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Agile Metrics

Your Guides:

Joe Knapp and Walter Weber

Agenda

- Getting Started
  - Metrics defined
  - What should we measure?
  - What to watch for
  - Pitfalls

- Baseline Metrics
  - Value Stream & Service
  - Scrum Teams
  - Kanban Teams

- Advanced Metrics
  - Focus
  - Estimation
  - Forecasting

- Wrap Up
  - What to do next?
  - Questions

Getting Started

- Metrics defined
- What should we measure?
- What to watch for
- Pitfalls

Let Rego be your guide.

Metrics Defined

"Metrics are agreed-upon measures used to evaluate how well the organization is progressing toward the portfolio, large solution, ART, and Agile team's business and technical objectives." © Scaled Agile, Inc.

Outcomes and Key Results

- Focused on Outcomes
- Subjective
- Different by Product, Value Stream, etc.

Metrics

- Focused on Output
- Data-driven analytics
- Standard

*"<u>Working software</u> is the **primary** measure of progress."*
\- [The Agile Manifesto](#)

What to Measure

- Start with Why

- Value Streams → Processes → Tools →

- Baseline Metrics
  - by Work Item Type
  - by Class of Service

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Watch for Variation

- Metrics show historical output over time

- Processes have Normal and Special Cause variation

- Identify trends

- Inspect and adapt to remove Special Cause variation

Graph Trends

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Pitfalls
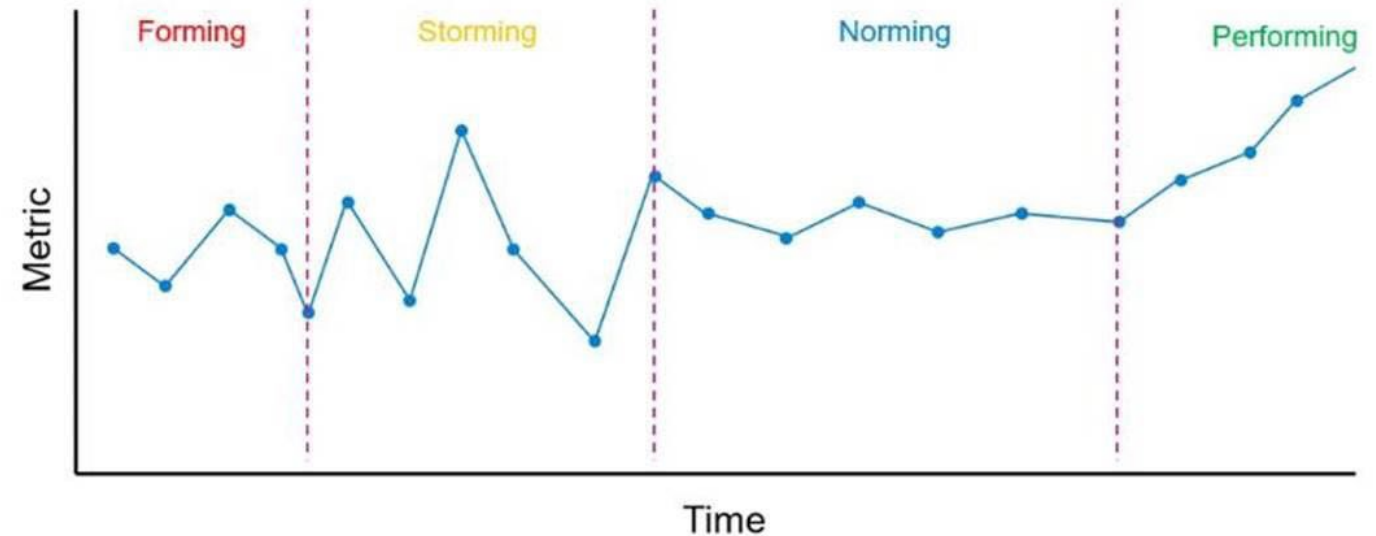
- Continuous Improvement NOT governance
  - Use to inform Continuous Improvement efforts
  - Do NOT use to compare team
  - Do NOT use to drive performance reviews

- Garbage In – Garbage Out
  - Metrics are as good as the underlying data
  - Everyone is responsible

