

**LAURA ZUBER**

---

# Vision, Value, and Velocity. The Role of Scope-based Forecasting in the Scaled Agile Framework

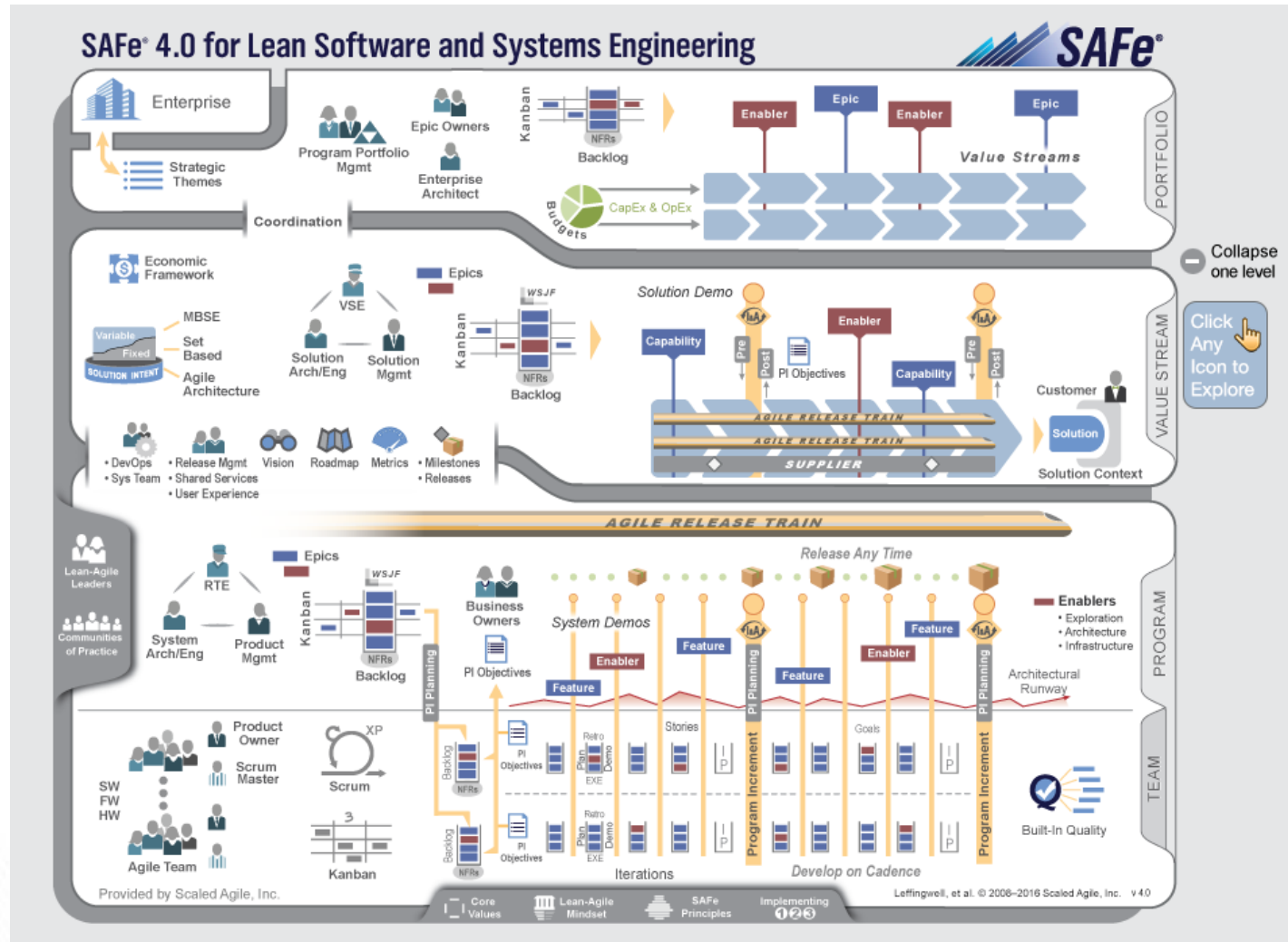
July 13, 2017

- Vision - Roadmap
- Value - Measurement of ROI or Economics of Roadmap Realized
- Velocity - Productivity vs Scrum Velocity



# What is SAFe?

The Intelligence behind Successful Software Projects



# SAFe Principles Supported by Top-Down Estimation

- Size delivered functionality (Epics, Features, Stories)
- Take a Systems View – a system can evolve no faster than its slowest integration point
- Base forecasts and commitments on known capabilities and resource availability
- Quality matters – can't scale crappy code
- Working software is the primary measure of progress
- Consider all the steps – definition, analysis, validation and delivery
- Roadmap forecasting requires estimating
  - Fast, efficient, and as reasonably accurate as possible
  - Support “what-if” analysis of various implementation scenarios
- Program/Portfolio Management Office (PMO) still has to do their thing

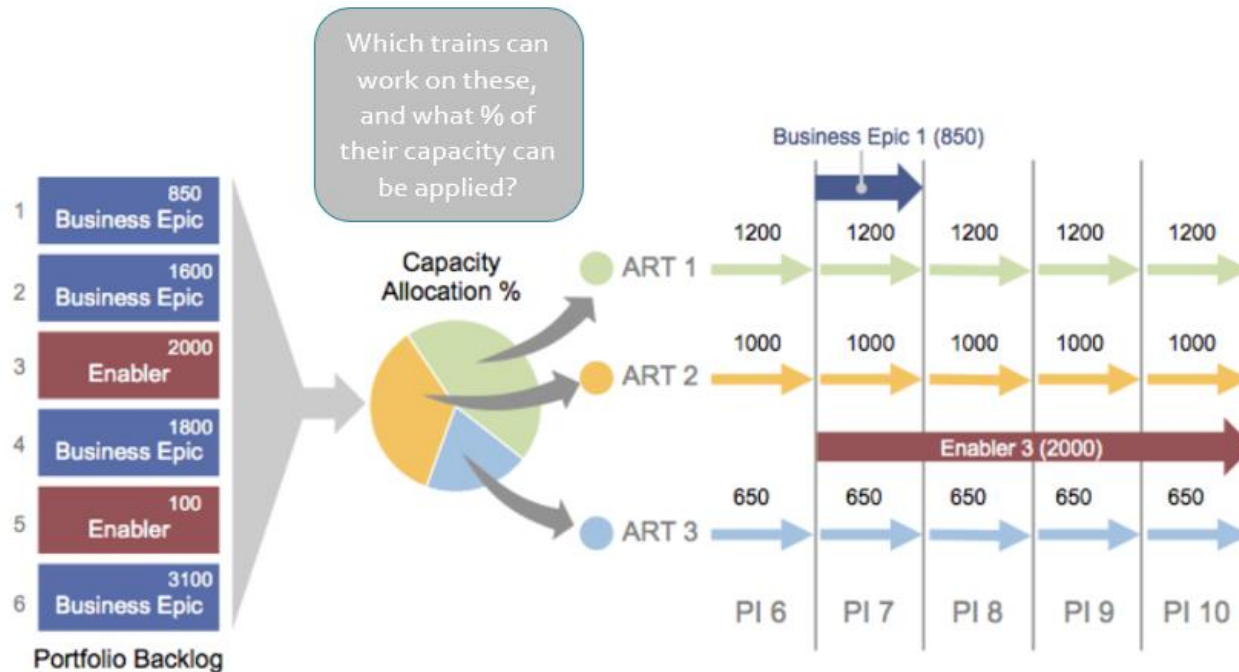
- SAFe enhances enterprise adaptability, providing faster response to changing market opportunities
- Yet, the enterprise, its partners, and customers need to plan to get some sense of the future
- The ability to perform effective, Agile forecasting is a key economic strategy
- Roadmaps capture strategic intent in forecasted deliverables

