

# HANDS-ON FLOW METRICS

Peter Kananen, VP of Project Delivery



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# HOW LONG

## will this story take?



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# why did this story take so long?



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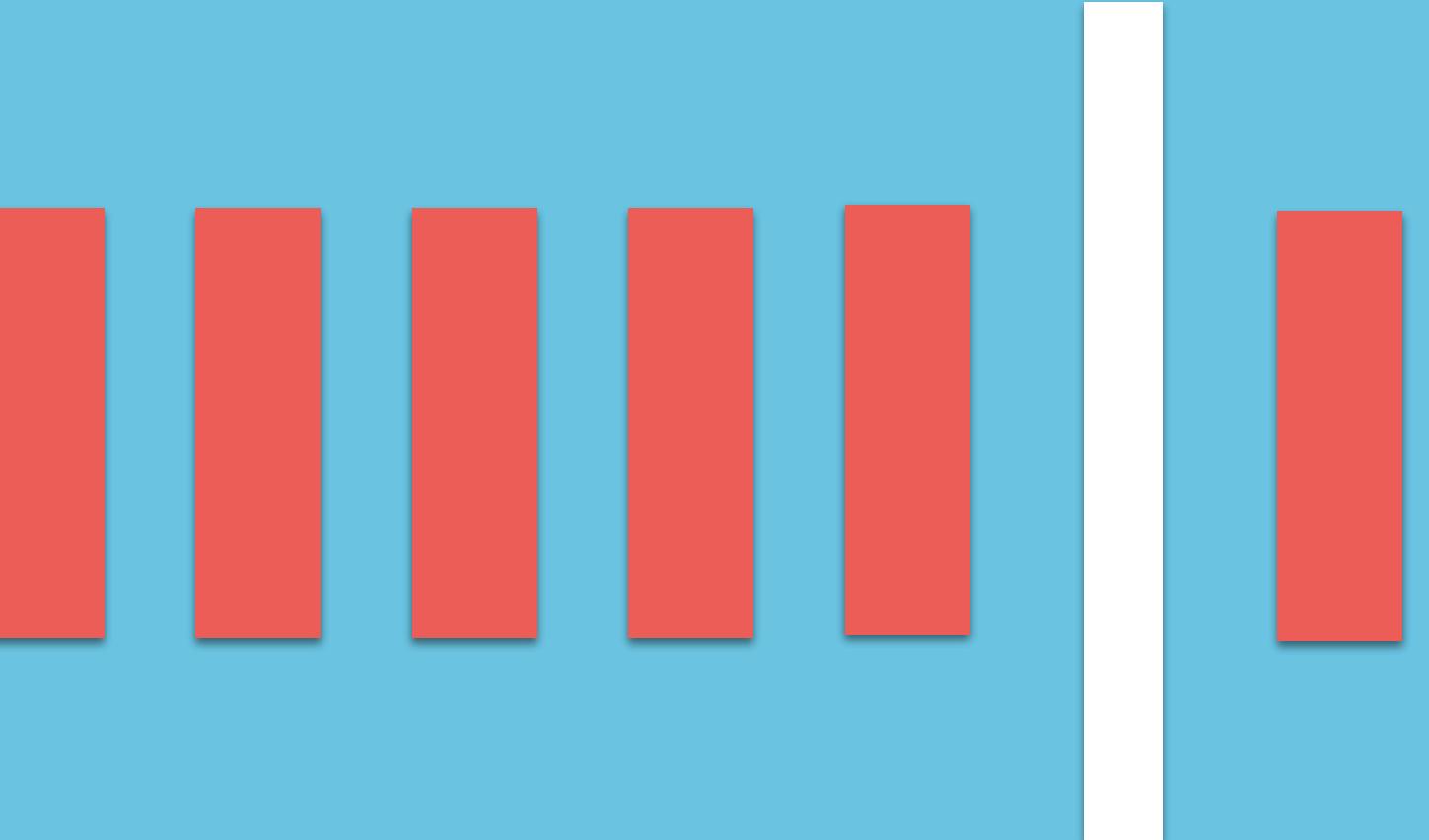
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1. The Basics of Flow
2. Four Flow Findings
3. Tools for Optimizing Flow
4. Implications for Teams



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# The Basics of Flow

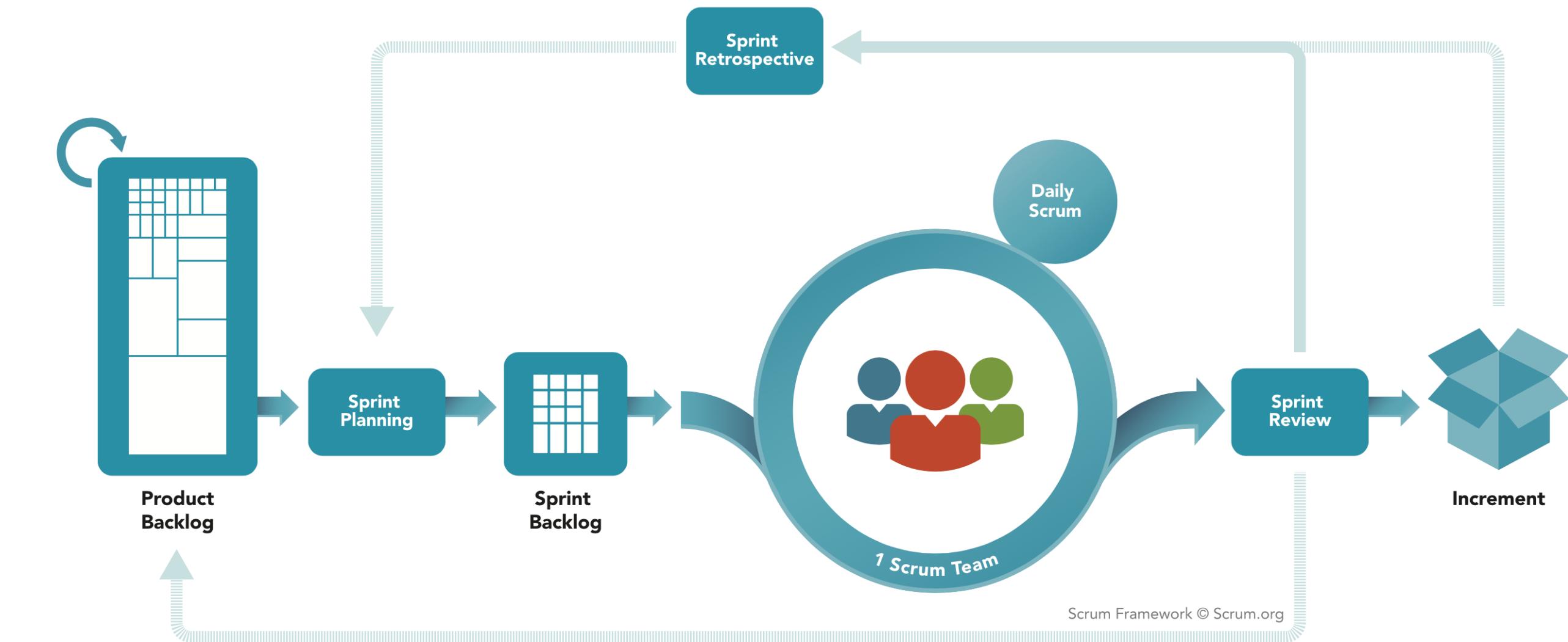
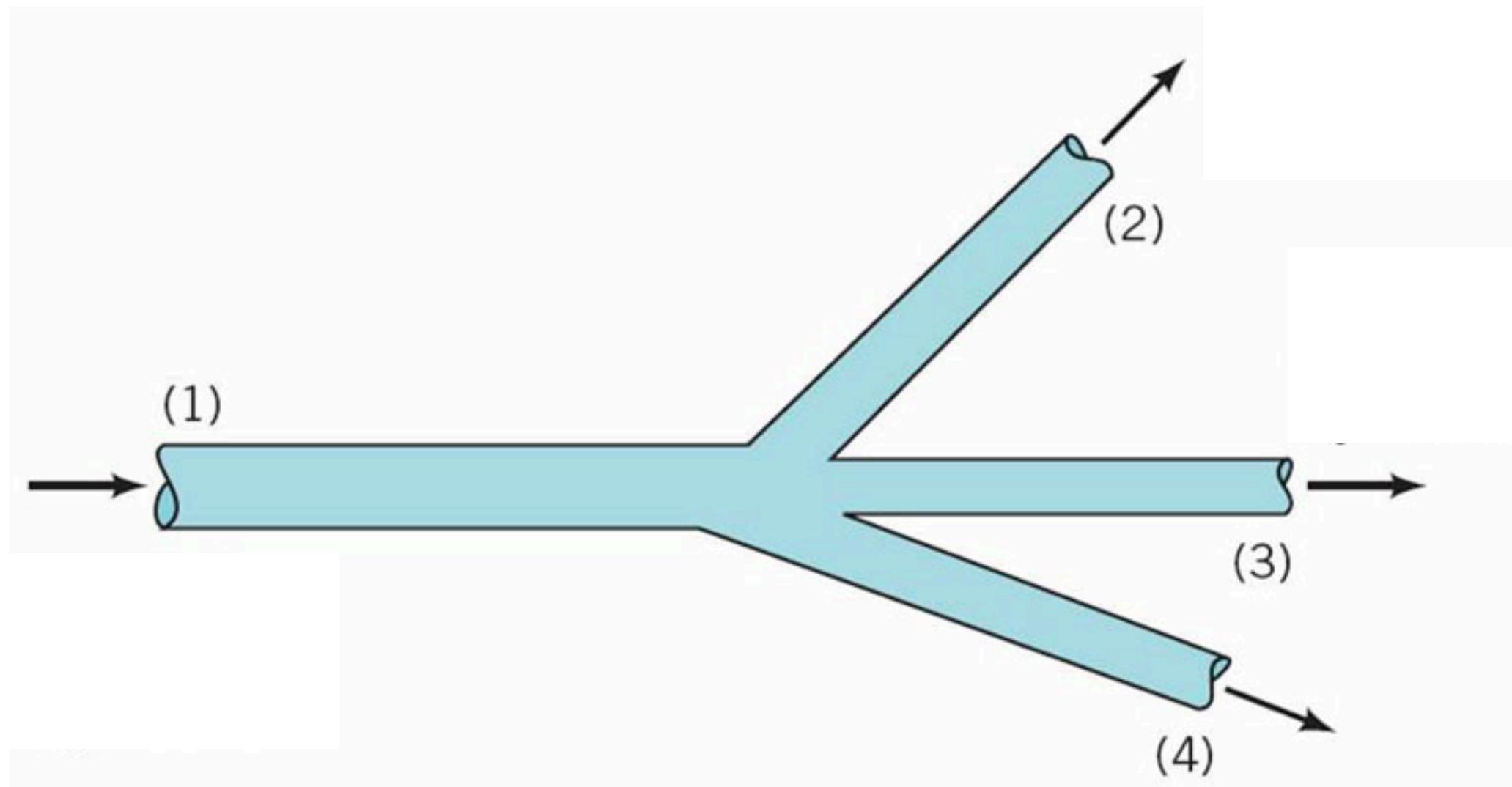
(and a little Agile commentary)



