

# Development Metrics You Should Use (but don't)

*Cat Swetel*

A clear glass bowl filled with multi-colored cereal rings (yellow, green, blue, red, purple) in a white liquid, with a silver spoon resting inside. The text is overlaid on the bowl.

# **Development Metrics You Should Use (but Don't)**

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**QUALITY**

**RESPONSIVENESS**

**PRODUCTIVITY**

**PREDICTABILITY**

QUALITY

RESPONSIVENESS

**Troy Magennis**  
**@t\_magennis**

PRODUCTIVITY

PREDICTABILITY

**QUALITY**

**RESPONSIVENESS**

**PRODUCTIVITY**

**PREDICTABILITY**

QUALITY

RESPONSIVENESS

What's  
missing?

PRODUCTIVITY

PREDICTABILITY





@catswetel at #gotochgo





[catswetel@gmail.com](mailto:catswetel@gmail.com)

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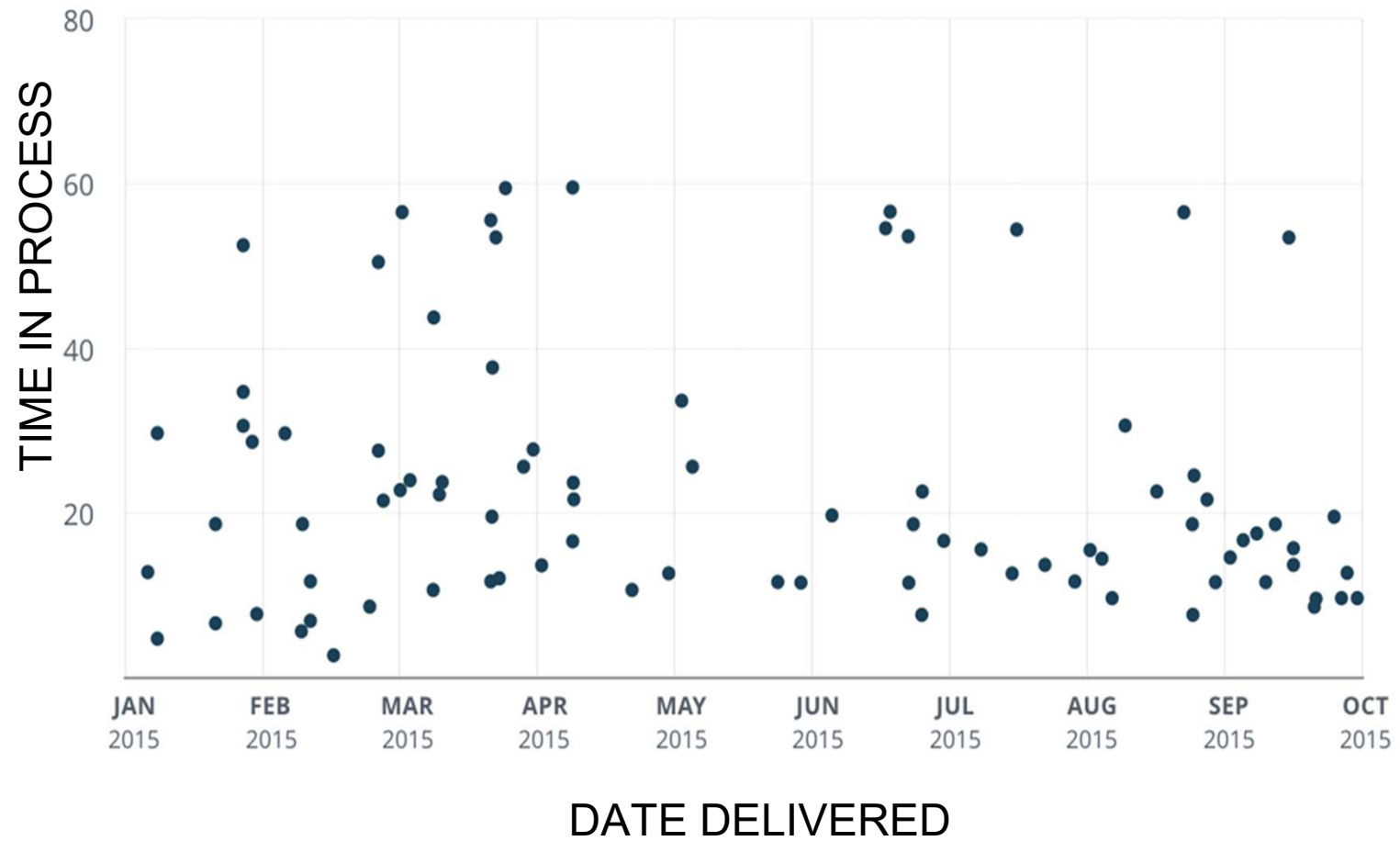


