{User-business value} + \text{Time criticality} + \text{Risk reduction and/or opportunity enablement}}{\text{Job size}}$$



### Activity: Weighted shortest job first (WSJF) prioritization



- ▶ **Step 1:** Prioritize three of the Features you identified earlier using WSJF
- ▶ **Step 2:** Share some insights from this activity with the class

Feature	User-business value	Time criticality	RR   OE Value	CoD	Job size	WSJF
	+	+	=	÷	≡	≡
	+	+	=	÷	≡	≡
	+	+	=	÷	≡	≡

Scale for each parameter: 1, 2, 3, 5, 8, 13, 20

**Note:** Do one column at a time, start by picking the smallest item and giving it a “1.” There must be at least one “1” in each column.

# Weighted Shortest Job First (WSJF)

$$\text{WSJF} = \frac{\text{User-business value} + \text{Time criticality} + \text{Risk reduction and/or opportunity enablement}}{\text{Job size}}$$

Feature	User-business value	Time criticality	RR   OE value	COD	Job size	WSJF
	+	+	=	÷	=	
	+	+	=	÷	=	
	+	+	=	÷	=	

## 4.3 PI Planning

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Video: The Power of PI Planning

Duration

SAFe®  
at Travelport  
The Power of PI Planning

SCALED AGILE®  
Provider of SAFe®

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

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## What is PI Planning?

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

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



PI Planning



Agile Team

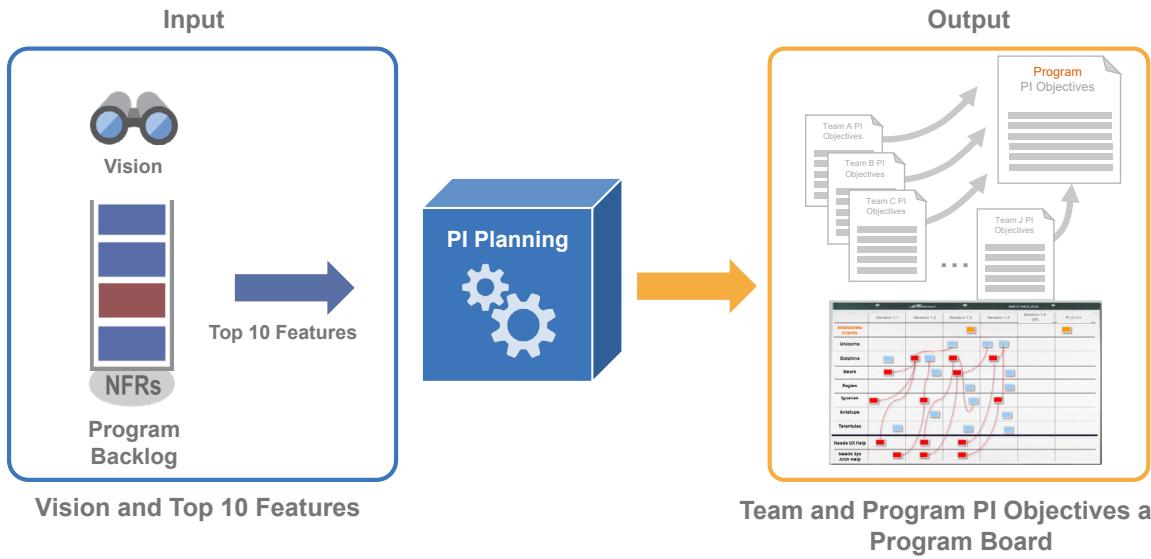
## The benefits of PI Planning

- ▶ Establishing personal communication across all team members and stakeholders
- ▶ Aligning development to business goals with the business context, Vision, and Team/Program PI Objectives
- ▶ Identifying dependencies and fostering cross-team and cross-ART collaboration
- ▶ Providing the opportunity for just the right amount of architecture and Lean User Experience (UX) guidance
- ▶ Matching demand to capacity, eliminating excess work in process (WIP)
- ▶ Fast decision making



Cross-team collaboration

## The PI Planning process



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## Create Alignment with PI Objectives

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

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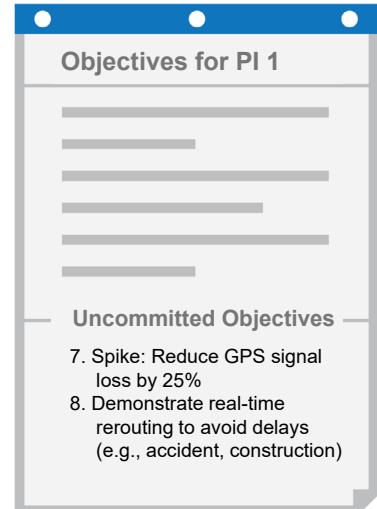
Objectives for PI 1	BV	AV
1. Show routing calculations between the 5 most frequent destinations	—	—
2. Navigate autonomously from distribution center to the most frequent destination	—	—
3. Parallel park for a delivery	—	—
4. Return to the distribution center after delivery	—	—
5. Include traffic data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

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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, it should be moved to uncommitted
- ▶ If an objective has many unknowns, consider moving it to uncommitted and put in early spikes
- ▶ Uncommitted objectives count when calculating load



## Prepare to experience a simulated PI Planning event

### The flow of the simulation



You will be presented with the program Vision

You will be involved in planning two Iterations considering Stories and Features

You will be drafting PI Objectives based on the program Vision and Features

You will be collaborating with the Business Owners to assign business value to the PI Objectives

## Outcomes of the PI Planning simulation

Actively participating in a simulated PI Planning event will enable you to:



### Communication

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



### Estimate Capacity

Experience estimating capacity for the Iteration



### Objectives

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



### Manage risks

Experience managing program risks



## Activity: Identify ART roles

Duration  
3 min

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

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

Your Instructor will be the RTE.



## Simulation: Why are we here?



### Alignment to a common mission

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



## Simulation: Day 1 agenda

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



## Simulation: Day 2 agenda

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



## Simulation: Briefings



**Executive**



**Product Manager**



**System Architect**



## Simulation: Planning guidance



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

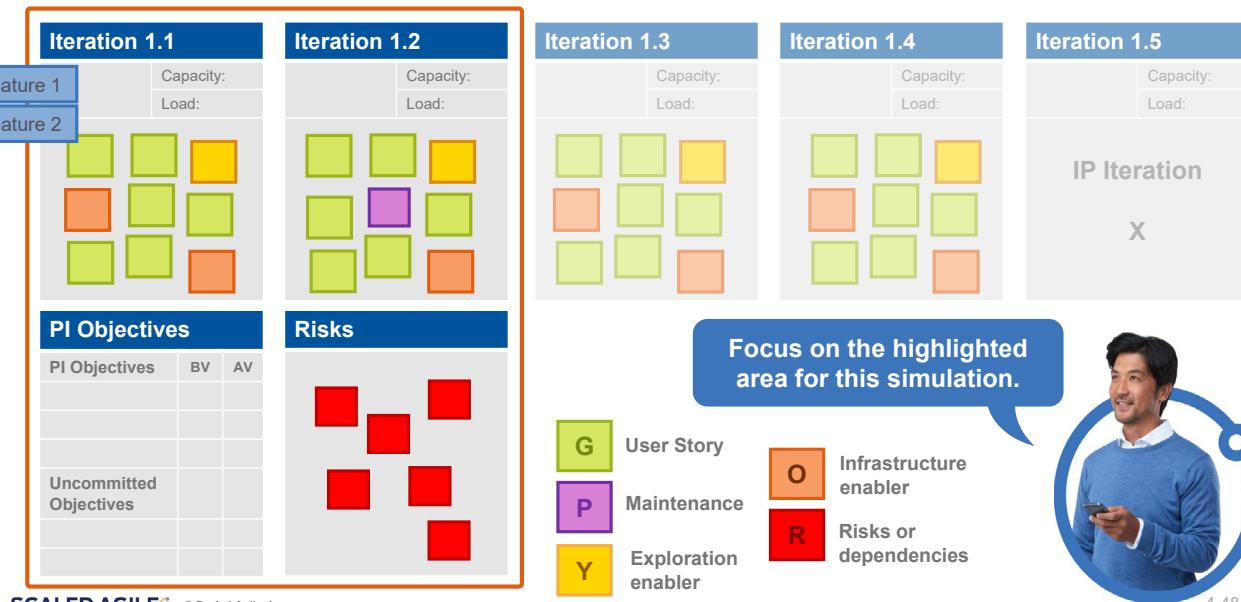
**Product Owners:** You have the content authority to make decisions at the user Story level

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

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

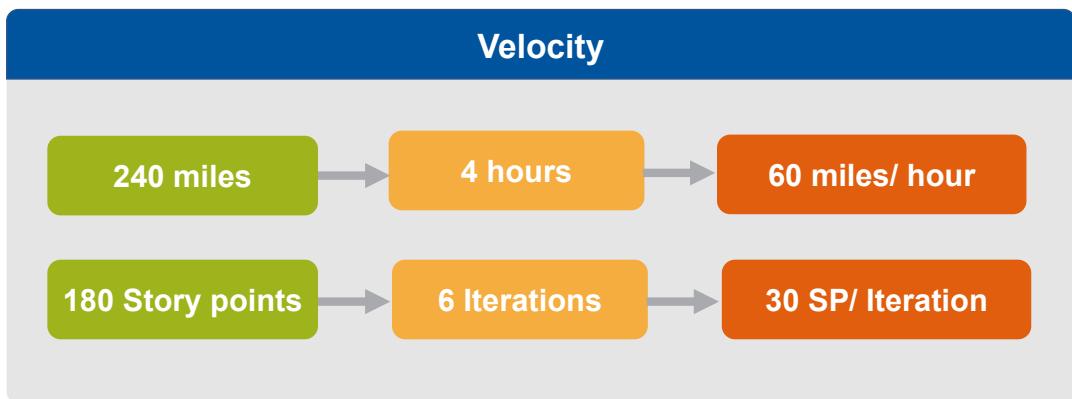


## Simulation: Planning requirements





## 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

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## Activity: Team breakout #1

Duration  
50 min

You will be planning a short Program Increment with two Iterations.

- ▶ **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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## Activity: Scrum of Scrums (SoS)

Duration  
5 min

- ▶ **Step 1:** Observe the SoS, 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)

*Scrum of Scrums questions are on the following slide.*



## Activity: Scrum of Scrums (SoS)

Duration  
5 Min

SoS Sync Questions	Team 1	Team 2	Team 3	Team 4	Team 5
Have you identified the capacity for each Iteration of the PI?					
Have you identified most of the Stories for the first two Iterations and begun estimating?					
Have you begun resolving dependencies with other teams?					
Are you discussing tradeoffs and conflicting priorities with your Business Owners?					
Have you identified any 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.					



## Activity: Draft plan review



- ▶ **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

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## 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 managers' 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?



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## Activities during day 2

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

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## 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 the reliability of cadence-based delivery

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



## Activity: Setting business value

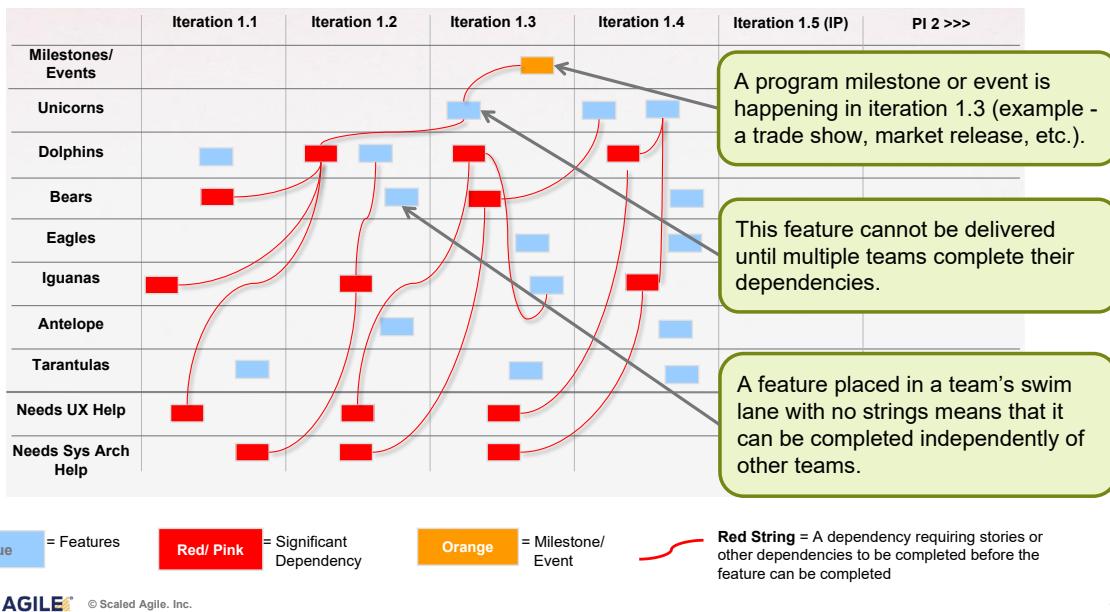


The instructor will demonstrate assigning business value for one team's objectives.