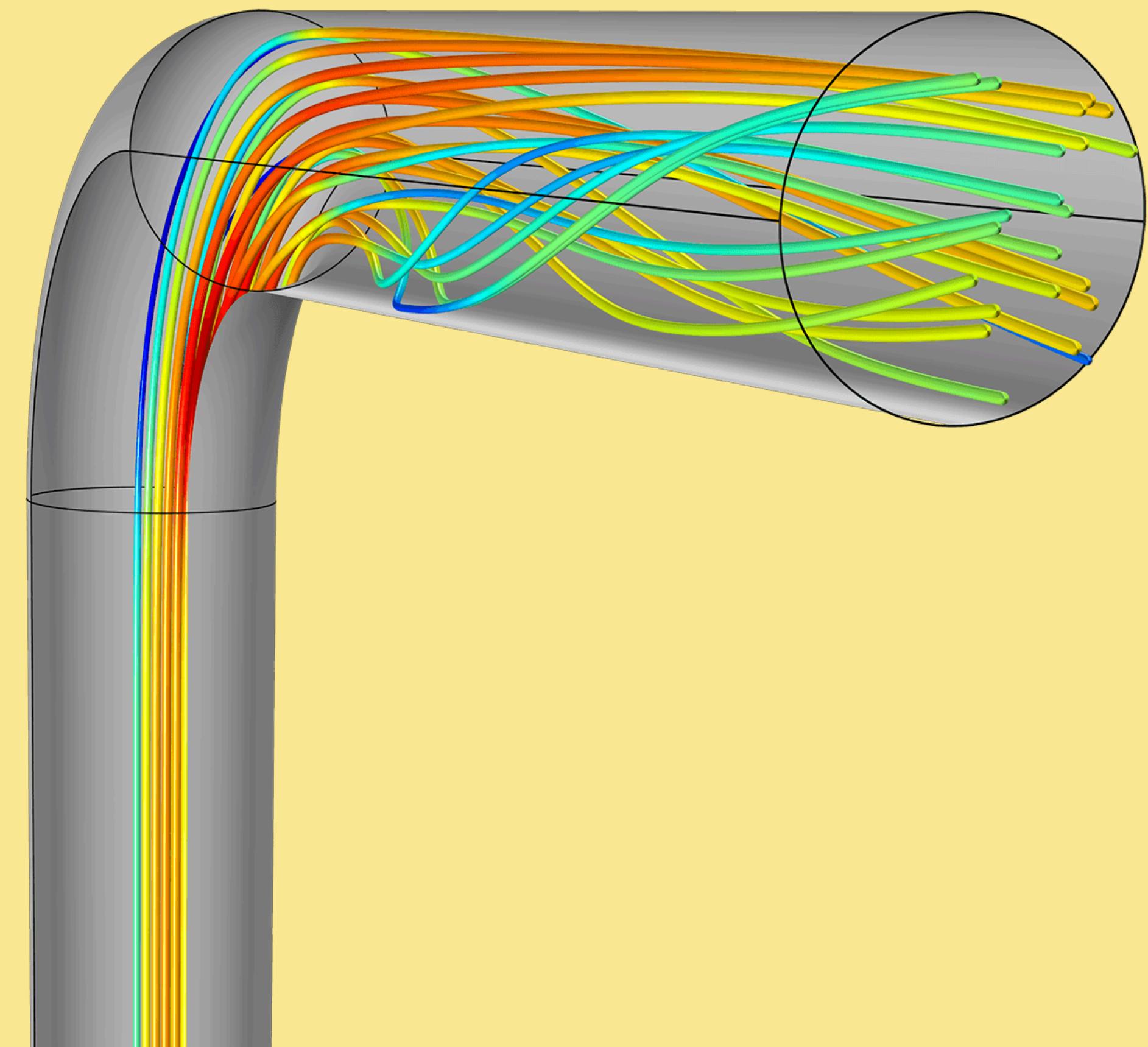
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# let's talk less about arranging pipes

