



# **Key Performance Measures in a Lean Agile Program**

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# Goal and Objectives

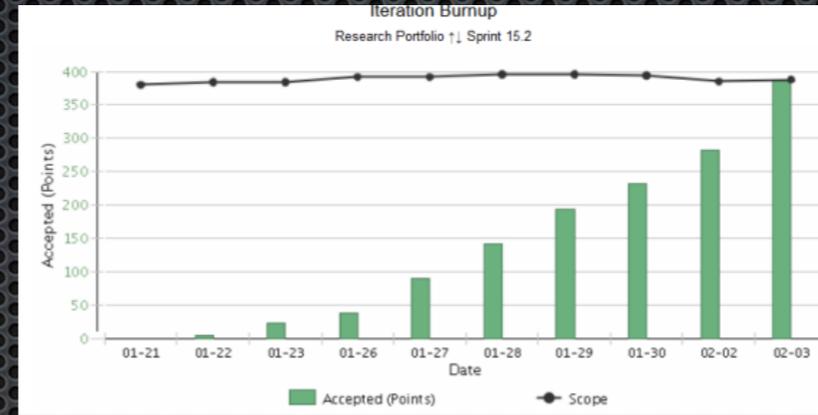
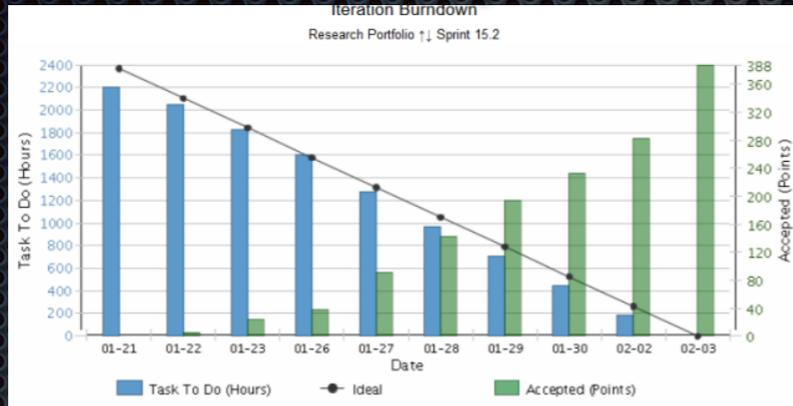
- ✦ Discussion on Current Performance Measurement in Agile
- ✦ Shared understanding of measures that can drive actionable change
- ✦ Seeking Alignment of the “Iron Triangle” and traditional Agile methods

# Agile Metric Principles

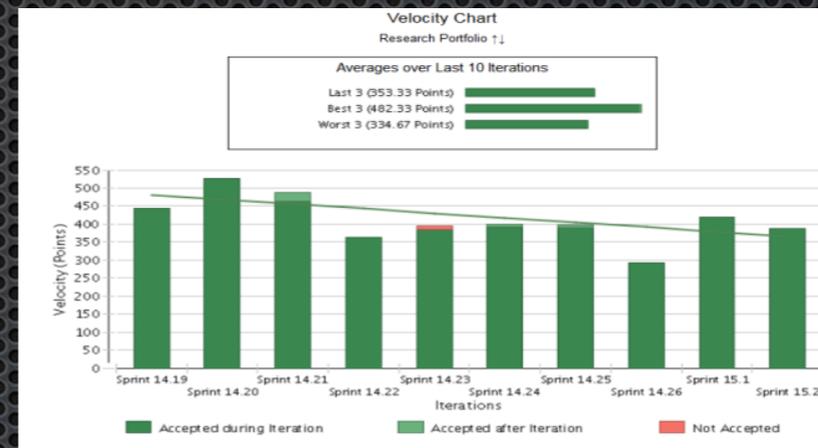
- Working software is the primary measure of progress
- Focus on Business Value delivery
  - Time to Market
  - Prioritization and Continuous Grooming
- Build Quality In (Foundational Principle)
- Customer Satisfaction
- Employee Engagement
- Focus on Comprehensive View but Lean

