

Lean Agile Product Development using the Scaled Agile Framework[®] (SAFe[®])

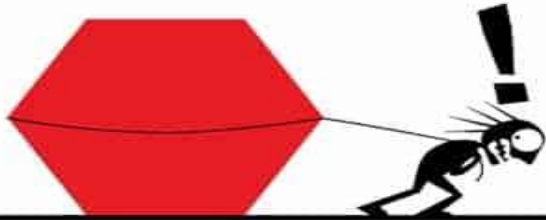


Eugene Nkomba, SPC4, ASQ-CMQ/OE

March 14, 2018

Waterfall vs. Agile

THE WATERFALL PROCESS



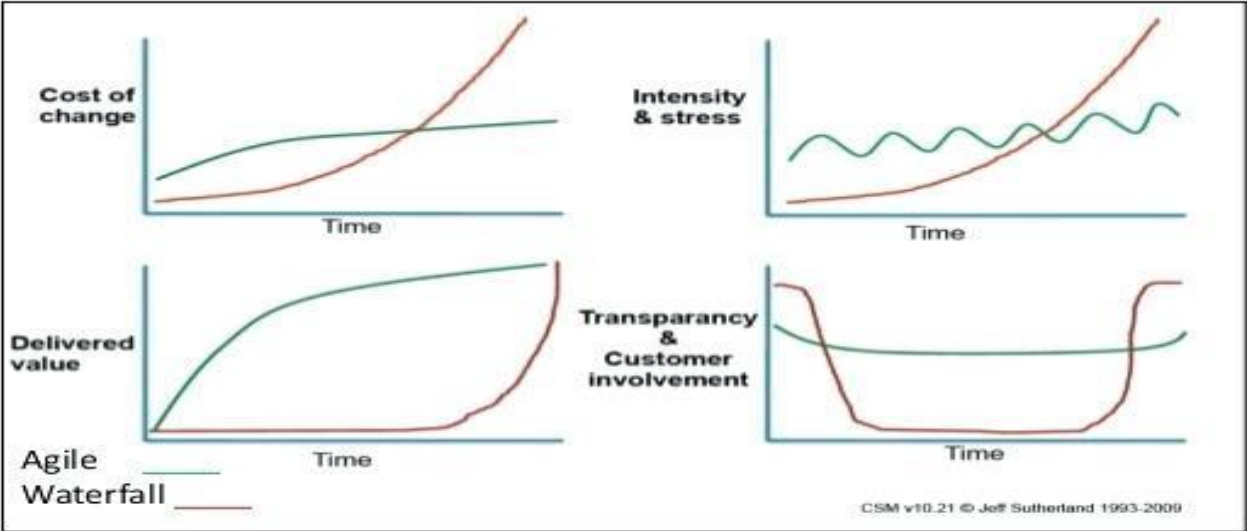
*'This project has got so big,
I'm not sure I'll be able to deliver it!'*

THE AGILE PROCESS



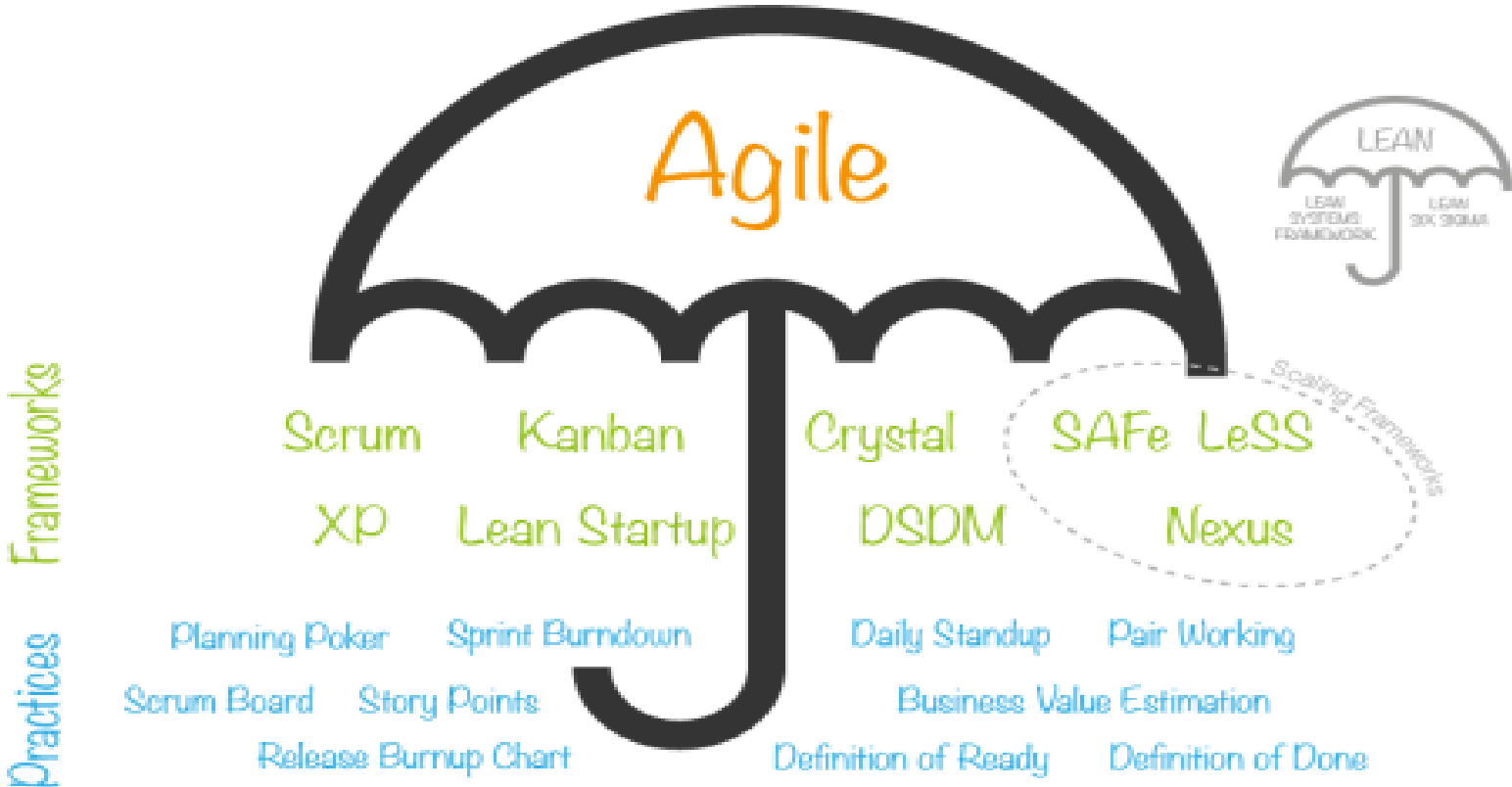
*'It's so much better delivering this
project in bite-sized sections'*

Waterfall vs. Agile



Agile vs. Waterfall: Characteristics

Agile Approaches





Digital disruption is affecting every industry across the globe.



“Every business is a software business now. Agility isn't an option, or a thing just for teams, it is a business imperative. But we struggle building big systems ... “

—Dean Leffingwell
Creator of SAFe

How can we compete when our retrospectives read like this?



