

Lesson 4

Continuously Explore Customer Needs

1. Applying SAFe in the Lean Enterprise
2. Relating a Lean-Agile Mindset to the PO/PM Roles
3. Collaborating with Lean Portfolio Management
- 4. Continuously Explore Customer Needs**
5. Executing the Program Increment
6. Defining the PO/PM Roles and Responsibilities
7. Creating your PO/PM Action Plan

SAFe® Course: Attending this course gives learners access to the SAFe Product Owner/Product Manager exam and related preparation materials.

Learning objectives

- 4.1 Explore customer needs
- 4.2 Synthesize information for the Vision and Roadmap
- 4.3 Visualize Feature and Enabler flow using a Program Kanban
- 4.4 Prioritize the Program Backlog
- 4.5 Estimate and forecast the backlog

4.1 Explore customer needs

Moving the Epic from Portfolio Backlog to Implementing

As the Epic moves from the Portfolio Backlog to implementing, responsibility shifts.

Epic Owner drives ← → *Epic Owner shepherds*

Funnel

- All big ideas are welcome here!*
- New business opportunities
 - Cost savings
 - Marketplace changes
 - Mergers and acquisitions
 - Problems with existing solutions

Reviewing

- Epic Hypothesis Statement
- Refine understanding
- Calculate WSJF
- VIP limited

Analyzing

- Solution alternatives
- Refine WSJF
- Cost estimate
- Identify MVP
- Lean business case
- VIP limited
- Go / no-go decision

Portfolio Backlog

- Epics approved by LPM team
- Continuous prioritization of approved Epics using WSJF

Implementing

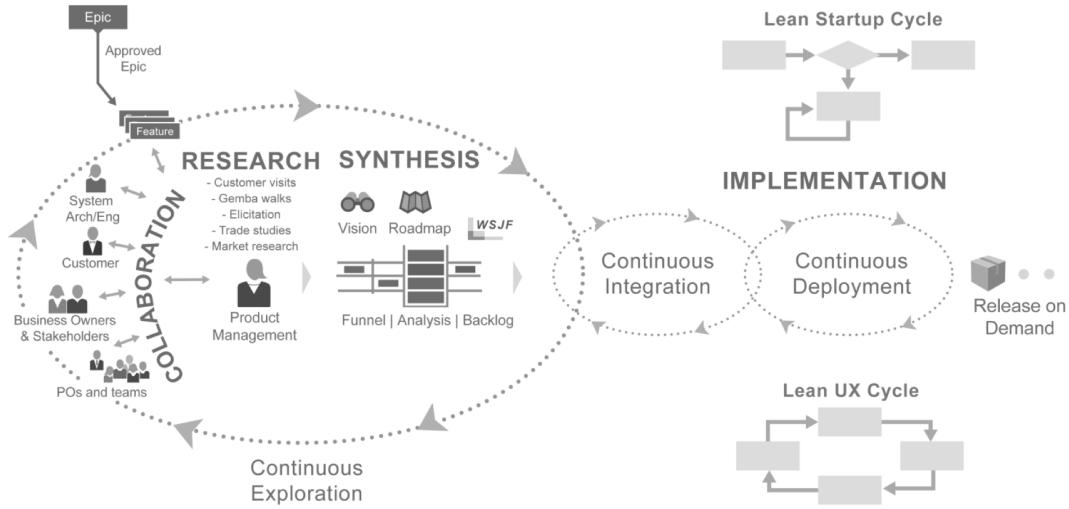
- Epics Owners and Product and Solution Management decompose Epics into Solution/Program Epics, Capabilities, and Features
- WIP limited by downstream capacity
- Teams begin implementing at Program Increment boundaries
- Epic tracking continues

Done

- Anticipated outcome hypothesis evaluated
- Pivot or persevere decision made

PO/PM stakeholders ← → *PO/PM drives*

Continuous Exploration



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Exercise: Continuous Exploration collaboration?



Select an approved Epic Hypothesis Statement and explore what collaboration and research the PM needs to engage in.

- ▶ Who are the PM key collaboration stakeholders?
- ▶ What are some key research resources and methods the PM can use?
- ▶ Be prepared to share



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4.2 Synthesize information for the Vision and Roadmap

Collaboration and Research Synthesis

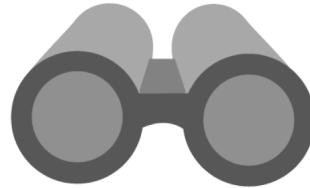
The Program Vision communicates strategic intent, and readies the Agile Release Train for launch.



