Agile Dev
Better Software
DevOps WEST

A TECHWELL EVENT

AW9

Agile Product Development
Wednesday, June 6th, 2018, 2:45 PM

Measuring Flow: Metrics That Matter

Presented by:

Julie Wyman & Hunter Tammaro

Excella Consulting

Brought to you by:

Julie Wyman

Excella Consulting

Julie Wyman is an agile coach with Excella Consulting. She has eight years of experience in agile software delivery, traditional project management, and client training. Julie has coached multiple globally distributed teams to deliver, while leveraging Scrum, kanban, and other agile frameworks to drive continuous improvement. Julie enjoys finding new ways to make trainings, workshops, and retrospectives more engaging through the use of interactive games and activities.

Hunter Tammaro

Excella Consulting

Hunter Tammaro is an agilist with Excella Consulting. He has five years' experience in agile projects and more than ten years in IT, working with multiple teams to create large, complex software systems. Hunter is especially interested in helping organizations scale their agile adoption using empirical, evolutionary techniques.

Measuring Flow:
Metrics that Matter

Julie Wyman & Hunter Tammaro

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Agenda

- Why is flow so important?

- How do we measure flow?

- Practice!

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Utilization vs. Flow

What's the difference?

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Prioritizing **Utilization**

Fully utilized, but spend most of the time **waiting**

Slow flow through the system

Slow to respond to change

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Prioritizing
Flow

Work almost always **moving**

Rapid flow through the system

Short response time reduces effect of impediments
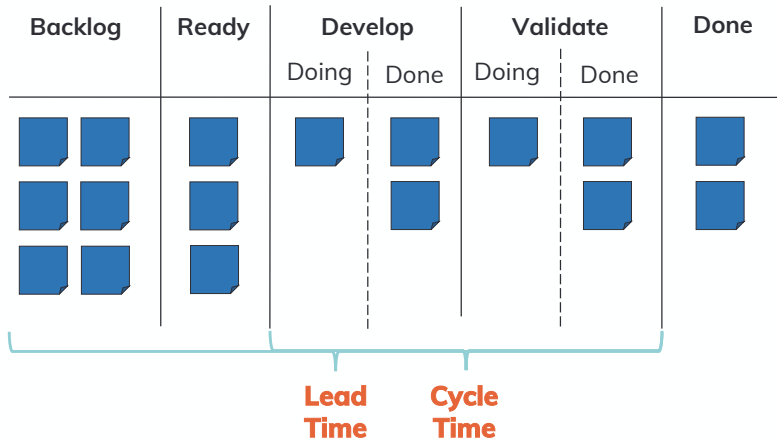
Measuring Flow

First, a couple questions...

Who uses?
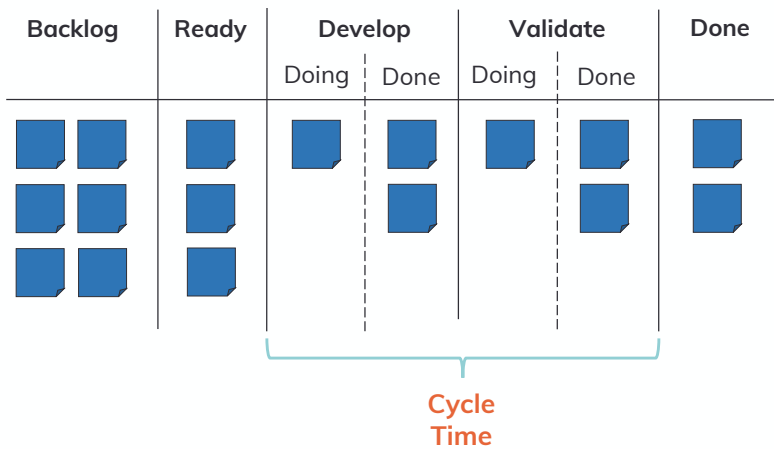
- Scrum?