Management's 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.”

*—Vignette from *Out of the Crisis*, Deming, 1986*

220,000

SAFe-trained professionals in 110+ countries



170

Scaled Agile Partners in 50 countries



SAFe
SUMMIT

Freely Available

SAFe's knowledge base is freely available at scaledagileframework.com

Training

A comprehensive role-based curriculum for successfully implementing SAFe and skills validation through professional certification.



Configurable

SAFe is able to accommodate enterprises of all sizes and industries

70% US *Fortune* 100 enterprises have SAFe-trained professionals



2 million

Annual visitors to SAFe and Scaled Agile websites



Pledged 1%

Scaled Agile stock equity & employee time to Pledge 1% campaign

Fastest Growing Method

SAFe cited as preferred solution for scaling Agile:

- 2017 Agile in the Enterprise survey by Gartner Research
- 11th Annual State of Agile Report by VersionOne
- 2017 Scaling Agile Report by cPrime

SAFe CASE STUDIES

30 - 75%

Faster Time-to-Market



25 - 75%

Increase in Productivity



20 - 50%

Improvements in Quality



10 - 50%

Increased Employee Engagement



SAFe is the world's leading framework for enterprise agility



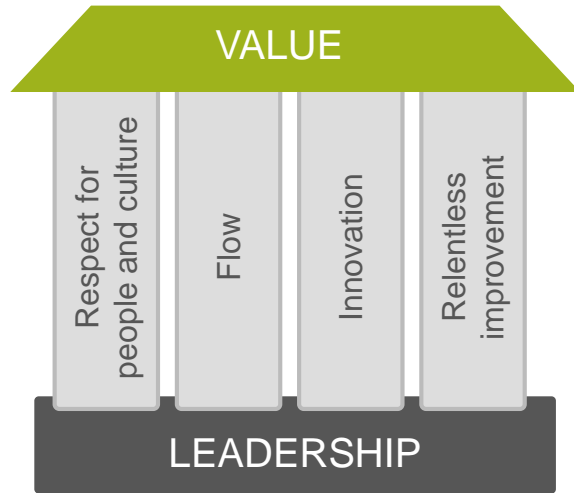
SAFe is a knowledge base of proven, integrated principles and practices for Lean, Agile, and DevOps.

scaledagileframework.com

Embrace a Lean-Agile mindset

Embrace Lean-Agile values

House of Lean



Value in the shortest sustainable lead time

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.

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

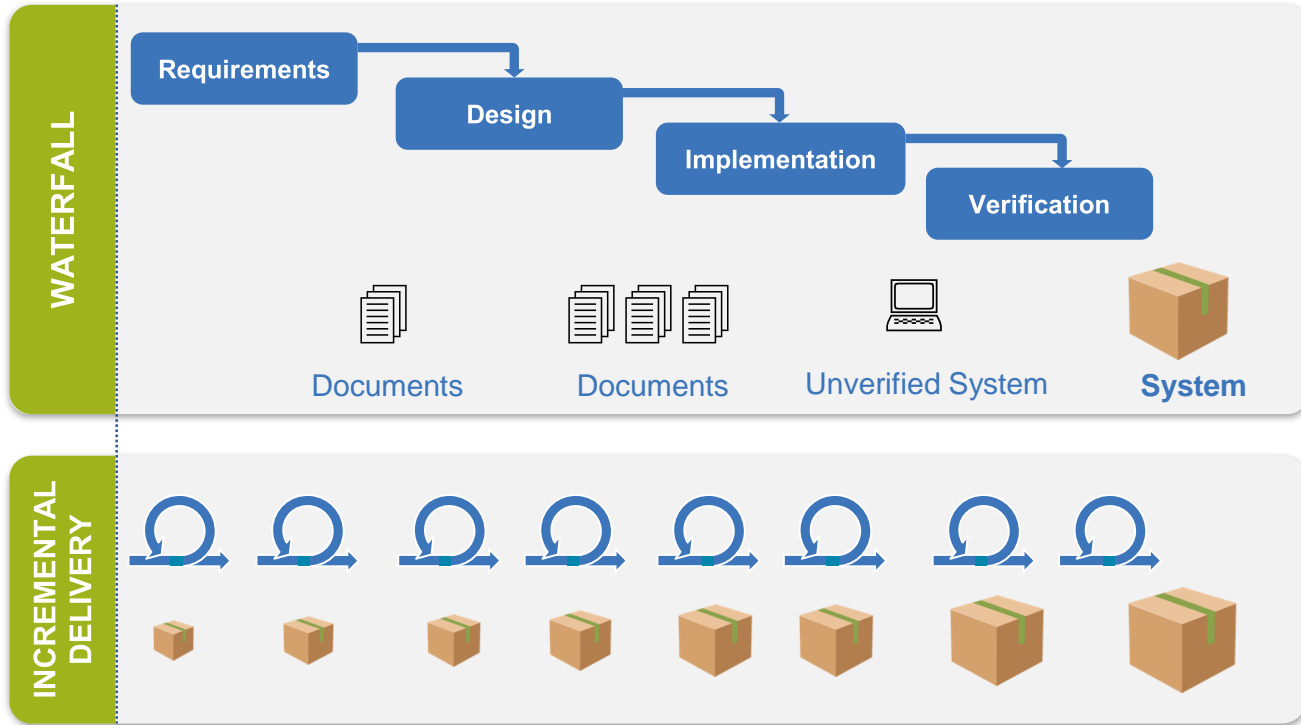
#6 - Visualize and limit WIP, reduce batch sizes, and manage queue lengths