“Some initiatives take years to develop, and some degree of commitment must be made to Customers, Suppliers, and Partners.”

– Roadmap Abstract

# Forecasting the Portfolio Backlog

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



- What is “Consumable Value?”

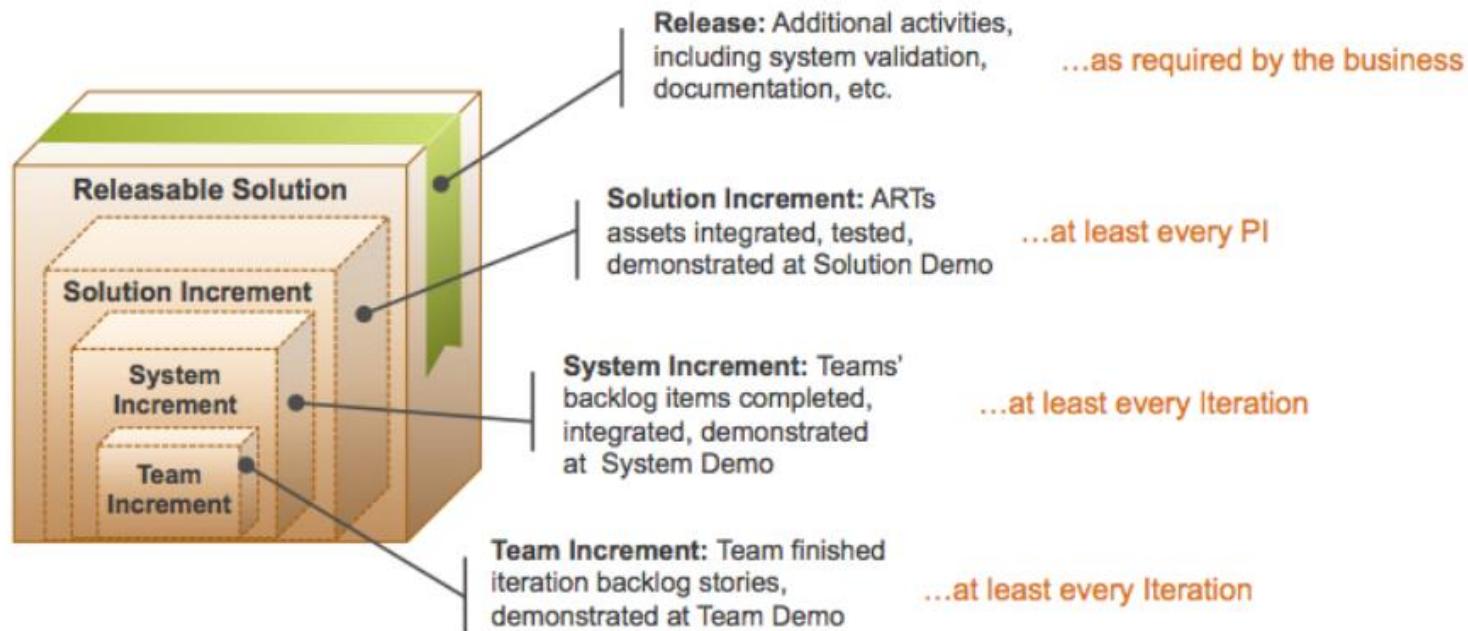


Figure 2. Building a releasable solution



- **System validation**
  - User acceptance testing
  - Final NFR testing
  - Integration testing with other systems
  - Regulatory standards and requirements
- **Documentation:**
  - Release communications
  - End user documentation
  - Bill of materials
  - Training support personnel
  - Installation/deployment instructions
  - Legal, regulatory, other
  - etc