- Fear of Failure
  - Transparency, Safety, & Trust

Baseline Metrics

- Value Stream & Service

- Scrum Team Metrics

- Kanban Team Metrics

Throughput and WIP

Throughput

- The number of work items completed in a time period

WIP (Work in Progress)
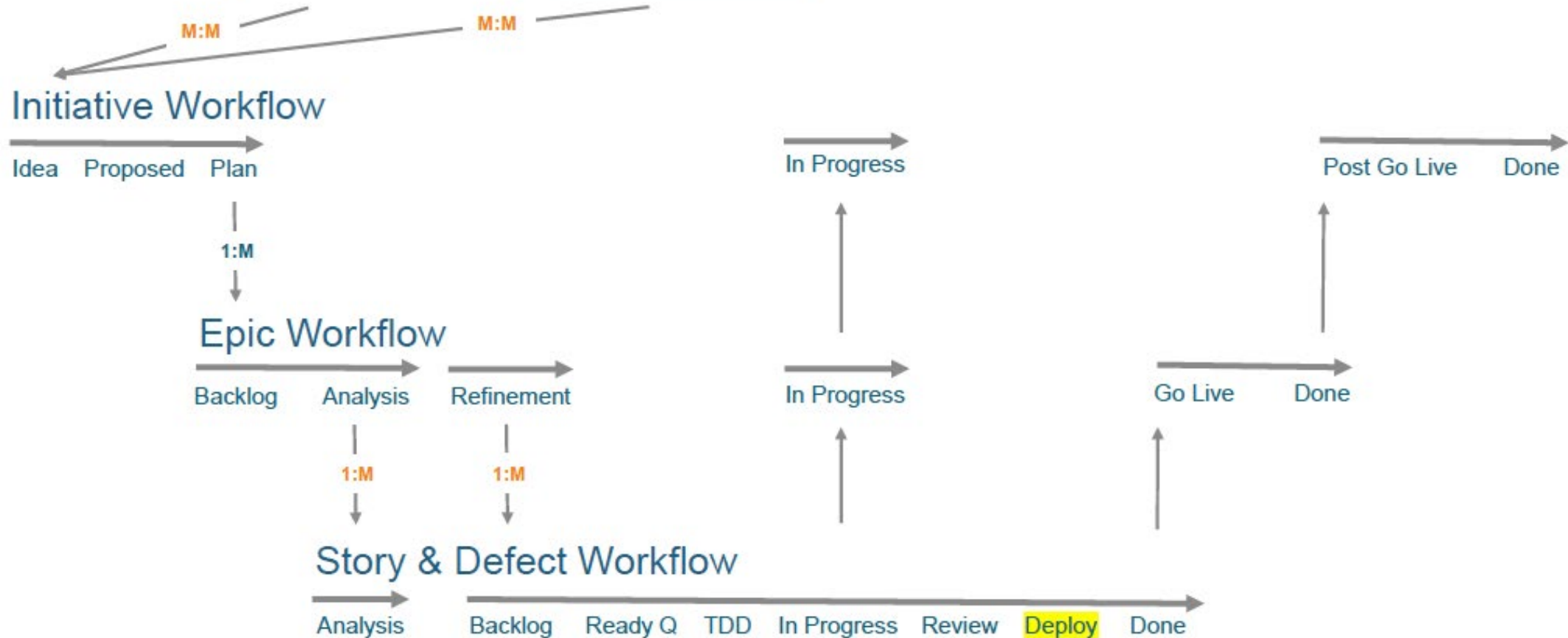
- The number of in-progress work items