- Kanban?

- Other?

What metrics do you use?

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Lead and Cycle Time

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How long from start to finish?

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What it measures

Backlog	Ready	Develop		Validate		Done
		Doing	Done	Doing	Done	

Lead Time   Cycle Time

How to collect

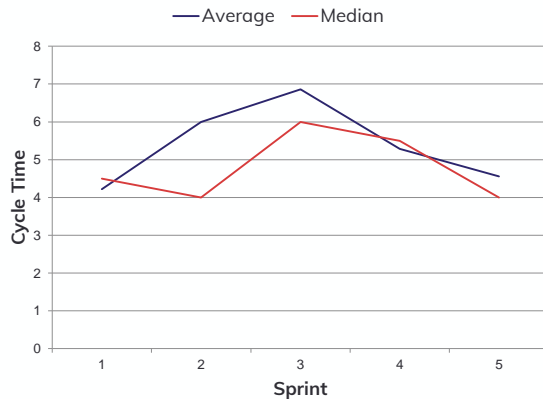| Backlog	Ready	Develop		Validate		Done
		Doing	Done	Doing	Done	

Cycle Time

US1: Customer Dashboard
Start: 5/14
Finish: 5/17
HT

Average and Median Cycle Time

What:
Average
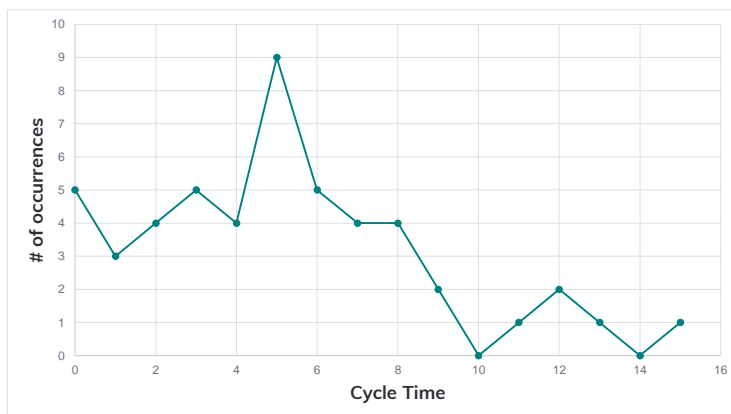The arithmetic mean (adding a group of numbers and dividing by the count of those numbers)

Median
The middle number of a group of numbers

Why:
Helps visualize trends and provide data for predicting delivery

Cycle Time Distribution

What:
Shows how many occurrences there have been of each cycle time

Why:
Differentiate between trends and outliers. May help explain differences between average and median cycle time

Cycle Time Scatter Plot

What:
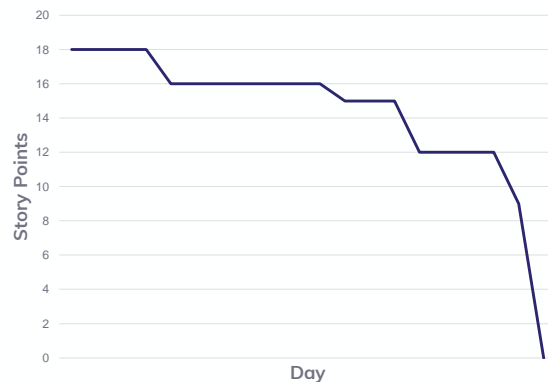Shows cycle time of individual work items in the order completed

Why:
Reflects cycle times within iterations and when outliers occurred

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Use in Scrum & Kanban

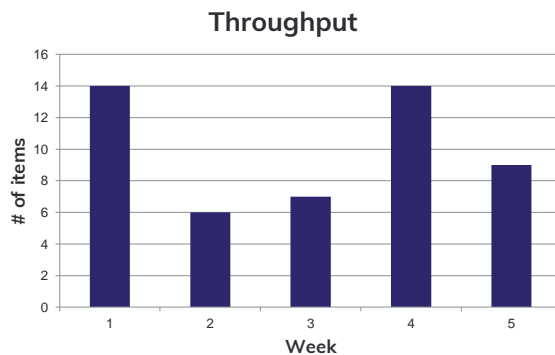Central to Kanban to show progress in lieu of sprints

Useful in Scrum to promote flow *within* a sprint to avoid "hockey stick" shaped burndown

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Throughput

How many items in a given period of time?