# Current Performance Measurement in Agile

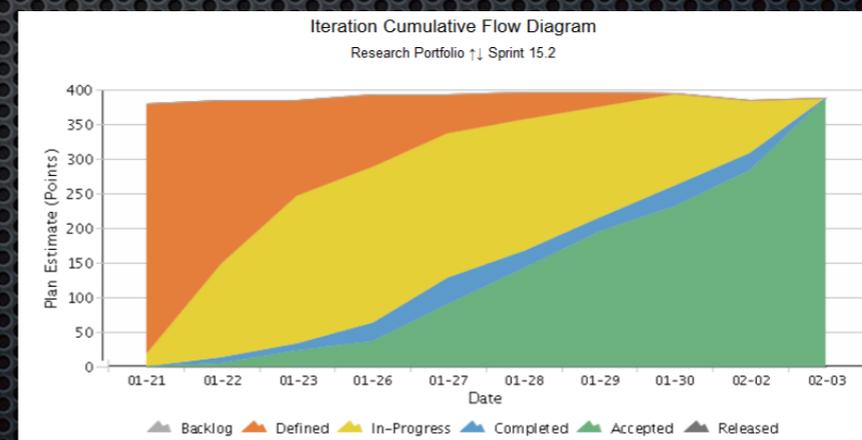
## ✦ Burn Down/Burn Up Charts



## ✦ Velocity over Time



## ✦ Cumulative Flow



# Key Agile Metrics Focus

- Focused on Team and Sprint
- Commit vs Accept
- Lean – Examine the “Flow” to done
- Speaking the same Language: Metric “Currency” –
  - Story Points and Feature Points (Prelim Estimate)
  - Sprints (Iterations)
  - Hours are used for lowest level tasks and capacity planning
- Allows for continuous improvement

# Challenges to Overcome

- Where is the “program” view?
  - Are we where we planned to be in terms of cost, schedule, and required scope?
- When delivery teams are one of many (scaled agile), how do we accurately reflect progress to “done” for a large portfolio?
- People/Teams adjust their behavior to metrics used to measure their systems and evaluate their performance
  - Careful what we ask for!
- Standardization and Consistency across the program needed to aggregate team level performance

# Driving Performance at the Program Level

# How is An Agile Program's Performance Measured?

**Responsiveness** measures the ability of a team to deliver functionality soon after it's requested

**Quality** measures how disciplined a team is in preventing defects being introduced and how quickly they resolve any that occur

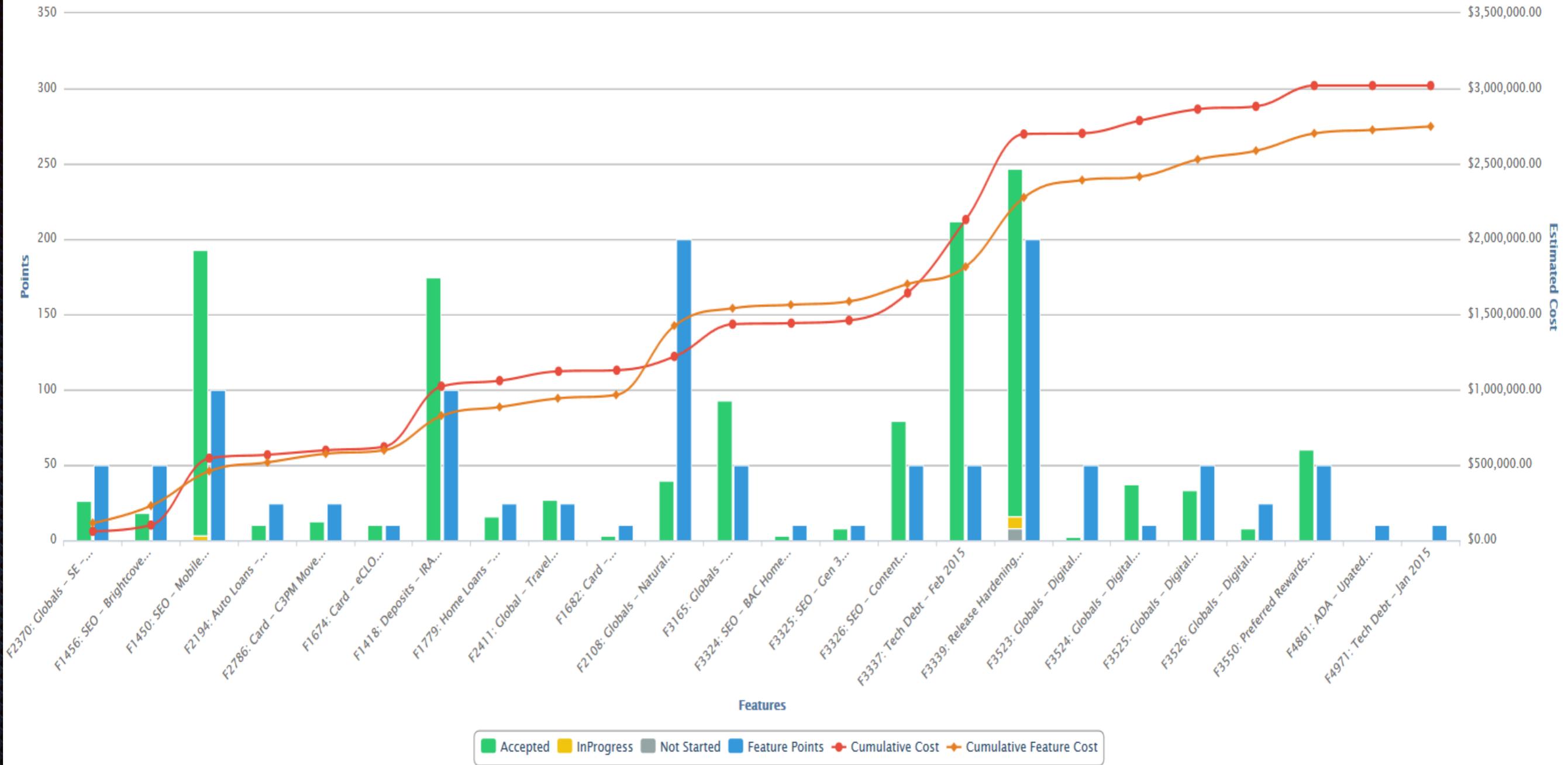
**Productivity** measures how much work a team accomplishes over time