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

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

## Program Board: Feature delivery, dependencies, and Milestones



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## Final plan review

Teams and Business Owners peer-review all final plans.

### Final plan review agenda

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

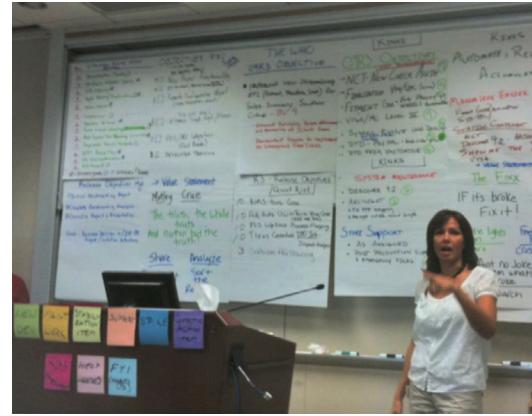


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## Building the final plan

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



A team presenting their final plan

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## Addressing program risks

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

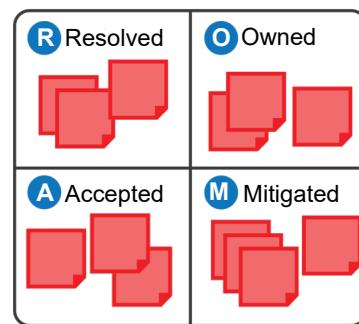
**ROAMing risks:**

**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.



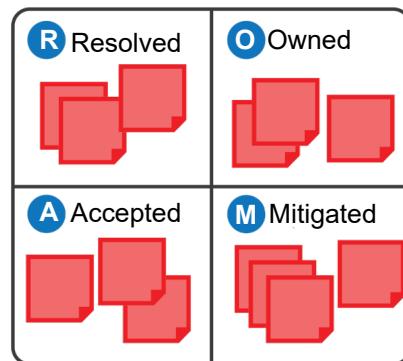


## Activity: Manage program risks

Duration  
7 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

Once program risks have been 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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4-66

## Run a planning meeting retrospective

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

The PI Planning Event Retrospective

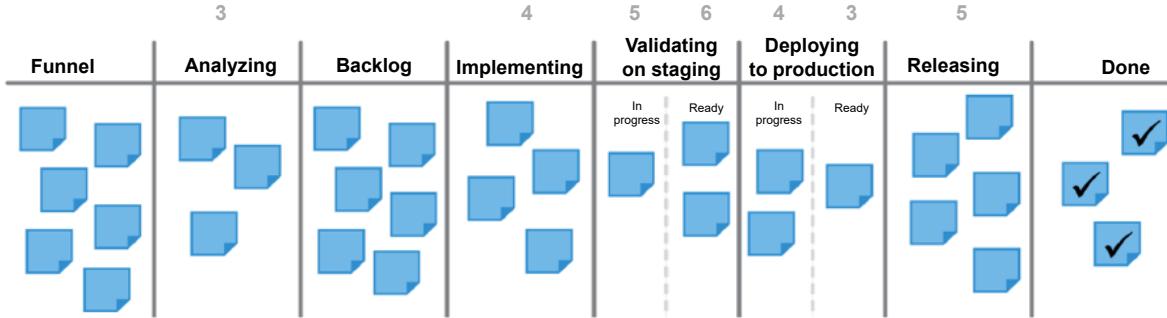
1. What went well
2. What didn't
3. What we can do better next time

WHAT WENT WELL

- RISK MANAGEMENT
- PARTICIPATION
- ALL TEAMS TOGETHER
- VISION FIRST!
- HANDLED A RATHER CHAOTIC
- COLLOCATING PIWES
- BIG UNDERPINNINGS / HIGH ALIGNMENT

## 4.4 Develop on Cadence; Release on Demand

## Manage the flow of work with the Program Kanban

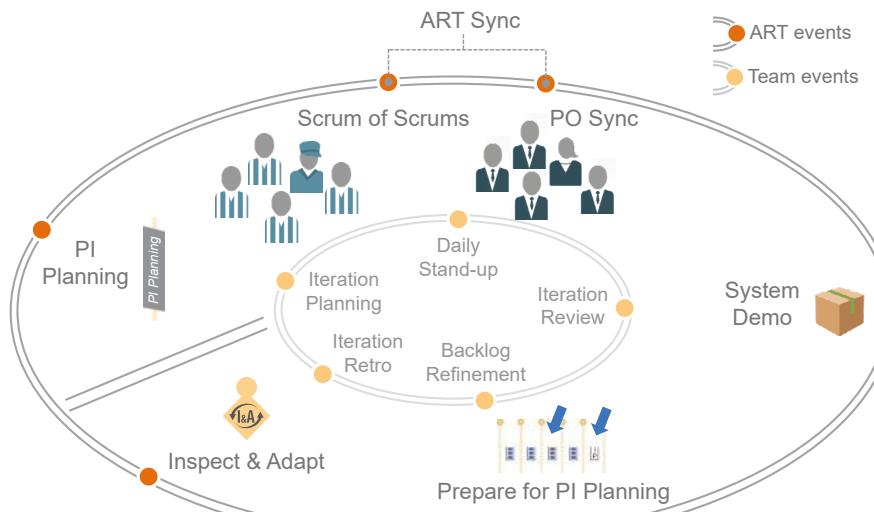


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4-69

## ART events drive the train

ART events create a closed-loop system to keep the train on the tracks.



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4-70

## ART sync is used to coordinate progress



### Scrum of scrums

- ▶ Visibility into progress and impediments
- ▶ Facilitated by RTE
- ▶ Participants: Scrum Masters, other select team members, SMEs if necessary
- ▶ Weekly or more frequently, 30–60 minutes
- ▶ Timeboxed and followed by a meet-after

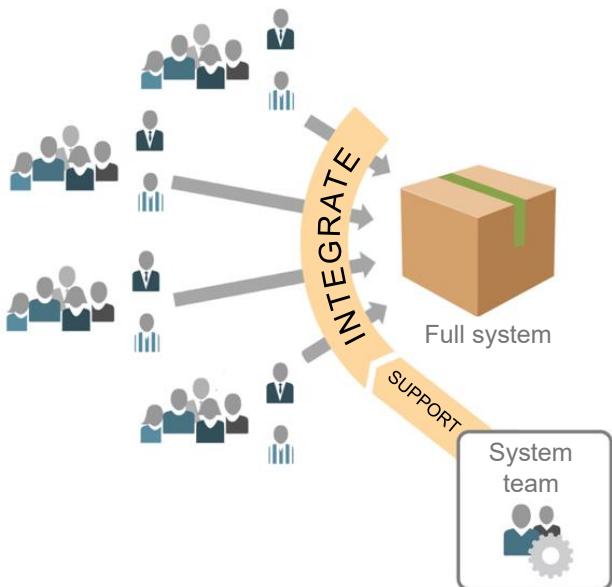


### PO Sync

- ▶ Visibility into progress, scope, and priority adjustments
- ▶ Facilitated by RTE or PM
- ▶ Participants: PM, POs, other stakeholders, and SMEs as necessary
- ▶ Weekly or more frequently, 30–60 minutes
- ▶ Timeboxed and followed by a meet-after

## Demo the full system increment every two weeks

- ▶ Features are functionally complete or toggled so as not to disrupt demonstrable functionality
- ▶ New Features work together and with existing functionality
- ▶ Happens after the Iteration review (may lag by as much as one Iteration maximum)
- ▶ Demo from a staging environment which resembles production as much as possible



## Innovation and Planning (IP) Iteration

*Provide sufficient capacity margin to enable cadence. —Donald G. Reinertsen*

Facilitate reliability, Program Increment readiness, planning, and innovation

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



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## 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
	Continuing education	PI planning		Optional time for distributed planning
		Business context Product / solution vision Architecture vision and development practices Planning requirements and lunch Team breakouts Final plan review and lunch Program risks PI confidence vote Plan rework if necessary Planning retrospective and moving forward		
	PI planning readiness	Inspect & Adapt Event		
	Innovation continues			

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4-74

## 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

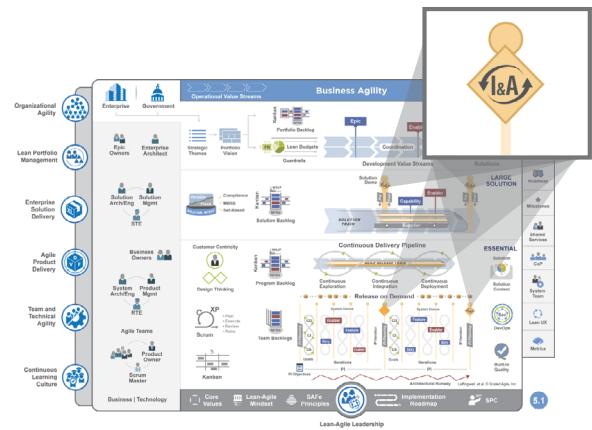


## Improving results with the Inspect and Adapt event

Three parts of Inspect and Adapt:

1. The PI System Demo
2. Quantitative and Qualitative Measurement
3. Problem-Solving Workshop

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



## 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

Prior to or as part of the PI System Demo, teams review the business value achieved for each of their PI Objectives.

- ▶ 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.

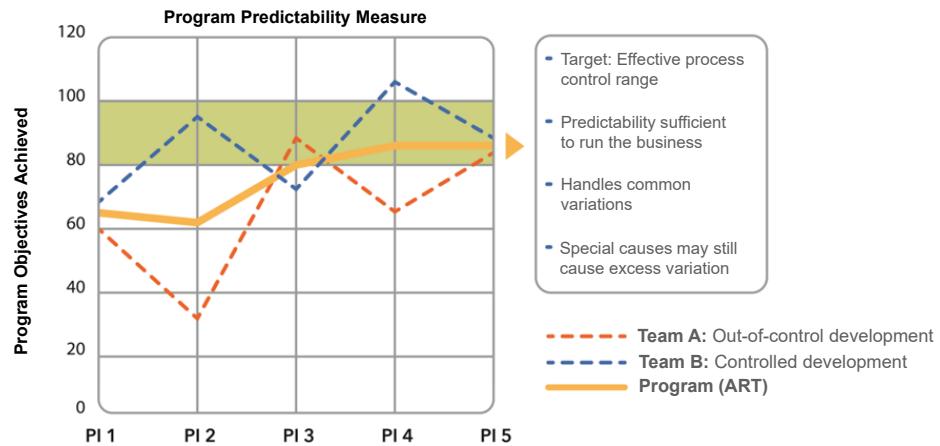
Objectives for PI 3		
	Business Value	
	Plan	Actual
- Structured locations and validation of locations	7	7
- Build and demonstrate a proof of concept for context images	8	8
- Implement negative triangulation by: tags, companies and people	8	6
- Speed up indexing by 50%	10	5
- Index 1.2 billion more web 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
<b>Totals</b>	<b>50</b>	<b>45</b>
<b>% Achievement: 90%</b>		