Caution – yes, the higher the Throughput the better, BUT it has been statistically proven that if you want to increase your Throughput, you need to put LESS work into the process
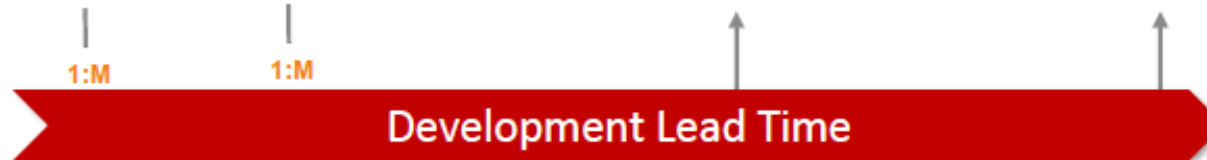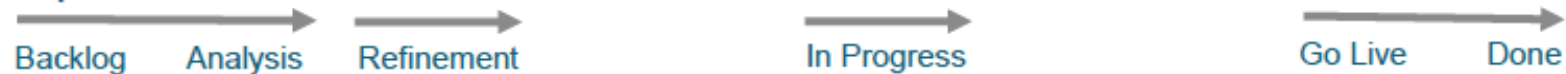
Lead Time - Value Stream

Product Lifecycle

Backlog → New Product Development → Active → Maintenance → End of Life → Done

M:M   M:M

Initiative Workflow

Idea   Proposed   Plan

1:M

Epic Workflow

Backlog   Analysis   Refinement

1:M   1:M

Story & Defect Workflow

Analysis   Backlog   Ready Q   TDD   In Progress   Review   Deploy   Done

In Progress

In Progress

Post Go Live   Done

Go Live   Done

Lead Time by Service

Product Lifecycle

Backlog	New Product Development	Active	Maintenance	End of Life	Done

M:M

Business Value Lead Time

Initiative Workflow

Idea → Proposed → Plan   In Progress   Post Go Live → Done

1:M

Customer Lead Time

Epic Workflow

Backlog → Analysis → Refinement   In Progress   Go Live → Done

1:M   1:M

Development Lead Time

Story & Defect Workflow

Analysis   Backlog → Ready Q → TDD → In Progress → Review → Deploy → Done

Cumulative Defect Trend

- The number of Support Issues that come in vs. go out over time
  - = (Total number of Support issues where create date >= Start Date) − (Total number of Support issues where Status = Done and Done Date <= today)
  - Start Date = Jan 1, yyyy
  - Done Date = date Support issue Status = Done (can be tracked via Automation for Jira rules)

- This number should be <= 0
  - A number greater than 0 indicates a growing backlog of unfinished support issues
  - A trend over time that shows this cumulative number growing is a cause for concern

- Run this report every week

Turn Around Time

- Lead Time for Customer Support issues

- Recommend having two Defect Issue Types (Support and Bug)
  - Bugs are issues reported by the team during testing, etc.
  - Support issues come from customer support desks usually via other tools (E.g., SalesForce)

- Support handles the issue completely by themselves in their support tool
  - Turn Around Time = Time when issue was resolved – Time when issue was logged in the system

- Support cannot solve the issue themselves and requires development to provide a solution
  - Turn Around Time = Time when issue is Done on Jira Development board – Time when issues was logged
  - This requires extracting time from two different systems.

Epic Lead Time Ratio

- The time an Epic takes to flow through a Service as a ratio of child stories.

- = Epic Lead Time / #User Stories under the Epic

- For example,
    - An Epic with <u>2 Stories</u> that took <u>20 days</u> to go from Backlog to Done would have an Epic Lead Time Ratio of **10 days** (20 days / 2 stories)
    - An Epic with <u>20 Stories</u> that took <u>150 days</u> to go from Backlog to Done would have an Epic Lead Time Ratio of **7.5 days** (150 days / 20 stories)