Prepare the Vision

The Vision is a description of the future state of the Solution.

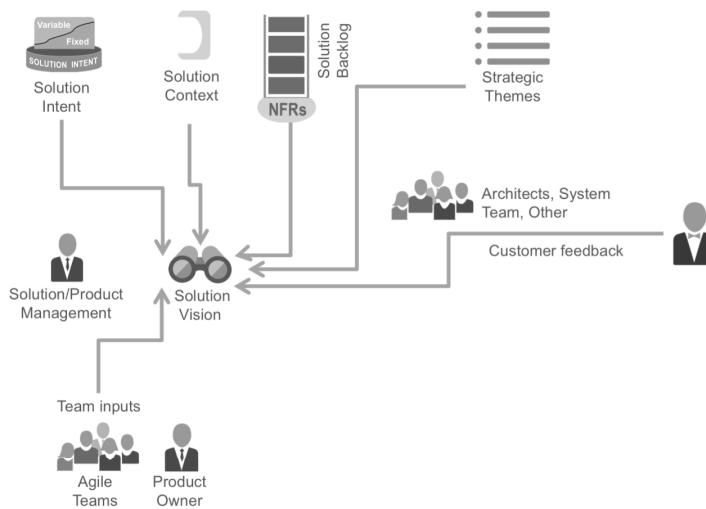
- ▶ Where are we headed with this Product or Solution?
- ▶ What problem does it solve?
- ▶ What Features and benefit hypothesis does it provide?
- ▶ For whom does it provide them?
- ▶ What Nonfunctional Requirements (performance, reliability, platforms, etc.) does the Solution deliver?



Common formats:

- ▶ Rolling-wave briefings
- ▶ Vision document
- ▶ Preliminary data sheet
- ▶ Draft press release

Inputs to the Solution and Program Vision



The Vision inspires action

It provides a longer-term context:

- ▶ How will our future Solution solve the larger Customer problems?
- ▶ How will it differentiate us?
- ▶ What is the future context in which our Solutions will operate?
- ▶ What is our current business context, and how must we evolve to meet this future state?



For a fun John Deere Vision video,
see <http://tinyurl.com/p5uloc5>

Vision: A postcard from the future



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

Result: The teams start thinking about how to apply their strengths in order to get there

Switch: How to Change Things When Change Is Hard,
Chip Heath and Dan Heath, Broadway Books, 2010

Exercise: Visioning – Postcard from the future

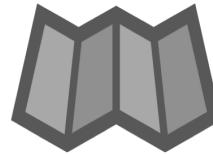


- ▶ In your group, pick one product or service that is currently being developed
- ▶ Imagine you are the customer. You have just received the product or service and are excited about using it!
- ▶ As the customer, write a postcard to the team describing:
 - What Features you like and why they are important to you
 - The quality of the product or service
- ▶ Share your postcard during a ‘gallery walk’