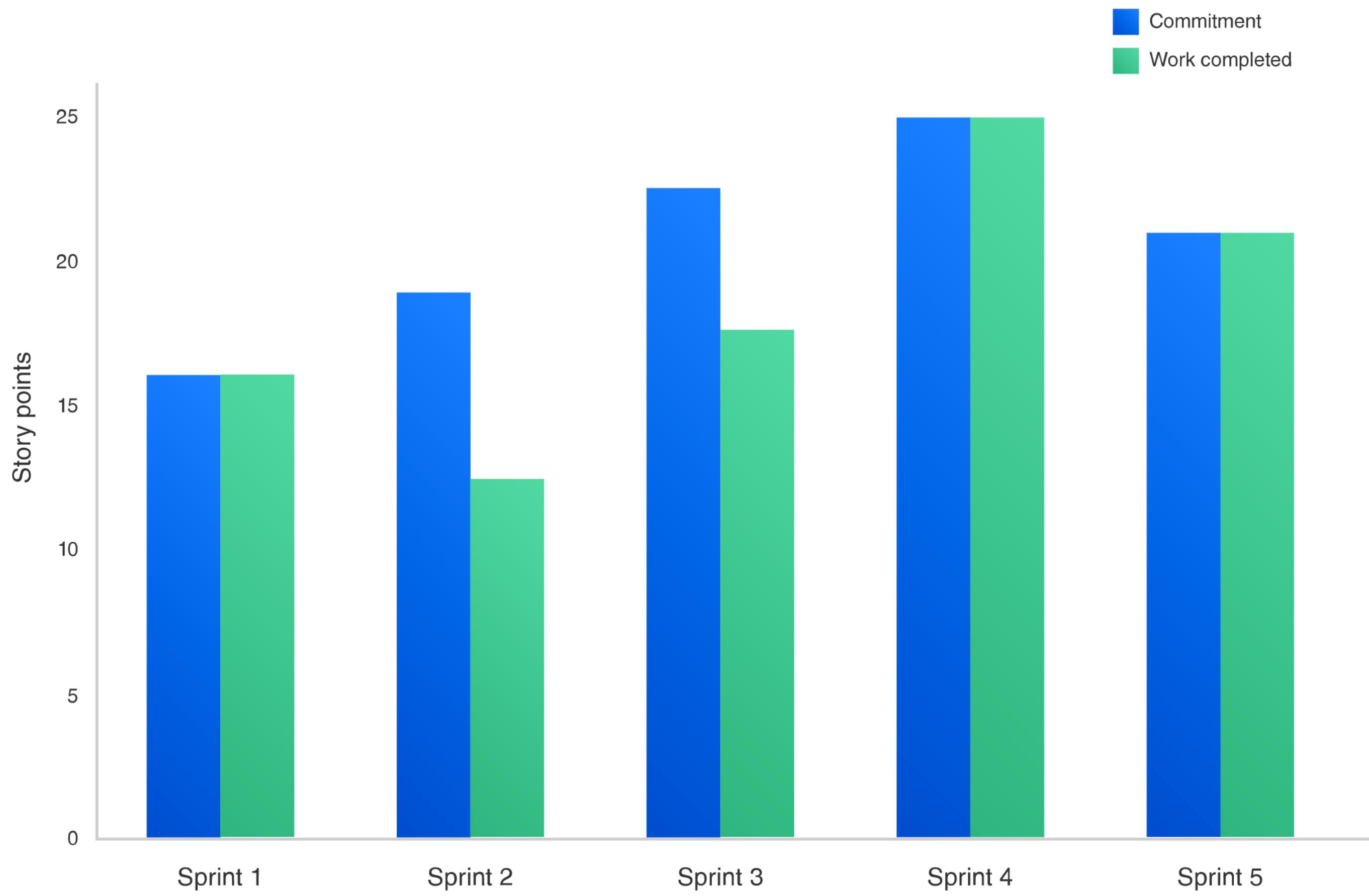


# ...and more about fluid dynamics



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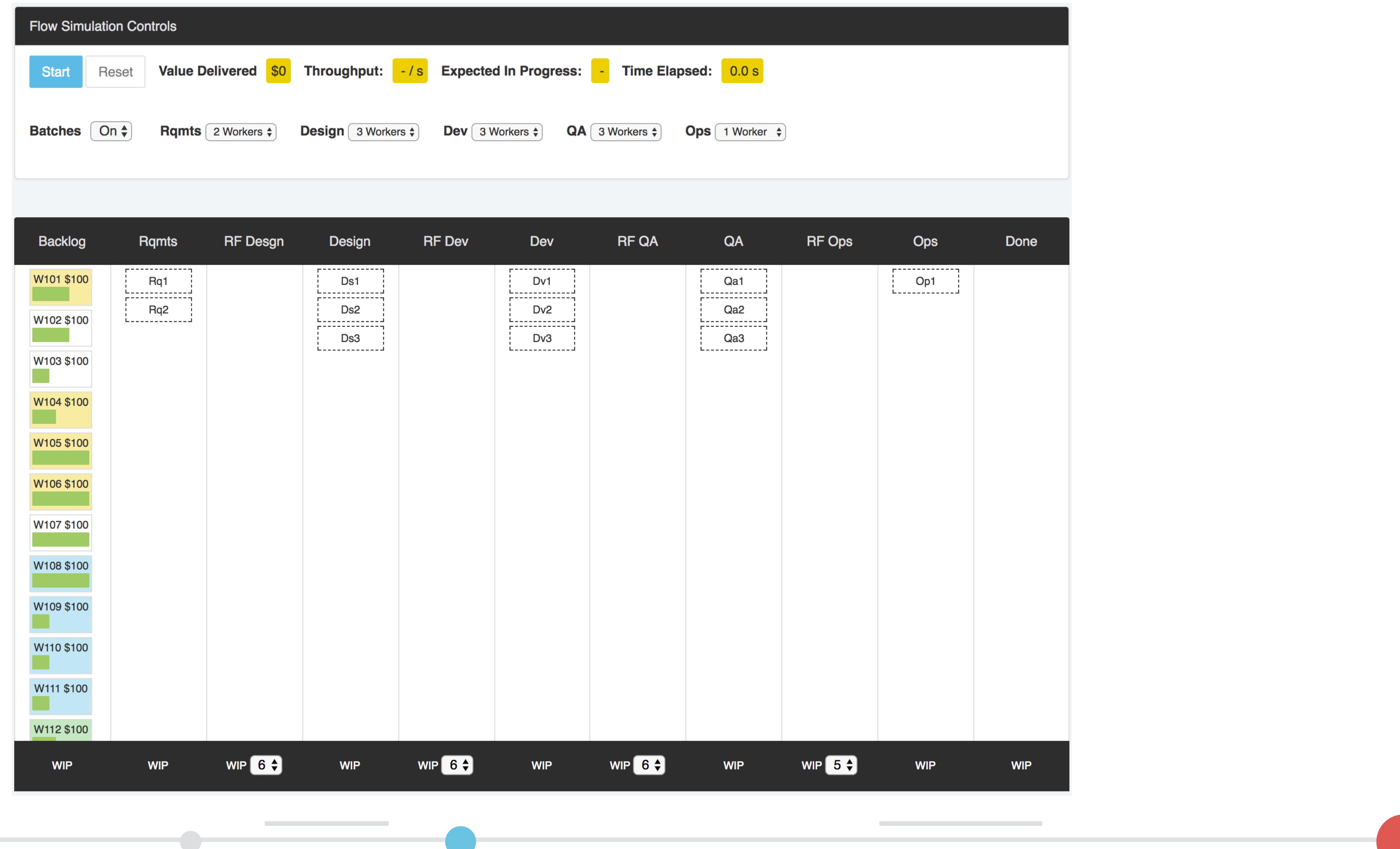


# What's missing in our metrics?



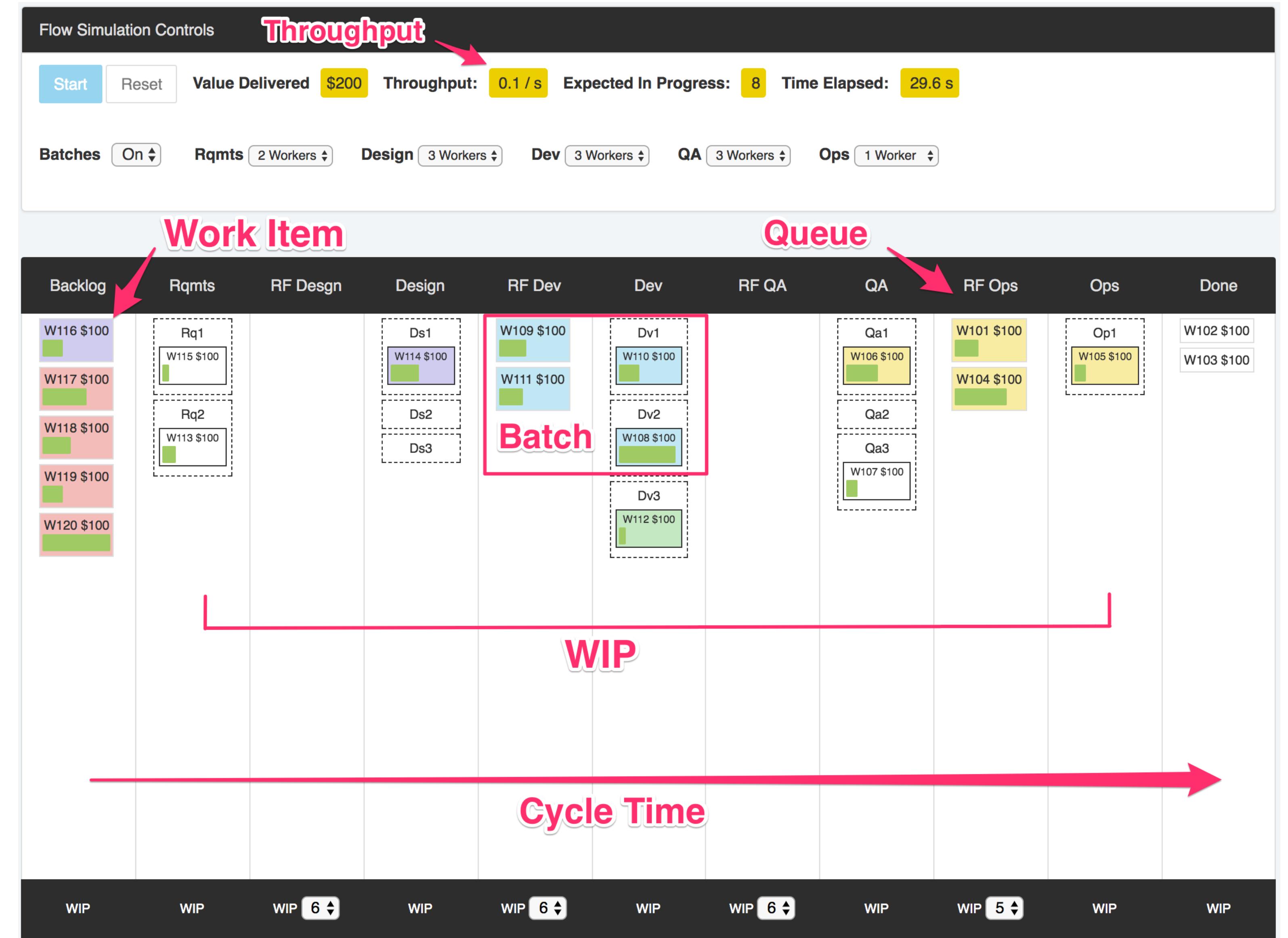
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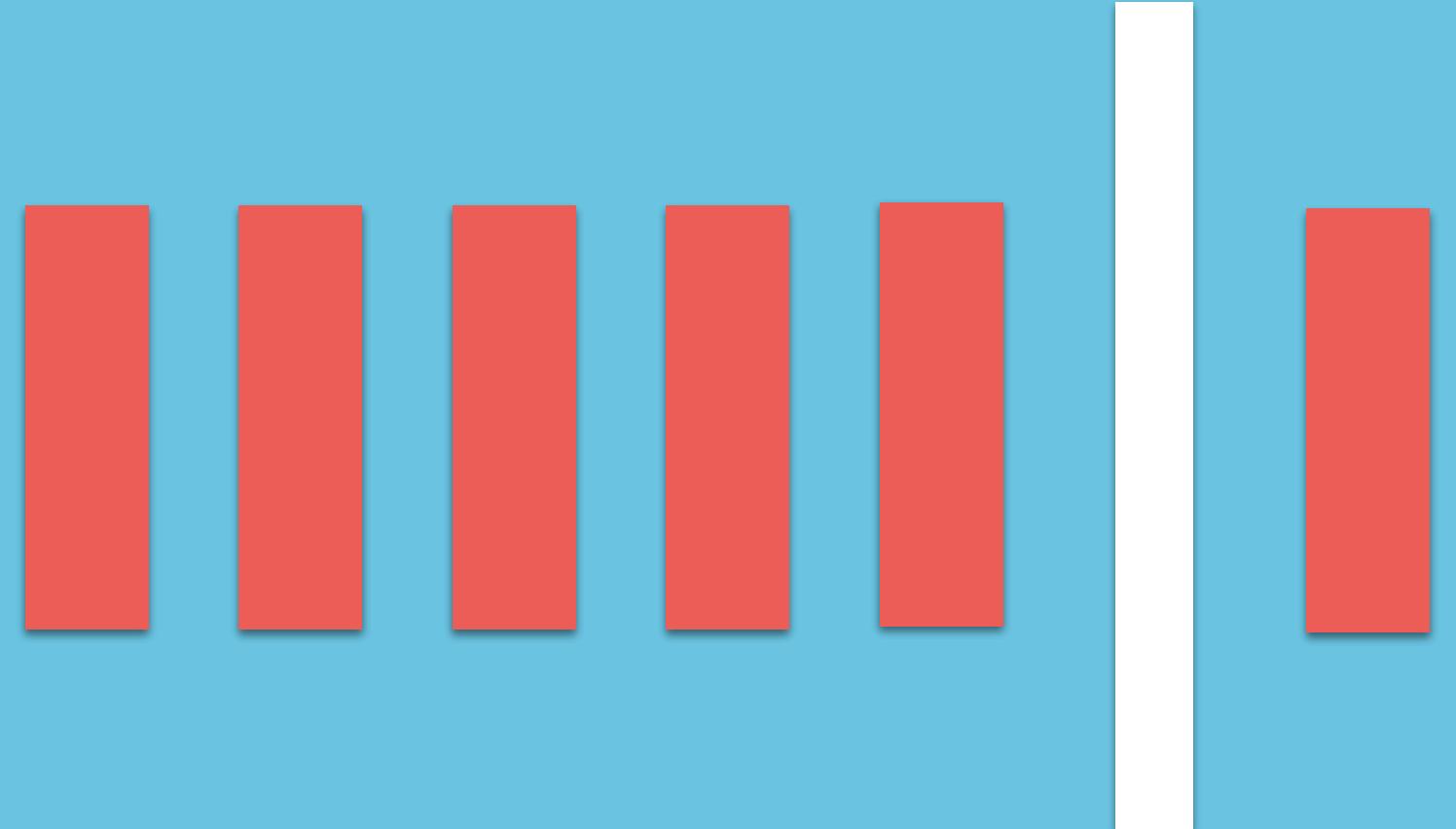
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what are we  
**OPTIMIZING**  
for?