    That's pretty consistent! And demonstrates that the Team's processes are scalable!
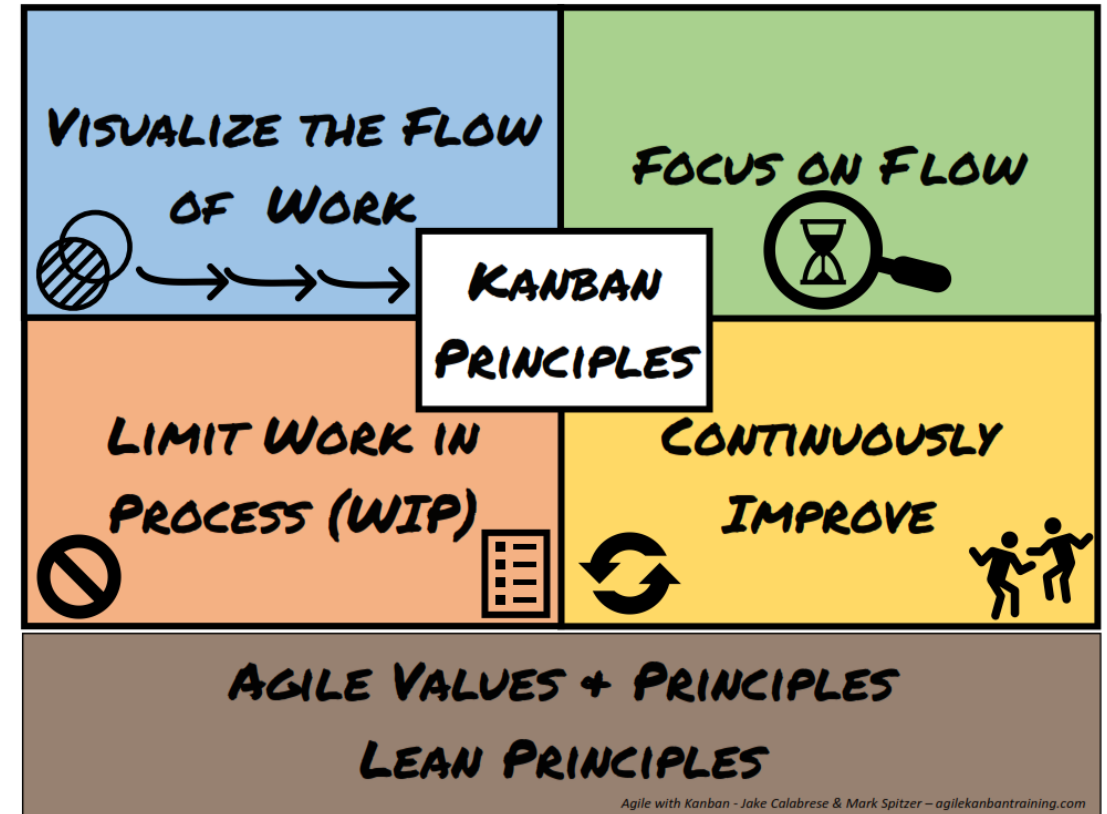
Scrum Teams

- Velocity
  - Measures how many points a team completed in a Sprint

- Planned vs Delivered
