Measuring Flow
Metrics that Matter
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Agenda

- Why is flow so important?
- How do we measure flow?
- Practice!
Utilization vs. Flow
What’s the difference?
Prioritizing Utilization

Fully utilized, but spend most of the time waiting

Slow flow through the system

Slow to respond to change
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?
Throughput

How many items in a given period of time?
What it measures

**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
Throughput

# of Work Items Completed vs Week
Comparison to Velocity

**Similarities**

- Team delivery over time
- Provides predictability

**Differences**

- Independent of work item size
- Not tied to a sprint
- Simplicity of collection
Lead and Cycle Time
How long from start to finish?
What it measures

<table>
<thead>
<tr>
<th>Backlog</th>
<th>Ready</th>
<th>Develop</th>
<th>Validate</th>
<th>Done</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Doing</td>
<td>Done</td>
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</tbody>
</table>

Lead Time  Cycle Time
How to collect

Backlog | Ready | Develop | Validate | Done
---|---|---|---|---
Doing | Done | | | 

Cycle Time

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

HT

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**Average Cycle Time**

**What:**
The arithmetic mean of cycle time tracked over time.

**Why:**
Helps visualize trends and provides data for predicting delivery.
Average Cycle Time

**What:**
The arithmetic mean of cycle time tracked over time

**Why:**
Helps visualize trends and provides data for predicting delivery
Cycle Time Distribution

**What:**
Shows how often each cycle time occurs

**Why:**
Differentiate between trends and outliers
Cycle Time Distribution

The graph shows the distribution of cycle times in days, with the x-axis representing cycle time and the y-axis representing the number of occurrences of the particular cycle time. The median, average, 85% confidence, and 95% confidence intervals are indicated on the graph.

- Median cycle time is represented by a vertical line.
- Average cycle time is represented by another vertical line.
- The 85% confidence interval is indicated by a red vertical line.
- The 95% confidence interval is indicated by a longer red vertical line.
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
Cumulative Flow Diagram

How is work moving along?
What it measures

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
# How to collect

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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
Cumulative Flow Diagram
Benefits of Improving Flow

Even for Scrum teams!
Improve flow to...

Reduce risk
By delivering some stories earlier

Increase feedback
Improving ability to make adjustments

Smooth workload
Across the team and throughout the Sprint
Visualize flow regardless of Agile approach used

Flow metrics...

• Are simple to collect

• Can be used for predictability and planning purposes

• Provide richer insights into a team’s bottlenecks and improvement areas
Wrapping It Up
and some additional resources
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
How to connect with us

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Continue the Conversation

Meet us at our booth to connect, discuss, and explore any questions that you have!

Find us at our booth:
Thursday, 12:30-1:30pm