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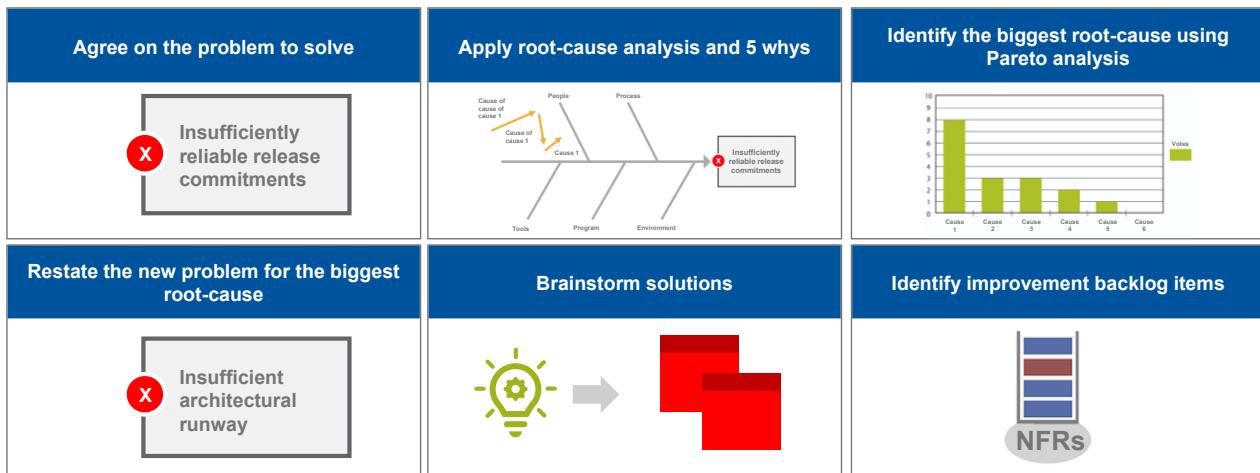
4-78

## Measure ART Predictability

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



## The Problem-Solving Workshop



## 4.5 Building a Continuous Delivery Pipeline with DevOps

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### Activity: DevOps myth or fact

Prepare  
7 min

- ▶ **Step 1:** Take the myth or fact quiz in your workbook
- ▶ **Step 2:** Check your results with the answer key at the bottom of the page that follows the quiz

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# DevOps Myth or Fact Quiz

**Instructions:** Take this myth or fact quiz individually. Check your results with the answer key at the bottom of the page that follows the quiz.

	Myth	Fact
1. DevOps is just about automation	<input type="radio"/>	<input type="radio"/>
2. DevOps is a cultural change	<input type="radio"/>	<input type="radio"/>
3. You don't need Lean-Agile to have a successful DevOps implementation	<input type="radio"/>	<input type="radio"/>
4. Agile is for development not operations	<input type="radio"/>	<input type="radio"/>
5. The deployment pipeline is used to deploy environments as well as solutions	<input type="radio"/>	<input type="radio"/>
6. DevOps tries to bridge the gap between new Features and stable solutions	<input type="radio"/>	<input type="radio"/>
7. Measurements are an important part of DevOps	<input type="radio"/>	<input type="radio"/>
8. Automation of testing reduces the holding cost	<input type="radio"/>	<input type="radio"/>
9. DevOps is only for small software companies	<input type="radio"/>	<input type="radio"/>
10. Chaos monkey was developed by Netflix	<input type="radio"/>	<input type="radio"/>

## Notes



## Video: What is DevOps?

Duration  
  
2 min

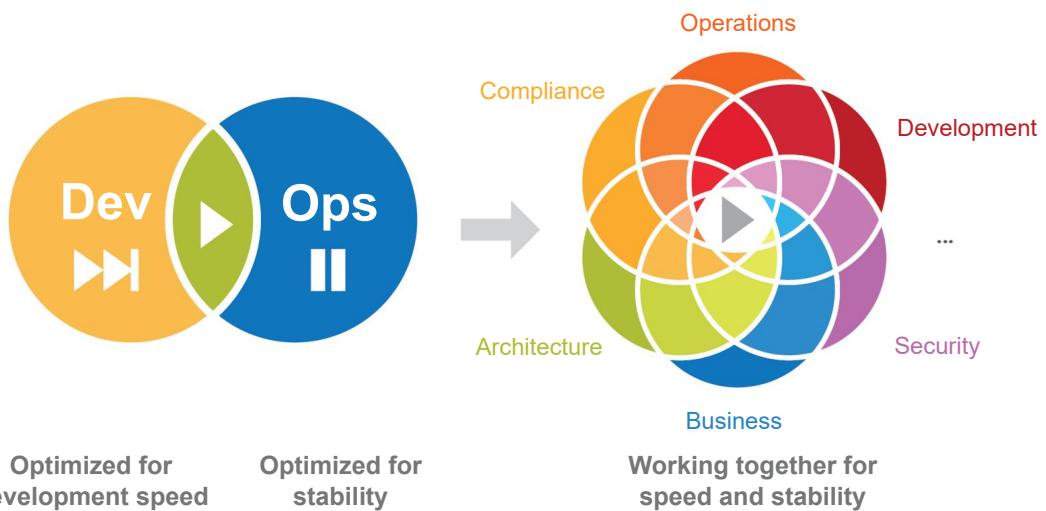


<https://bit.ly/Video-WhatisDevOps>

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Maximize speed *and* stability

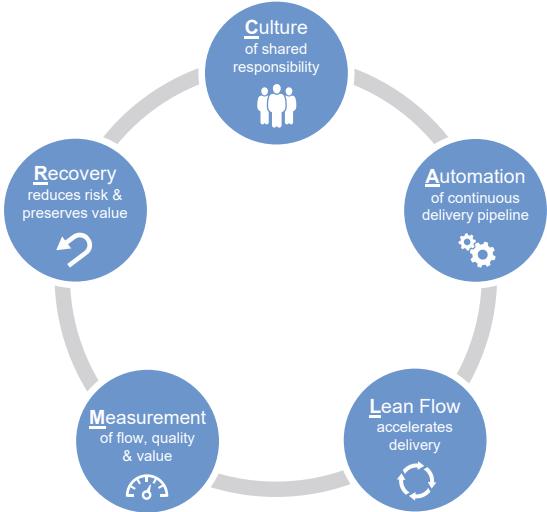


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4-84

## A CALMR approach to DevOps

- ▶ **C**ulture - Establish a culture of shared responsibility for development, deployment, and operations.
- ▶ **A**utomation - Automate the Continuous Delivery Pipeline.
- ▶ **L**ean flow - Keep batch sizes small, limit WIP, and provide extreme visibility.
- ▶ **M**easurement - Measure the flow through the pipeline. Implement full-stack telemetry.
- ▶ **R**ecover - Architect and enable low-risk releases. Establish fast recovery, fast reversion, and fast fix-forward.

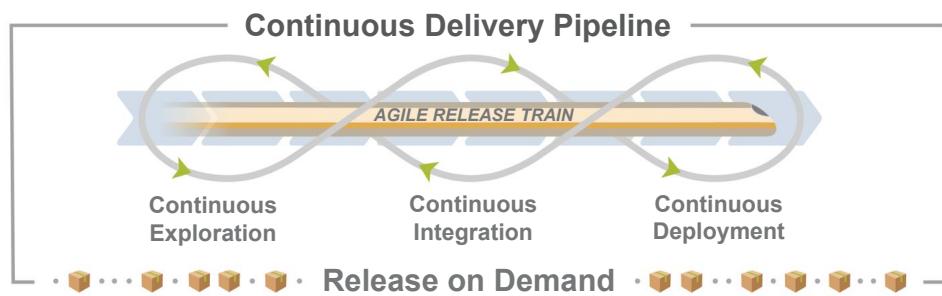


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## Building the Continuous Delivery Pipeline with DevOps

- ▶ The Continuous Delivery Pipeline (CDP) represents the workflows, activities, and automation needed to deliver new functionality more frequently.
- ▶ Each Agile Release Train builds and maintains, or shares, a pipeline.
- ▶ Organizations map their current pipeline into this new structure and remove delays and improve the efficiency of each step.

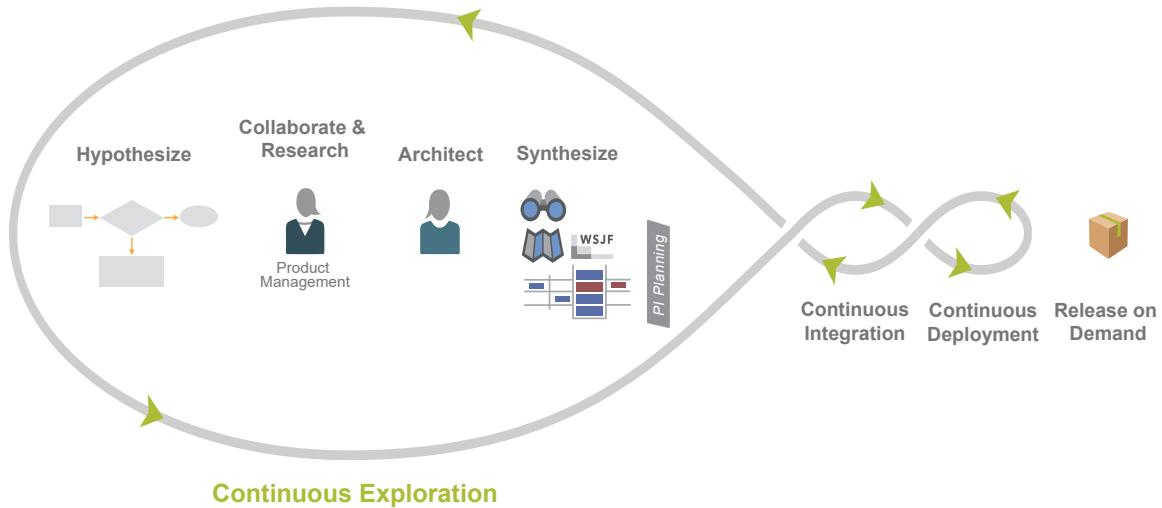


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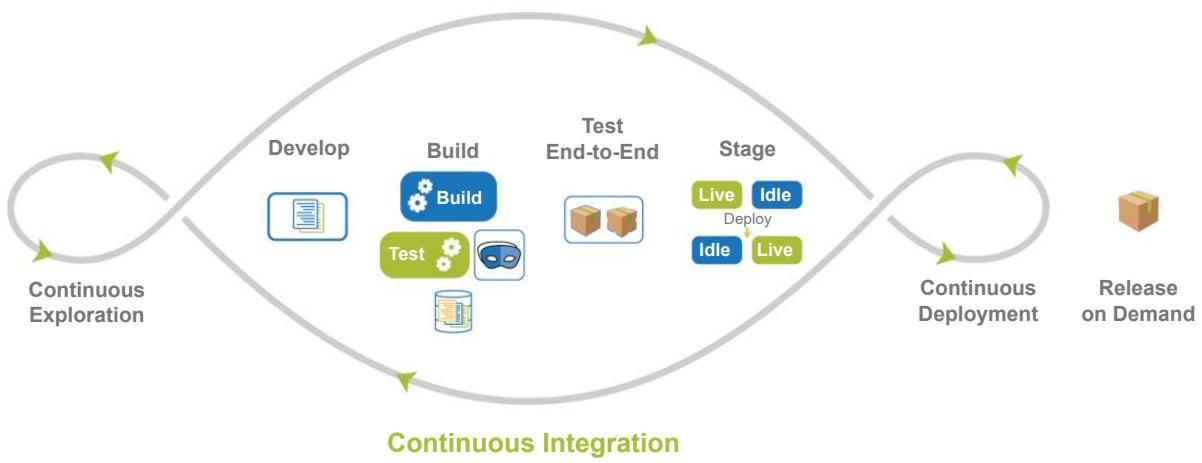
## Continuous Exploration – Understand Customer needs