**Predictability** measures how consistent a team is at producing work over time; an indication that teams are better at estimating their work and flowing increments of value

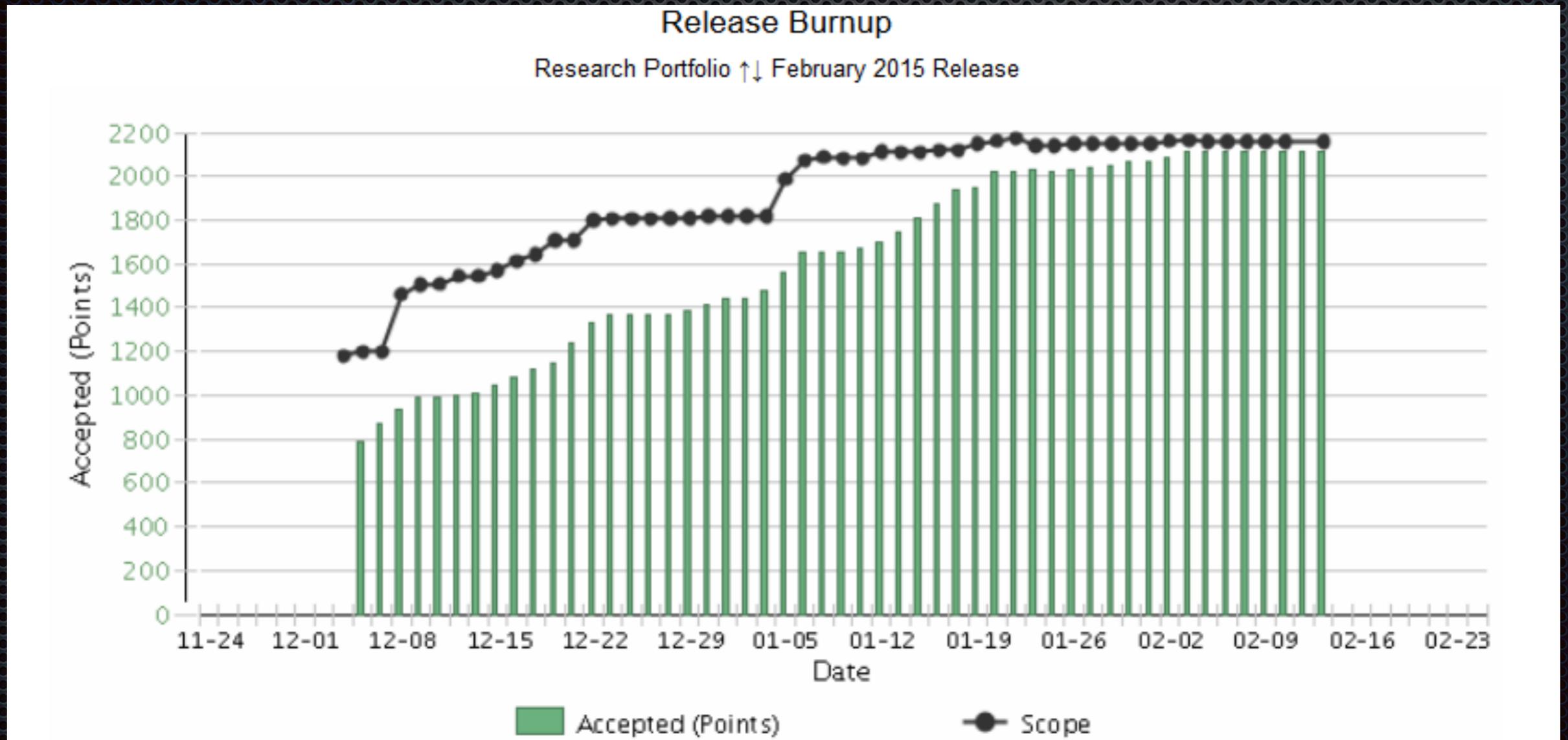
# Feature Progress/Profile

Feature Profile

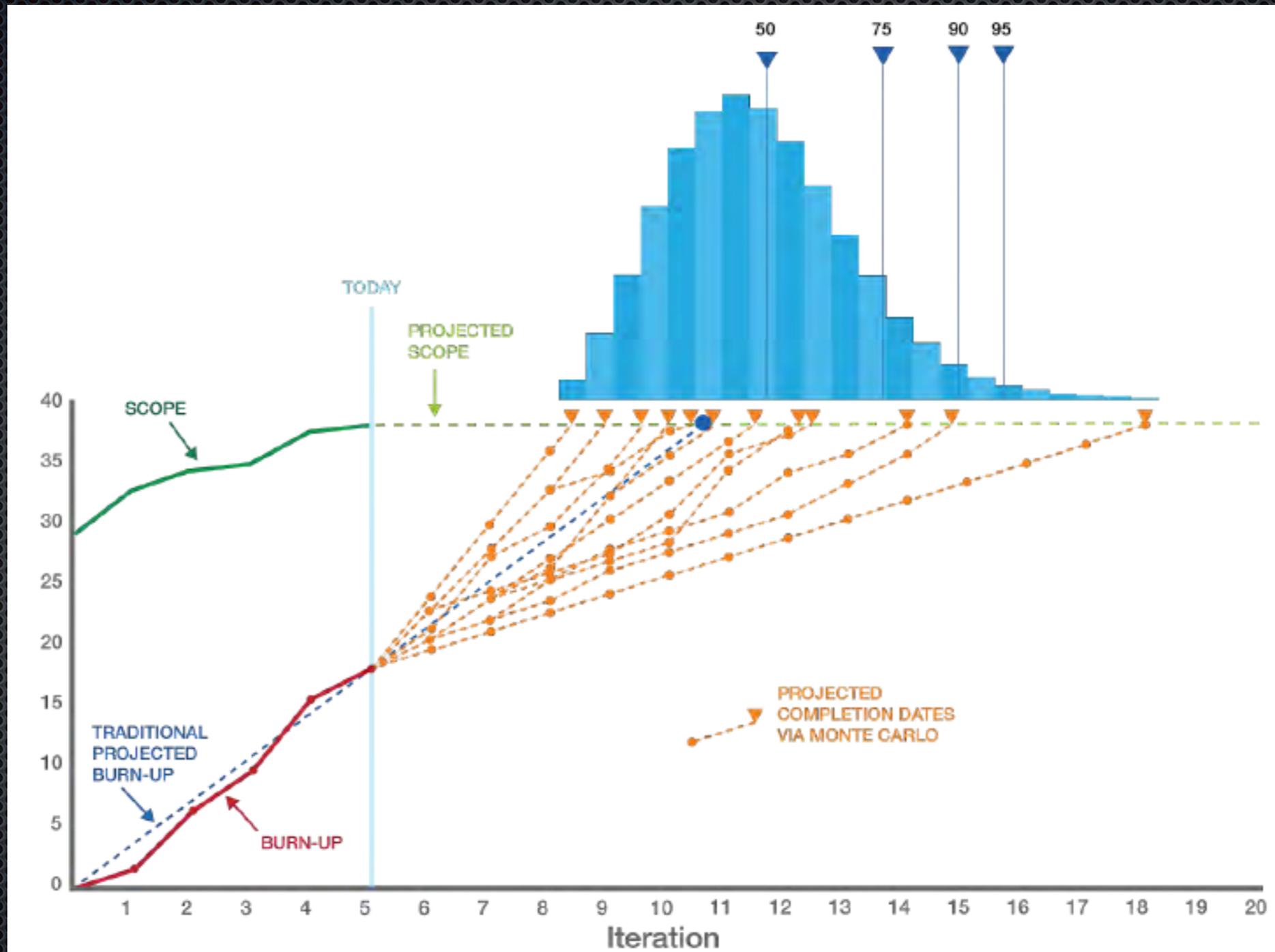
February 2015 Release



# Release Burn Up



# Forecasting Schedule and Required Velocity (must include Probability)



- **Budget at Complete**
- **Iteration Length**
- **Planned Iterations**
- **Planned Release Story Points (Initial Estimate)**
- **Start Date**

**Initial Inputs  
(Baseline)**

*On-going Inputs*

- **Current Iteration Number**
- **Number of Story Points Completed**
- **Number of Story Points Added or Removed from the Release**
- **Actual Cost in \$ (or Hours)**

METRICS	DEFINITIONS
Budget At Complete (BAC)	The Planned Amount Expected to Spend
Actual Cost (AC)	The Actual Cost to Complete Work
Planned Release SP (PRSP)	Planned Release Story Points
Expected % Complete (EPC)	Current Sprint (n)/Total Planned Sprints