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

#8 - Unlock the intrinsic motivation of knowledge workers

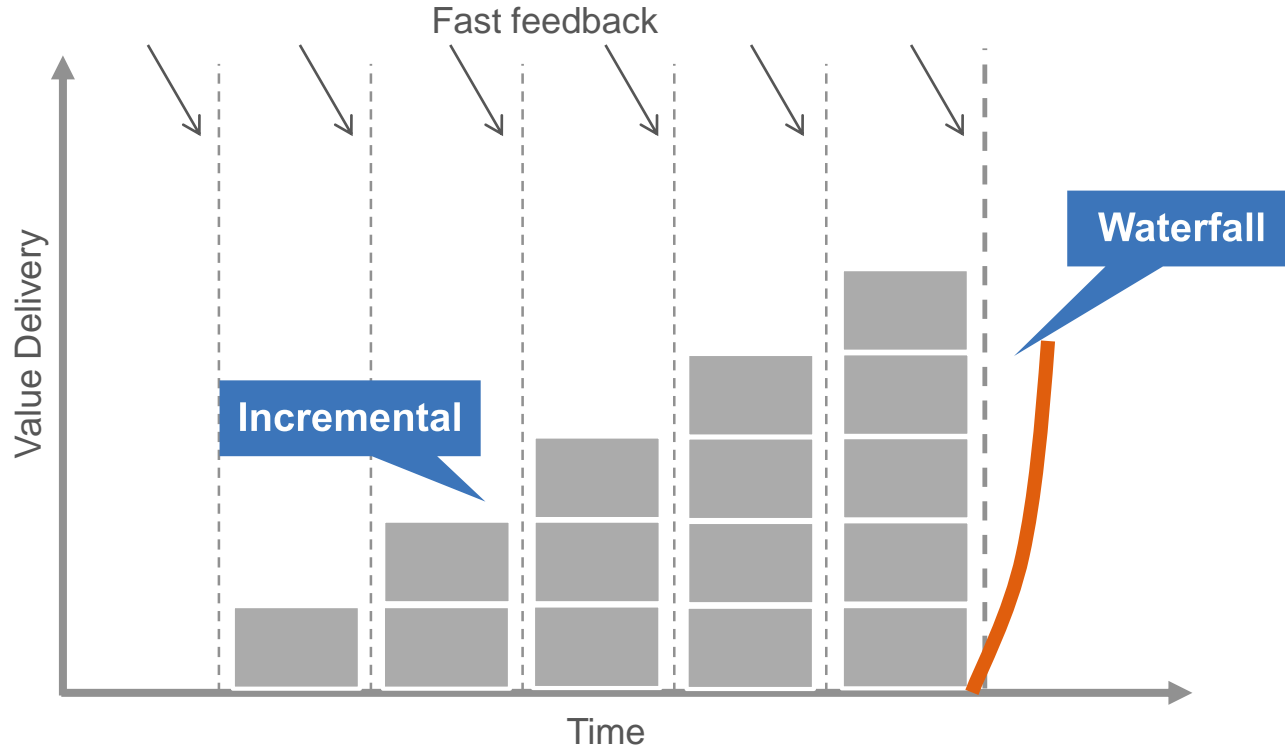
#9 - Decentralize decision-making

Building incrementally accelerates value delivery



And delivers better economics

Early delivery provides fast value with fast feedback



Aspects of systems thinking

1. The solution itself is a system.

2. The enterprise building the system is a system too.

3. Optimize the full value stream.



- ▶ 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

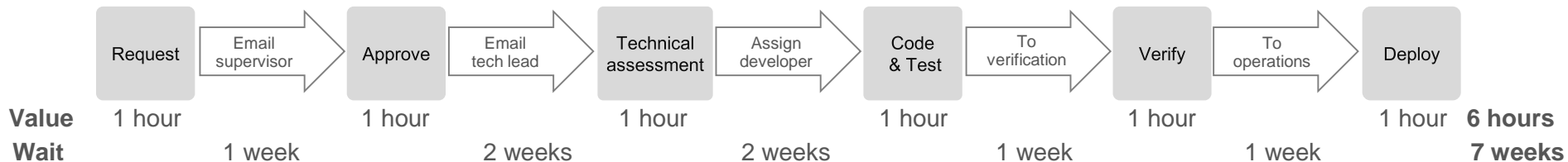
Optimize the full value stream

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

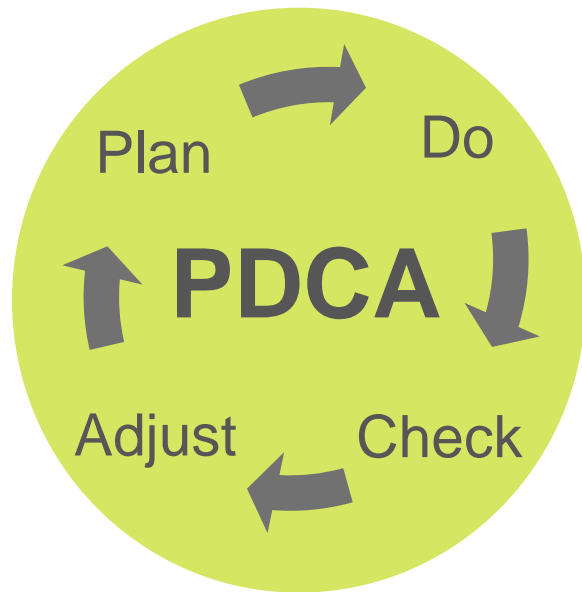
- ▶ Most problems with your process will surface as *delays*
- ▶ Most of the time spent getting to market is a result of these delays
- ▶ Reducing delays is the fastest way to reduce time to market

Focus on the delays!



Apply fast learning cycles

Fast feedback accelerates knowledge.



The iterative learning cycle

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

The shorter the cycles, the faster the learning

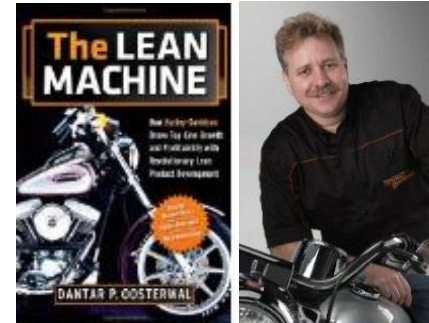
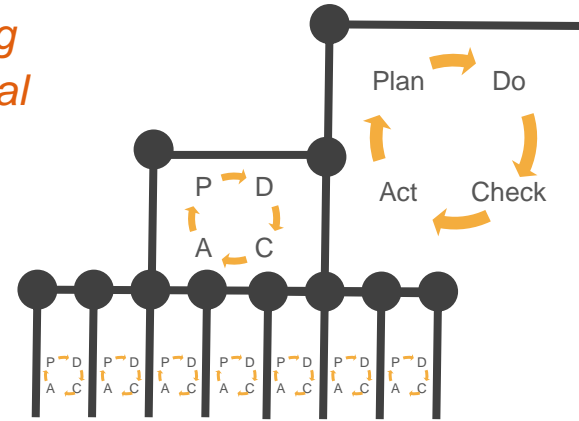
*Principles of Product Development Flow, Don Reinertsen
Plan. Do. Check. Act. (Adjust), W. Edwards Deming, Walter Shewhart, et al.*

Apply fast learning cycles

Product development is the process of converting uncertainty to knowledge —Dantar P. Oosterwal