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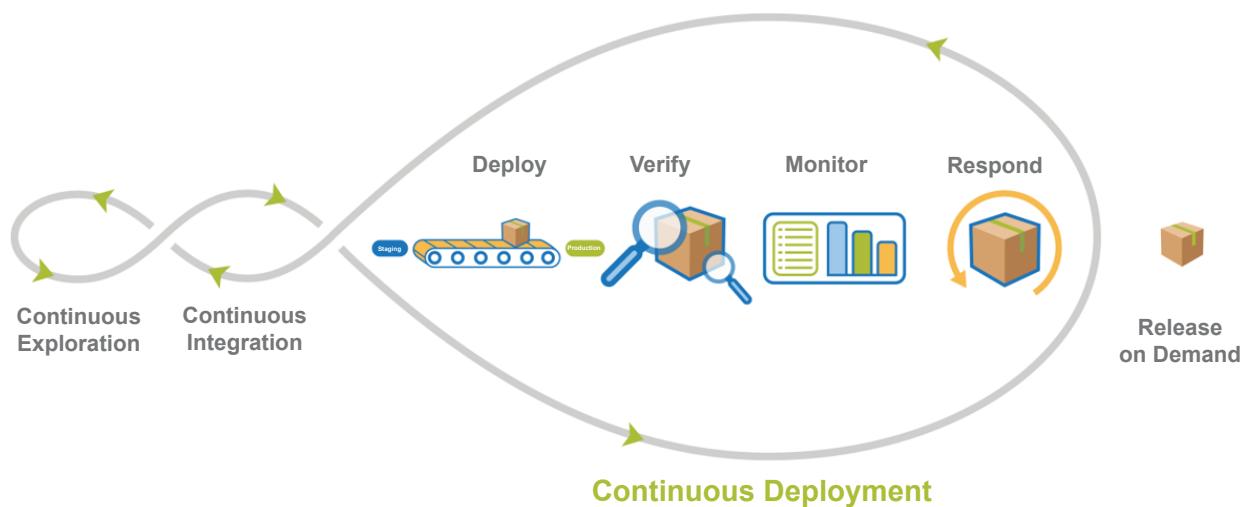
## Continuous Integration – A critical technical practice of the ART



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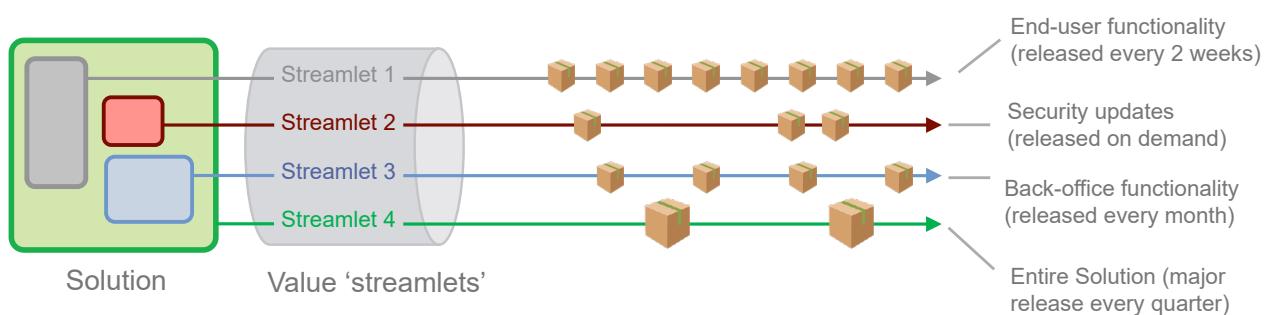
## Continuous Deployment – Getting to production early



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## Decouple release elements from the total Solution

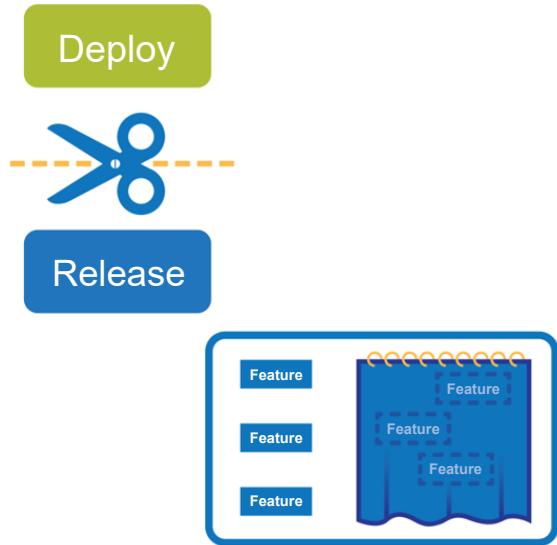


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4-90

## Separate deploy from release

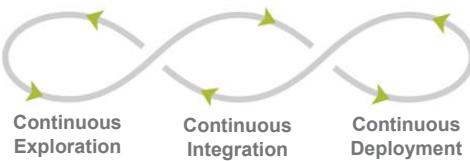
- ▶ Separate deploy to production from release
- ▶ Hide all new functionality under feature toggles
- ▶ Enables testing background and foreground processes in the actual production environment before exposing new functionality to users
- ▶ Timing of the release becomes a business decision



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## Release on Demand – Making value available when it's needed



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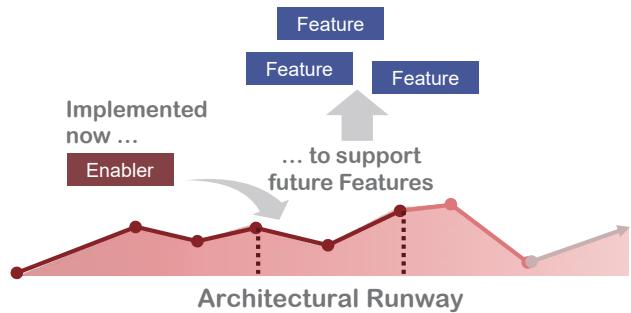
4-92

## Architect for releasability

Architectural Runway is existing code, hardware components, marketing branding guidelines, etc., that enable near-term business Features.

- ▶ Enablers build up the runway
- ▶ Features consume it
- ▶ Architectural Runway must be continuously maintained
- ▶ Use capacity allocation (a percentage of train's overall capacity in a PI) for Enablers that extend the runway

**Example:**  
A single sign-on mechanism will enable sign-on in multiple applications.



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## Action Plan: Improving Agile Product Delivery



- ▶ **Step 1:** Consider the practices and the events that support Agile Product Delivery as discussed earlier
- ▶ **Step 2:** Identify three minimum viable improvements you could execute to improve Agile Product Delivery. Write them down in your Action Plan
- ▶ **Step 3:** Share your insights with the class



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## Improving Agile Product Delivery

## Lesson review

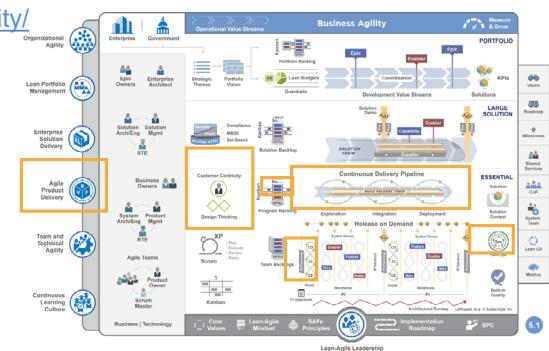
In this lesson you:

- ▶ Identified the benefits of Customer Centricity
- ▶ Practiced Design Thinking
- ▶ Experienced Program Backlog prioritization with WSJF
- ▶ Participated in a PI Planning simulation
- ▶ Explored how to Develop on Cadence and Release on Demand
- ▶ Discussed how to build a Continuous Delivery Pipeline with DevOps

## Articles used in this lesson

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

- ▶ Agile Product Delivery  
<https://www.scaledagileframework.com/agile-product-delivery/>
- ▶ Customer Centricity  
<https://www.scaledagileframework.com/customer-centricty/>
- ▶ Design Thinking  
<https://www.scaledagileframework.com/design-thinking/>
- ▶ WSJF  
<https://www.scaledagileframework.com/wsjf/>
- ▶ PI Planning  
<https://www.scaledagileframework.com/pi-planning/>
- ▶ DevOps  
<https://www.scaledagileframework.com/devops/>
- ▶ Continuous Delivery Pipeline  
<https://www.scaledagileframework.com/continuous-delivery-pipeline/>



## Continue your SAFe journey with the following resources

Apply the <i>Empathy Map</i> Collaborate template to inform Solution development: <a href="https://bit.ly/Template-EmpathyMap">https://bit.ly/Template-EmpathyMap</a>	Write <i>SMART PI Objectives</i> with the following guide: <a href="https://bit.ly/Community-SMARTObjectivesPDF">https://bit.ly/Community-SMARTObjectivesPDF</a>
Review the five-minute <i>WSJF Overview</i> and the five-minute <i>Calculating WSJF</i> videos in preparation for a prioritization workshop: <a href="https://bit.ly/Video-WSJFOverview">https://bit.ly/Video-WSJFOverview</a> <a href="https://bit.ly/Video-CalculatingWSJF">https://bit.ly/Video-CalculatingWSJF</a>	Use the <i>PI Planning</i> Collaborate templates to run a successful remote PI Planning Event: <a href="https://bit.ly/Community-PIPlanning">https://bit.ly/Community-PIPlanning</a>
Facilitate effective <i>ART Events</i> using the following tools and guidance: <a href="https://bit.ly/Community-SAFeARTandTeamEvents">https://bit.ly/Community-SAFeARTandTeamEvents</a>	Run an <i>Agile Product Delivery Assessment</i> to identify improvement opportunities: <a href="https://bit.ly/Community-MeasureAndGrow">https://bit.ly/Community-MeasureAndGrow</a>

## Lesson notes

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

# Lesson 5

## Exploring Lean Portfolio Management

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



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5-1

### Why Lean Portfolio Management?

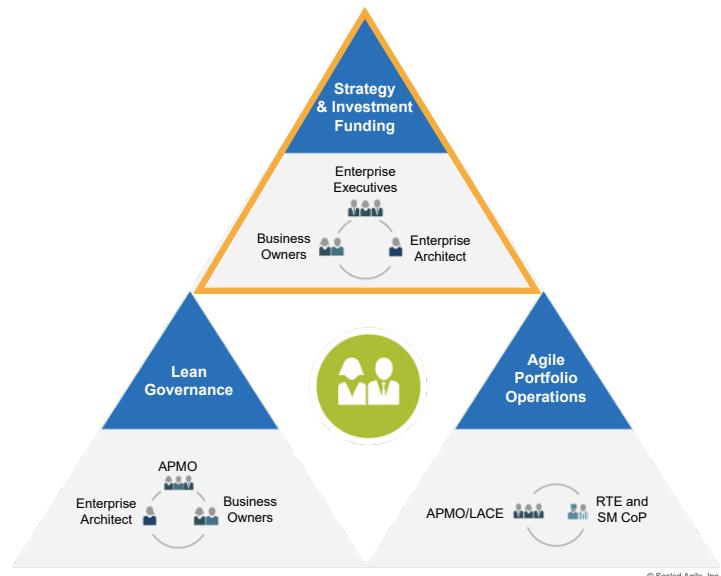
Traditional approaches to portfolio management were not designed for a global economy or the impact of digital disruption. These factors put pressure on enterprises to work under a higher degree of uncertainty and yet deliver innovative Solutions much faster.



5-2

## Lesson Topics

- 5.1 Defining a SAFe Portfolio
- 5.2 Connecting the portfolio to the Enterprise strategy
- 5.3 Maintaining the Portfolio Vision
- 5.4 Realizing the Portfolio Vision through Epics
- 5.5 Establishing Lean Budgets and Guardrails
- 5.6 Establishing portfolio flow



5-3

## Learning objectives

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

- ▶ Describe the purpose and elements of a SAFe portfolio
- ▶ Construct well-written strategic themes
- ▶ Employ the portfolio canvas to describe the current and future state
- ▶ Create Epic hypothesis statements to inform the Vision
- ▶ Distinguish traditional and Lean budgeting approaches
- ▶ Construct a Portfolio Kanban

## The role of Lean Portfolio Management (LPM)

“

*Most strategy dialogues end up with executives talking at cross-purposes because... nobody knows exactly what is meant by **vision** and **strategy**, and no two people ever quite agree on which topics belong where.*

*That is why, when you ask members of an executive team to describe and explain the corporate strategy, you frequently get wildly different answers. We just don't have a good business discipline for converging on issues this abstract.*



—Geoffrey Moore, *Escape Velocity*

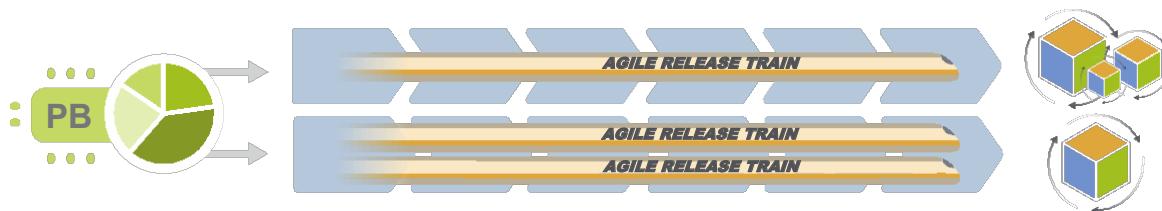
5-5

## 5.1 Defining a SAFe portfolio

## What is a SAFe portfolio?

A SAFe portfolio is a collection of *development* Value Streams.