Actual %Complete (APC)	SP Completed/Total Planned SPs
Planned Value (PV)	$PV = BAC * EPC$
Earned Value (EV)	$EV = BAC * APC$
Cost Performance Index (CPI)	$CPI = EV / AC$
Schedule Perf. Index (SPI)	$SPI = EV / PV$

# AgileEVM

- Program level metrics are the primary use case
- Should be used in concert with Probability Based Burn down or Burn Up
- Every iteration is an opportunity to “Re” Baseline and provide transparency of performance to stakeholders
- Accurately informs both the Productivity and Predictability Performance Measure Categories

# Practices to Reinforce Metric Production and Team Performance

- ✦ Dedicated and Stable Teams
  - ✦ Stable Teams result in up to:
    - ✦ 60% better Productivity
    - ✦ 40% better Predictability
  - ✦ “There is an almost 2:1 difference in throughput between teams that are 95% or more dedicated compared with teams that are 50% or less dedicated “ (1)

# Reinforcing Practices (Cont)

- Set up your teams cross functionally (everyone needed to develop and test) to get the stories to done
- Set up team size  $7 \pm 2$  for the most balanced performance
- Balance just enough Work in Process – “There is a huge effect on Quality for Teams that have low WiP”. (Queuing Theory – Little’s Law)\*

\*Predicts that there will be a linear relationship between WiP and Time in Process (TiP)

Other Key Performance Measures to Consider

# Additional KPIs

- ✦ **Baseline Cost Per Point and Track Every Sprint**
  - ✦ Performance thresholds should be based on acceptable variations
- ✦ **Focus on Trends Emerging from Feature Preliminary Estimate to Story Decomposition**
  - ✦ Leading indicator to future scope considerations

# Questions and Answers

# Connect to your Speaker



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## ▪ References

- [1] "Impact of Agile Quantified, Swapping Intuition For Insight "®, Larry Maccherone, Rally Software 2013
- "AgileEVM - Earned Value Management in Scrum Projects", Tamara Sulaiman, Brent Barton, Thomas Blackburn, AGILE, 2006