  - Measures the difference between the committed vs delivered work

- Planned vs Unplanned
  - Measures the number of work items added to a Sprint after Sprint begins
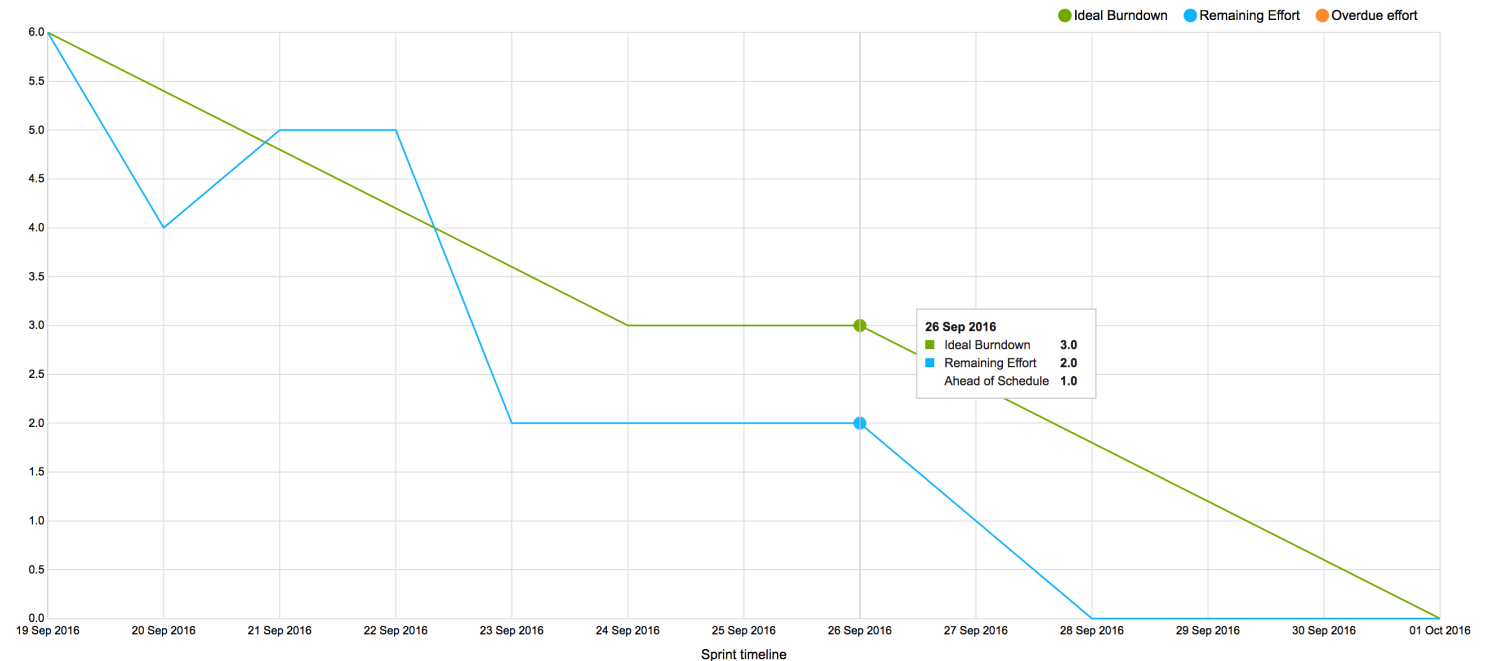
Kanban Teams