- ▶ Each Value Stream builds, supports, and maintains Solutions
- ▶ Solutions are delivered to the Customer, whether internal or external to the Enterprise



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5-7

An Enterprise may have a single portfolio or multiple portfolios



Small Enterprise



Single Portfolios



Large Enterprise



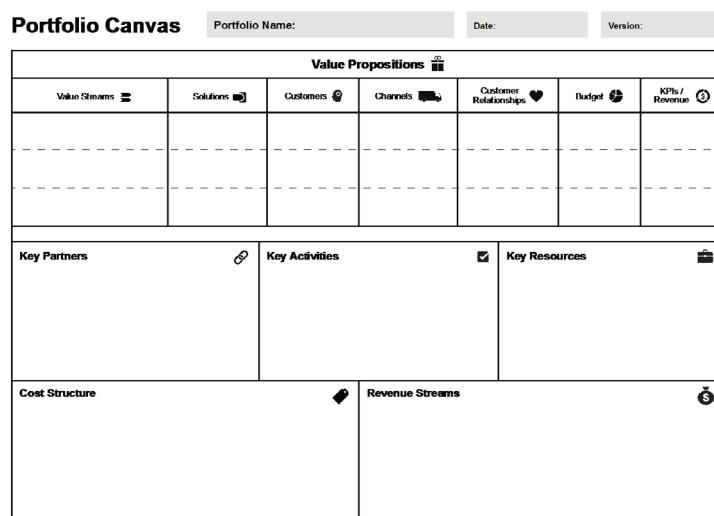
Multiple Portfolios

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## Define the portfolio with the portfolio canvas

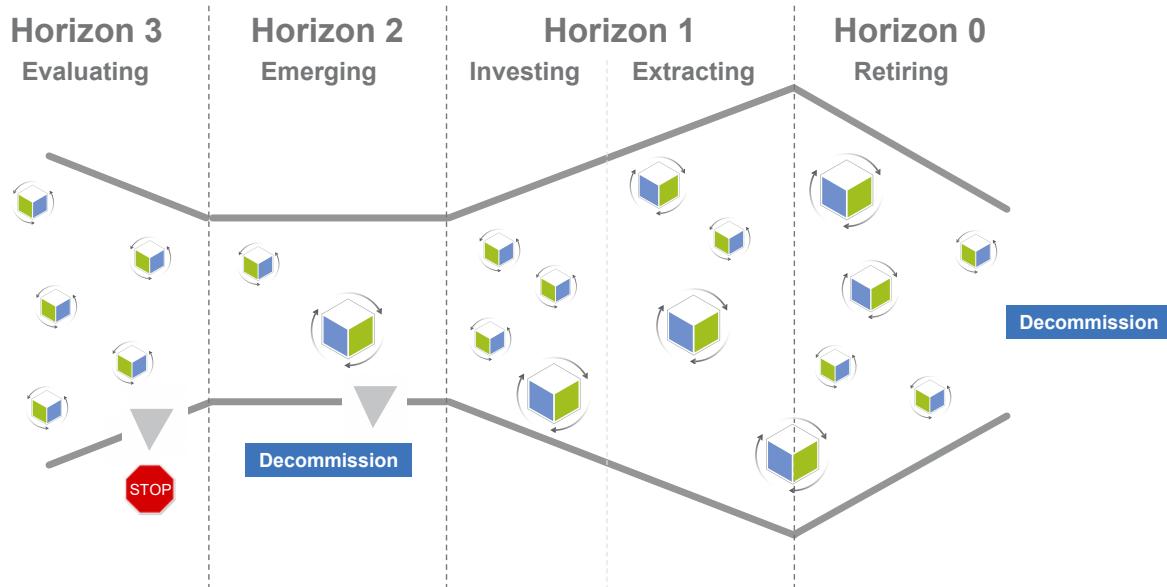
- ▶ The portfolio canvas is a template for identifying a specific SAFe portfolio
- ▶ It defines the domain of the portfolio and other key elements



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## Map Solutions by horizon



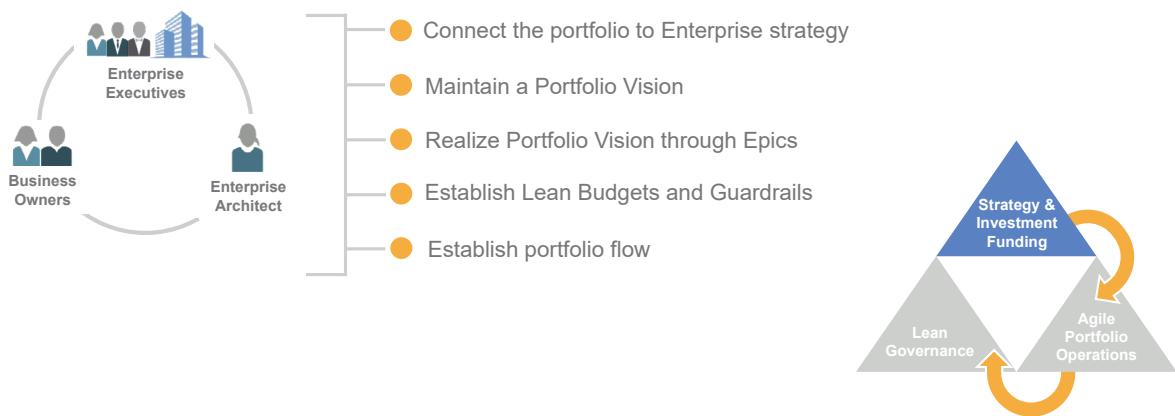
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5-10

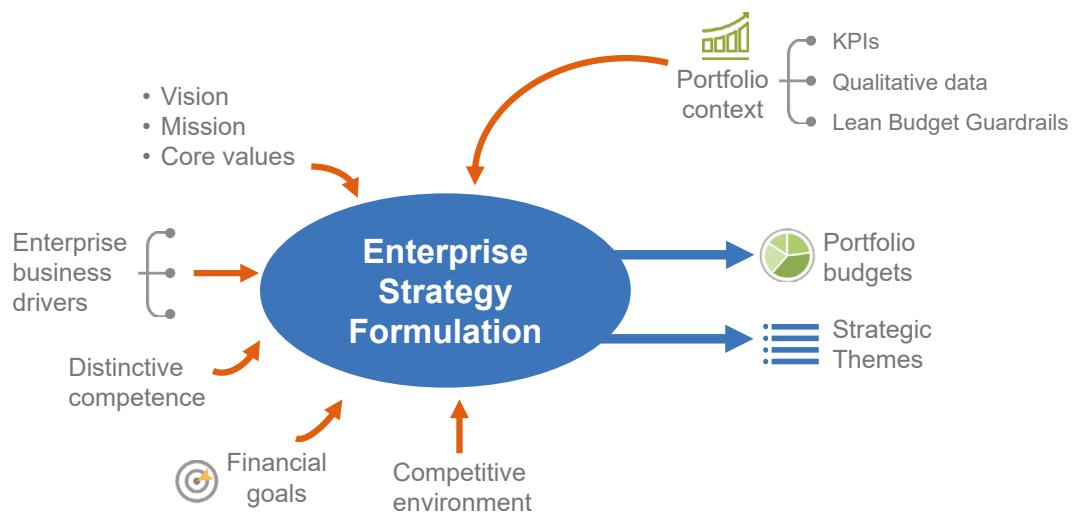
## 5.2 Connecting the portfolio to Enterprise strategy

### Strategy and investment funding: Collaboration and responsibilities

Strategy and investment funding ensures that the entire portfolio is aligned and funded to create and maintain the Solutions needed to meet business targets.



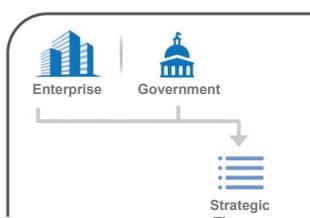
## Elements of Enterprise strategy formulation



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## Connect the portfolio to the Enterprise with Strategic Themes



Strategic Themes are differentiating business objectives that:

- Are a collaboration between LPM and the larger Enterprise
- Drive the future state of a portfolio
- Connect the Portfolio to the Enterprise strategy
- Provide context for the Portfolio Vision and Lean budgeting

### Good examples of Strategic Themes

Expand autonomous delivery into retail

### Bad examples of Strategic Themes

Increase shareholder wealth

Expand autonomous delivery into healthcare

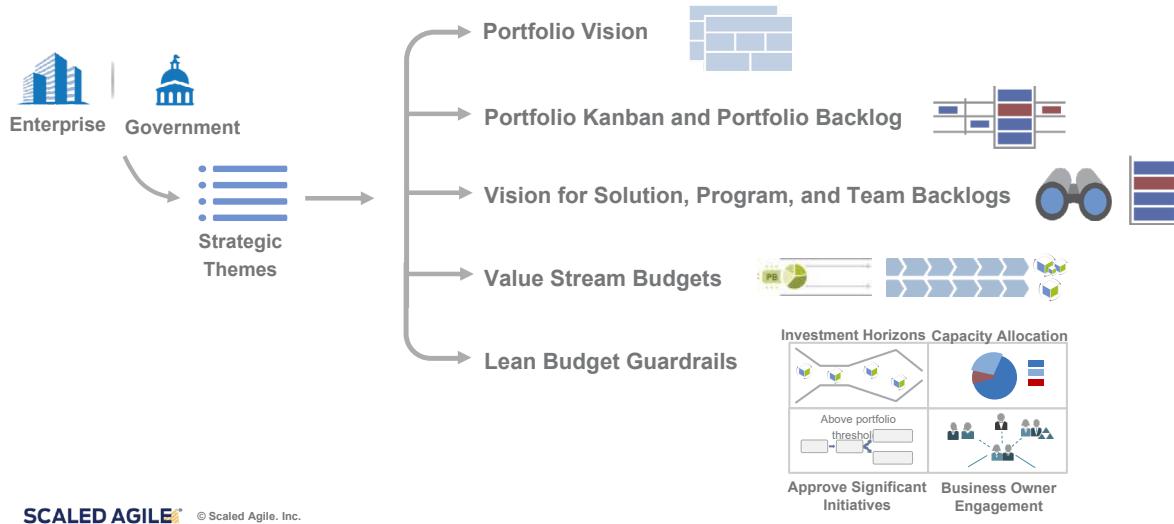
Maximize corporate wealth

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5-14

## Influence of Strategic Themes

Strategic Themes influence portfolio strategy and provide business context for portfolio decision-making.