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# 4 Flow Findings

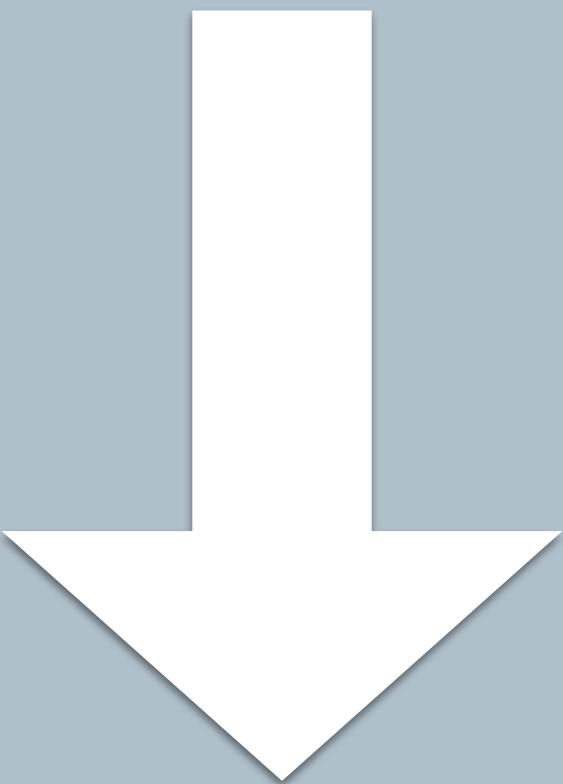


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# EXPERIMENT



[greenlight-flow-metrics.herokuapp.com](https://greenlight-flow-metrics.herokuapp.com)



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1. Work Item Cycle Time
2. Worker Activity Times
3. Queue and WIP Sizes
4. Batch Size Effects

[greenlight-flow-metrics.herokuapp.com](http://greenlight-flow-metrics.herokuapp.com)



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# Experiment 1:

What makes up a work item's cycle time?



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# Finding 1:

## Work Items Have High Idle Times



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# Experiment 2:

How productive are our workers?



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# Finding 2:

**Workers have high idle times**



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# Experiment 3:

How can we identify bottlenecks?



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# Finding 3:

**Queue time indicates resource balance problem**



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# Experiment 4:

What effect do batches have on delivery?



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# Finding 4:

**Batches lead to higher idle times and cycle times**



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**“In product development, our greatest waste is not unproductive engineers, but work products sitting idle in process queues.”**

**- Donald G Reinertsen**



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# what is QUEUE TIME?

time waiting for a  
constrained resource



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# why track QUEUE TIME?

~50% cycle time



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what is a

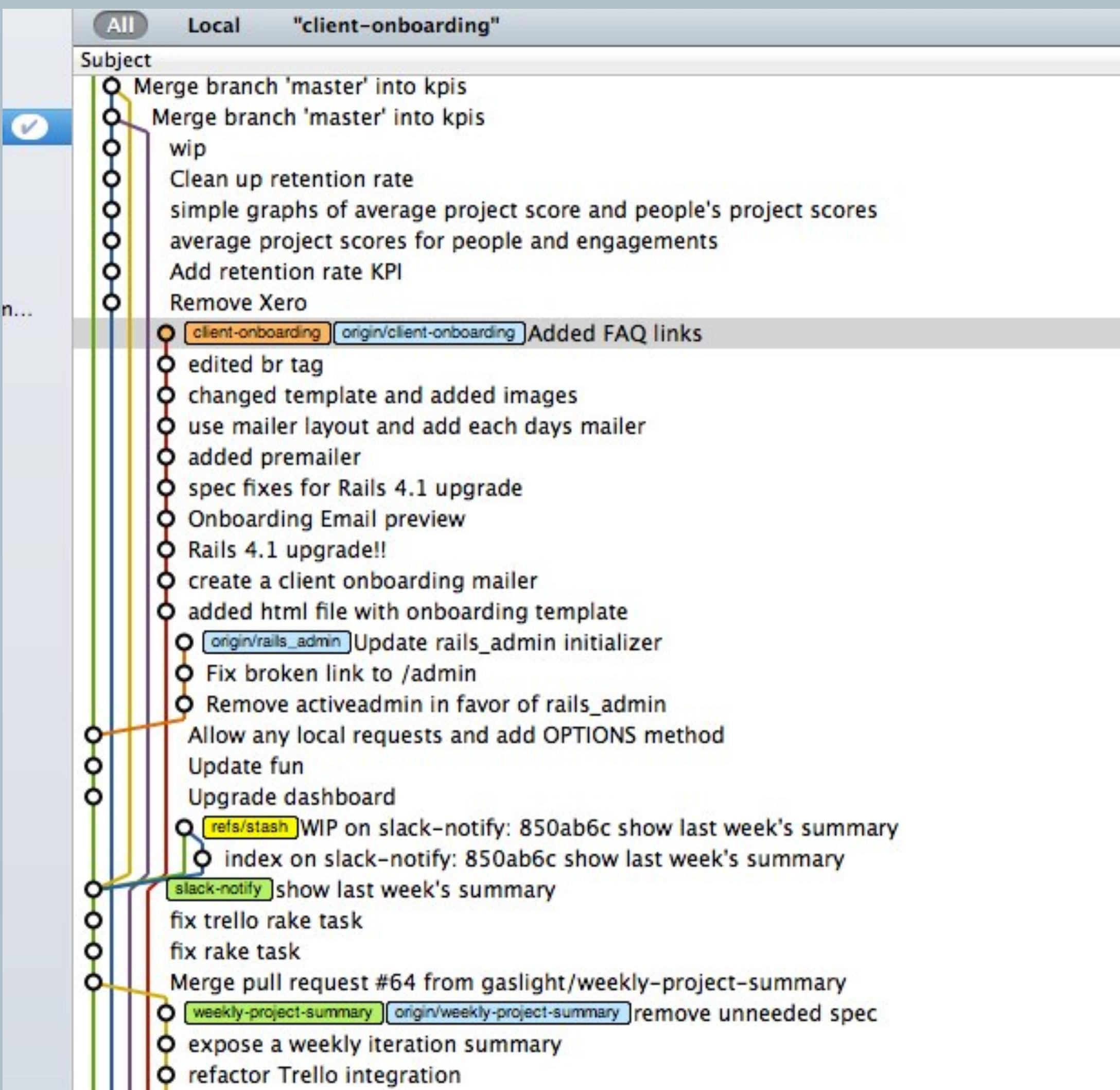
LARGE BATCH?