What it measures & how to collect

Throughput

What:
Number of work items completed in a given length of time

Why:
Predict how long to complete a given set of work
Get a sense of team stability

5/17/2018

Comparison to Velocity

Similarities

- Team delivery over time

- Provides predictability
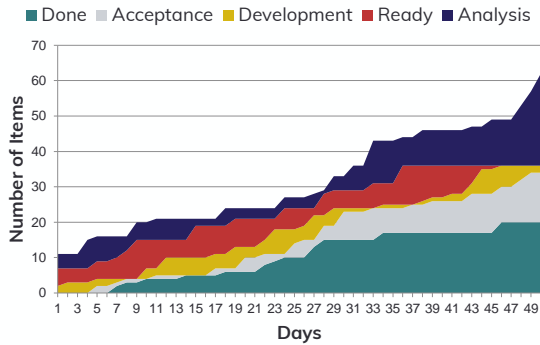
Differences

- Independent of work item size

- Not tied to a sprint

- Simplicity of collection

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Cumulative Flow Diagram

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How is work moving along?

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What it measures

Legend: Done, Acceptance, Development, Ready, Analysis

Y-axis: Number of Items (0–70)
X-axis: Days (1–49)

What:
Number of work items in a given status over time

Why:
Highlights bottlenecks, visualizes amount of work in progress and cycle time, shows end-to-end flow through system

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How to collect

Day	Analysis	Ready	Develop	Accept	Done
1	4	5	2	0	0
2	4	4	3	0	0
3	4	4	3	0	0
4	8	4	3	0	0
5	7	5	2	2	0
6	7	5	2	2	0
7	6	6	1	1	2
8	4	8	0	1	3
9	5	8	0	1	3
10	5	4	3	2	4

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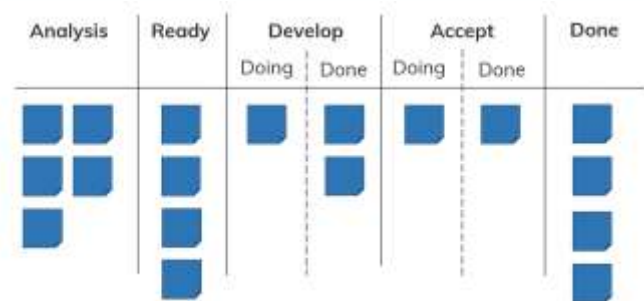
Comparison to Burndown Chart

Independent of work item size and iteration

Gives insight into bottlenecks on intermediate steps

Accounts for changes in scope

Shows WIP and cycle time in context

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Time to practice!

In small groups

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Instructions / questions to consider

Review sample charts in small groups and discuss:

- What does this chart tell you about the team's flow? What trends do you see?
- What questions would you want to ask this team to learn more?
- What are some possible explanations?
- What are some ideas for improvement?

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Wrapping it up

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And some additional resources

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- Visualizing and understanding flow is essential, regardless of Agile approach used

- Lead and cycle time, throughput and CFDs are relatively simple to collect

- Flow-based metrics provide deeper insight without sacrificing usefulness for predictability and planning

- Can be applied to end-to-end processes beyond the team

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Additional Resources

- Burndown Charts vs Cumulative Flow Diagrams
- 7 Lean Metrics to Improve Flow
- Lean Metrics: Measure Predictability with Facts over Estimates
- Using Flow Metrics to Deliver Faster
- More Cumulative Flow Diagrams

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Questions?

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