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### Activity: Identify Strategic Themes



- ▶ **Step 1:** Identify three Strategic Themes that help define the strategy of your portfolio in the upcoming year
- ▶ **Step 2:** Discuss:
  - Are these *differentiators* for your business or business as usual?
- ▶ **Step 3:** Be prepared to share with the class

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# Identifying Strategic Themes

***Strategic Theme #1***

***Strategic Theme #2***

***Strategic Theme #3***

## 5.3 Maintaining the Portfolio Vision

### Identify opportunities for the portfolio's future state with SWOT

- ▶ Establishes an understanding of the portfolio's strengths and weaknesses
- ▶ Helps identify the most significant opportunities and potential threats

Internal Origin	S Strengths	W Weaknesses
External Origin	O Opportunities	T Threats

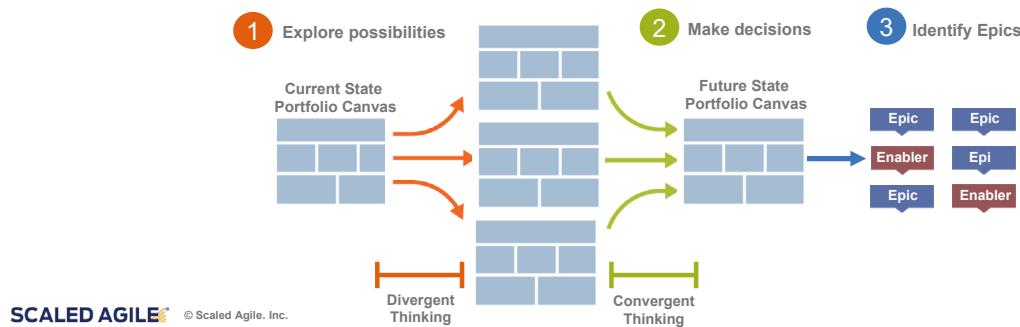
## TOWS strategic options matrix

- The key difference between the SWOT and TOWS analyses are the outcomes that they create
- TOWS analysis is used primarily for identifying strategic options to create a better future state
- SWOT analysis is a great way to uncover the current situation of your Value Stream, product, or portfolio

External Opportunities (O)	External Threats (T)	
1.	1.	
2.	2.	
3.	3.	
4.	4.	
Internal Strength (S)	SO	ST
1.	How can your strengths be used to exploit and maximize opportunities?	How can you apply your strengths to overcome present and potential threats?
2.		
3.		
4.		
Internal Weaknesses (W)	WO	WT
1.	How can your opportunities be leveraged to overcome weaknesses?	How can you minimize weaknesses and avoid threats?
2.		
3.		
4.		

## Envision the future state

- The portfolio canvas captures the current state
- Use SWOT and TOWS to brainstorm potential future states
- Evaluate your options and select a future state
- Identify the Epics that will get you to this future state



## Express the future state as a Vision

### A long view:

- ▶ How will our portfolio of future solutions solve the larger customer problems?
- ▶ How will these solutions differentiate us?
- ▶ What is the future context within which our solutions will operate?
- ▶ What is our current business context, and how must we evolve to meet this future state?



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### Vision: A postcard from the future



- ▶ Aspirational, yet realistic and achievable
- ▶ Motivational enough to engage others on the journey

**Result:** Everyone starts thinking about how to apply their strengths in order to get there.

Switch: How to Change Things When Change is Hard, Heath and Heath, Broadway Books, 2010

5-21

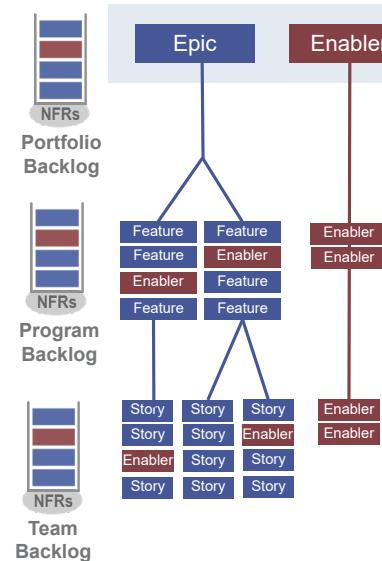
## 5.4 Realizing Portfolio Vision through Epics

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## What is a portfolio Epic?

- ▶ An Epic is a significant Solution development initiative. There are two types:
  - *Business Epics* directly deliver business value
  - *Enabler Epics* support the Architectural Runway and future business functionality
- ▶ Portfolio Epics are typically cross-cutting, typically spanning multiple Value Streams and PIs.
- ▶ Epics need a Lean business case, the definition of a minimum viable product (MVP), an Epic Owner, and approval by LPM.



## Epics are initially described with the Epic hypothesis statement

Epics are described with four major fields:

- ▶ **The value statement** – Describes the Epic in general terms: the “for-who-the ...” portion
- ▶ **Business outcomes hypothesis** – States the quantitative or qualitative benefits that the business can anticipate if the hypothesis is proven to be correct
- ▶ **Leading indicators** – Describe the early measures that will help predict the business outcomes
- ▶ **Nonfunctional requirements (NFRs)** – Identify any NFRs associated with the Epic

Epic Hypothesis Statement	
Funnel Entry Date:	<The date that the epic entered the funnel.>
Epic Name:	<A short name for the epic.>
Epic Owner:	<The name of the epic owner.>
Epic Description:	<An elevator pitch (value statement) that describes the epic in a clear and concise way.>  For <customers> who <do something> the <solution> is a <something – the ‘how’> that <provides this value> unlike (competitor, current solution or non-existing solution) our solution <does something better – the ‘why’>
Business Outcomes:	<The measurable benefits that the business can anticipate if the epic hypothesis is proven to be correct.>
Leading Indicators:	<The early measures that will help predict the business outcome hypothesis. For more on this topic, see the Innovation Accounting advanced topic article.>
Nonfunctional Requirements (NFRs):	<Nonfunctional requirements (NFRs) associated with the epic.>



## Activity: Epic writing



- ▶ **Step 1:** In your group, identify an Epic from one of your contexts
- ▶ **Step 2:** Write the Epic hypothesis statement
- ▶ **Step 3:** Discuss:
  - What could be an MVP to validate this Epic?

Epic Hypothesis Statement	
<b>Funnel Entry Date:</b>	<The date that the epic entered the funnel.>
<b>Epic Name:</b>	<A short name for the epic.>
<b>Epic Owner:</b>	<The name of the epic owner.>
<b>Epic Description:</b>	<p>&lt;An elevator pitch (value statement) that describes the epic in a clear and concise way.&gt;</p> <p>For &lt;customers&gt; who &lt;do something&gt; the &lt;solution&gt; is a &lt;something – the ‘how’&gt; that &lt;provides this value&gt; unlike &lt;competitor, current solution or non-existing solution&gt; our solution &lt;does something better – the ‘why’&gt;</p>
<b>Business Outcomes:</b>	<The measurable benefits that the business can anticipate if the epic hypothesis is proven to be correct.>
<b>Leading Indicators:</b>	<The early measures that will help predict the business outcome hypothesis. For more on this topic, see the Innovation Accounting advanced topic article.>
<b>Nonfunctional Requirements (NFRs):</b>	<Nonfunctional requirements (NFRs) associated with the epic.>

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## 5.5 Establishing Lean Budgets and Guardrails

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# Epic Writing

**Epic:** Develop next-generation van hardware to capture additional data on van performance

**Epic:** Maintenance programs tailored for each van based on sensor data

**Epic:** Automated electronic inspections and tracking

## Epic Hypothesis Statement

Funnel Entry Date:	<The date that the epic entered the funnel.>
Epic Name:	<A short name for the epic.>
Epic Owner:	<The name of the epic owner.>
Epic Description:	<An elevator pitch (value statement) that describes the epic in a clear and concise way.> For <customers> who <do something> the <solution> is a <something - the 'how'> that <provides this value> unlike <competitor, current solution or non-existing solution> our solution <does something better – the 'why'>

Business Outcomes:	<The measurable benefits that the business can anticipate if the epic hypothesis is proven to be correct.>
Leading Indicators:	<The early measures that will help predict the business outcome hypothesis. For more on this topic, see the Innovation Accounting advanced topic article.>
Nonfunctional Requirements (NFRs):	<Nonfunctional requirements (NFRs) associated with the epic.>

# Epic Writing

## Epic Hypothesis Statement

Funnel Entry Date:

Epic Name:

Epic Owner:

Epic Description:

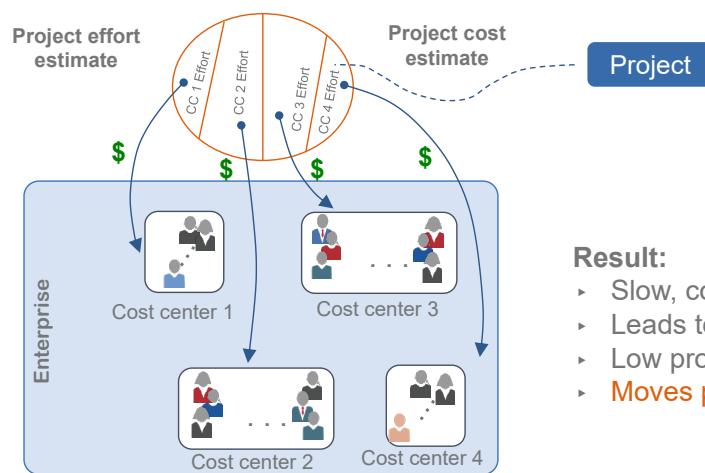
Business Outcomes:

Leading Indicators:

Nonfunctional Requirements (NFRs):

## Problem: Cost-center budgeting

Traditional project-based, cost-center budgeting creates overhead and friction, lowers velocity.



A project requires collaboration of cost centers and assignment of people, budget, and schedule. It takes multiple budgets to build a single project budget.

### Result:

- Slow, complex budgeting process
- Leads to utilization-based planning and execution
- Low program throughput
- **Moves people to the work**

## Project overruns cause re-budgeting and increases cost of delay

**Planned:** Project

### Project estimate

**Actual:** Project

### What/who do we blame?

- Technology challenge?
- Change in scope?
- The team?
- **Does it matter?**

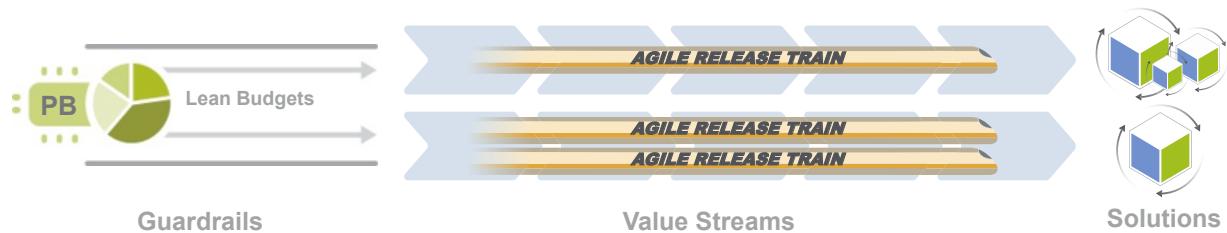
### Result:

- Wait for new budget approval; increase cost of delay (CoD)
- Costly variance analysis; blame game; threatens transparency
- Resource scramble reassessments

## Solution: Fund Value Streams, not projects

Funding Value Streams provides for full control of spend, with:

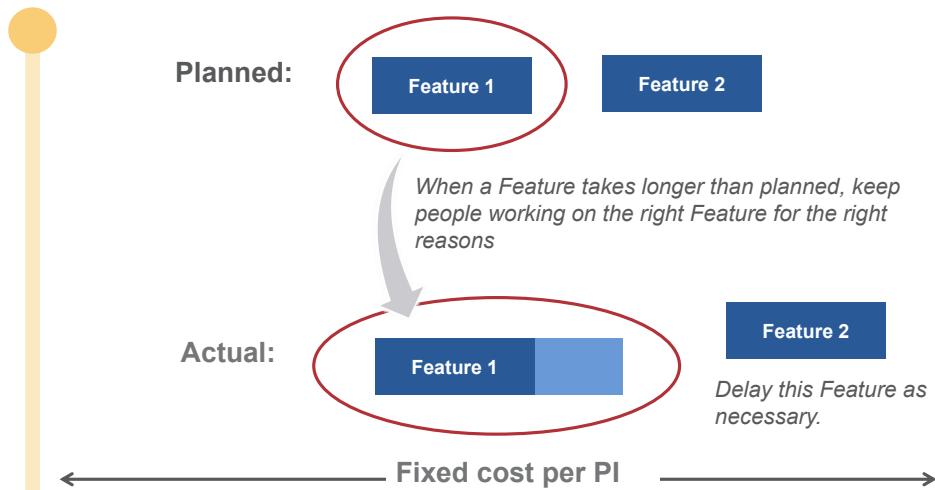
- ▶ No costly and delay-inducing project cost variance analyses
- ▶ No resource reassessments
- ▶ No blame game for project overruns