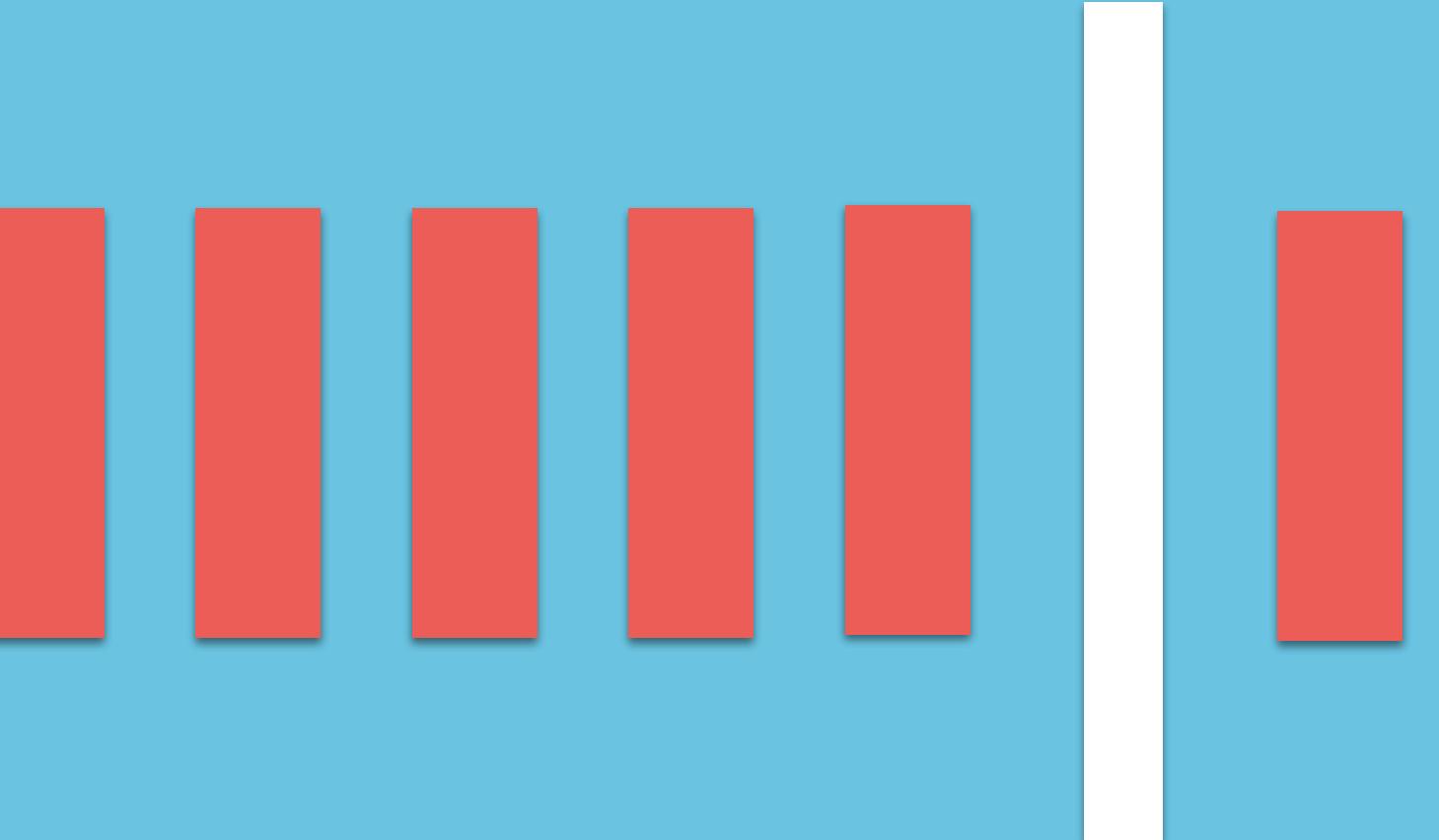
WIP



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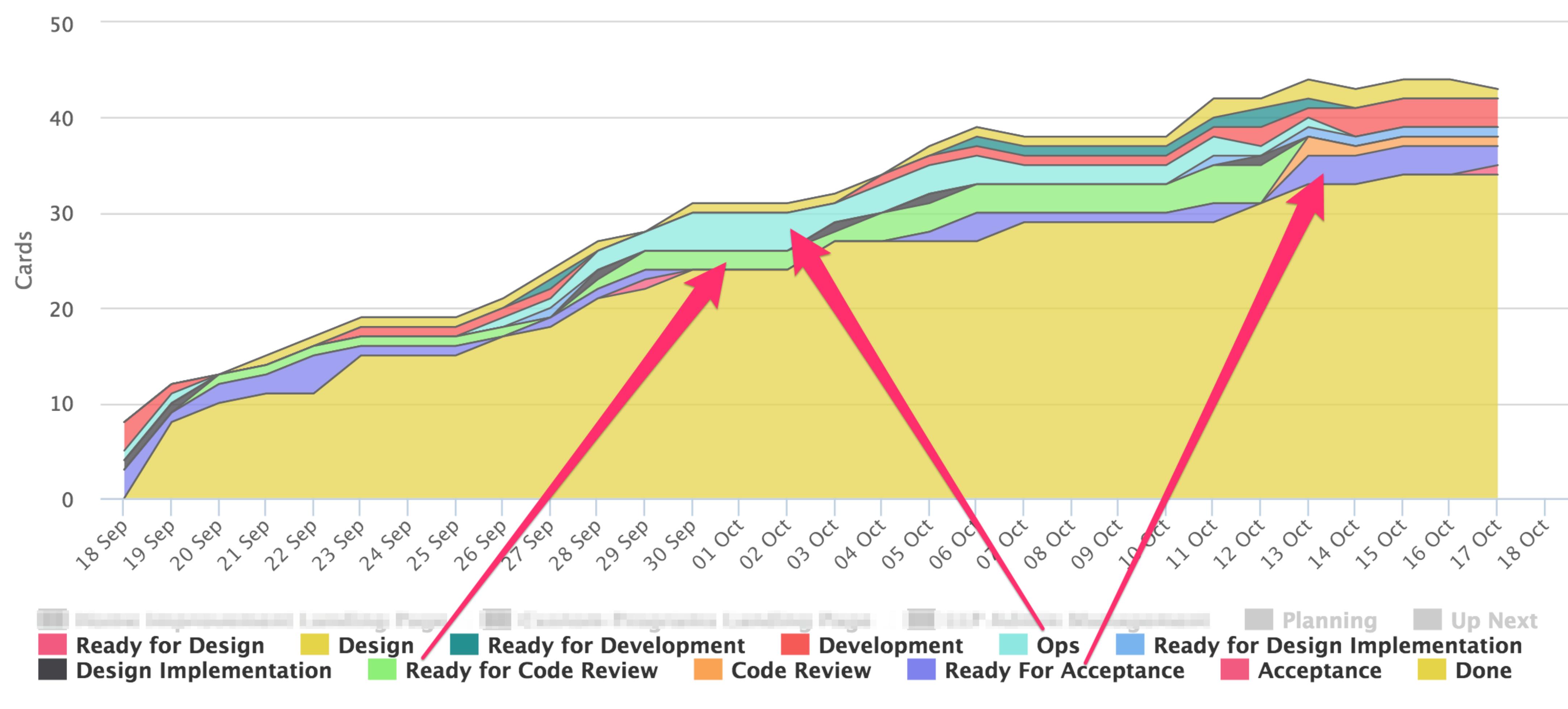
# Tools for Measuring Flow