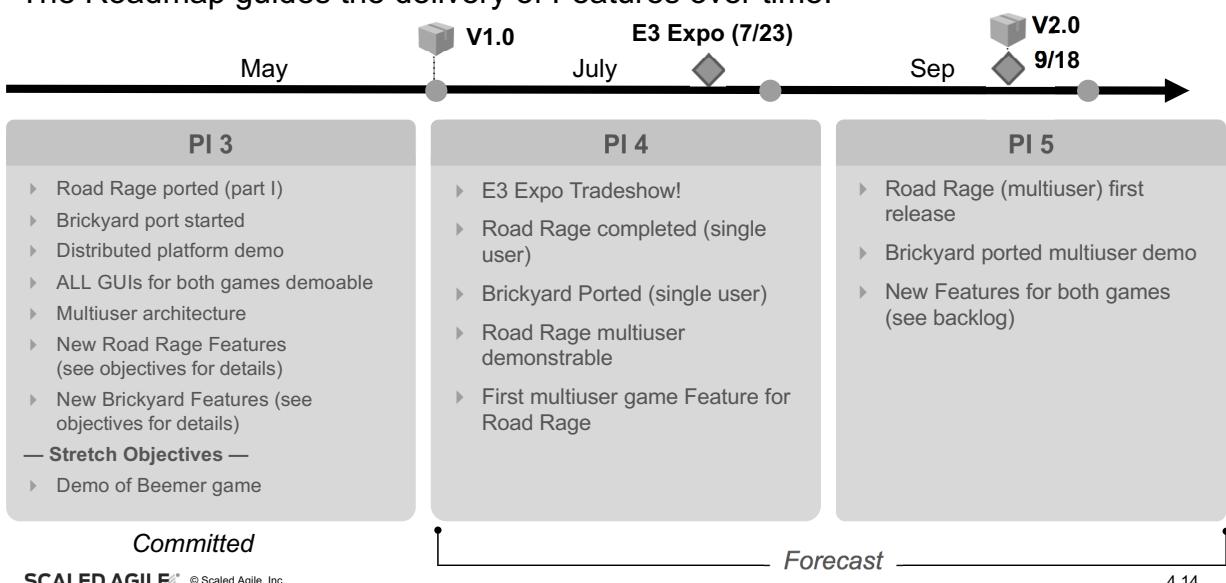
The SAFe Roadmap and its attributes

- ▶ Often derived from the Vision
- ▶ Created by the Product Manager
- ▶ Exists on the Spanning Palette in the SAFe Big Picture – and so can exist at all levels of the framework
- ▶ General plan of when Business and Enabler Features will be delivered over the next 3 PIs
- ▶ Only the first PI is committed; the others are a forecast which will be adjusted based on the learning from initial PI



Example Program Increment Roadmap

The Roadmap guides the delivery of Features over time.



Exercise: Construct a Roadmap

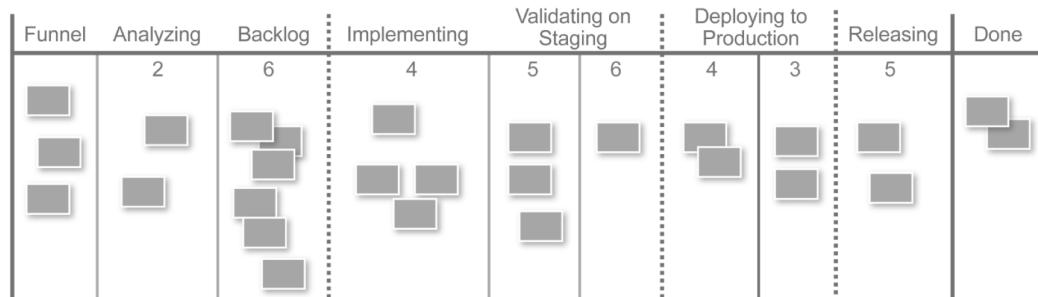


- At your table, use the template in your workbook to create a Roadmap of Features based on the Epic you previously created:
 - Pull in MVP Features
 - Identify additional Features from local context
 - Arrange them in the Roadmap
- Discuss how you will communicate your Roadmap to your customers and stakeholders
- Explore this question: Are Features always derived from Epics?
- Be prepared to share your Roadmap and communication plan



4.3 Visualize Feature and Enabler flow using a Program Kanban

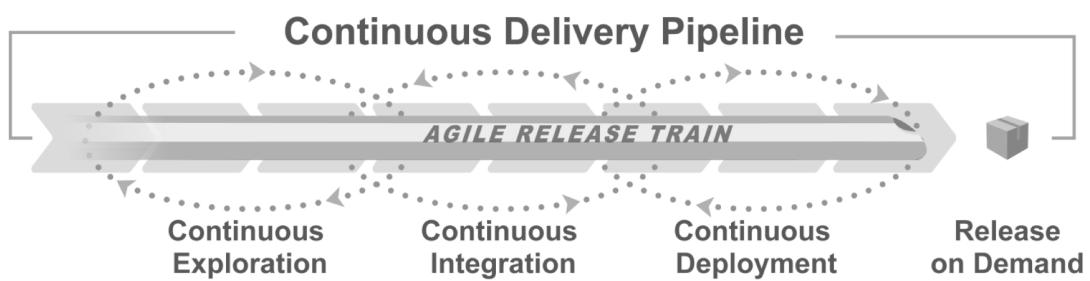
Kanban Systems



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Continuous Delivery Pipeline Learning Cycle