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

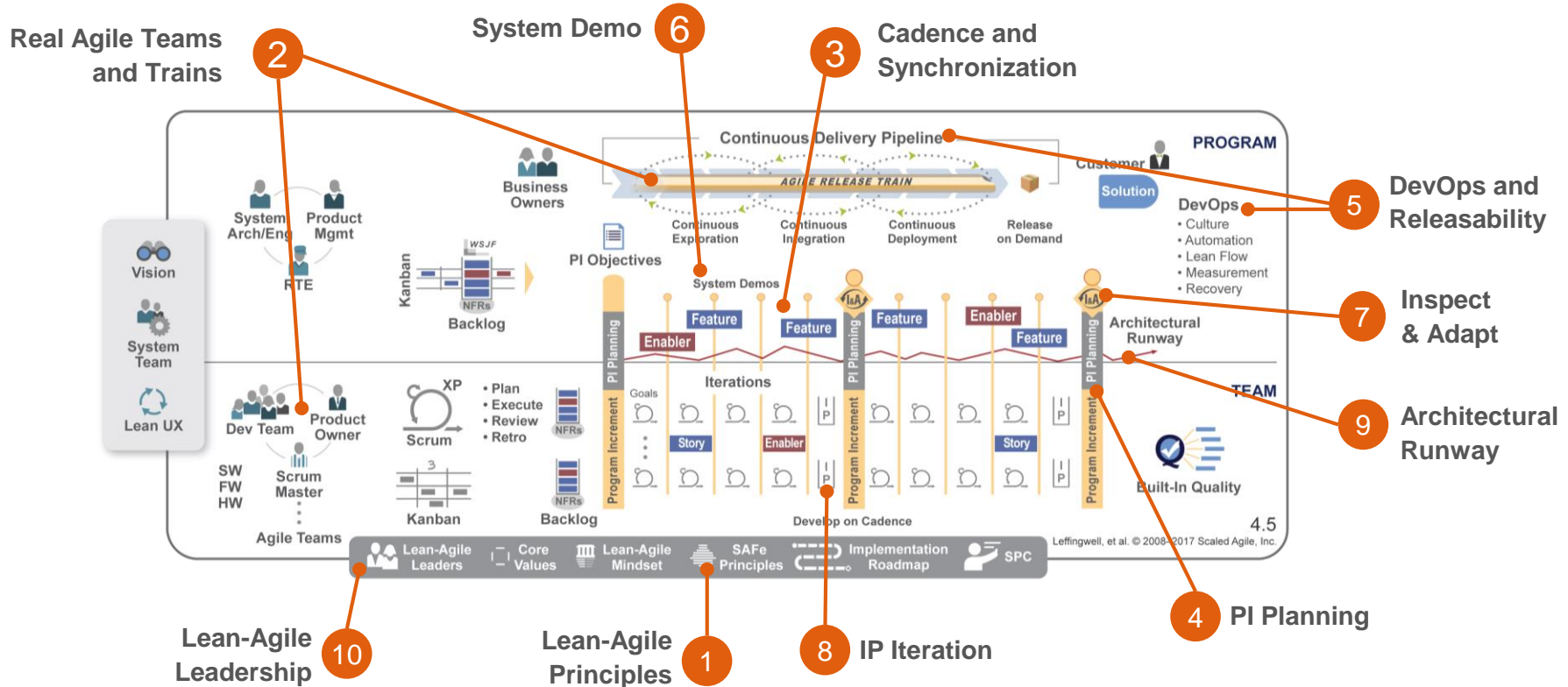


The Lean Machine:
How Harley Davidson Drove Top-Line Growth and Profitability with Revolutionary Lean Product Development

—Dantar P. Oosterwal

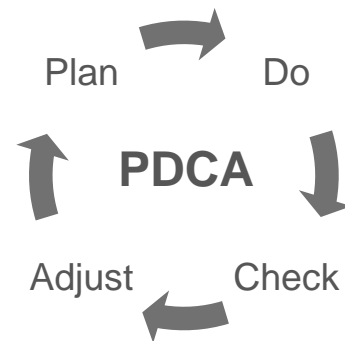
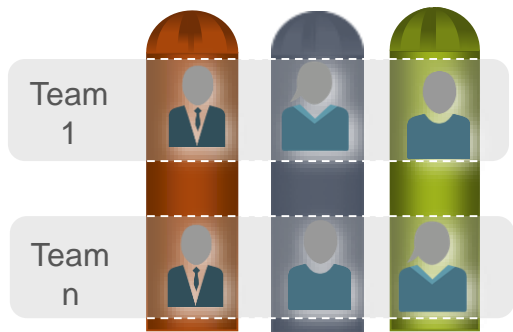
Build the Lean enterprise

Start with Essential SAFe



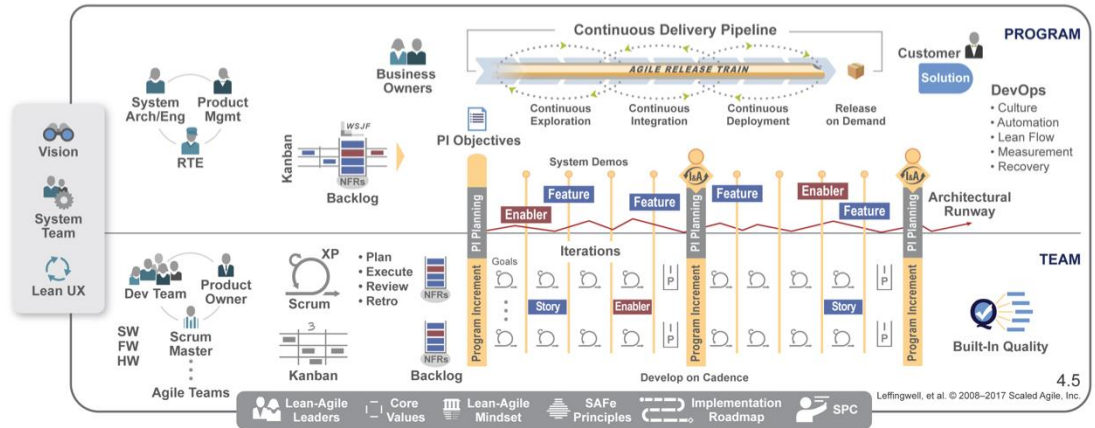
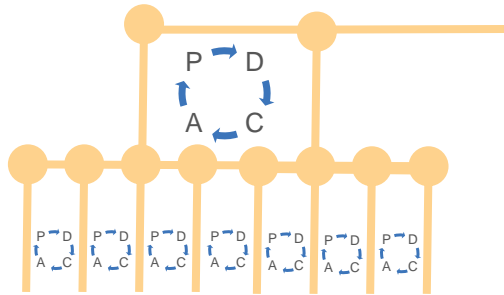
Nothing beats an Agile Team

- ▶ Cross-functional, self-organizing — can **define, build, and test** valuable things
- ▶ Applied Agile Software Engineering practices with XP, Scrum, and Kanban
- ▶ Delivers value every two weeks