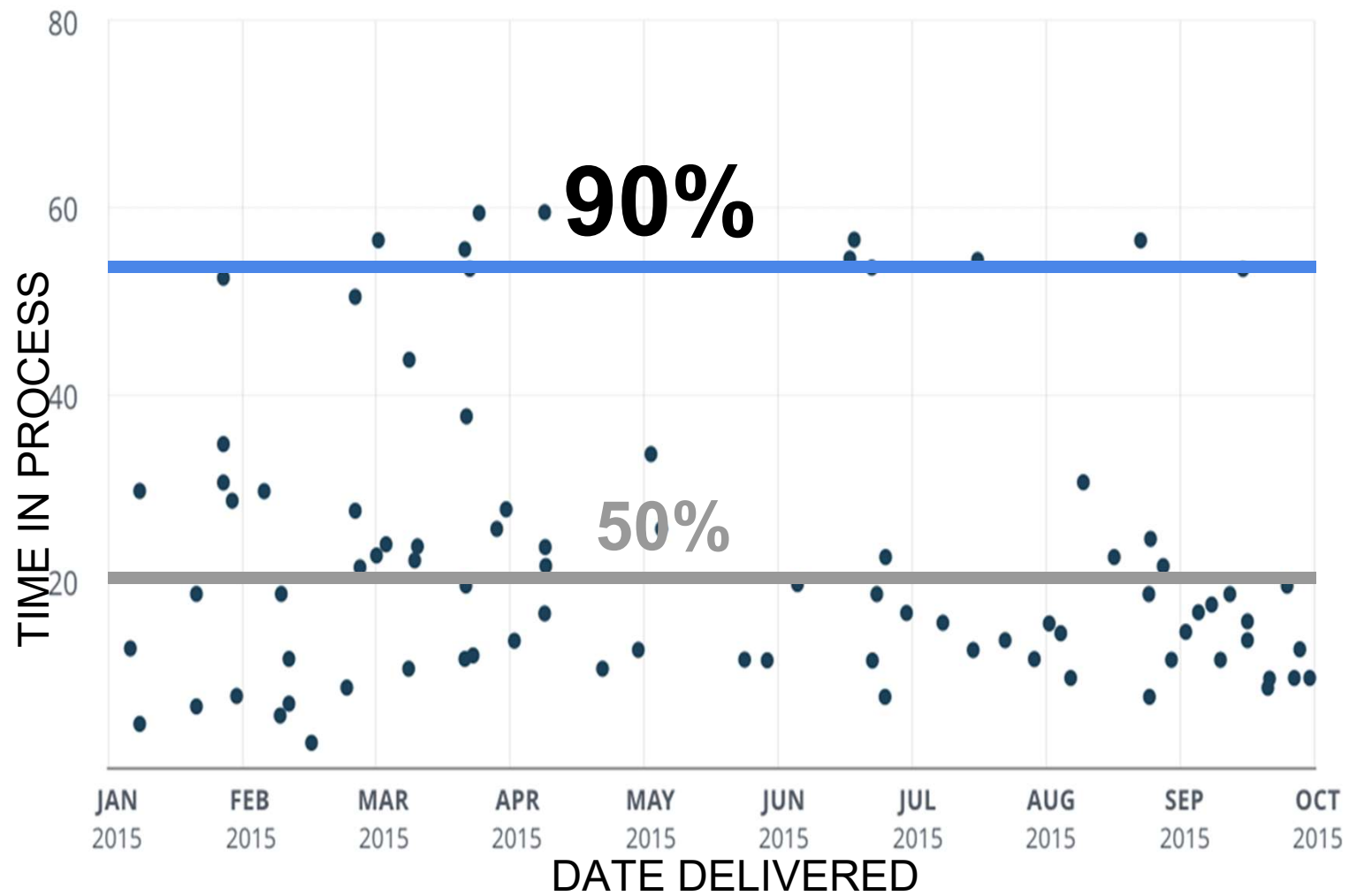
# Time in Process

Units of time per unit of work



# TIME IN PROCESS SCATTER