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# Cumulative flow diagram

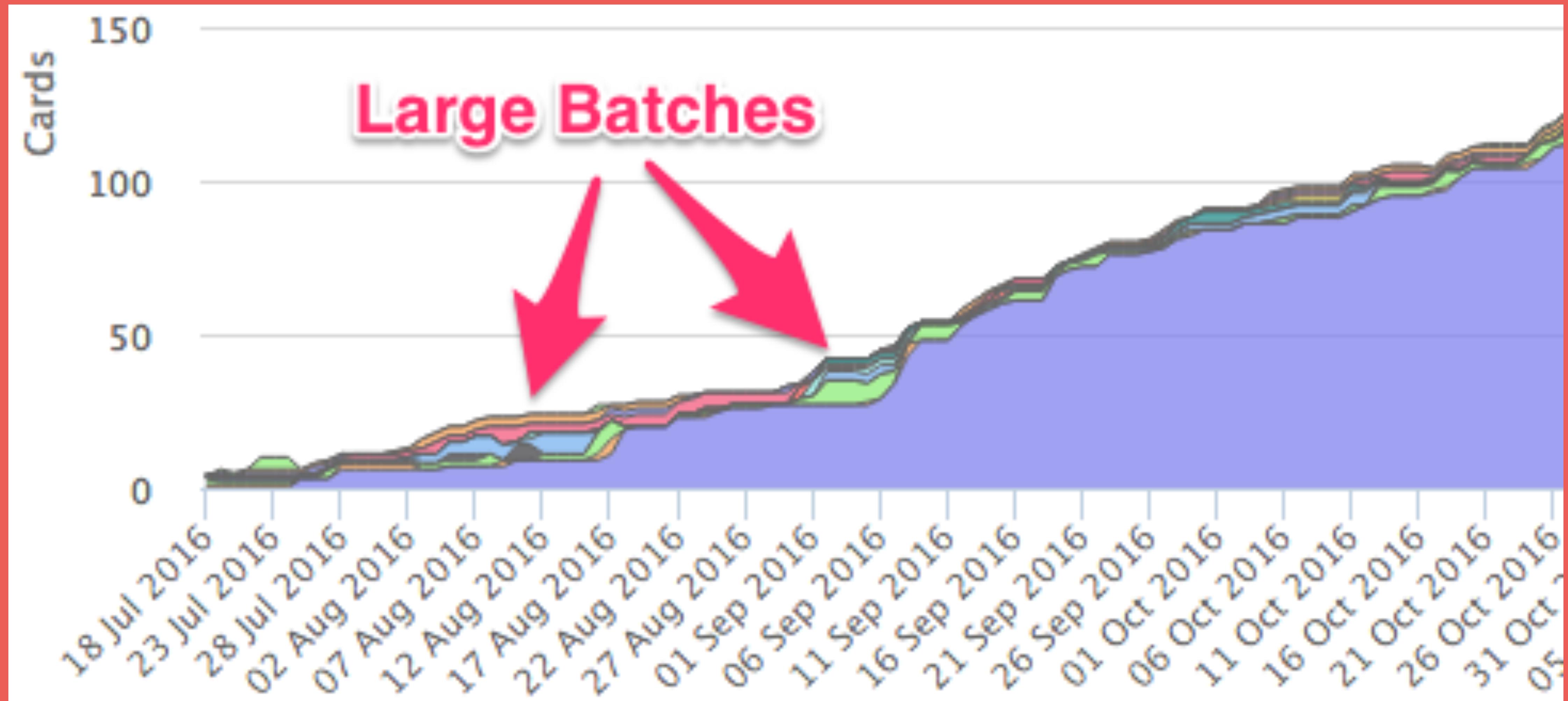


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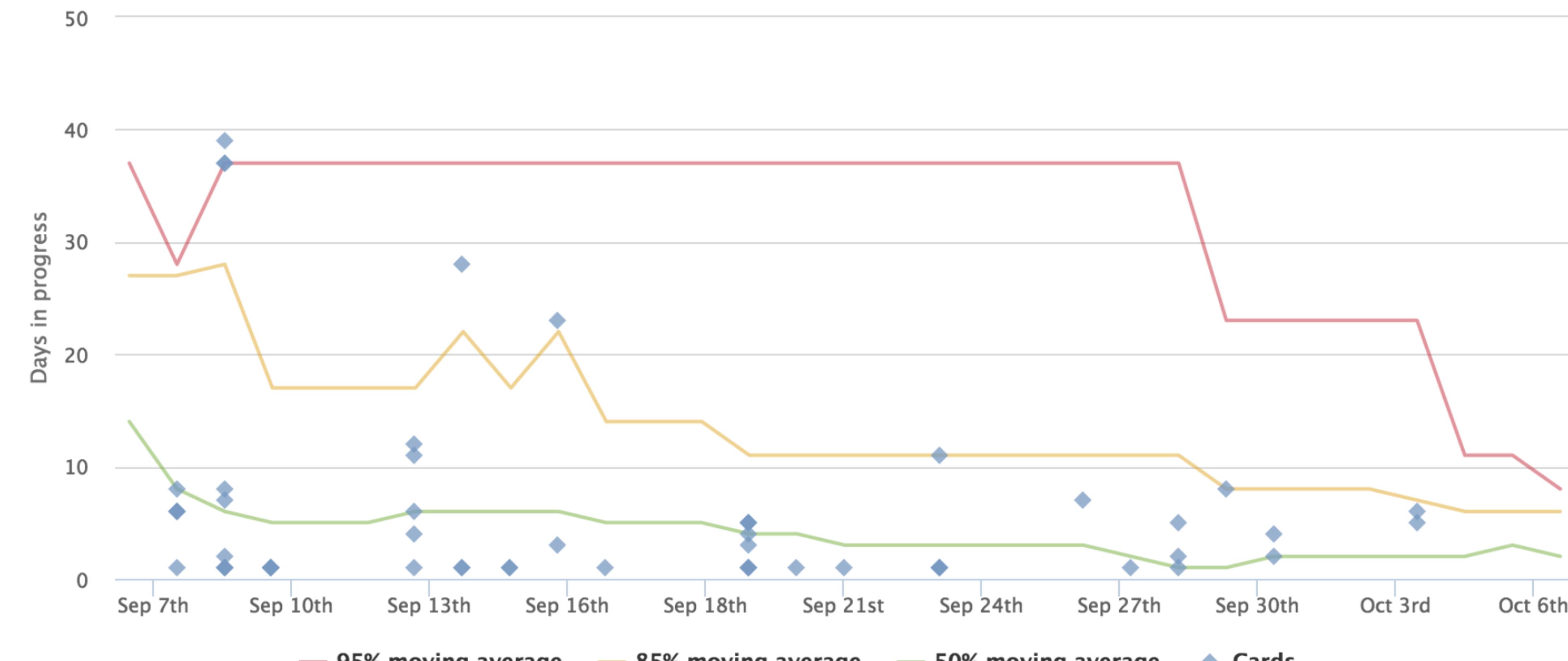
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## Cycle time chart



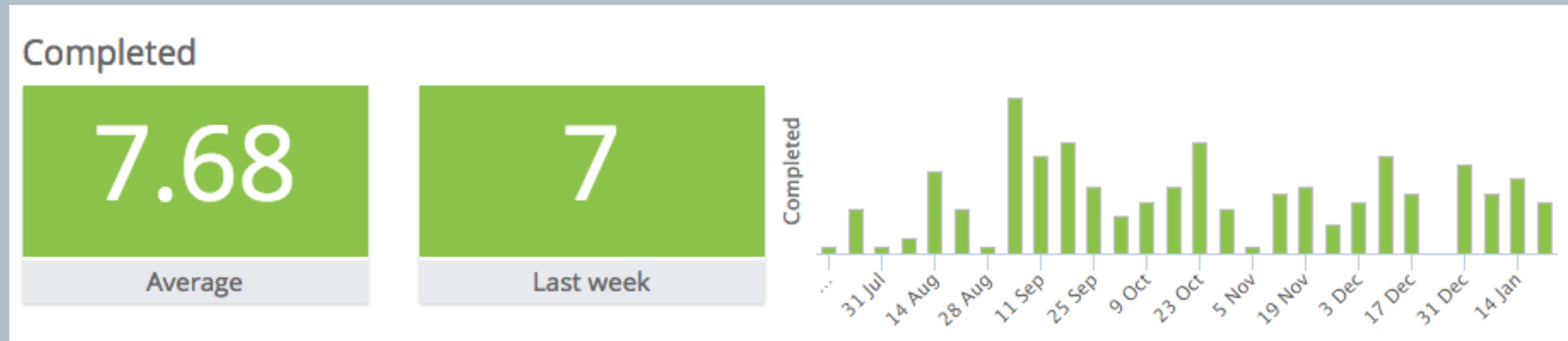
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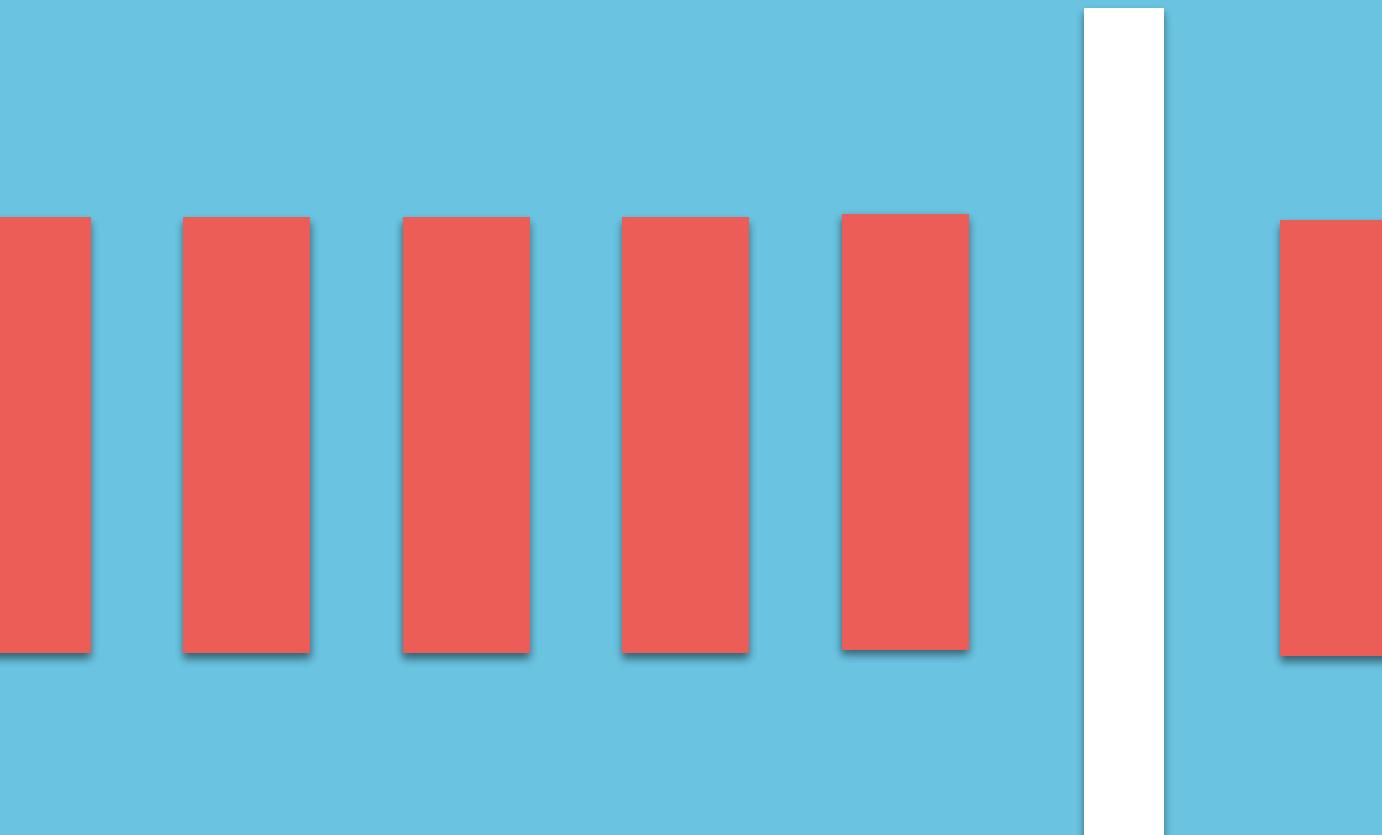