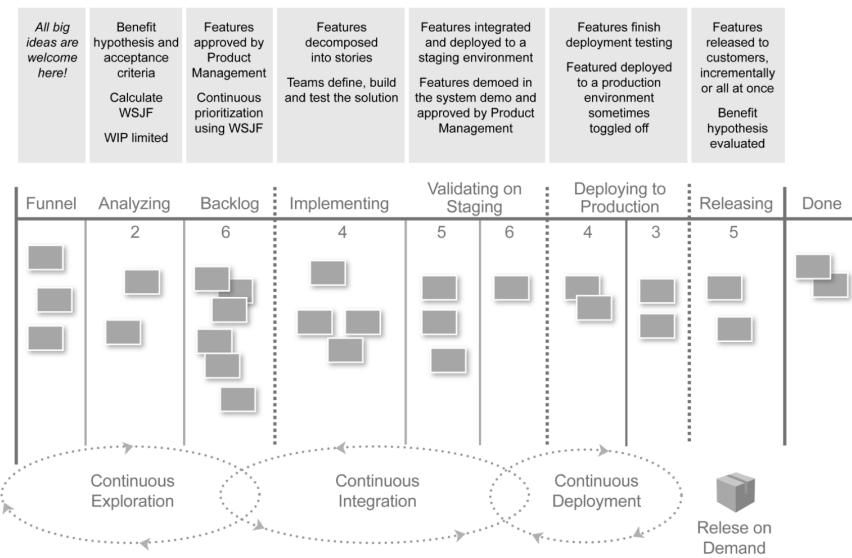


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The Program Kanban facilitates flow through the Pipeline



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Exercise: Create your Kanban and WIP limits



- ▶ Organize into groups of 2 to 4 people
- ▶ Choose one person's context and Features. Using the Kanban board in the workbook, fill in the initial WIP Limits in the circles
- ▶ Be prepared to present your thought process

PREPARE | SHARE
5 min | 5 min

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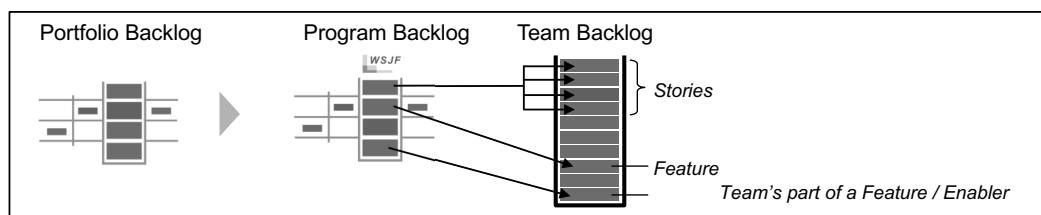
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4.4 Prioritize the Program Backlog

Manage and prioritize the flow of work

Product Managers manage the flow of work from the Portfolio Kanban through the Portfolio Backlog and into the Program Backlog.

- ▶ Decompose Portfolio Epics from the Portfolio Backlog (as well as program-defined Epics) into Features
- ▶ Ensure that there are enough Features in the backlog, clearly defined with acceptance criteria, ready to be pulled by Agile Teams at all times
- ▶ Prioritize the Program Backlog using WSJF



Non-economic-based prioritization

Product Owners, Product and Solution Managers will often face non-economic-based prioritization.



HiPPo – Highest-paid person makes the decision.

“The Senior VP said we should do this project.”



Anti-pattern



Squeaky Wheel – The person who yells the loudest or makes the biggest promise of revenue.

“Fund my project and we will make a billion dollars!”



ROI – Making a decision based exclusively on an ROI metric (e.g., NPV, payback, etc.). Requires a sensitivity analysis to be relevant.

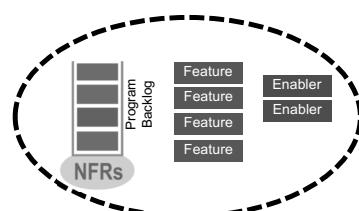
“The NPV indicates we will make a 30% profit.”

Prioritize Features for optimal ROI

In a flow system, job sequencing by Product Owners and Product Managers are key to economic outcomes.

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

1. What is the Cost of Delay (CoD) in delivering value?
2. What is the cost to implement the valuable thing?

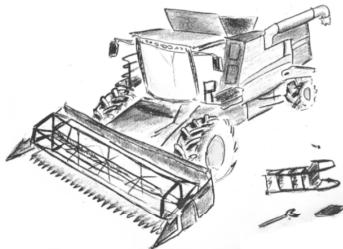


If you only quantify one thing, quantify the cost of delay.

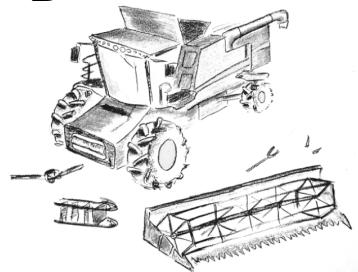
—Donald G. Reinertsen, *Principles of Product Development Flow*

Example with equal Cost of Delay: Which job first?