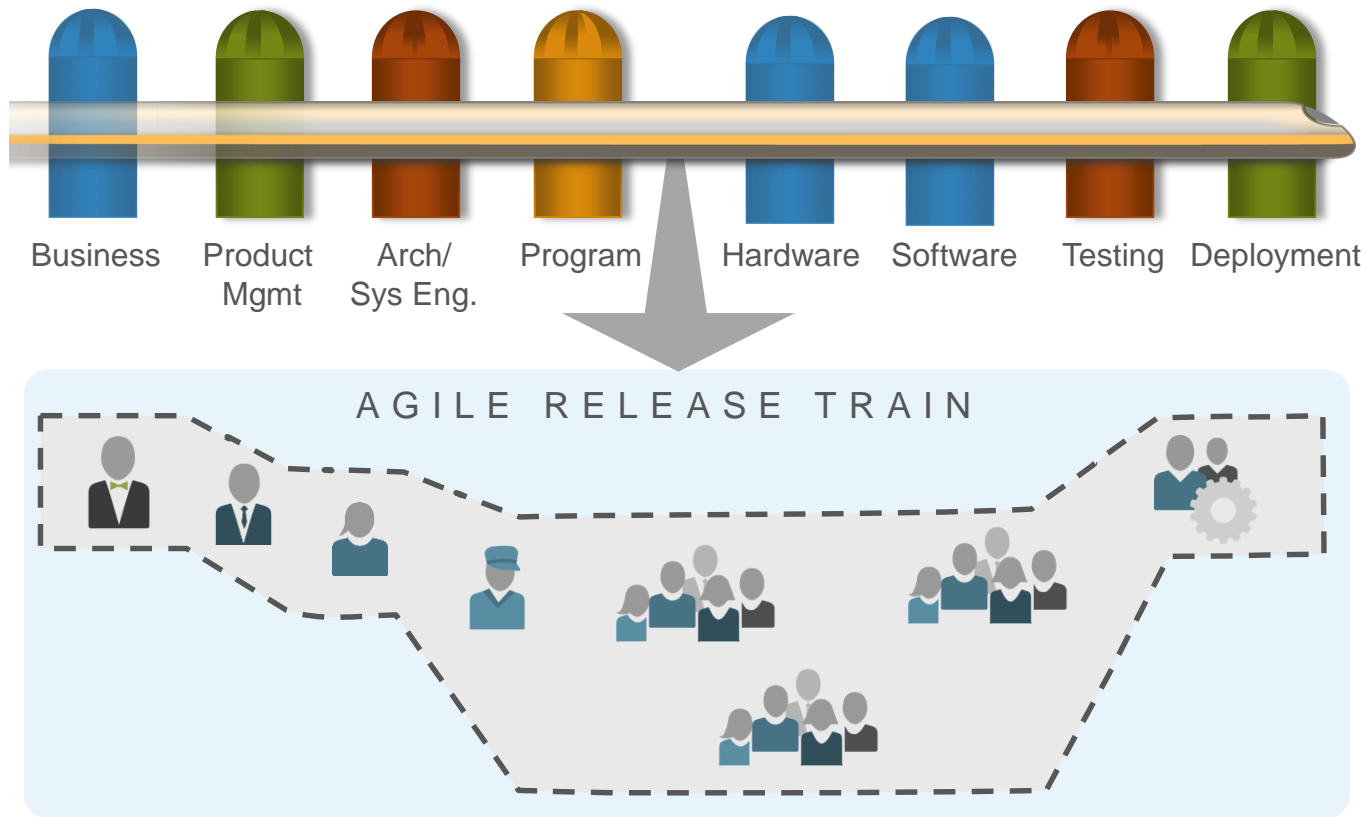


Except a team of Agile Teams

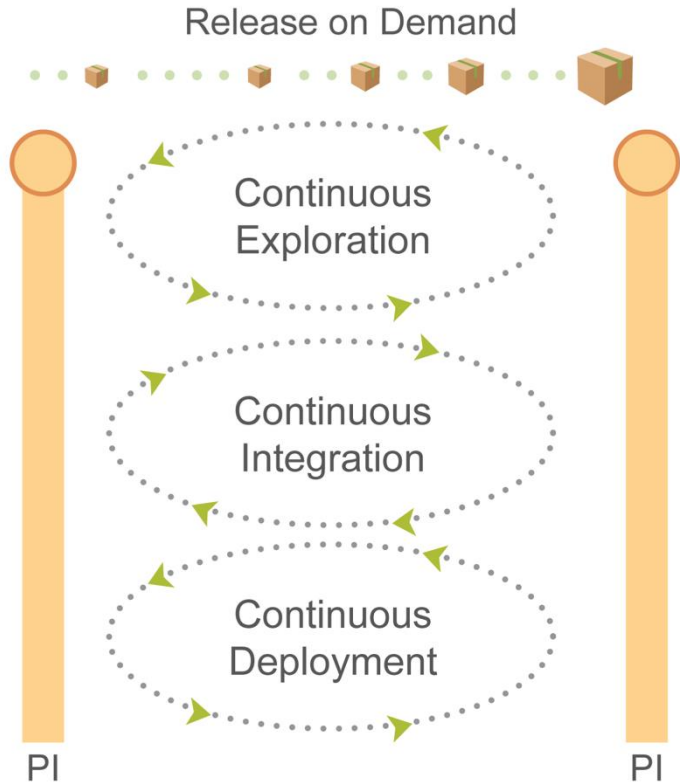
- ▶ Align 50 - 125 practitioners to a common mission
- ▶ Apply cadence and synchronization, Program Increments every 6 - 12 weeks
- ▶ Provide Vision, Roadmap, architectural guidance



Bringing together the necessary people



To deliver value continuously



Synchronizing with PI Planning

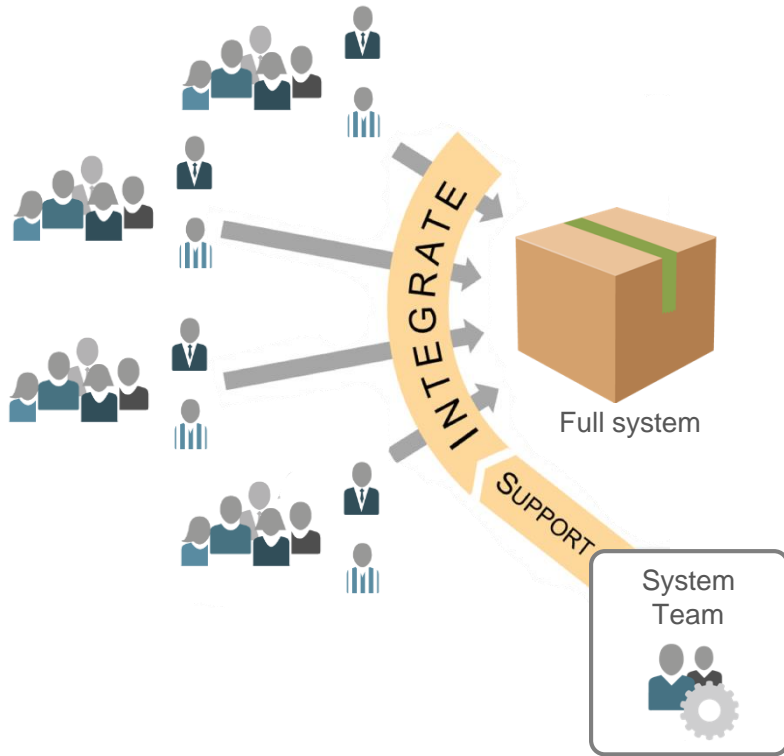
Future product development tasks can't be pre-determined. Distribute planning and control to those who can understand and react to the end results. —Michael Kennedy, Product Development for the Lean Enterprise

- ▶ All stakeholders face-to-face (but typically multiple locations)
- ▶ Management sets the mission, with minimum possible constraints
- ▶ Requirements and design emerge
- ▶ Important stakeholder decisions are accelerated
- ▶ Teams create—and take responsibility for—plans



For a short video PI planning example, see: <https://youtu.be/ZZAtI7nAB1M>

Demonstrating the full system every two weeks



- ▶ An integrated solution demo
- ▶ Objective milestone
- ▶ Demo from the staging environment, or the nearest proxy



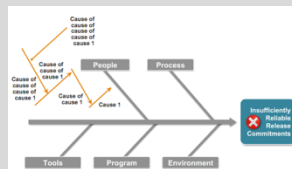
Inspecting and Adapting every PI

Every PI, teams systematically address the larger impediments that are limiting velocity.

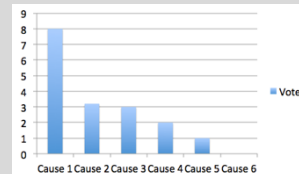
Agree on the problem to solve

Insufficiently reliable release commitments?