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## Budgets are not affected by Feature overruns or changing priorities

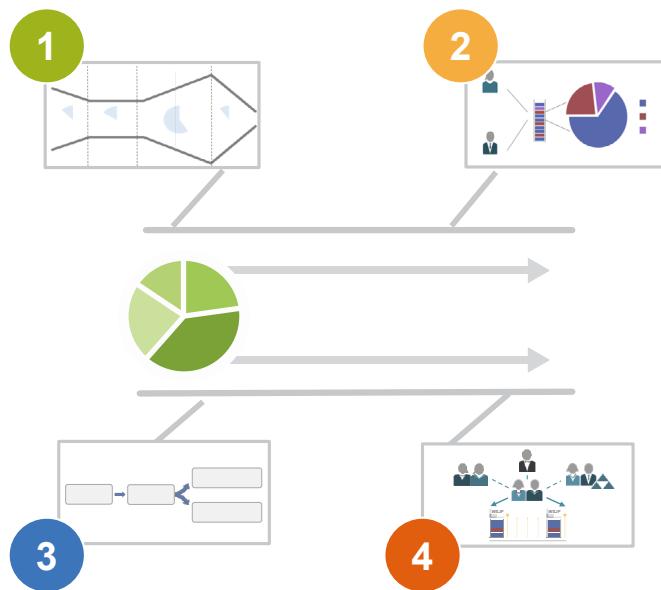


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5-30

## Maintain the Guardrails

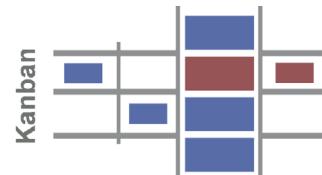
- ▶ Apply investment horizons
- ▶ Utilize capacity allocation
- ▶ Approve Epic initiatives
- ▶ Continuous Business Owner engagement



## 5.6 Establishing portfolio flow

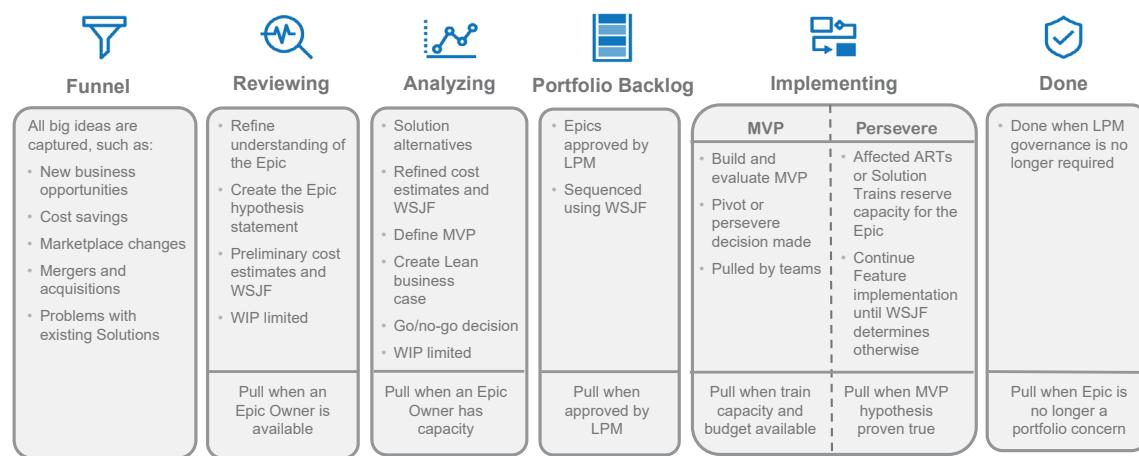
## Govern Epic flow with the Portfolio Kanban

- ▶ Makes largest business initiatives visible
- ▶ Brings structure to analysis and decision-making
- ▶ Provides WIP limits to ensure the teams analyze responsibly
- ▶ Helps prevent unrealistic expectations
- ▶ Helps drive collaboration among the key stakeholders
- ▶ Provides a transparent and quantitative basis for economic decision-making

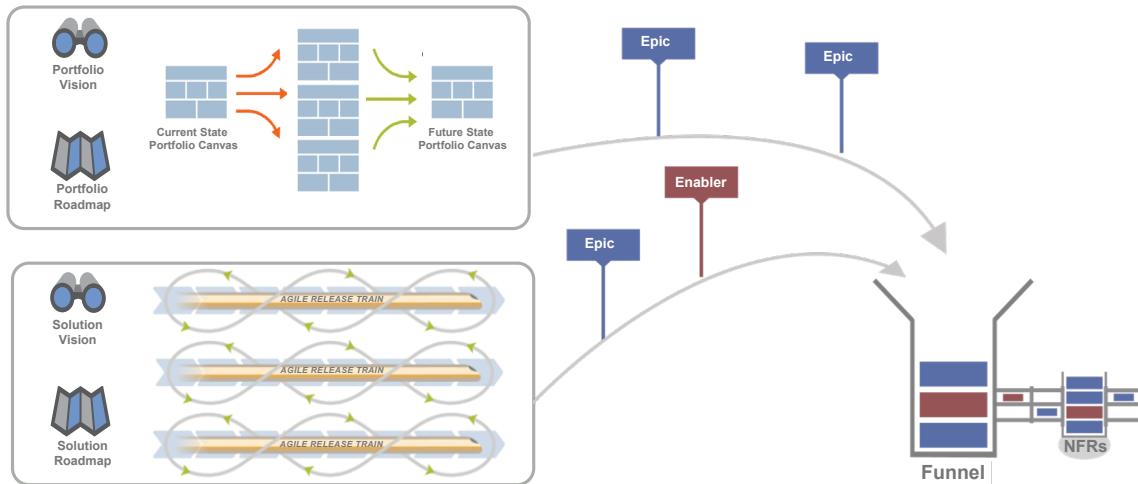


## Epics flow through the Portfolio Kanban

The Portfolio Kanban system describes the process states that an Epic goes through from the funnel to done.



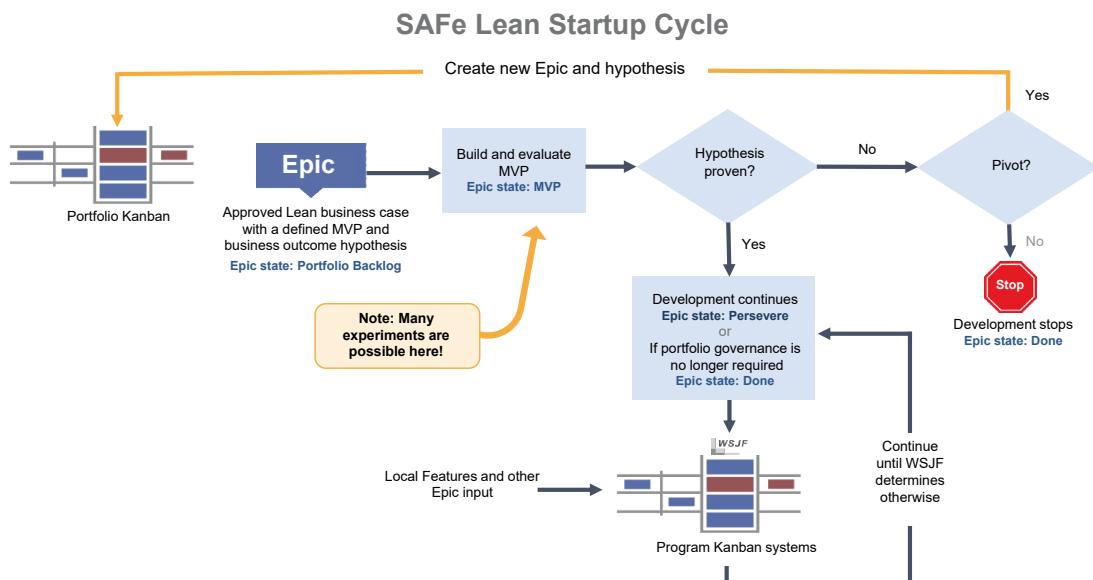
## Feed the portfolio funnel



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## MVPs foster innovation and control scope



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## Lesson review

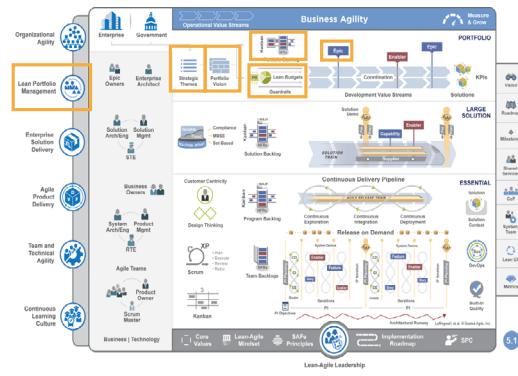
In this lesson you:

- ▶ Described the purpose and elements of a SAFe portfolio
- ▶ Constructed well-written strategic themes
- ▶ Reviewed the Portfolio Canvas to describe the current and future state
- ▶ Created Epic hypothesis statements to inform the Vision
- ▶ Distinguished traditional and Lean budgeting approaches
- ▶ Discussed the Portfolio Kanban

## Articles used in this lesson

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

- ▶ “Lean Portfolio Management”  
<https://www.scaledagileframework.com/lean-portfolio-management/>
- ▶ “Strategic Themes”  
<https://www.scaledagileframework.com/strategic-themes/>
- ▶ “Portfolio Vision”  
<https://www.scaledagileframework.com/portfolio-vision/>
- ▶ “Lean Budgets”  
<https://www.scaledagileframework.com/lean-budgets/>
- ▶ “Lean Budget Guardrails”  
<https://www.scaledagileframework.com/guardrails/>
- ▶ “Portfolio Kanban”  
<https://www.scaledagileframework.com/portfolio-kanban/>
- ▶ “Epics”  
<https://www.scaledagileframework.com/epic/>



## Continue your SAFe journey with the following resources

Watch this six-minute video, <i>Introduction to LPM</i> , to revisit the key themes: <a href="https://bit.ly/Video-IntroductionLPM">https://bit.ly/Video-IntroductionLPM</a>	Use the <i>SWOT/TOWS Analysis Collaborate</i> template to identify strategic options to create a better future state: <a href="https://bit.ly/Template-SWOTandTOWSAnalysis">https://bit.ly/Template-SWOTandTOWSAnalysis</a>
Complete the <i>Portfolio Canvas Collaborate</i> template to define the key elements of the portfolio: <a href="https://bit.ly/Template-PortfolioCanvas">https://bit.ly/Template-PortfolioCanvas</a>	Use the <i>Epic Hypothesis Statement</i> Collaborate template to define a statement for each of your significant solution initiatives: <a href="https://bit.ly/Template-EpicHypothesisStatement">https://bit.ly/Template-EpicHypothesisStatement</a>
Analyze the Portfolio's strengths and weaknesses with the <i>SWOT Analysis Collaborate</i> template: <a href="https://bit.ly/Template-SWOT-Analysis">https://bit.ly/Template-SWOT-Analysis</a>	Run a <i>Lean Portfolio Management Assessment</i> to identify improvement opportunities: <a href="https://bit.ly/Community-MeasureAndGrow">https://bit.ly/Community-MeasureAndGrow</a>

## Lesson notes

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

# Lesson 6

## Leading the Change

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



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### Why Lean-Agile Leadership?

An organization's managers, executives, and other leaders are responsible for the adoption, success, and ongoing improvement of Lean-Agile development and the competencies that lead to Business Agility. Only they have the authority to change and continuously improve the systems that govern how work is performed.