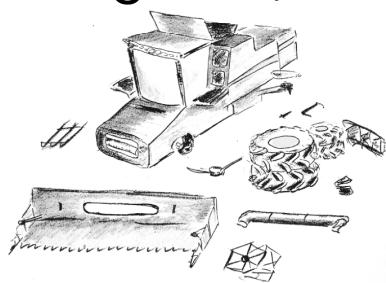
A \$\$, 1 day



B \$\$, 3 days

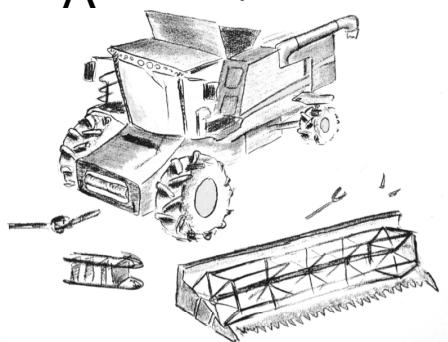


C \$\$, 10 days

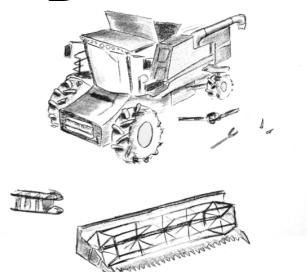


Example with equal duration: Which job first?

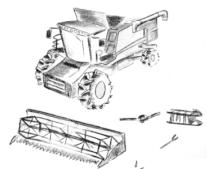
A \$\$\$, 3 days



B \$\$, 3 days

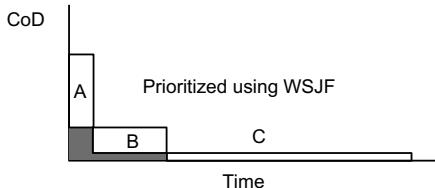


C \$, 3 days

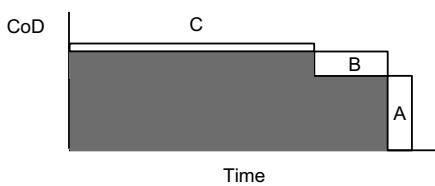


General case: Any CoD and duration

In the general case, give preference to jobs with *shorter duration* and *higher CoD*, using Weighted Shortest Job First (WSJF):



$$\text{WSJF} = \frac{\text{CoD}}{\text{Duration}}$$



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

— Dark area: Total cost of delay

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

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Components of Cost of Delay

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

$$\text{WSJF} = \frac{\text{CoD}}{\text{Job size}} = \frac{\text{User business value} + \text{Time criticality} + \text{RR | OE value}}{\text{Job size}}$$

Exercise: Prioritizing the Program Backlog



- ▶ Select three Features from the “Create Features with benefits hypothesis” exercise and prioritize them using the WSJF template in your workbook
- ▶ Do one column at a time. Start by picking the smallest item and giving it a “1.” There must be at least one number “1” in each column of the template.
- ▶ Be prepared to share your WSJF prioritization



Exercise: Duration discussion



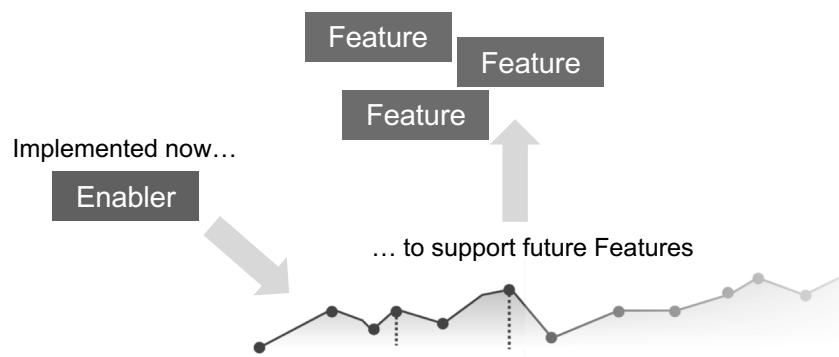
As a class, consider and discuss these three questions:

1. Is job size always a good proxy for duration?
2. When might it NOT be the case?
3. How would you adjust duration based on that case?



Partner with System Architect/Engineering

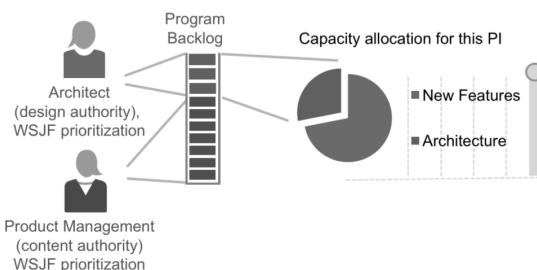
- ▶ Support Enabler items that provide sufficient Architectural Runway
- ▶ Work with System and Solution Architects/ Engineering to sequence technical infrastructures that will enable delivery of new business functionality



Define Features by type of service

Types of service provide a way to separate concerns, such that we can deliver the right mix of new Features and architecture evolution.