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# a word on velocity





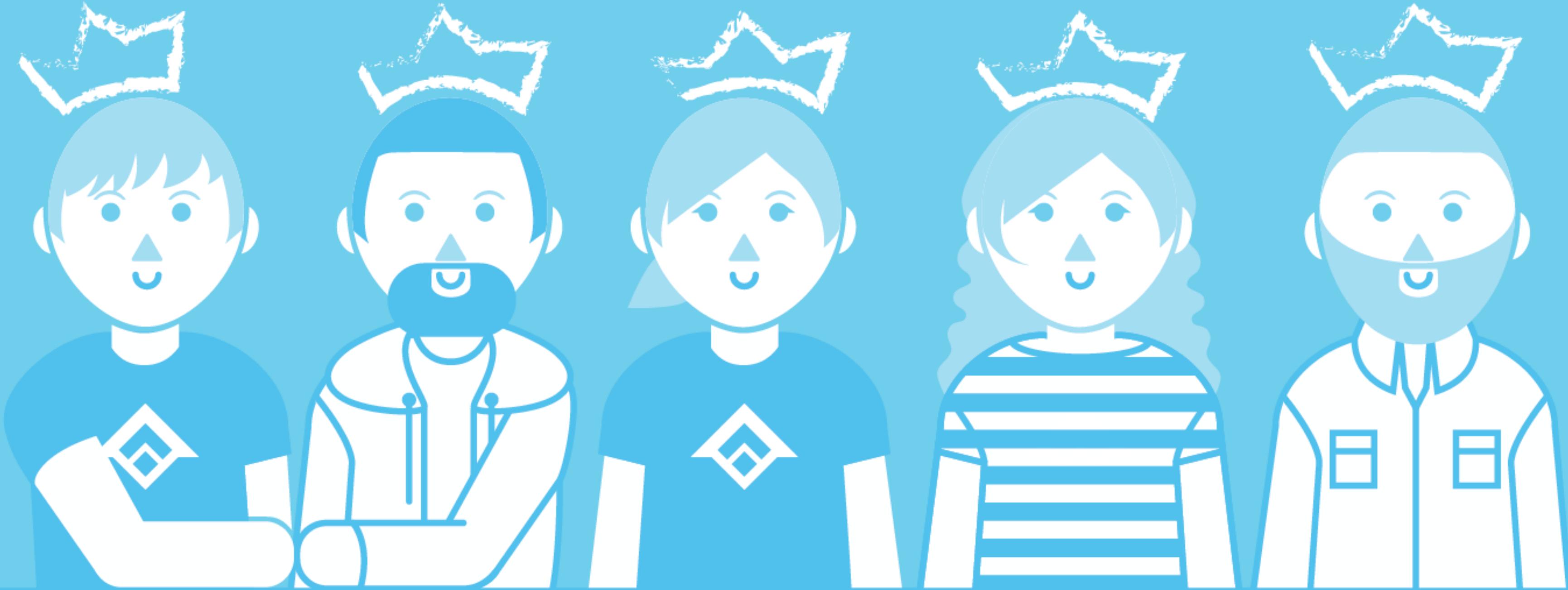
# Implications for Teams



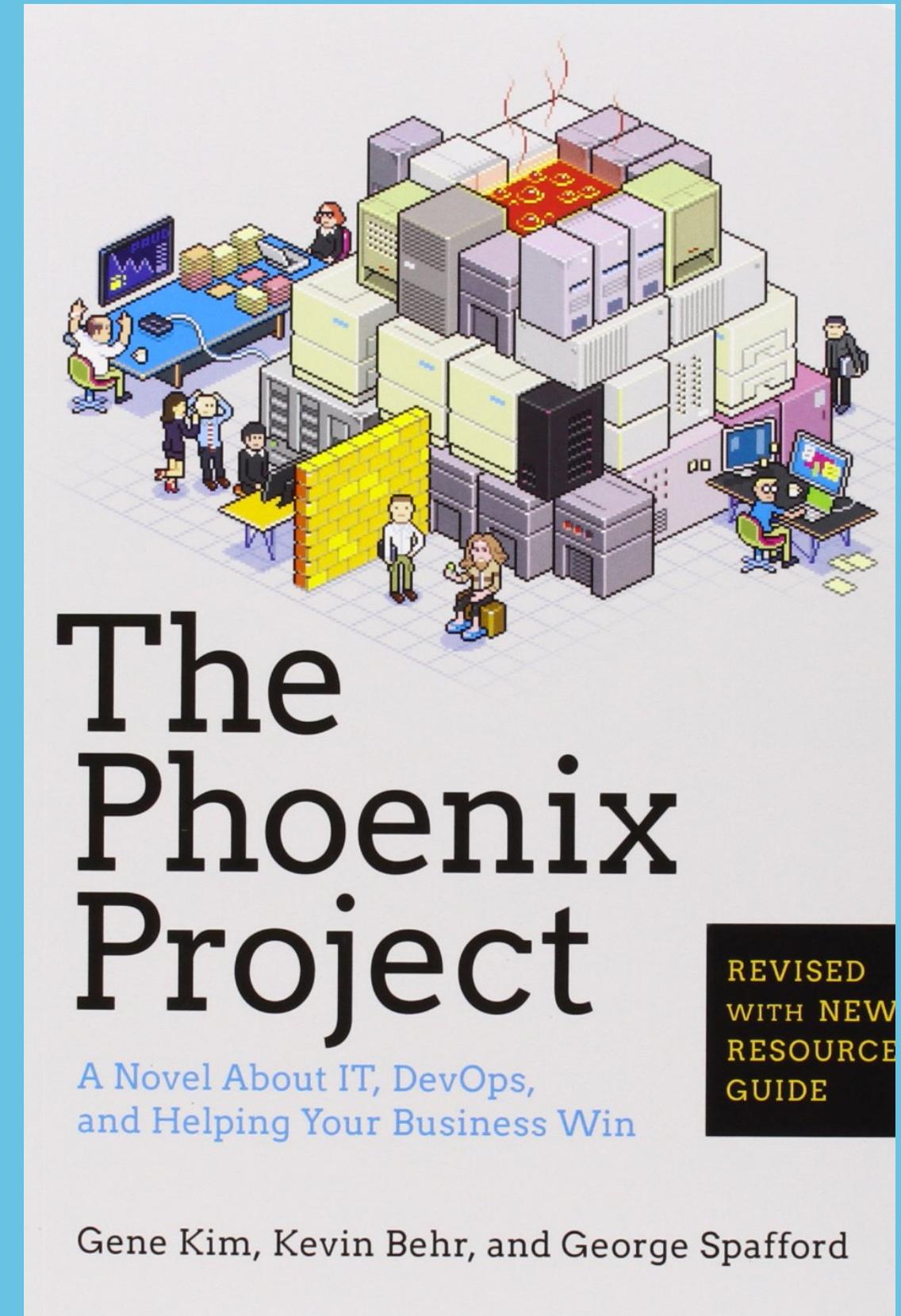
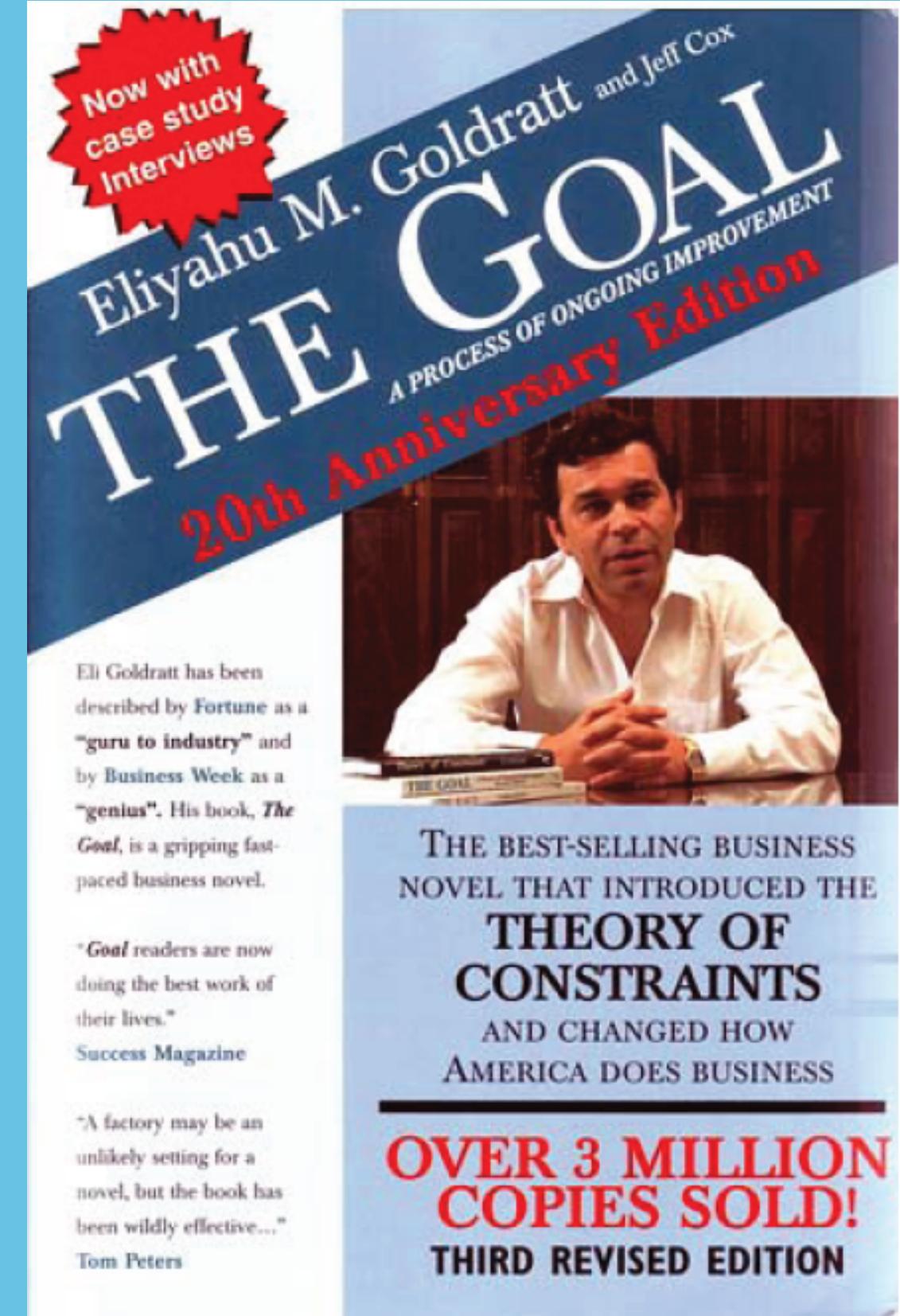
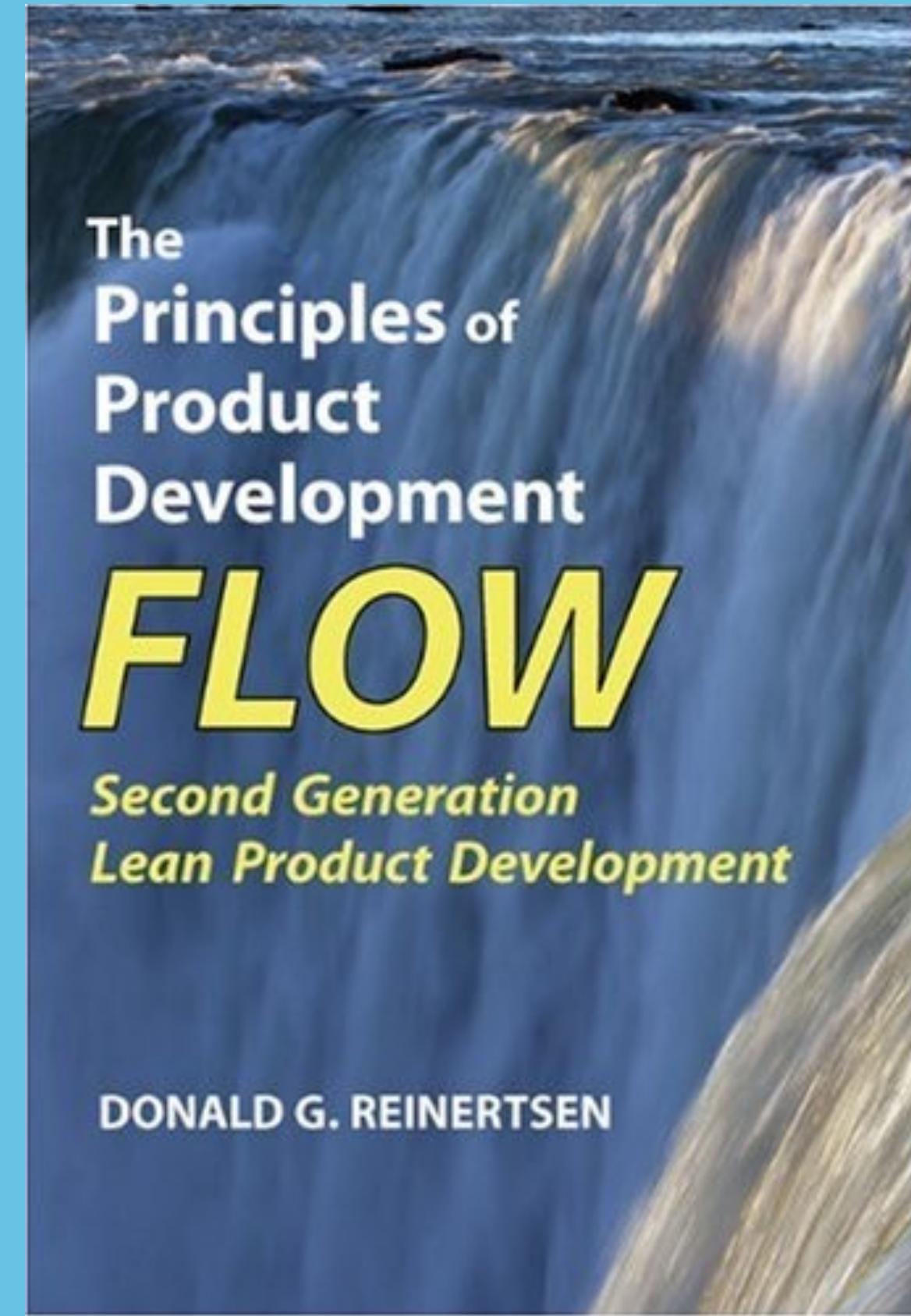