Apply root cause analysis (+ five whys)



Identify the biggest root cause using Pareto Analysis



Restate the new problem for the biggest root cause

Insufficient architectural runway

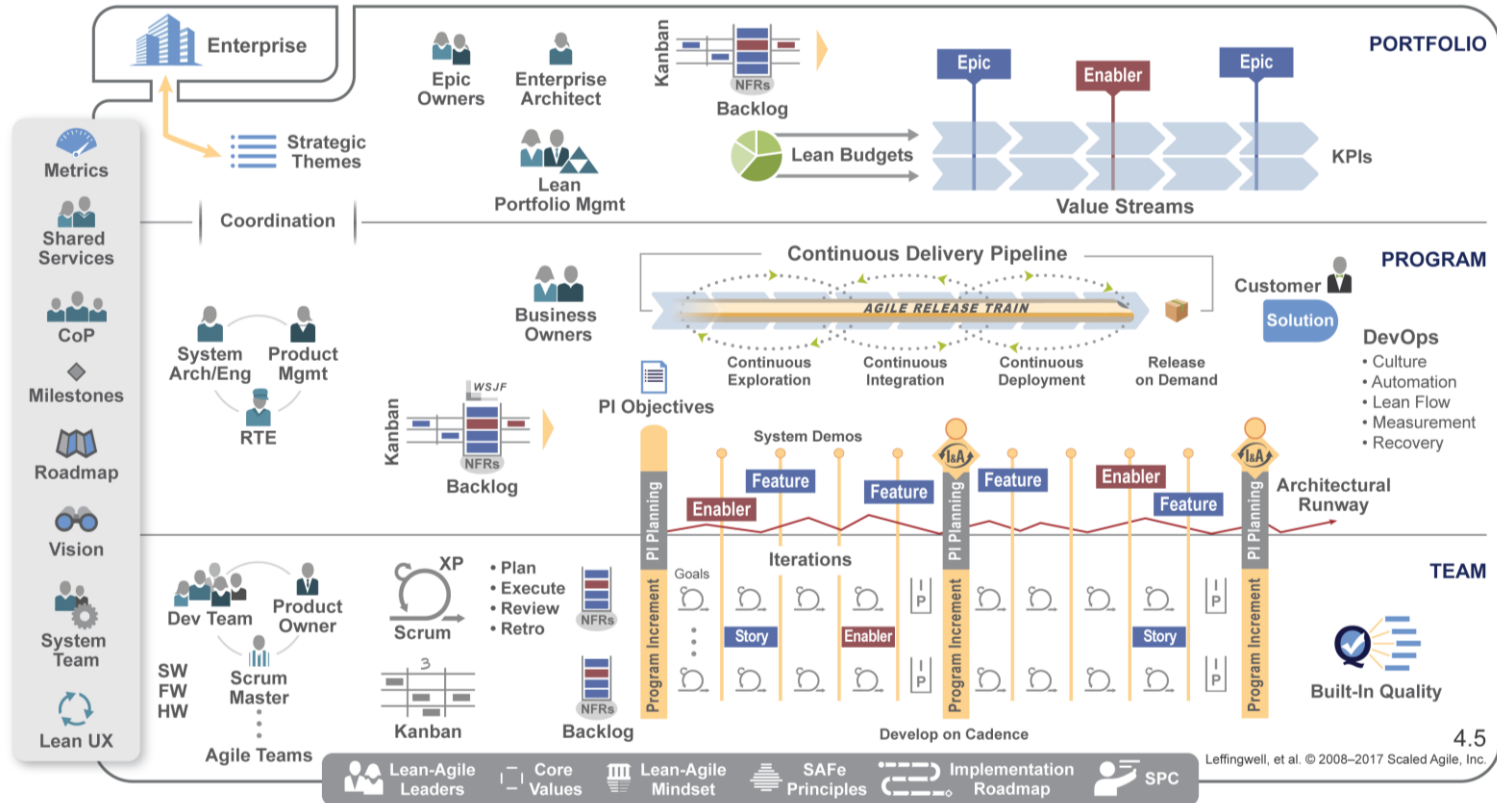
Brainstorm solutions



Identify improvement Backlog items



Align strategy and execution with Portfolio SAFe



The Portfolio challenge



*“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.*”

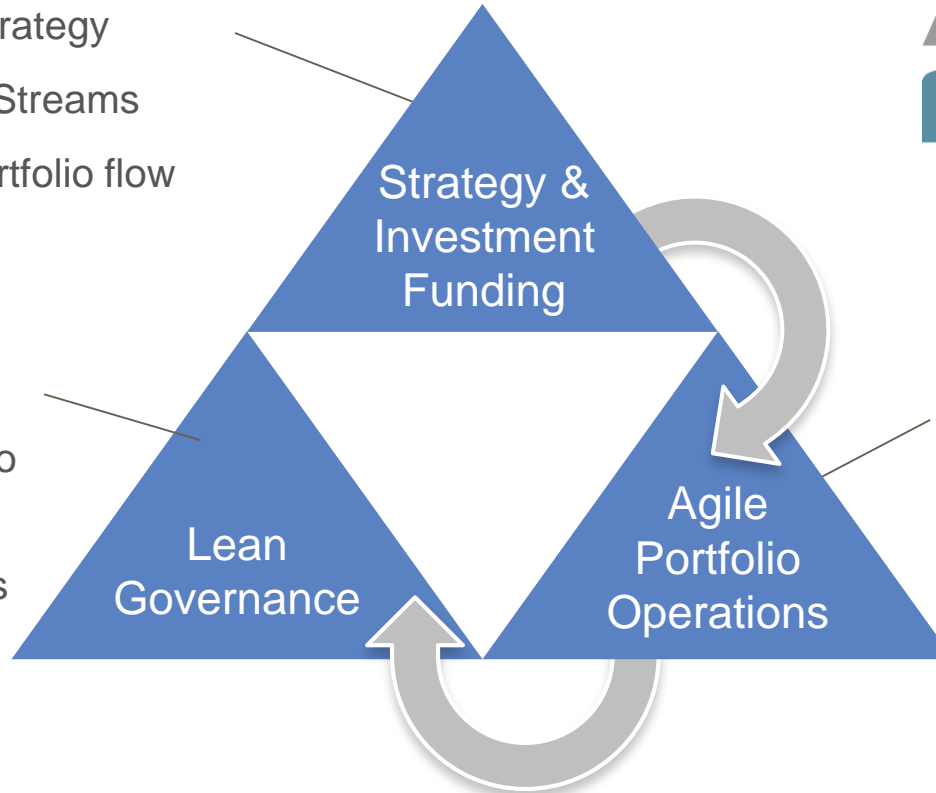
That is why, when you ask members of an executive team to describe and explain the corporate strategy, you frequently get wildly different answers. We just don’t have a good business discipline for converging on issues this abstract.”