1. Determine how much service is to be allocated to each class
2. Establish policies to determine how work is performed for each defined class

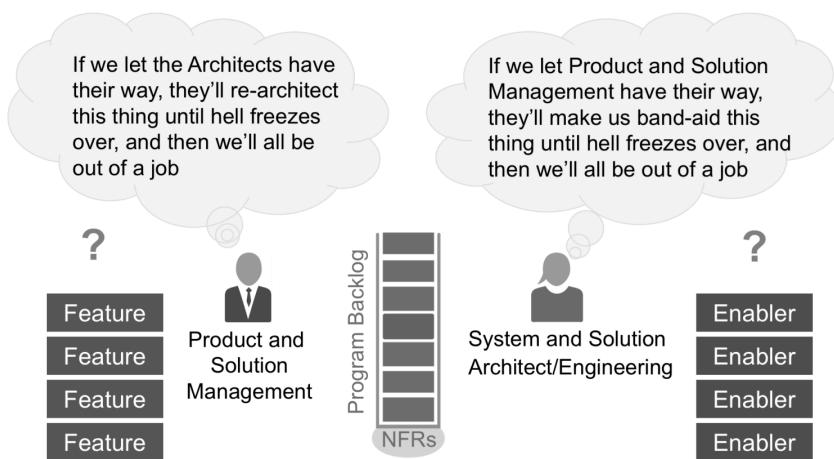


Architecture policies

1. We agree on the percentage of resources to be devoted to new Feature development vs. architecture at each boundary.
2. We agree that the architect has design authority and prioritizes the work in that class.
3. We agree that content authority (Product Management) prioritizes work in that class.
4. We agree to jointly prioritize our work based on economics.
5. We agree to collaborate so as to sequence work in a way that maximizes Customer value.

How much architecture?

Product Management collaborates with System Architects to build Architectural Runway.



Exercise: Draft your Capacity Allocation policy



- Consider how you would use Capacity Allocation in your enterprise
- In your workbook, draft a Capacity Allocation policy that you could bring back for discussion with your key collaborators
- Share your policies with a person next to you

PREPARE SHARE



4.5 Estimate and forecast the backlog

Relative estimating

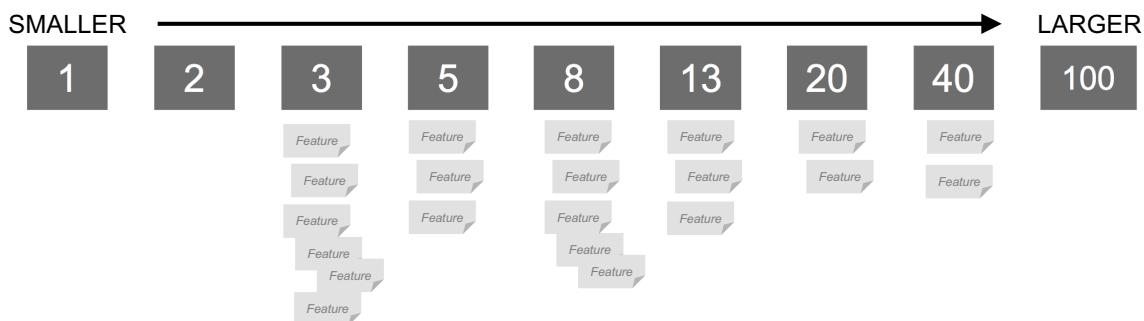
Agile Teams use story points and relative estimating to quickly arrive at estimates for size and duration for user stories

- ▶ Product Managers can use historical data to fairly quickly estimate the size of Features in story points as well
- ▶ Feature estimates can then be rolled up into epic estimates in the portfolio backlog
- ▶ Portfolio managers and other planners can use capacity allocation to estimate how long a portfolio epic might take under various scenarios

White Elephant sizing

When you need to estimate a lot of Features fast:

- ▶ Team members take turns putting Features under the size that they feel is appropriate or using their turn to move a Feature to a different estimate
- ▶ When all Features are estimated, the team reviews the Feature sizes and can make one final change