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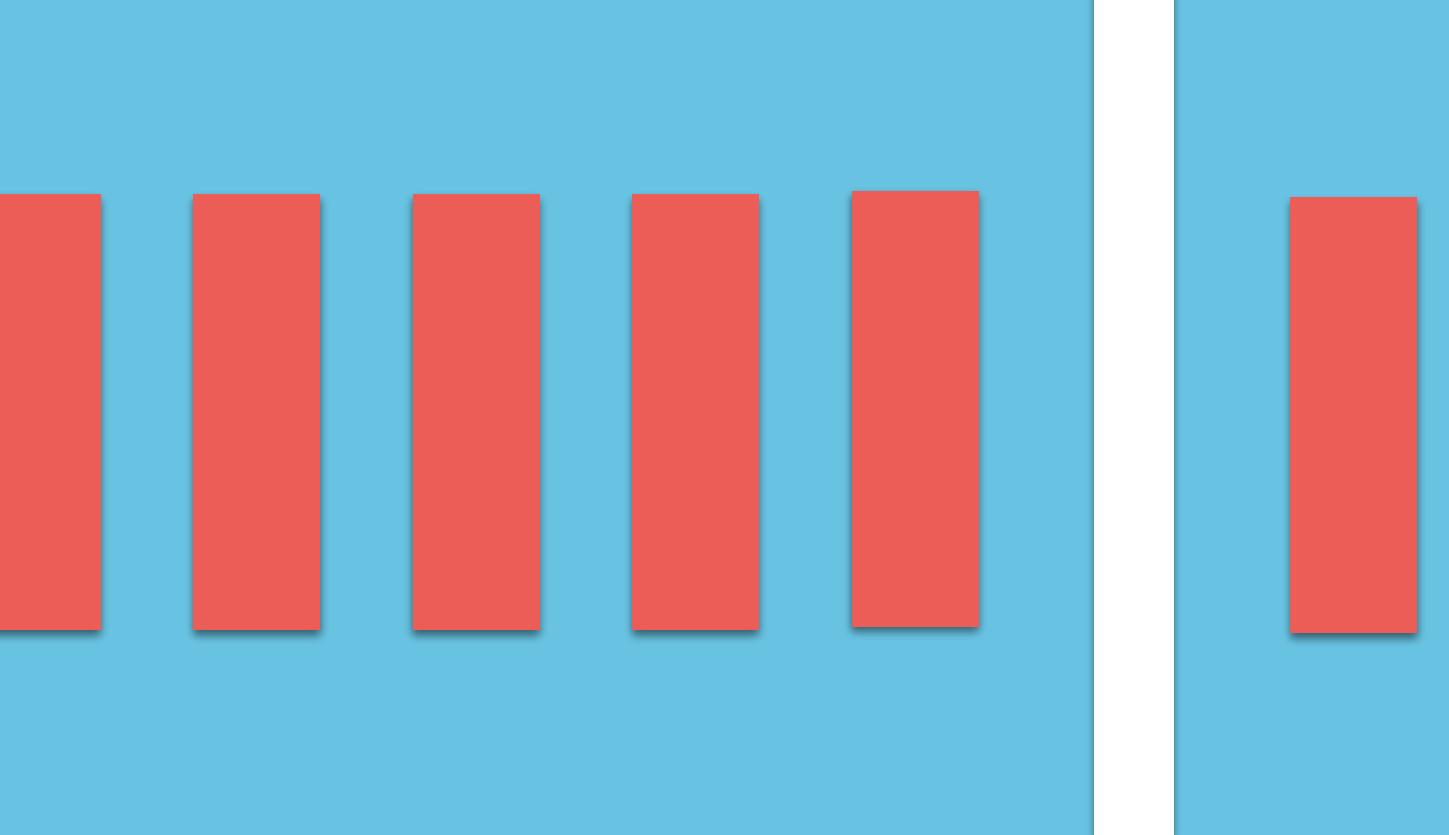
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cross-functional, dedicated,  
**EMPOWERED** teams



# Suggested Resources



# Q&A



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