—Geoffrey Moore
Escape Velocity

Apply SAFe Lean Portfolio Management

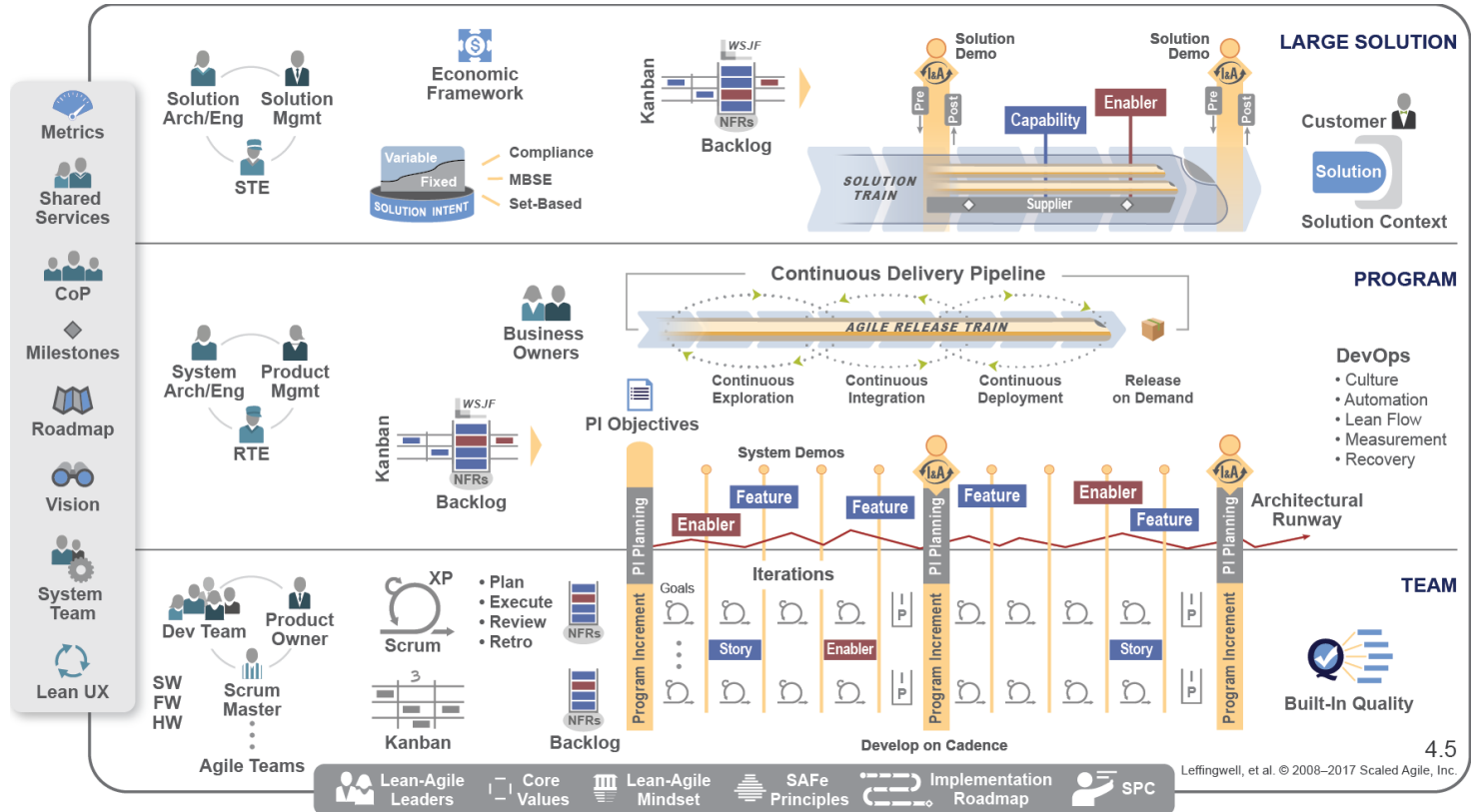
- Connect the portfolio to enterprise strategy
- Fund Value Streams
- Establish portfolio flow

- Forecast and budget dynamically
- Measure Lean portfolio performance
- Coordinate continuous compliance

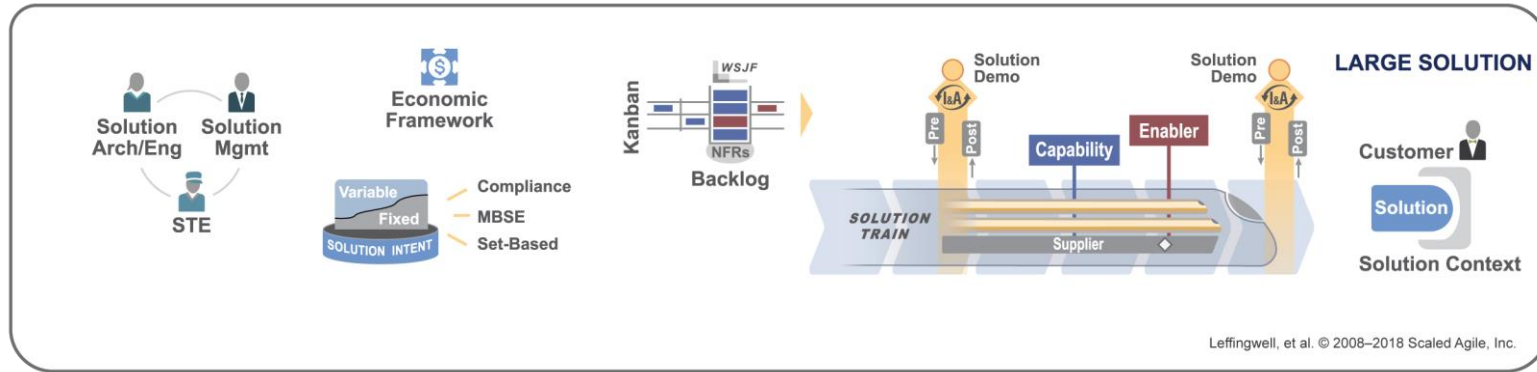


- Support Agile PMO, LACE, RTE and SM CoP
- Coordinate Value Streams
- Sustain and improve

Build big systems with Large Solution SAFe



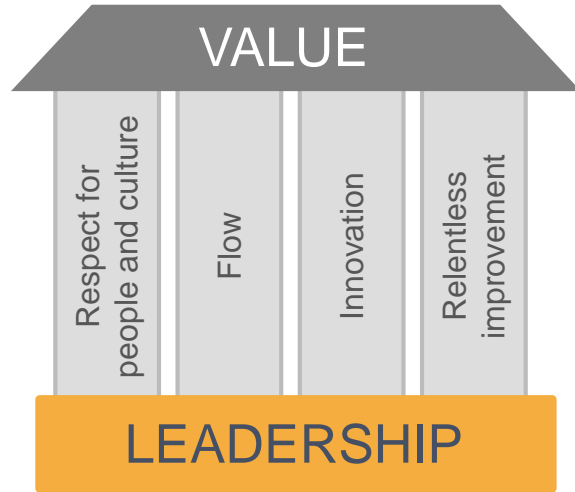
Apply Lean Systems Engineering



- ▶ Solution Trains coordinate ARTs and suppliers
- ▶ Capture fixed and variable Solution Intent
- ▶ Integrate and test the full solution on cadence
- ▶ Implement continuous compliance