6-2

## Lesson Topics

6.1 Leading by example

6.2 Leading the change

### Mindset & Principles



I Core Values

III Lean-Agile Mindset

SAFe Principles

#### Leading by Example



- ⌚ Authenticity
- ⌚ Decentralized Decision-Making
- ⌚ Emotional Intelligence
- ⌚ Lifelong Learning
- ⌚ Growing Others

#### Leading Change



6-3

## Learning objectives

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

- ▶ Explain the behaviors necessary to lead by example
- ▶ Discuss techniques for leading successful change
- ▶ Recognize the steps in the SAFe Implementation Roadmap

## 6.1 Leading by example

### Leading by example

*Setting an example is not the main means of influencing others, it is the only means. —Albert Einstein*

- ▶ **Authenticity** requires leaders to model desired professional and ethical behaviors
- ▶ **Emotional intelligence** describes how leaders identify and manage their emotions and those of others through self-awareness, self-regulation, motivation, empathy, and social skills
- ▶ **Lifelong learning** depicts how leaders engage in an ongoing, voluntary, and self-motivated pursuit of knowledge and growth, and they encourage and support the same in others
- ▶ **Growing others** encourages leaders to provide the personal, professional, and technical guidance and resources each employee needs to assume increasing levels of responsibility
- ▶ **Decentralized decision-making** moves the authority for decisions to where the information is



## Leaders provide the organization with patterns of expected behaviors

<b>Pathological Culture</b> <i>Power-oriented</i>	<b>Bureaucratic Culture</b> <i>Rule-oriented</i>	<b>Generative Culture</b> <i>Performance-oriented</i>
Low cooperation	Modest cooperation	High cooperation
Messengers blamed	Messengers neglected	Messengers trained
Responsibilities shirked	Narrow responsibilities	Responsibilities shared
Collaboration discouraged	Collaboration tolerated	Collaboration encouraged
Failure leads to scapegoating	Failure leads to justice	Failure leads to improvement
Innovation crushed	Innovation leads to problems	Innovation implemented

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6-7

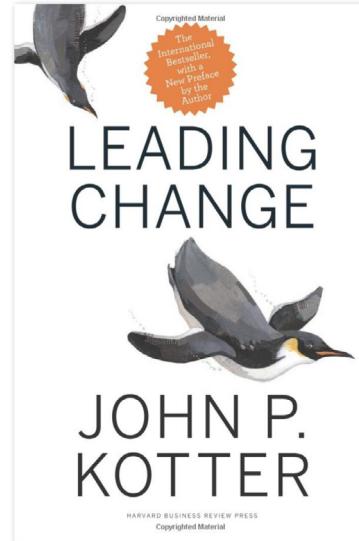
## 6.2 Leading the change

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6-8

## Keys to leading successful change

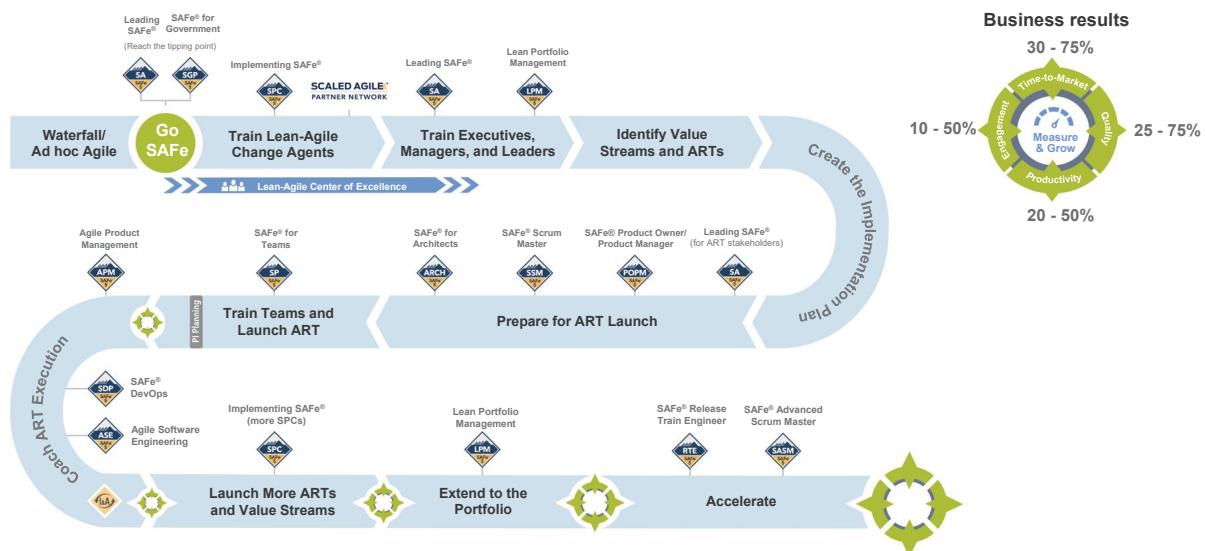
- ▶ Establish a sense of urgency
- ▶ Create a powerful guiding coalition
- ▶ Develop the vision and strategy
- ▶ Communicate the vision
- ▶ Empower employees for broad-based action
- ▶ Generate short-term wins
- ▶ Consolidate gains and produce more wins
- ▶ Anchor new approaches in the culture



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6-9

## SAFe® Implementation Roadmap



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6-10

# Train everyone.

# Launch trains.

6-11



## Action Plan: Leading the change

Prepare 5 minShare 3 min

▶ **Step 1:** Identify three action items you can do in the next month to start leading the SAFe transformation.

▶ **Step 2:** Share your ideas with your group.

▶ **Step 3:** Discuss outcomes you hope to achieve with your Action Plan



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6-12



# Action Plan

Leading the change

## Lesson review

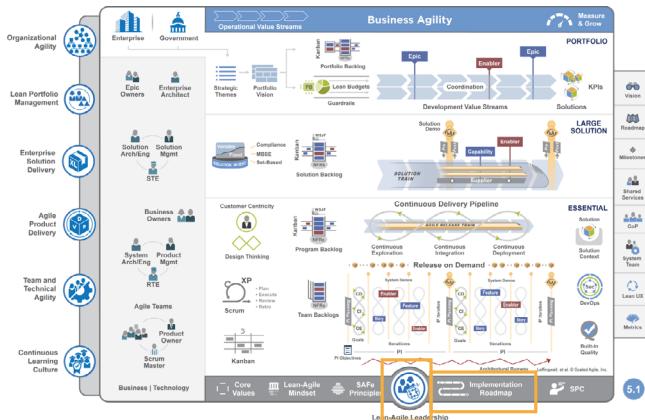
In this lesson you:

- ▶ Explored the behaviors necessary to lead by example
- ▶ Discussed techniques for leading successful change
- ▶ Reviewed the steps in the SAFe Implementation Roadmap

## Lesson review

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

- ▶ Lean-Agile Leadership  
<https://www.scaledagileframework.com/lean-agile-leadership/>
- ▶ Implementation Roadmap  
<https://www.scaledagileframework.com/implementation-roadmap/>



## Continue your SAFe journey with the following resources

Use the *Introducing SAFe Toolkit 5.1* to establish a sense of urgency in your organization:  
<https://bit.ly/Community-ToolkitsandTemplates>

Run a *Lean Agile Leadership Assessment* to identify improvement opportunities:  
<https://bit.ly/Community-MeasureAndGrow>

## Lesson notes

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

# Lesson 7

## Practicing SAFe

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



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Video: SAFe Certification Benefits

Duration  
3 min



<https://bit.ly/Video-SAFE Certification Benefits>

## A Path Towards Certification



Access exam study guides and practice tests



Download your certificate of course completion



Take the **Certification Exam**



Showcase your **Digital Badge** and get recognized as Certified SAFe Professional



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7-3



Video: Welcome to the SAFe Community Platform



# Welcome to the SAFe® Community Platform!

SCALED AGILE®  
Provider of SAFe®

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

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7-4

## Leading SAFe Class Page

Access all the practice assets you need to get started on your SAFe journey.

The screenshot shows the SAFe Community website's 'Learn' section. A red box highlights the 'My Classes' menu item under 'My Learning'. Below this, a red box highlights the 'Before Class' tab in the 'Training and Events Calendar' navigation bar. The main content area displays four video thumbnails: 'Agile Basics', 'SAFe Lean-Agile Principles', 'What is SAFe for Lean Enterprises', and 'SAFe Core Values', each with a play button and a duration indicator (30-45 Minutes or 15-30 Minutes).

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7-5

## SAFe ART and Team Events

**SAFe Art and Team Events:** Use checklists, templates, videos, agendas, toolkits, and more to support your ART and team events



The screenshot shows the SAFe ART & Team Events page. It features a 'Support for ART and Team Events' section with a globe icon and a brief description of the tools and guidance available. To the right, a 'What's on this page?' sidebar lists three items: 'Videos, checklists, toolkits, and more to help guide you in preparing for and facilitating SAFe ART and Team events.', 'SAFe Collaborate Templates specifically curated for each SAFe event.', and 'New to SAFe Collaborate? Find guidance for using that tool here as well.' Below this, there are three sections: 'Events' (Program Increment (PI) Planning, Inspect and Adapt (I&A), Team Events), each with a thumbnail image and a brief description.

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7-6

## Community Video Hub



Access videos to support your learning and grow your skills



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7-7

## E-learning Resources



Discover and develop skills through self-paced, interactive e-learning modules to achieve your personal and professional goals



### Agile Basics

E-learning

Learn what Agile is, where it comes from, why it continues to be used and needed, and how it supports teams and organizations to do what they do better.

⌚ 30 - 45 Minutes

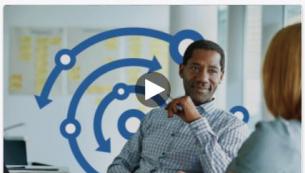


### What is SAFe for Lean Enterprises

E-learning

Become more familiar with the goals and methods of SAFe to achieve Business Agility.

⌚ 15 - 30 Minutes



### SAFe Foundations: Core Values

E-learning

Build your understanding of the core values of SAFe and how they are applied in practice.

⌚ 15 - 30 Minutes

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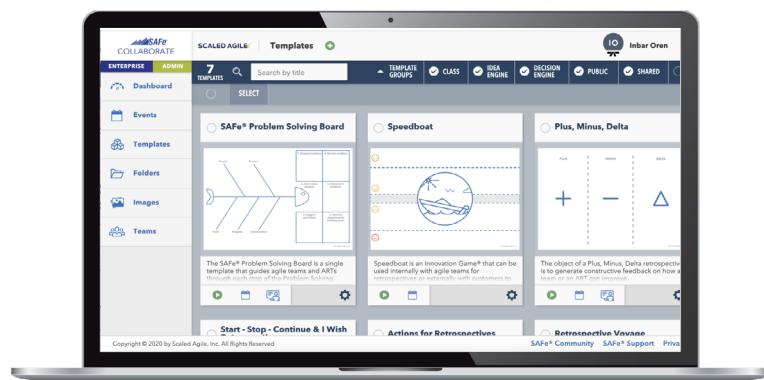
7-8

## SAFe Collaborate



### Organize and run virtual SAFe events in real time

**SAFe Collaborate** is a visual, cloud-based workspace where organizations can orchestrate virtual SAFe events activities easily and effectively with predefined and customizable templates.



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7-9

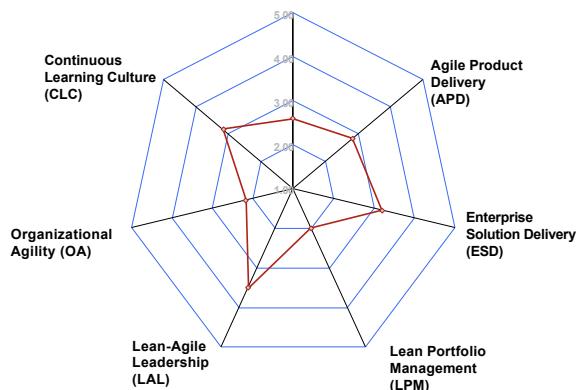
## Measure and Grow



Evaluate progress towards business agility with the SAFe assessments, Measure and Grow workshop and our assessment partners

### Business Agility Assessment

Team and Technical Agility (TTA)



**Measure and Grow Workshop Toolkit**

SAFe Measure and Grow Workshop Toolkit

[PDF](#)

Find the tools and resources needed to facilitate successful Measure & Grow Workshops in your organization.

[Download](#)

**agilityhealth** enabling business agility

**comparative agility**

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7-10

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

**SAFe Community  
Platform!**

<https://community.scaledagile.com>



7-11

## Lesson notes

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

# SAFe Glossary



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