# Kanban System for Epics

The Intelligence behind Successful Software Projects

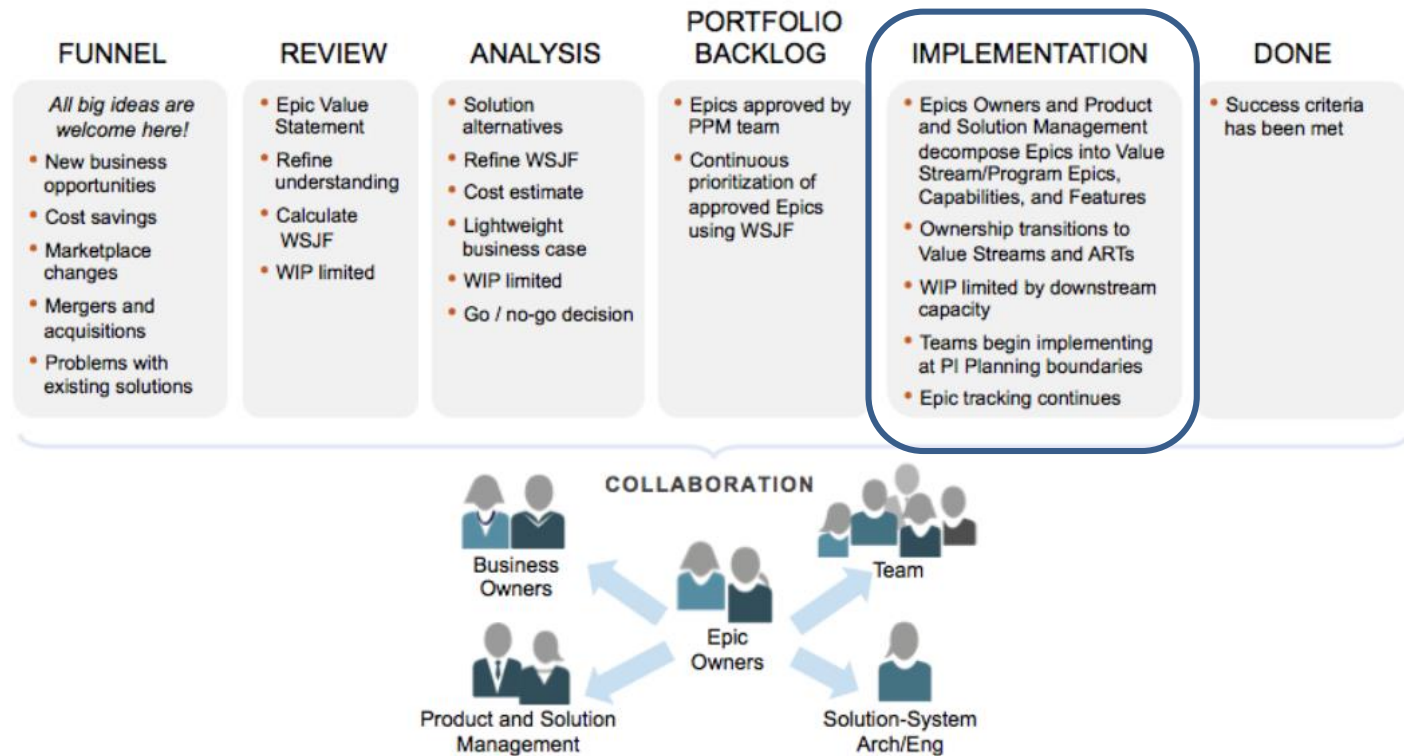
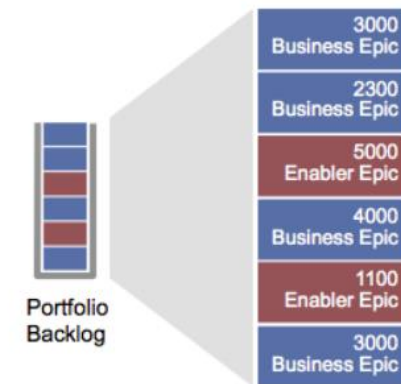


Figure 1. Portfolio Kanban system and typical collaborators

- **Portfolio Backlog holds epics approved for implementation**
  - These epics have made it through the portfolio Kanban with go approval
  - Low-cost holding pattern for upcoming implementation work
  - Sizing estimates are in story points
  - Avoid excess WIP, await implementation capacity



“Program Portfolio Management requires an understanding of the productive capacity of each ART, the velocity of each, and the availability of each for new developments and business-as-usual support activities.” – Portfolio Kanban Abstract