Exercise: Take a white elephant out for a run

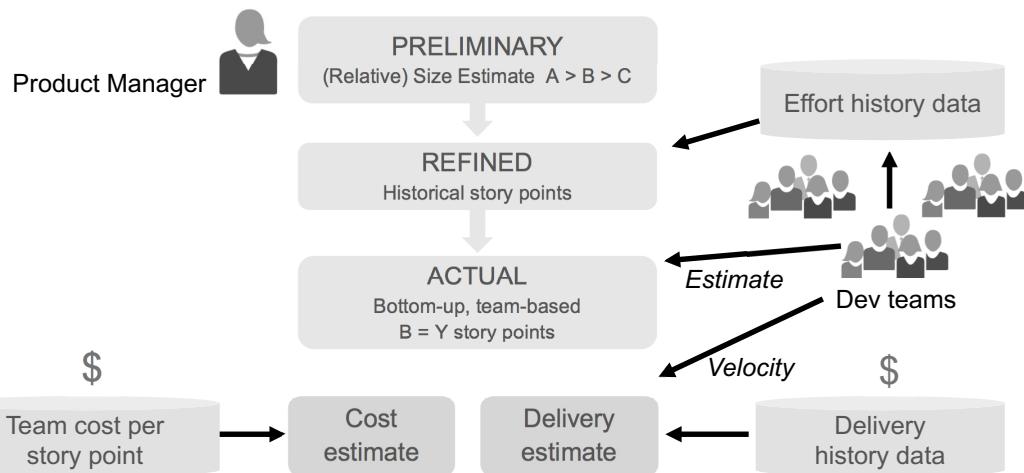


- ▶ Using the modified Fibonacci sequence (1, 2, 3, 5, 8, 13, 20, 40, 100), build a sizing board so that your group can estimate a series of Features
- ▶ Choose 3 to 5 Features in your group, and each person writes the Features on a sticky note
- ▶ Team members take turns putting the Features under the size that they feel is appropriate or using their turn to move a Feature to a different estimate
- ▶ When all Features are estimated, the team reviews the Feature sizes and can make one final change



Estimating Features effort

Estimating the effort needed to implement a Feature typically goes through a series of successive refinements.

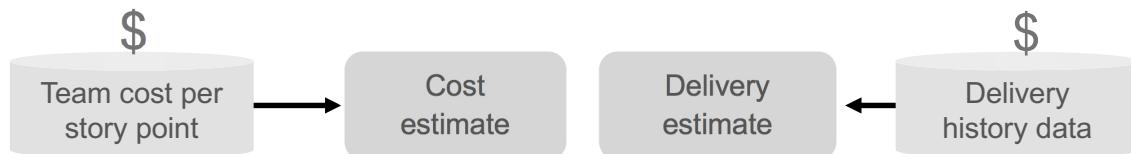


Estimating cost

Once the Feature has been estimated in story points, a cost estimate can be quickly derived.

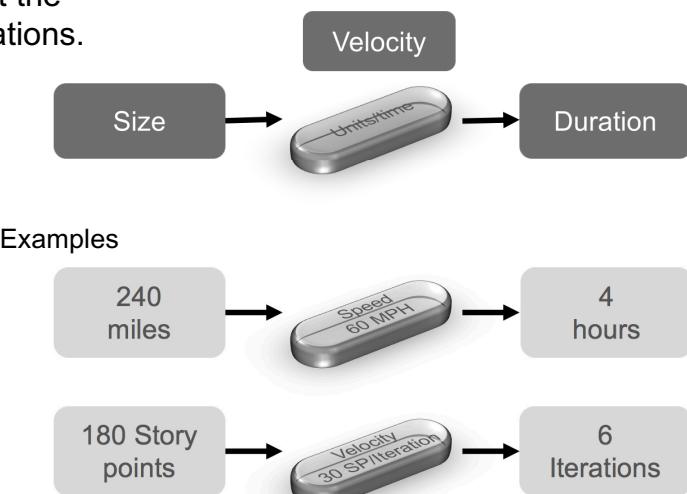
- ▶ Calculate the burdened cost for a team in an Iteration length
- ▶ Divide that by their PI velocity to get average cost per story point

Example: If a team has an average velocity of 40 points, and their cost is \$40,000 per Iteration, then each story point costs ~\$1,000