- Lead Time
  - Measures the amount of time it takes for a work item from backlog to customer

- Cycle Time
  - Measures the amount of time from start of work through done

- Throughput
  - The number of work items completed in a time period

- Cumulative Flow
  - Measures the flow of work through the system

VISUALIZE THE FLOW OF WORK

FOCUS ON FLOW

KANBAN PRINCIPLES

LIMIT WORK IN PROCESS (WIP)

CONTINUOUSLY IMPROVE

AGILE VALUES + PRINCIPLES
LEAN PRINCIPLES

Agile with Kanban - Jake Calabrese & Mark Spitzer – agilekanbantraining.com

Advanced Metrics

- Focus Factor

- Accuracy of Estimation

- Accuracy of Forecast

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Sutherland's Scrum Metrics

Teams are much like modern jet fighters

A fighter aircraft is inherently unstable and must constantly make corrections.

Teams need reliable, lightweight metrics (gauges) so that performance can be easily monitored and quickly corrected.

Scrum Metrics for Hyper-productive Teams by Scott Downey & Jeff Sutherland

- RoboScrum Video 1 (Sutherland and Downey explain each metric in detail)
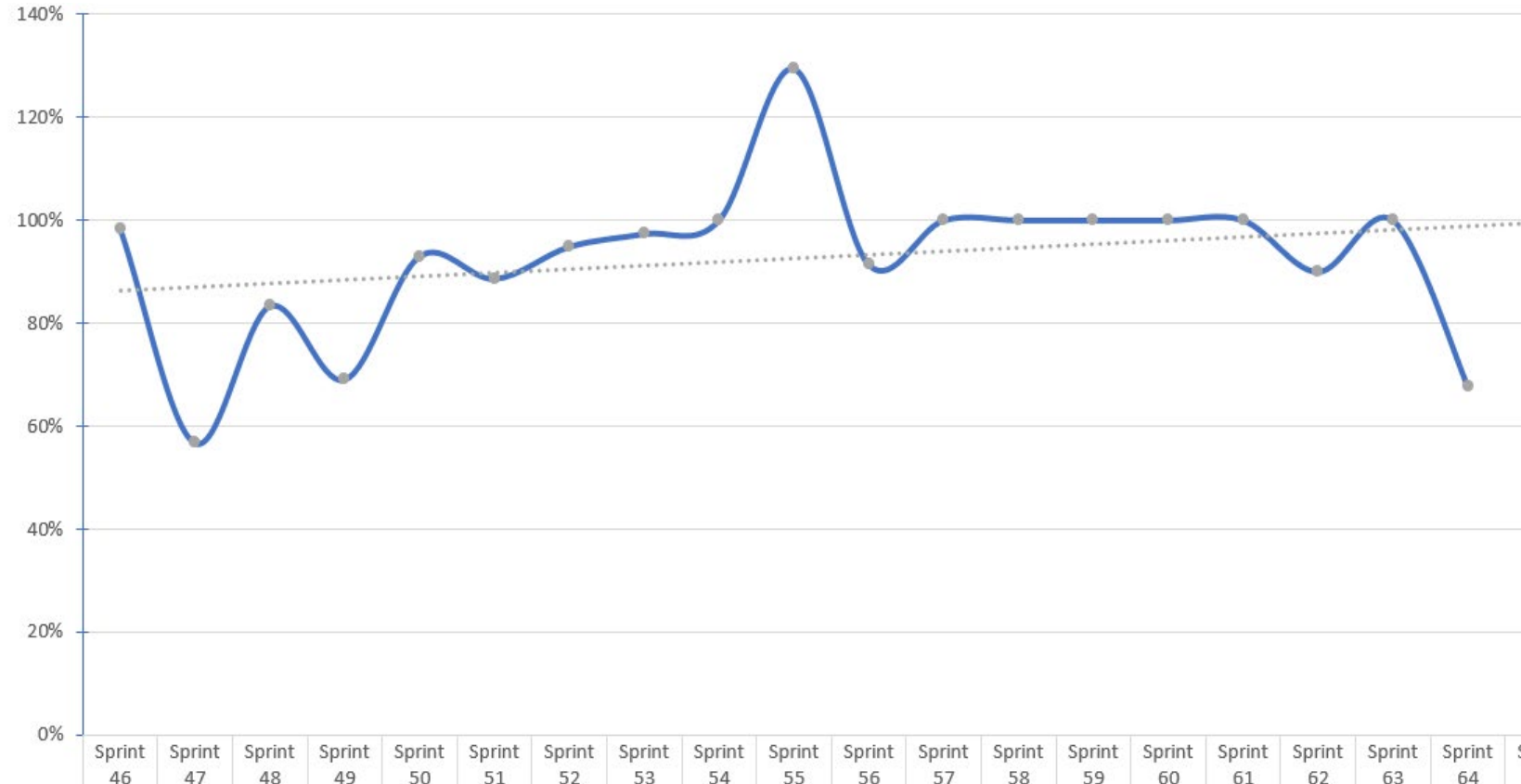- RoboScrum Video 2
- RoboScrum Video 3

Scrum Metrics for Hyper-productive Teams by Scott Downey & Jeff Sutherland

Focus Factor

Measure of the team's ability to focus on the sprint commitment.

- Benefits:
    - Focus on commitments
    - Identify and remove obstacles
- Too Low/High:
    - Disruptions (internal/external)
   - Under forecasting to appear "perfect"

=Velocity ÷ Work Capacity

Accuracy of Estimation

Reflects the team's ability to correctly estimate work during Sprint Planning.