PLOT



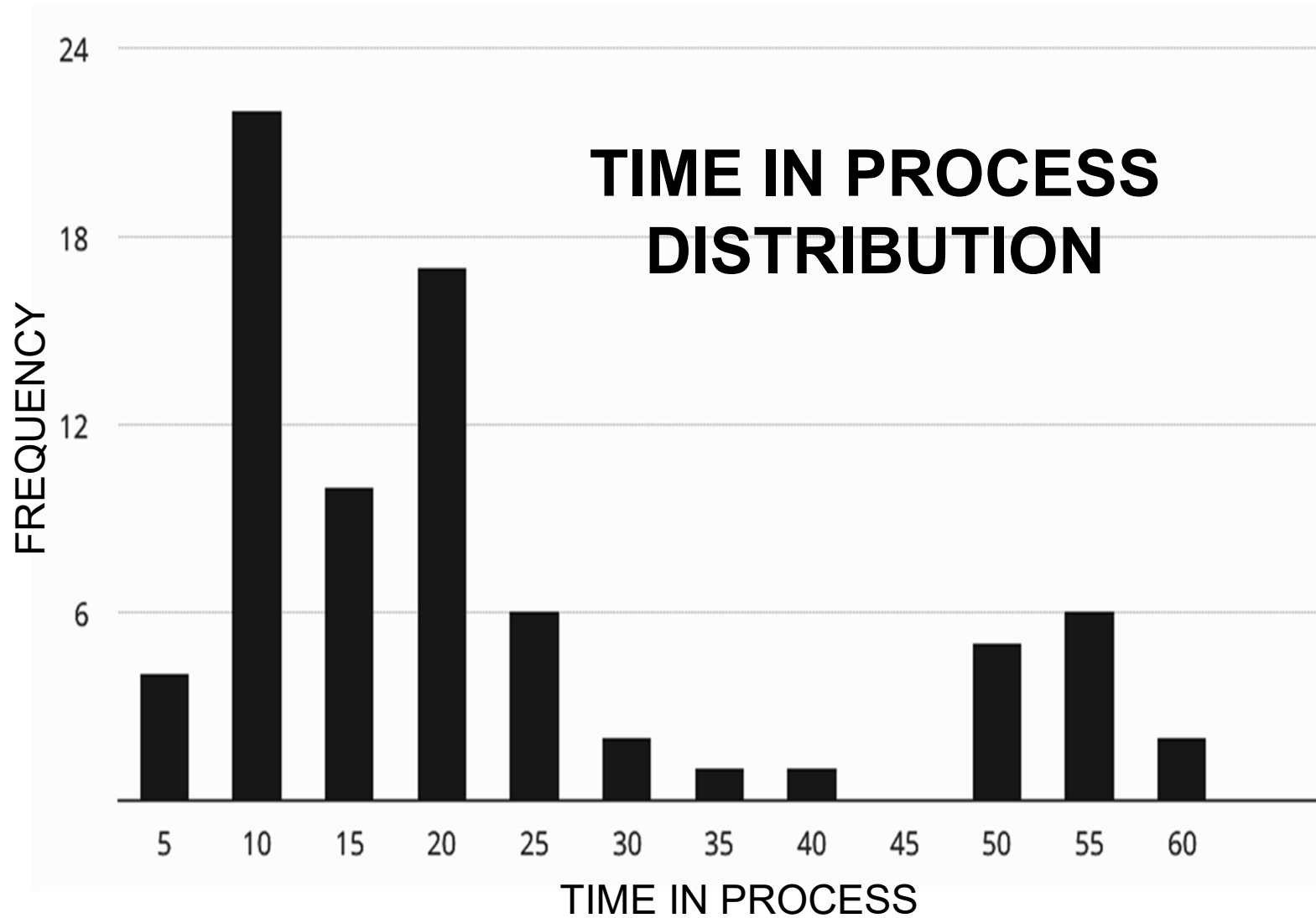


**QUALITY**

**RESPONSIVENESS**

**PRODUCTIVITY**

**PREDICTABILITY**



