Lesson 8
Building Really Big Systems

Day 1

1. Introducing the Scaled Agile Framework
2. Embracing a Lean-Agile Mindset

   Break
3. Understanding SAFe Principles

   Lunch
4. Implementing an Agile Release Train

   Break
5. Experiencing PI Planning

Day 2

6. Executing and Releasing Value

   Break
7. Building an Agile Portfolio

   Lunch
8. Building Really Big Systems

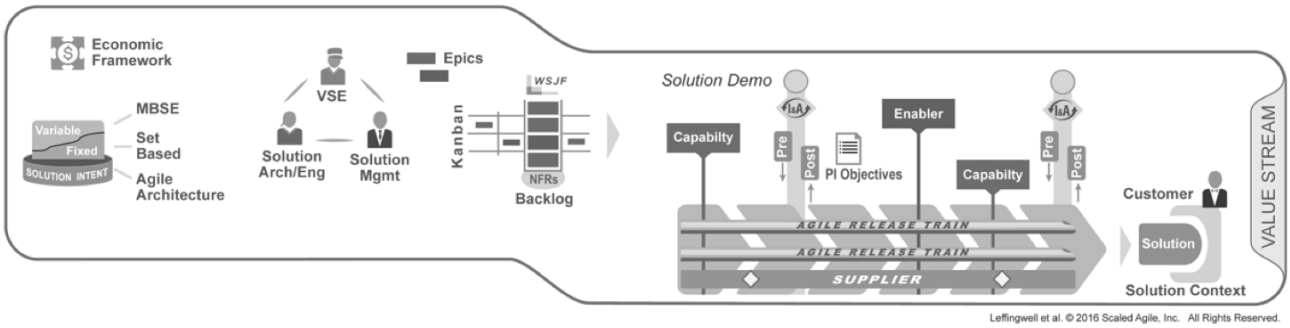
   Break
9. Leading the Lean-Agile Enterprise

Learning objectives

8.1 Apply the Value Stream level for large and complex solutions

8.2 Coordinate and integrate multiple ARTs and Suppliers

8.3 Establish Value Stream flow

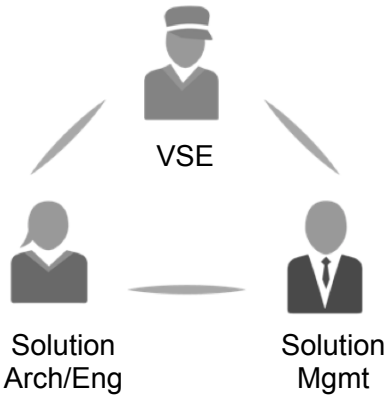


8.1 Apply the Value Stream level for large and complex solutions

The Value Stream roles

Three primary roles help ensure successful execution of the Vision and Roadmap initiatives at the Value Stream Level:

1. The Value Stream Engineer is a servant leader that facilitates and guides the work of all ARTs and suppliers. They have similar responsibilities to an RTE.
2. Solution Management is the main content authority guiding the Value Stream. They have primary responsibility for the Value Stream Backlog.
3. The Solution Architect/Engineer has the technical responsibility for the overall architectural and engineering design of the solution



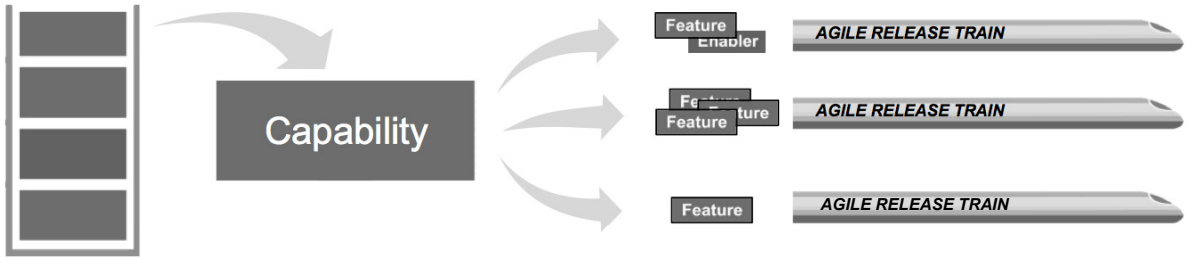
Solution and Solution Context

- A Solution is uniquely associated with one Value Stream. It is defined by Solution Intent.
- The Solution Context defines the environment in which the solution operates:
  - System of systems (e.g. avionics system as part of the aircraft), product suite (word processor as part of an office suite)
  - Production infrastructure (e.g. cloud environment where Solution is deployed)
  - Other applications or systems the target solution is integrated with