# Roadmap Guides the Delivery of Features

The Intelligence behind Successful  
Software Projects

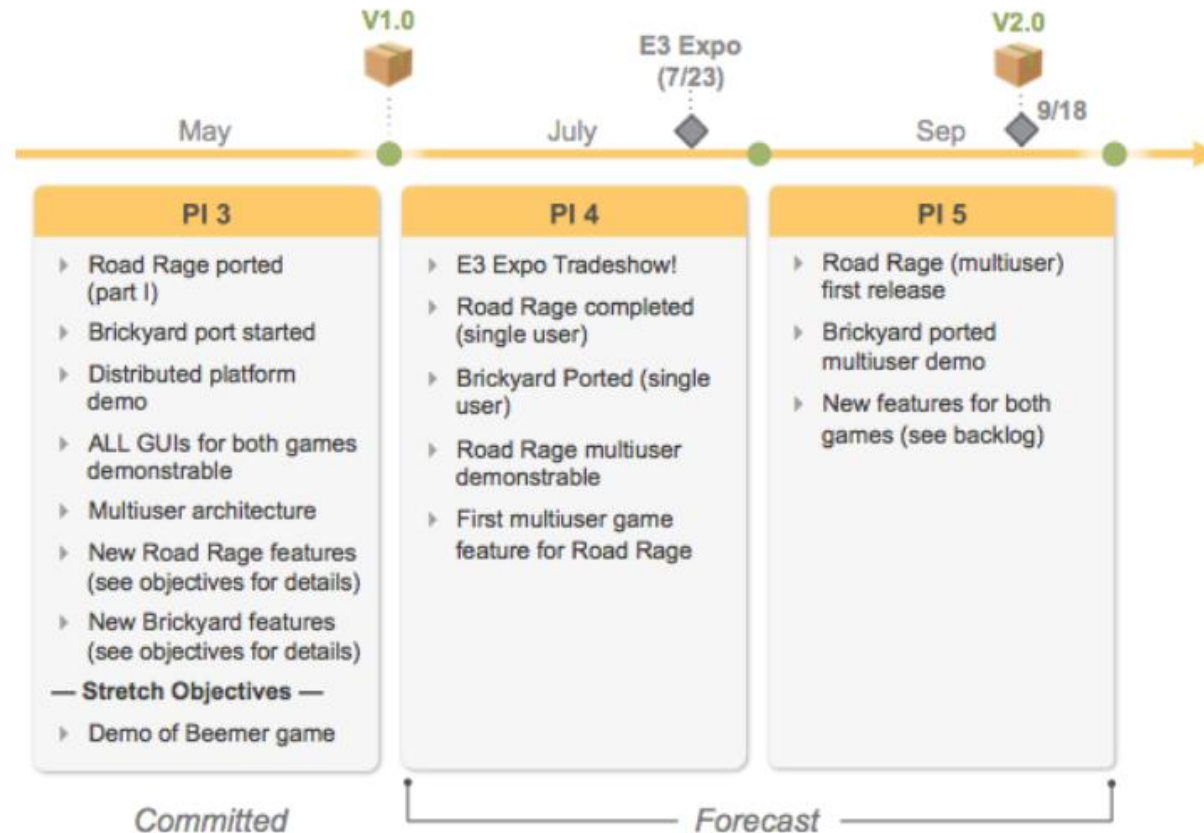


Figure 1. An example PI Roadmap for a gaming company

# A Top-Down Estimate Example

## ■ Visualize the Portfolio

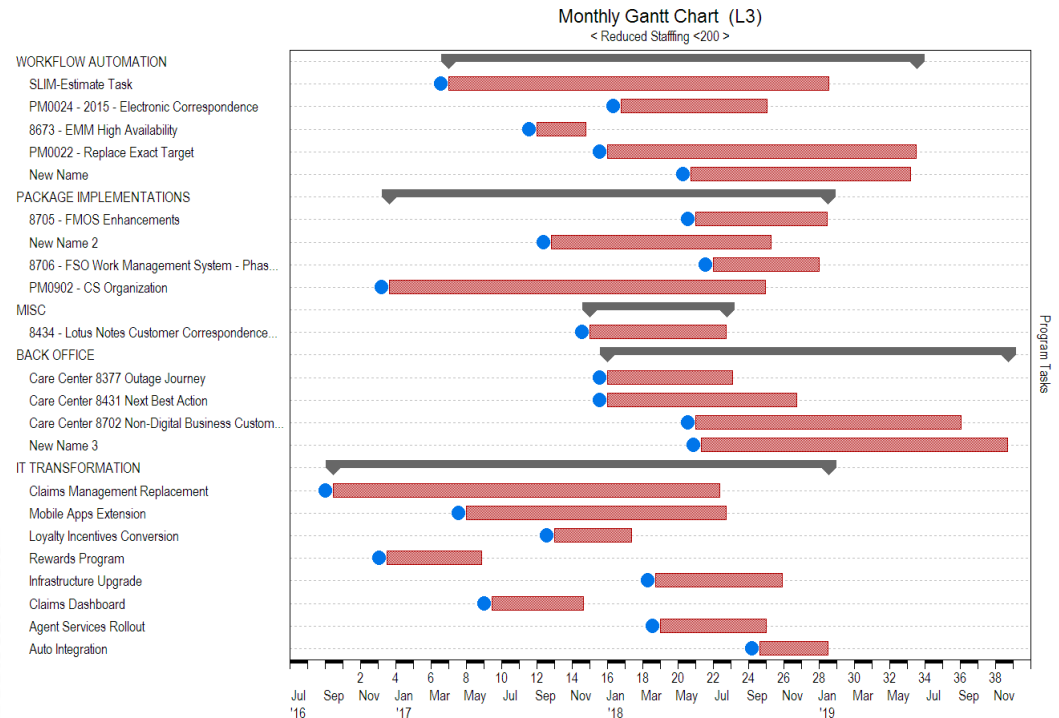
- Perform early high level estimates of Portfolio Backlog Items to support Kanban process
- Assess risk areas

## ■ Visualize Velocity and Value Creation

- Model alternative scenarios for release of epics into the Value Stream
- Account for the reality of the rate at which work becomes available
- Use historical productivity measures that incorporate the non-linear behavior of software development

## ■ IT Budgeting Analysis

- Long range forecast
- Value Stream and/or Program aggregation
- “As submitted” versus reduced risk scenarios

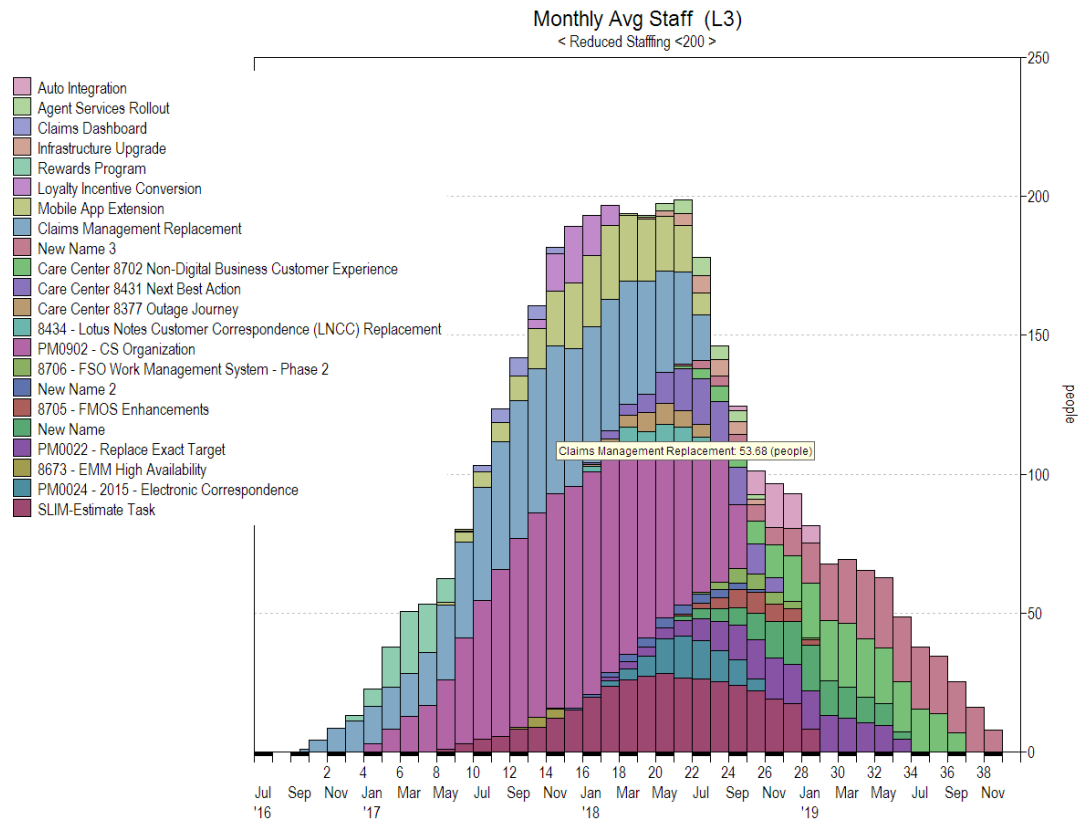


<http://www.qsm.com/articles/take-risk-out-it-budgeting-linkedin>

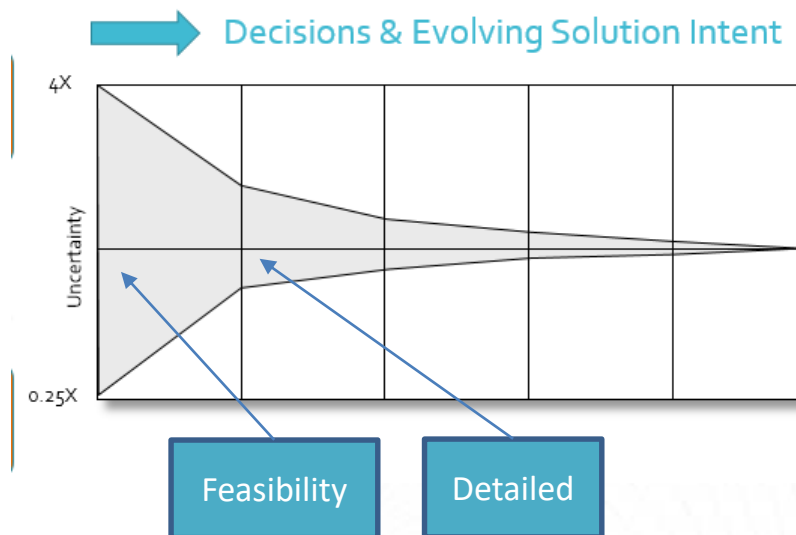
# Visualize the Resource Demand

The Intelligence behind Successful Software Projects

- High-level staffing needs assessment
- Adjust Epic prioritization given budget and resource goals or limitations