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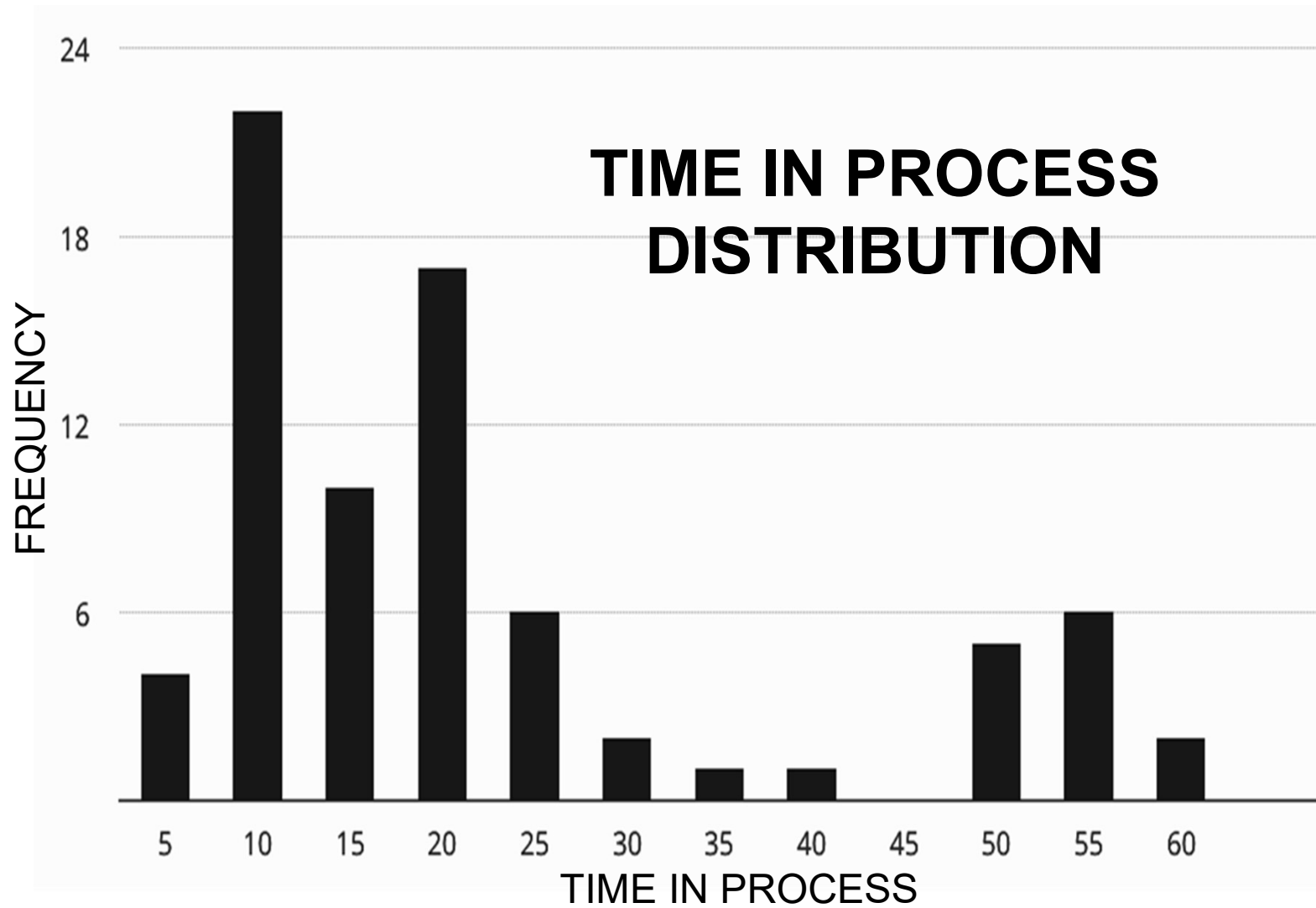
**QUALITY**