Solution Context

Capabilities describe Solution behaviors

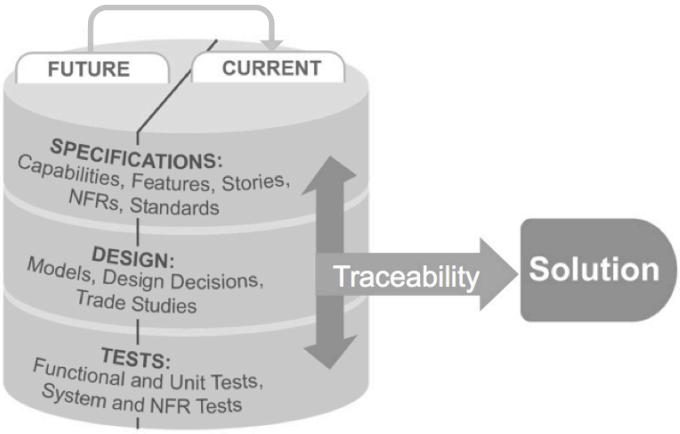
- A Capability describes the higher level behaviors of a Solution
- They are maintained in the Value Stream backlog and are prioritized using WSJF
- Written using a phrase, statement of benefits and acceptance criteria
- Must be structured to fit within a single PI
- Capabilities are split into Features for implementation



Value Stream Backlog

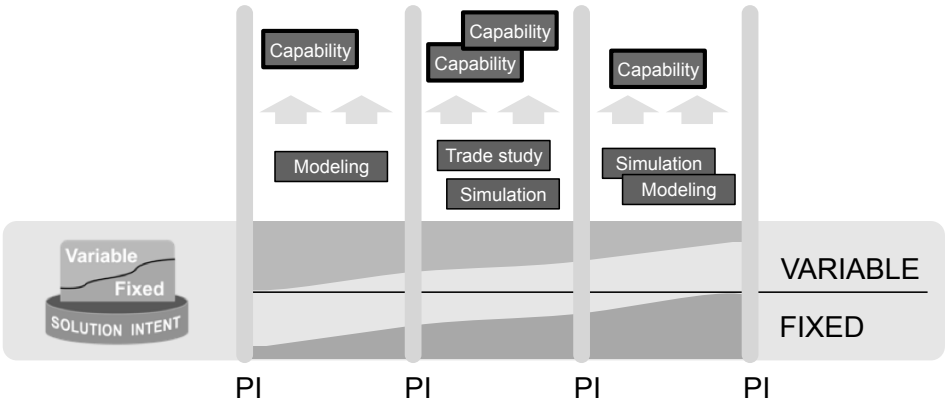
Capture knowledge in Solution Intent

Solution Intent:
Single source of truth as to the intended and actual behavior of the Solution



- Record and communicate requirements and design decisions
- Facilitate continuous exploration and analysis activities
- Align the Customer, the system builders and Suppliers to a common purpose
- Support compliance, contractual, traceability, high assurance

Moving from variable to fixed Solution Intent



- Preserve flexibility to enable evolution towards optimum solution alternative
- To achieve that, fix only minimum requirements and designs
- Consider the rest as assumptions and hypotheses
- Validate assumptions continuously, through repetitive learning cycles (PIs)
- Drive exploration with Enablers
- Converge on well-defined (fixed) behaviors

Customer

Critical aspect of development—engaging customer into the process—depends on type of the solution and customer impact

General solutions

Example: End-user purchaser of a CRM system

Custom-built solutions

Example: Government purchaser of a defense system

- Solution builder content authorities proxy the Customer
- Solution Intent reflects facts and hypotheses
- Frequently validates product assumptions
- Scope, schedule, and budget at solution builders' discretion

- Customer represents self
- Defines fixed/variable Solution Intent
- Directly validates product assumptions; attends planning and solution demos
- Collaborative scope and schedule management; managed investment funding model

Supplier

- Suppliers often play a key role in Solution development. The overall value stream's agility is dependent on suppliers' agility.
- Lean-Agile suppliers are treated as another Agile Release Train, participating in all value stream ceremonies
- Suppliers working in traditional methodologies work against Milestones, but are expected to attend Pre- and Post-PI Planning, Solution Demo and Value Stream Inspect and Adapt
- SAFe enterprises help suppliers improve their processes and become more Lean and Agile to the economic benefit of both organizations