- Benefits
  - Helps to improve estimates on user stories
- Too Low/High
  - Overly conservative, spending too much time planning
  - User stories, technology, or products poorly understood
  - Product Owner/Manager is unavailable during the sprint
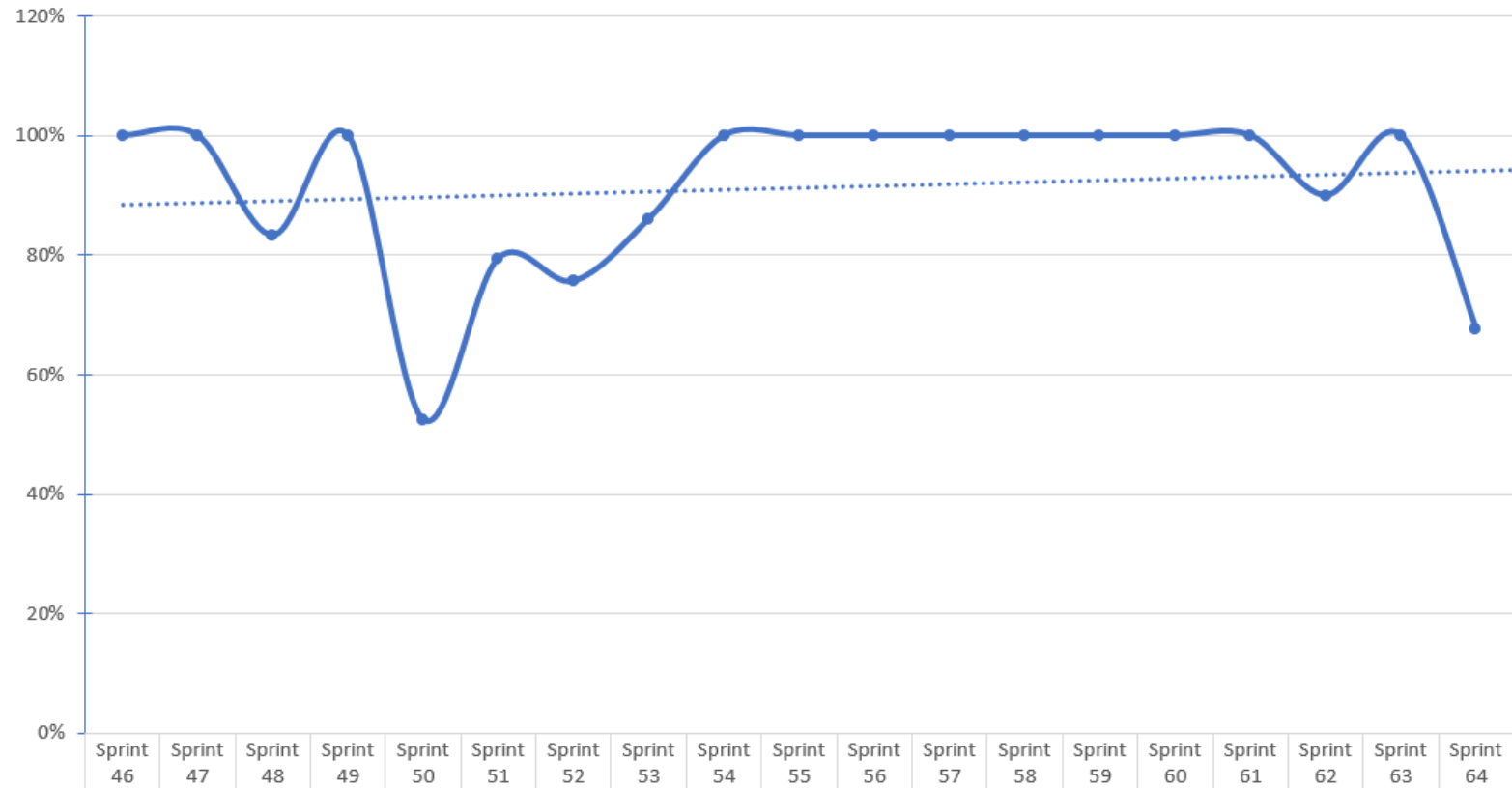 - Requirements are changing during the sprint