- Estimates are needed....
  - Feasibility Estimate – little information; high degree of uncertainty
  - Detailed Estimate – review & analysis are complete; PBI

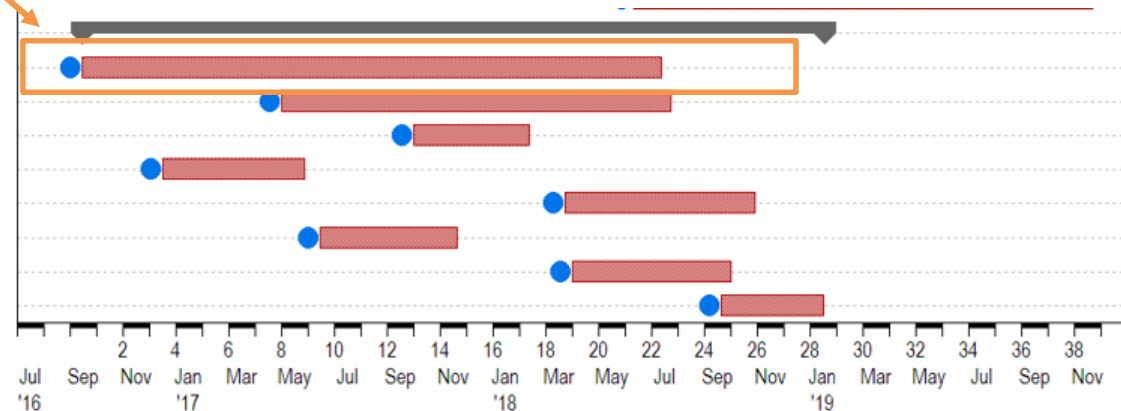




- **IT TRANSFORMATION VALUE STREAM**
  - Claims Management Replacement initiative

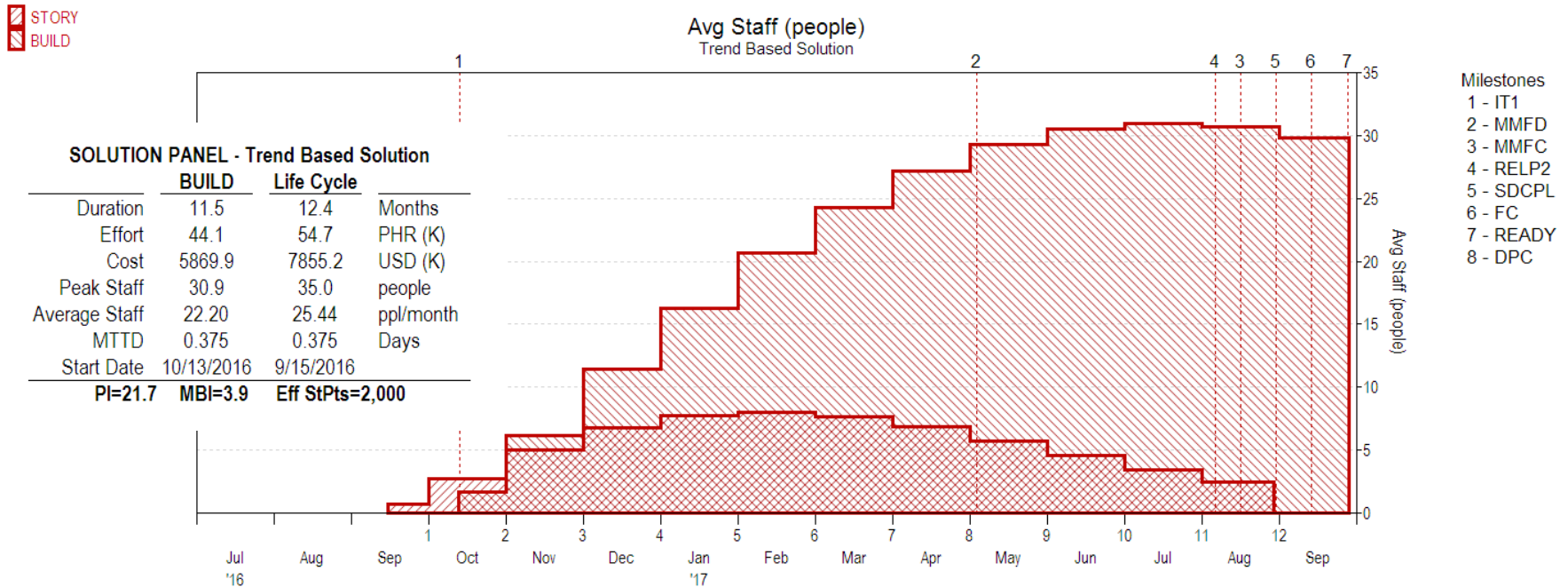
## IT TRANSFORMATION

Claims Management Replacement  
Mobile Apps Extension  
Loyalty Incentives Conversion  
Rewards Program  
Infrastructure Upgrade  
Claims Dashboard  
Agent Services Rollout  
Auto Integration