Lead the transformation

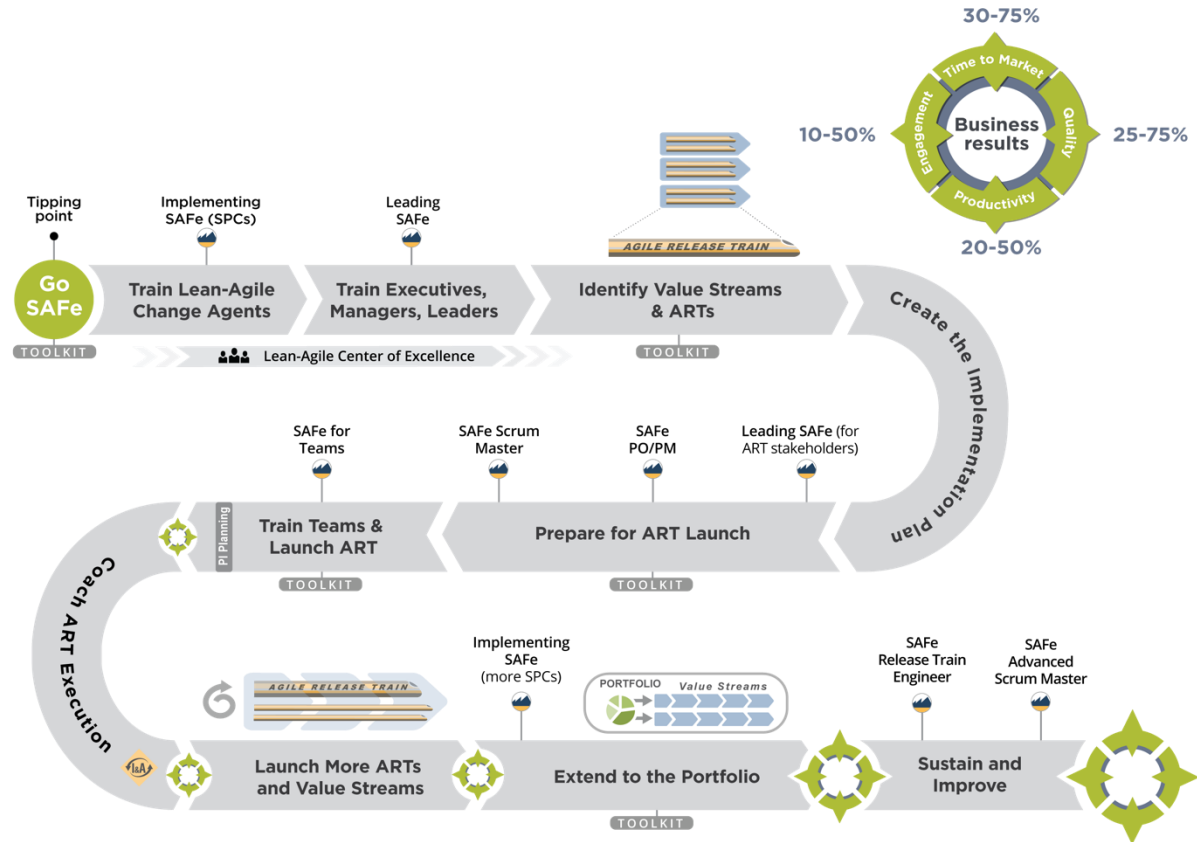
Leadership foundation



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

—W. Edwards Deming

Follow the SAFe Implementation Roadmap



Get results

Business results




See scaledagileframework.com/case-studies

Financial Services / Electronics / Software / Telecom / Retail & Distribution / Government / Healthcare / Insurance /
Medical Technology / Pharmaceutical / Media / Manufacturing / COTS Software / Customer Care & Billing / Outsourcing



Life insurance giant saves \$12 million and stays 18 months ahead of schedule with SAFe



SAFe helps Intel continuously innovate while controlling costs and maintaining quality.



\$30 million in savings and initial planning time cut by 28% with SAFe



SAFe improves quality and drives continuous delivery of new features for the largest networking company in the world



SAFe delivered millions in benefits in first year and significantly faster time-to-value



SAFe helps the world's leading navigation technology company fail fast, adapt to change, and release faster and more often




Improved Demand management & traceability from Portfolio through to Agile delivery teams



Faster delivery, happier teams, greater predictability, and increased customer satisfaction with SAFe.



SAFe® Helps French National Employment Agency Deliver Strategic Program



Velocity increased 33 percent allowing Fitbit to launch a record number of products

See scaledagileframework.com/case-studies

Gain the knowledge

Educate yourself



scaledagile.com/learning

Scaled Agile's role-based curriculum:

CORE

- Leading SAFe
- SAFe for Teams
- SAFe Scrum Master
- SAFe Product Owner/Product Manager

ADVANCED

- SAFe Advanced Scrum Master
- Implementing SAFe
- SAFe Release Train Engineer
- *More courses in development!*

Learn from the community

200,000+
trained in SAFe



Connect with the global SAFe community to advance learning through the SAFe Community Platform (accessible to those who certify), webinars, conferences, and worldwide SAFe Meetups in places like Mumbai, Paris, Chicago, and Mexico City.

To find a SAFe Meetup near you, go to scaledagile.com/calendar and select **SAFe Meetup** from the *Event Type* dropdown menu.

Attend the world's largest gathering of SAFe professionals at the Global and Regional SAFe Summit events. Details at safesummit.com.

Get help to ensure success

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and support through the Scaled Agile
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- Training and coaching for all SAFe roles
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- Platforms for SAFe automation, visibility, and flow



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PARTNER NETWORK

Start your journey: explore SAFe

scaledagileframework.com

Explore the SAFe knowledge base
and find free resources:

- Articles
- Guidance
- Presentations
- White papers
- Videos
- Case studies

The screenshot displays the Scaled Agile Framework (SAFe) website. At the top, it features the logo for 'SAFe PROVIDED BY SCALED AGILE' and the tagline 'Knowledge for People Building the World's Most Important Systems'. A navigation menu includes links for Home, Why SAFe?, SAFe Blog, Training & Certification, Community, Implementing, Case Studies, Resources, Partners, and About. The main content area is titled 'SAFe for Lean Enterprises' and 'Portfolio SAFe', showing a complex diagram of the framework's structure. This diagram illustrates the flow from Enterprise-level metrics and shared services down to individual team-level activities like Scrum, Kanban, and DevOps. It also shows the 'Continuous Delivery Pipeline' and 'Value Streams' across different levels. To the right of the diagram is a 'CONFIGURATIONS' section with radio buttons for 'FULL SAFe', 'PORTFOLIO SAFe' (which is selected), 'LARGE SOLUTION SAFe', and 'ESSENTIAL SAFe'. Below this, a brief description states: 'This Configuration: Portfolio SAFe is for enterprises building solutions that require a modest number of Agile teams. It supports the development of multiple solutions, which have minimal dependencies on one another. Learn more.' At the bottom of the page, there are four article cards with titles and dates: 'New Case Study: Northwestern Mutual Delivers 18 Months Ahead of Schedule with SAFe' (April 3, 2017), 'Regulatory and Industry Standards Compliance with SAFe' (April 3, 2017), 'Article 11 in SAFe Implementation Roadmap series: Extend to the Portfolio' (April 2, 2017), and 'Article 10 in SAFe Implementation Roadmap series: Launch More ARTs and Value Streams' (March 27, 2017).