=1-(∑(Estimate Deltas) ÷ Total Forecast)
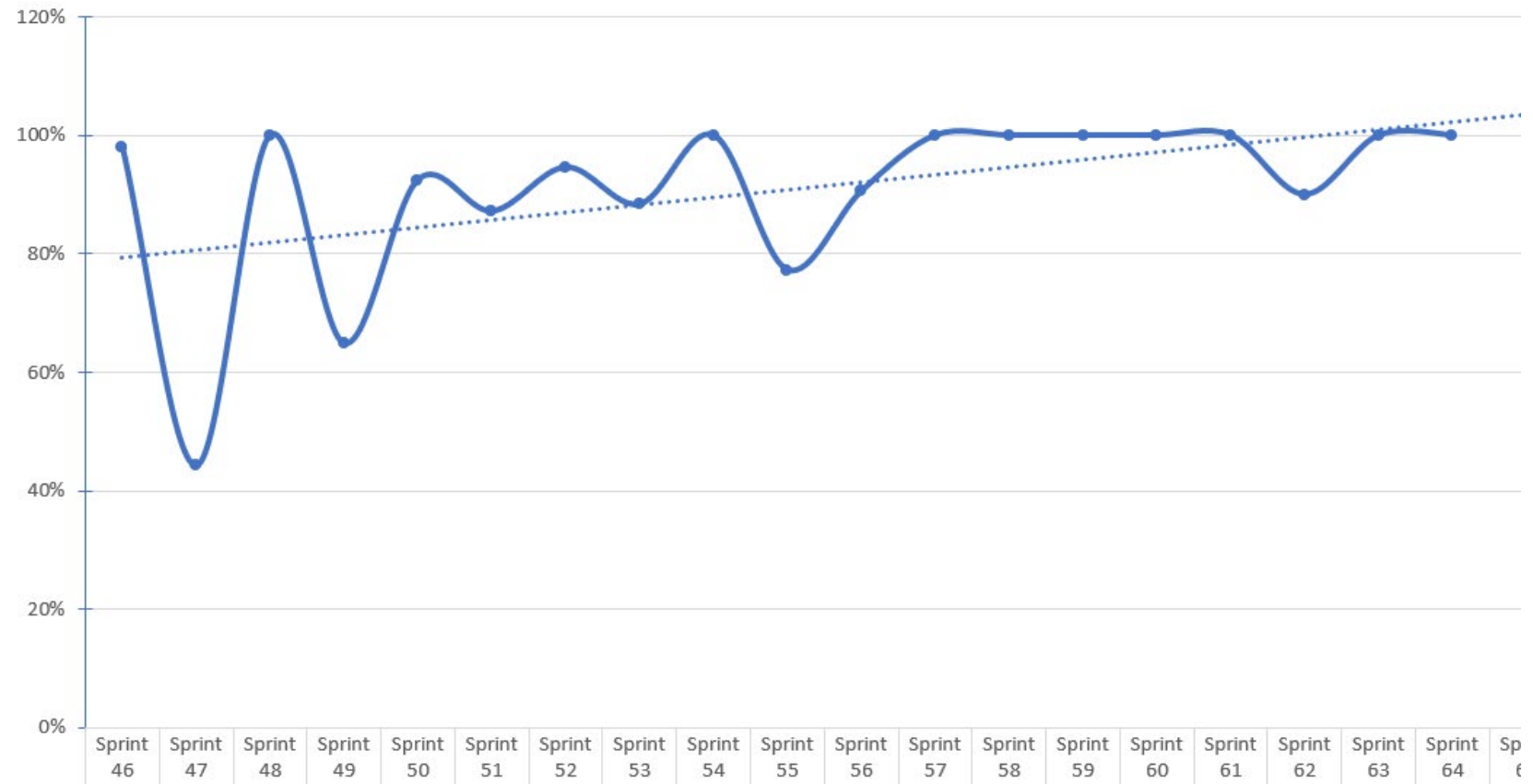
Accuracy of Forecast

Ability to identify and commit to sprint deliverables.

- Benefits
  - Improve predictability
  - Identify blockers
- Too Low/High
  - Under forecasting, fear of failure
  - Sprint work not protected

= (∑Original Estimates) ÷ (∑Original Estimates + ∑Adopted Work + ∑Found Work)

Wrap Up

- What next?

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What Now?

- Plan
  - Decide what you want to measure and why
  - Decide how metrics will be collected and shared (information radiators)
  - Obtain buy-in and establish safety (avoid the pitfalls)
  - Start small and grow as you learn more

- Do
  - Develop metrics based on this presentation or elsewhere (there is no one-size-fits-all solution)
  - Develop Automation rules to easily collect data (Excel, NimbleIQ, BI)

- Check
  - Verify the data
  - Watch for trends
  - Watch for variations

- Act (on the Data)
  - Learn through Retrospectives

Questions?

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- Click on **Report PDU's**
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- Class Name = **regoUniversity**
- Course Number = **Session Number**
- Date Started = **Today's Date**
- Date Completed = **Today's Date**
- Hours Completed = **1 PDU per hour of class time**
- Training classes = **Technical**
- Click on **I agree** and **Submit**

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