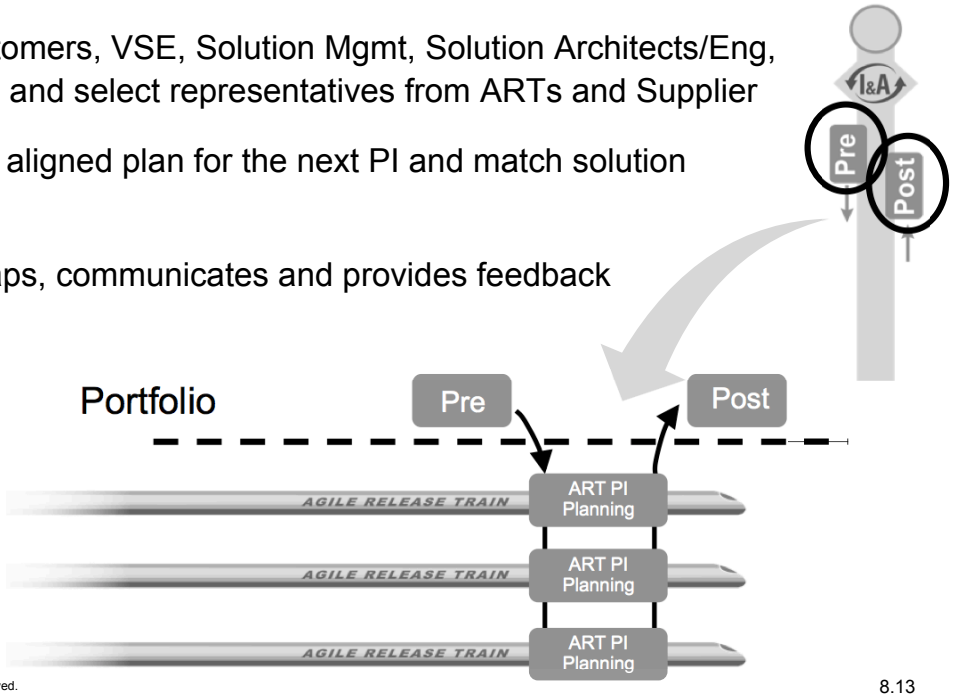
Exercise: Fixed or variable part of your Solution Intent?

- Consider 3-4 upcoming requirements for your solution
- Are they considered fixed or variable?
- Are there any aspects of “fixed” that would still allow for some flexibility?
- In either case, how might variability lead to better economic outcomes?

8.2 Coordinate and integrate multiple ARTs and Suppliers

Pre- and Post-PI Planning meetings

- Typically attended by: Customers, VSE, Solution Mgmt, Solution Architects/Eng, Value Stream stakeholders and select representatives from ARTs and Supplier
- Pre-meeting helps build an aligned plan for the next PI and match solution demand to ART capacities
- Post-meeting reviews, recaps, communicates and provides feedback



Pre-Planning structure

Pre

8:00-10:00	PI summary reports
10:00-10:30	Business context & Value Stream Vision
10:30-11:30	Top X Capabilities
11:30-13:30	Next PI features

Goals

- Align Product Managers, System Architects and other ART stakeholders to a common vision
- Prepare content for ART PI Planning

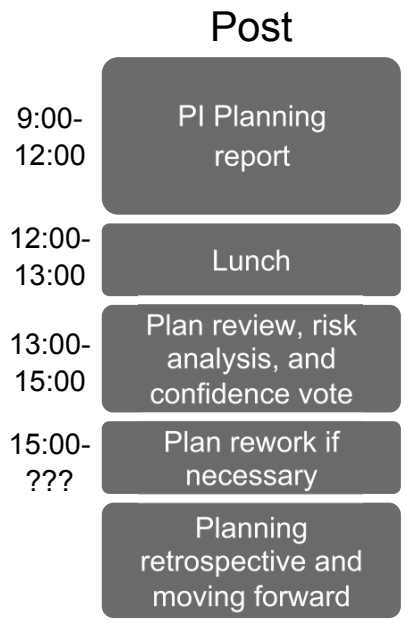
Input

- Results of the previous PI execution
  - Outcomes of the Solution Demo or, if delayed, ART demos
  - Roll-up of the Program Predictability Measure to the Value Stream