# Feasibility Estimate – Consumable Release

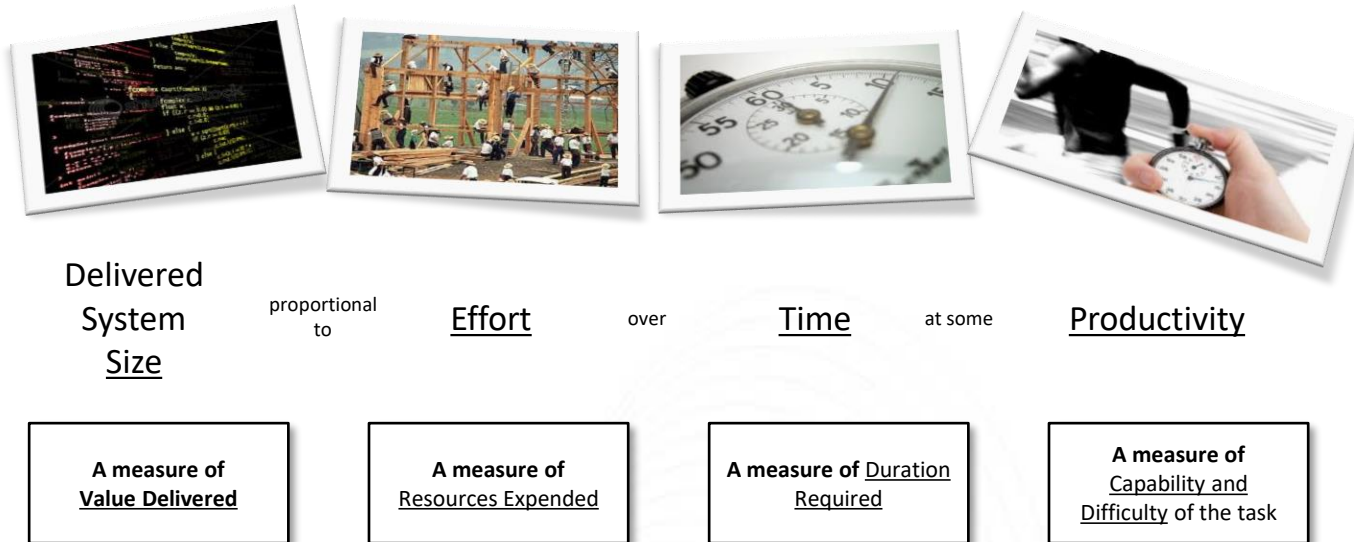
The Intelligence behind Successful Software Projects



<http://www.qsm.com/webinar/agile-estimation-beyond-myths-part-1>

# SLIM Production Equation

The Intelligence behind Successful  
Software Projects



# What is “Productivity”?

- Not simply units produced per time
- A combination of:
  - Capability: How effective is the development process?
  - Difficulty: How challenging is the task?
- Productivity is affected by numerous factors
- Calculate Productivity from completed project metrics:

$$\text{Productivity} = \frac{\text{Size}}{\text{Effort}^{1/3} * \text{Time}^{4/3}}$$