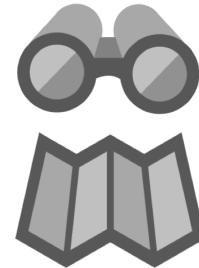
Using size to estimate duration

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



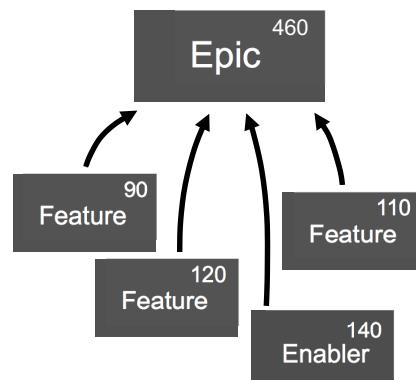
The business needs to forecast

- ▶ SAFe enhances enterprise adaptability, providing faster response to changing market opportunities
- ▶ Yet, the enterprise, its partners, and customers need to plan some sense of the future
- ▶ Estimating must:
 - Be fast and efficient as possible to be reasonably accurate
 - Support “what if” analysis of various implementation scenarios
- ▶ Traditional Work Breakdown Structure to task-level estimating binds the teams to waterfall practices



Estimating Epics in SAFe

1. Epics are broken down into potential Features during the Portfolio Kanban analysis stage
2. Potential Features are estimated in story points
 - Typically performed at the PM-System Architect level, based on history and relative size
 - Individual teams are engaged as necessary
3. Feature estimates are aggregated back into the Epic estimate as part of the lightweight business case



Exercise: Forecasting



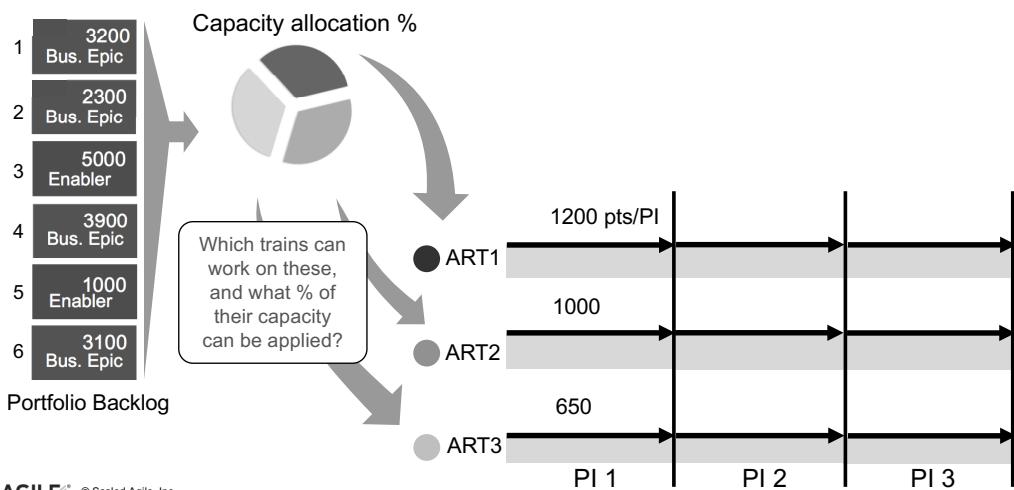
With your small group, look at the next slide (slide is also shown on page 102 in your workbook) and together, answer the following question:

- ▶ ART 2 is capable of doing Epic 5 by themselves, but they can only dedicate half of their capacity to that initiative. In which PI would you reflect this Epic on the Roadmap?



Forecasting from the Portfolio Backlog

Given knowledge of Epic sizes and ART velocities, applying “what if” capacity allocations informs decisions and forecasting.



Organizational readiness

How can you effectively ensure organizational readiness? Ask yourself these questions!

- ▶ Planning scope and context:
 - Is the scope (product, system, technology domain) of the planning process understood?
 - Do we know which teams need to plan together?
- ▶ Business alignment:
 - Is there reasonable agreement on priorities among the Business Owners?
- ▶ Agile teams:
 - Do we have Agile Teams?
 - Does each have dedicated developer and test resources and an identified Scrum Master and Product Owner?



Exercise: Are you ready to rock and roll?



The PM's responsibility is to enter PI Planning with a prioritized backlog.

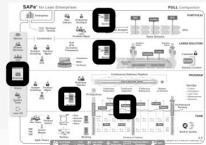
- ▶ What does a PM need to do to ensure org readiness and content readiness?
- ▶ How could the PO support the PM in org readiness and content readiness?



Lesson summary

In this lesson, you:

- ▶ Continuously explored customer needs
- ▶ Synthesized information for the Vision and Roadmap
- ▶ Visualized Feature and Enabler flow using a Program Kanban
- ▶ Prioritized the Program Backlog
- ▶ Estimated and forecasted the Backlog



Suggested Scaled Agile Framework reading: "Portfolio Backlog", "Program and Solution Backlogs", "Roadmap", and "Features and Capabilities" articles

Exercise: This lesson's key learnings



Summarize key learnings and insights from this lesson in your workbook.