Output

- A set of features for every ART
- Updates to the ART visions

Post-Planning structure



Goals

- Understand the resultant PI plan for the entire Value Stream
- Make adjustments if necessary and communicate to trains

Input

- Program PI Objectives from all ARTs
- Value Stream planning board
- Unresolved program risks and confidence vote

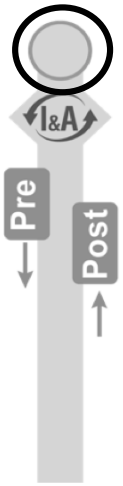
Output

- Consolidated Value Stream PI Objectives
- Adjustments for ART plans, if any
- Value Stream roadmap updates

Solution Demo

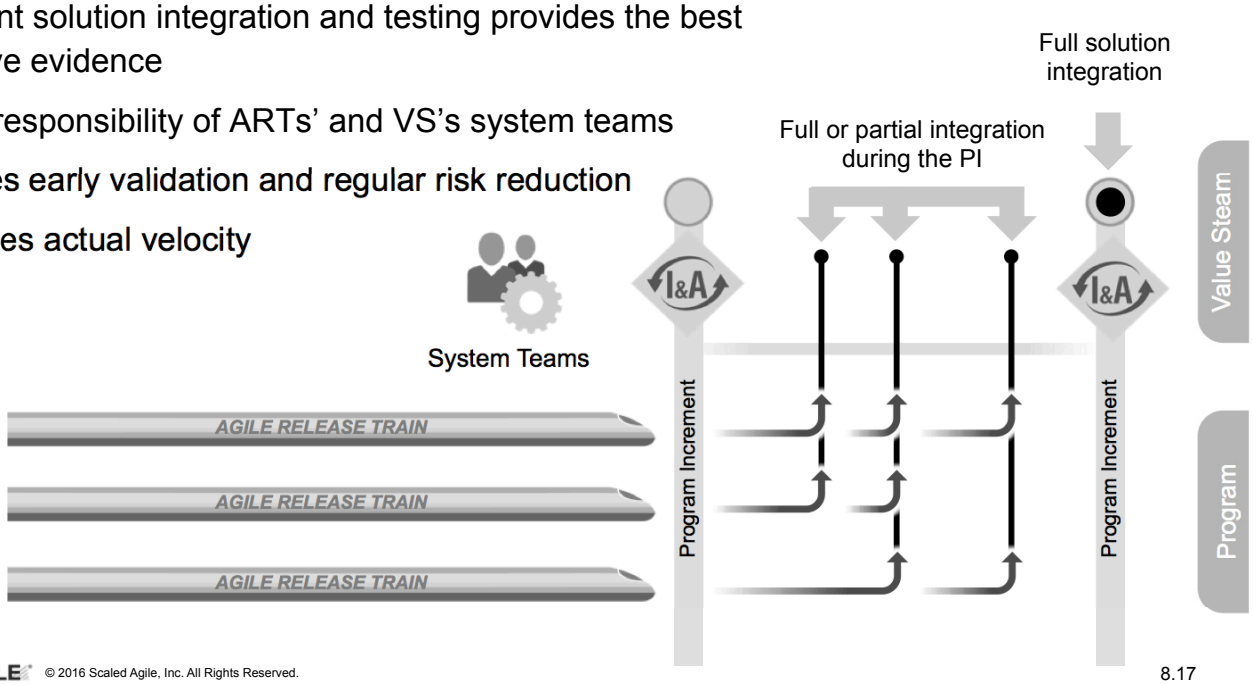
- The Solution Demo is a major event in the life of the Solution
- The entire Value Stream demos a fully integrated Solution, showing accomplishments of the previous Program Increment
- Senior managers and high profile stakeholders review the progress
- Action and investment decisions are based on this objective evidence

Solution Demo



Solution Demo requires frequent solution integration

- Frequent solution integration and testing provides the best objective evidence
- A joint responsibility of ARTs' and VS's system teams
- Provides early validation and regular risk reduction
- Increases actual velocity



Value Stream Inspect & Adapt

The Value Stream I&A workshop consists of three parts:

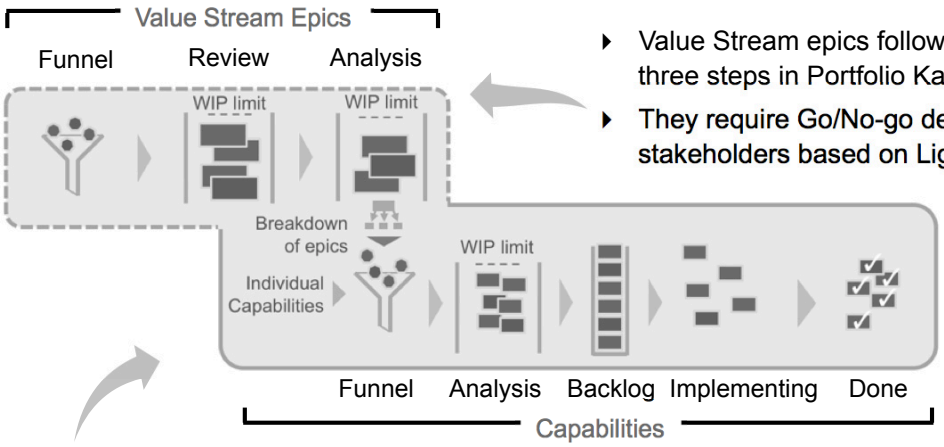
1. Solution Demo
2. Retrospective
3. Problem-solving workshop

Participants are representatives from ARTs and Suppliers building the solution:

- Release Train Engineers, Value Stream Engineer, System and Solution Architect/Engineering, Product and Solution Management, Customers
- Portfolio stakeholders may also attend this workshop

8.3 Establish Value Stream flow

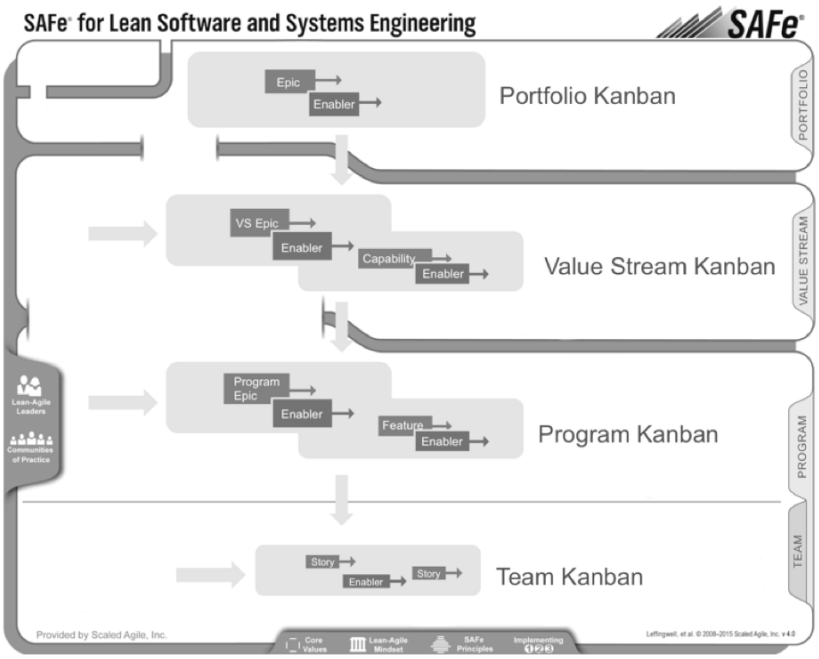
Value Stream Kanban



- Value Stream epics follow the steps similar to first three steps in Portfolio Kanban
- They require Go/No-go decision made by Portfolio stakeholders based on Lightweight Business Case

- Capabilities may result from Value Stream epics or can be defined as individual backlog items
- Capabilities section of Kanban is fully managed by Solution Management
- Analysis refines business benefit, acceptance criteria, gross estimate, WSJF. Does not require Lightweight Business Case.
- Prioritized Capabilities in the Backlog can further go through Implementing and completion

SAFe realizes a set of connected Kanban systems



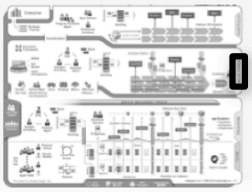
Exercise: Connected Kanbans

- For the Kanban systems on the previous slide
- How exactly are they connected in your enterprise (process)?
- How can centralized initiatives “from above” be balanced with local ones in Value Stream, Program and Team Kanbans?
- Be ready to discuss

Lesson summary

In this lesson, you learned how to:

- Apply Value Stream roles, activities and artifacts to develop large and complex solutions
- Coordinate and integrate multiple ARTs and Suppliers with PI Planning, solution demos, and Inspect and Adapt
- Establish the flow of value through a Value Stream with connected Kanbans



Suggested Scaled Agile Framework reading:
"Value Stream Level" article