- Encapsulates all other project environment factors



# Detailed Estimate – Program Increment

The Intelligence behind Successful  
Software Projects

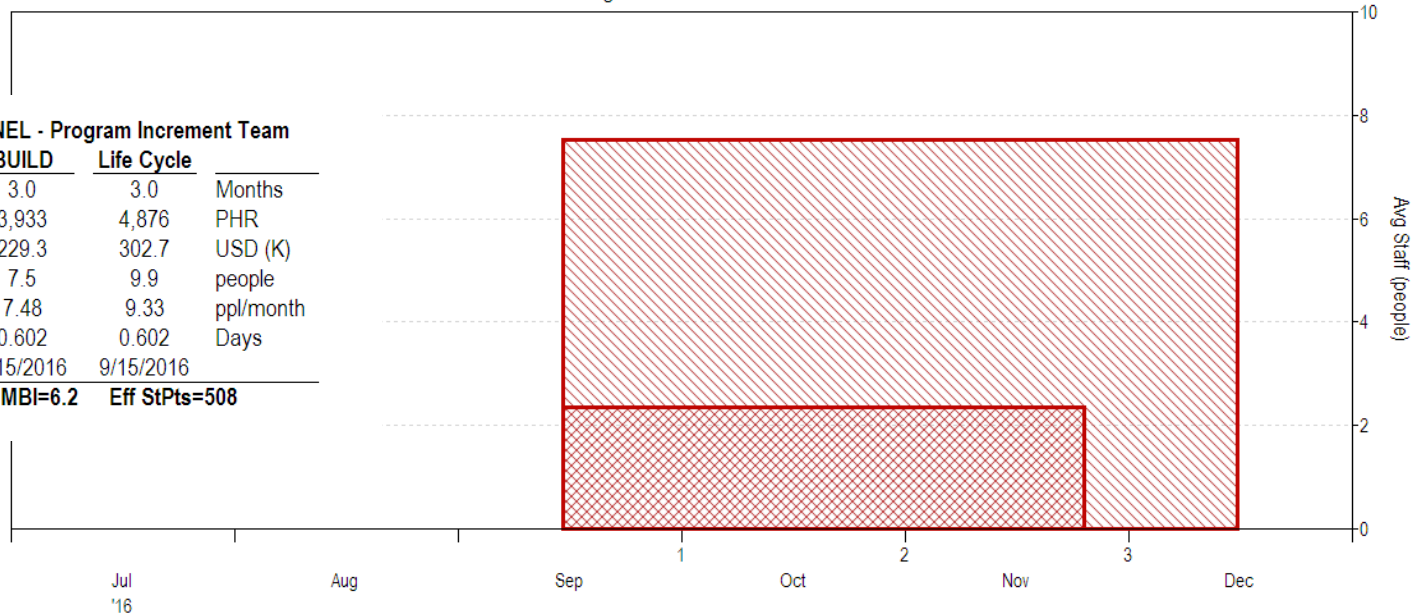


STORY  
BUILD

Avg Staff (people)  
Program Increment Team

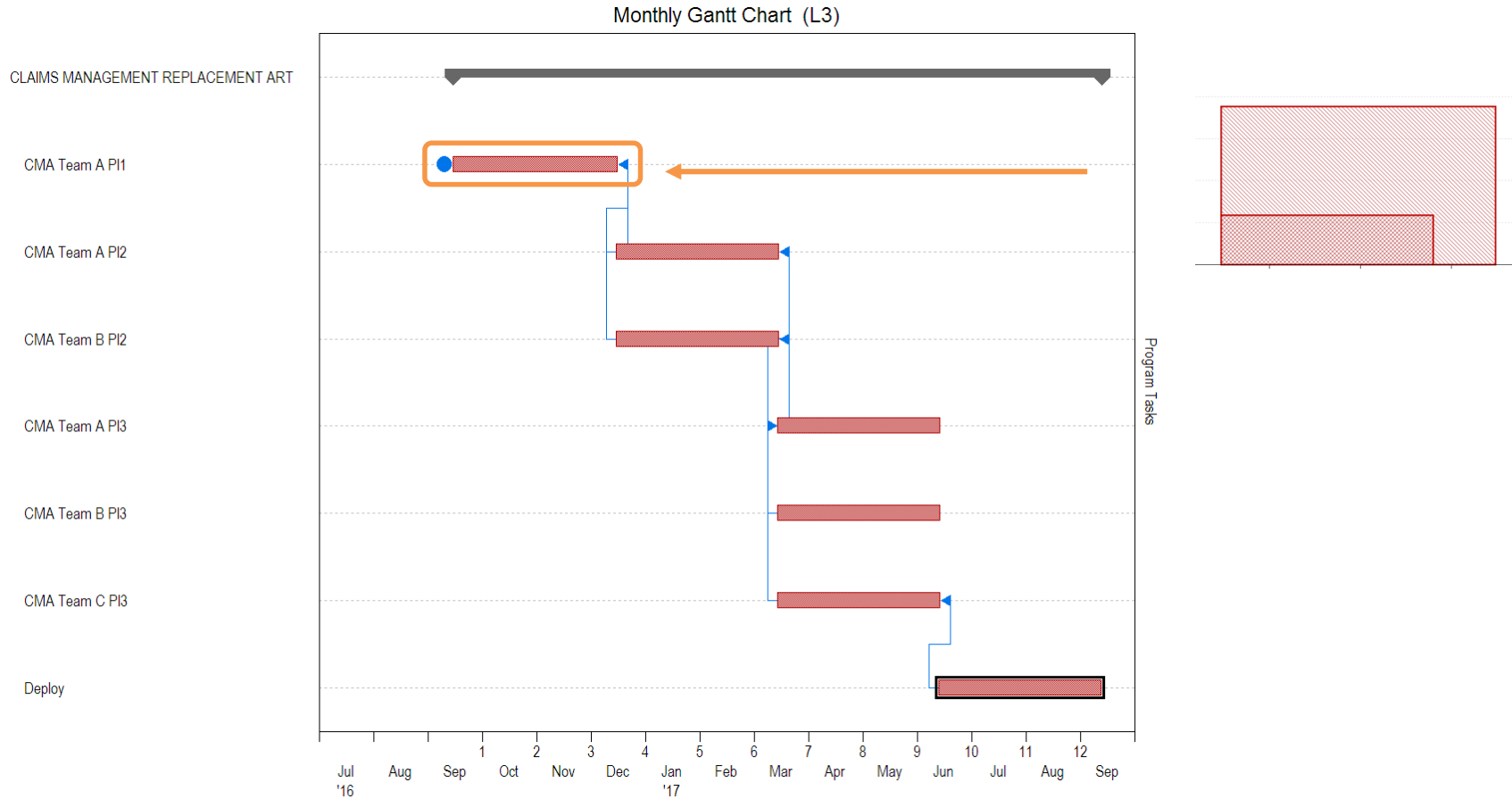
SOLUTION PANEL - Program Increment Team

	BUILD	Life Cycle	
Duration	3.0	3.0	Months
Effort	3,933	4,876	PHR
Cost	229.3	302.7	USD (K)
Peak Staff	7.5	9.9	people
Average Staff	7.48	9.33	ppl/month
MTTD	0.602	0.602	Days
Start Date	9/15/2016	9/15/2016	
PI=26.8 MBI=6.2 Eff StPts=508			



# Visualize Velocity and Value Creation

The Intelligence behind Successful Software Projects





# Visualize Velocity and Value Creation

The Intelligence behind Successful  
Software Projects

## Gantt Report (L3) Release

Task	Task Description	Start Date	End Date	Elapsed Months	PHR	Cost (USD 1000)
CLAIMS MANAGEMENT REPLAC...	Summary Task	9/15/2016	9/12/2017	11.93	34,252	4,917
CMA Team A PI1	SLIM-Estimate ( CMA ART Team Est...	9/15/2016	12/15/2016	3.02	4,876	700
CMA Team A PI2	SLIM-Estimate ( CMA ART Team Est...	12/15/2016	3/14/2017	3.00	4,808	690
CMA Team B PI2	SLIM-Estimate ( CMA ART Team Est...	12/15/2016	3/14/2017	3.00	4,808	690
CMA Team A PI3	SLIM-Estimate ( CMA ART Team Est...	3/14/2017	6/13/2017	3.01	4,842	695
CMA Team B PI3	SLIM-Estimate ( CMA ART Team Est...	3/14/2017	6/13/2017	3.01	4,842	695
CMA Team C PI3	SLIM-Estimate ( CMA ART Team Est...	3/14/2017	6/13/2017	3.01	4,842	695
Deploy	SLIM-Estimate ( CMA ART Team Est...	6/13/2017	9/12/2017	3.00	5,233	751
RELEASE	Release	9/15/2016	9/12/2017	11.93	34,252	4,917



# Visualize Velocity and Value Creation

The Intelligence behind Successful  
Software Projects

What If

Task	Solution Method	StPts	PI	Peak Staff
Release				
1 Claims Management Replaceme...				
1.1 CMA Team A PI1	Current Staff Buildup R...	508	26.8	7.5
1.2 CMA Team A PI2	Current Staff Buildup R...	499	26.8	7.5
1.3 CMA Team B PI2	Current Staff Buildup R...	499	26.8	7.5
1.4 CMA Team A PI3	Current Staff Buildup R...	141	21.0	7.5
1.5 CMA Team B PI3	Current Staff Buildup R...	141	21.0	7.5
1.6 CMA Team C PI3	Current Staff Buildup R...	141	21.0	7.5
1.7 Deploy	Current Staff Buildup R...	67	16.8	10.1

Global Adjustments

Global adjustments will be applied to the currently selected subsystem or to all subsystems in the currently selected summary task.

Solution Method

Current Staff Buildup Rate

\* PI and Peak Staff are not used as inputs when the Solution Method is Trend-Based.

Solution Parameters

Adjust PI \* ...

Adjust Size...

Adjust Peak Staff \* ...

Note: Only SLIM-Estimate subsystems may be adjusted.

OK

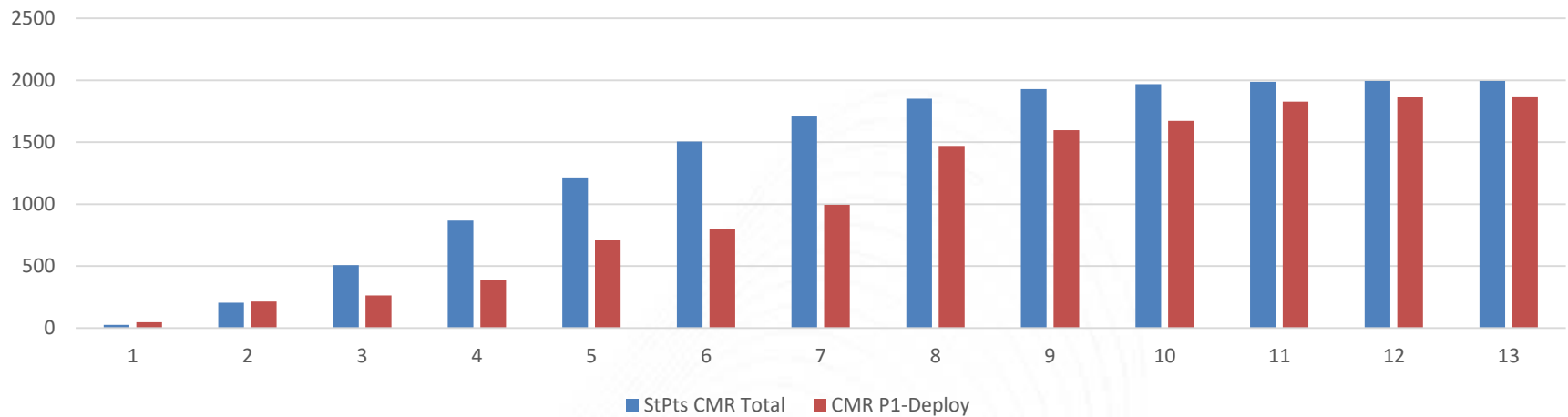
Cancel

Help

# Visualize Velocity and Value Creation

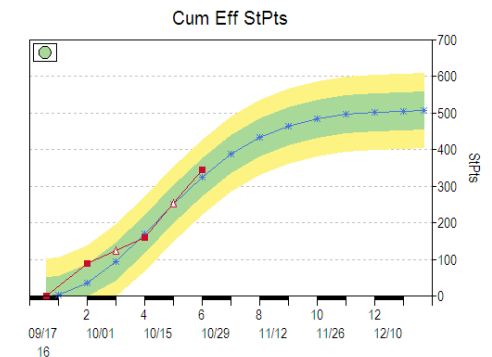
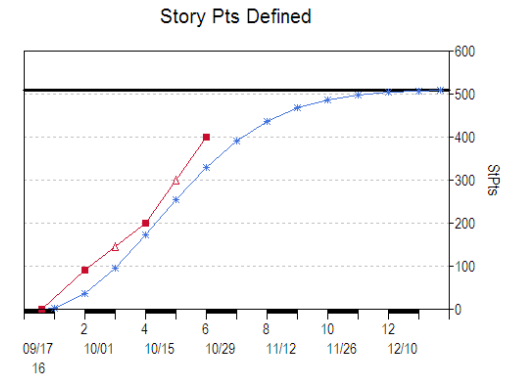
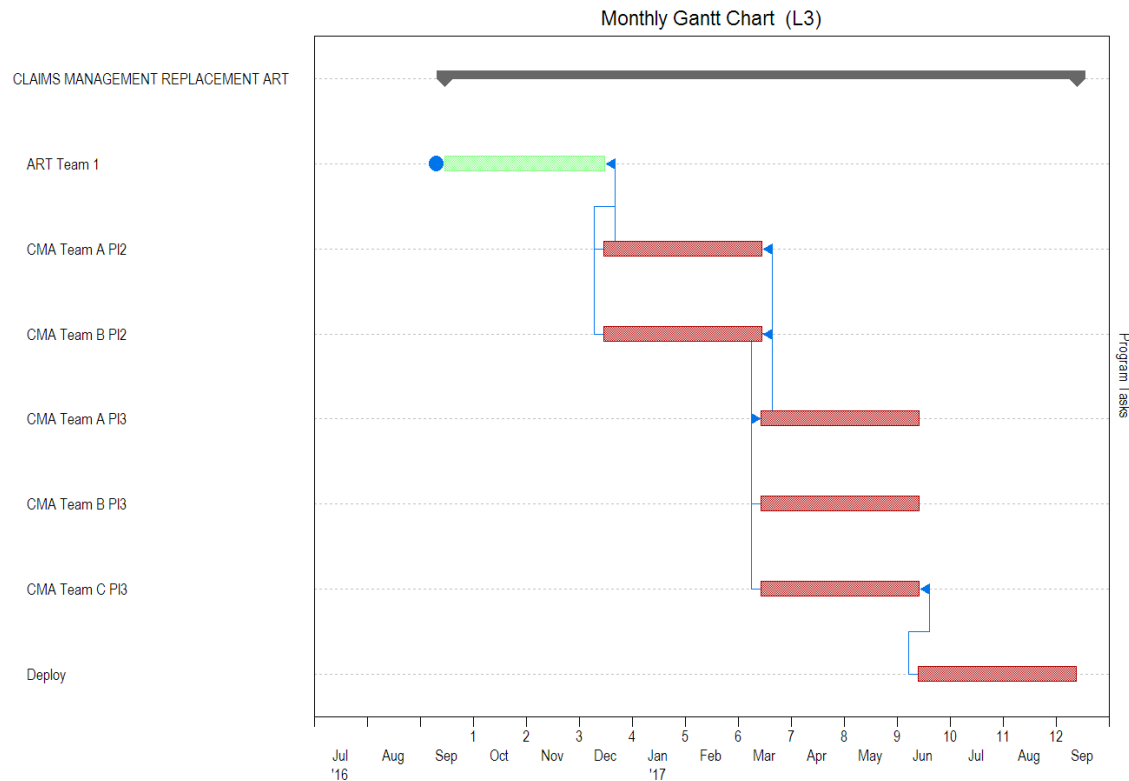
The Intelligence behind Successful  
Software Projects

Feasibility vs Detailed Estimate Cumulative Production



# Updating the Forecast

The Intelligence behind Successful Software Projects



- Top-down, scope-based estimating supports many principles of the Scaled Agile Framework (SAFe)
- Product and Release Management Teams at Portfolio, Value Stream, and Program levels are equipped to visualize potential release plans for Consumable Value, to ensure the timing, budget, and resource requirements are aligned with the enterprise's strategic business objectives
- A top-down approach allows you to build a defensible estimate based on known capabilities at the development environment level, allowing quick and easy vision of alternative scenarios and their relative risks.

- For more information about this presentation or QSM Agile services, contact

Laura Zuber

[Laura.zuber@qsm.com](mailto:Laura.zuber@qsm.com) or [info@qsm.com](mailto:info@qsm.com)

(800) 424-6755