**PRODUCTIVITY**

**RESPONSIVENESS**

**PREDICTABILITY**





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**ANSWERS**

**STORIES**

**OPTIONS**

**DECISIONS**

**TRADE OFFS**

**ANSWERS**

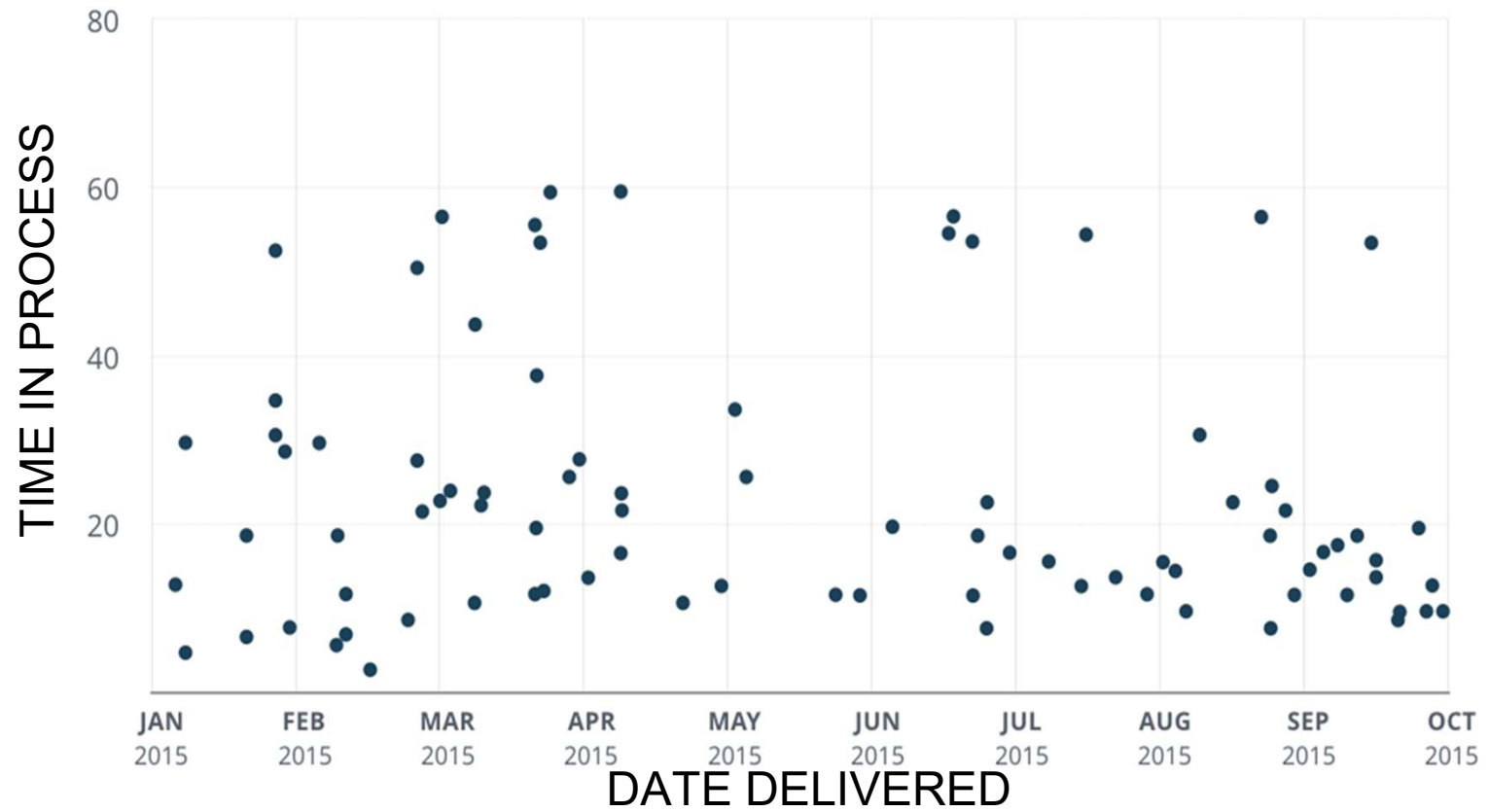
**STORIES**

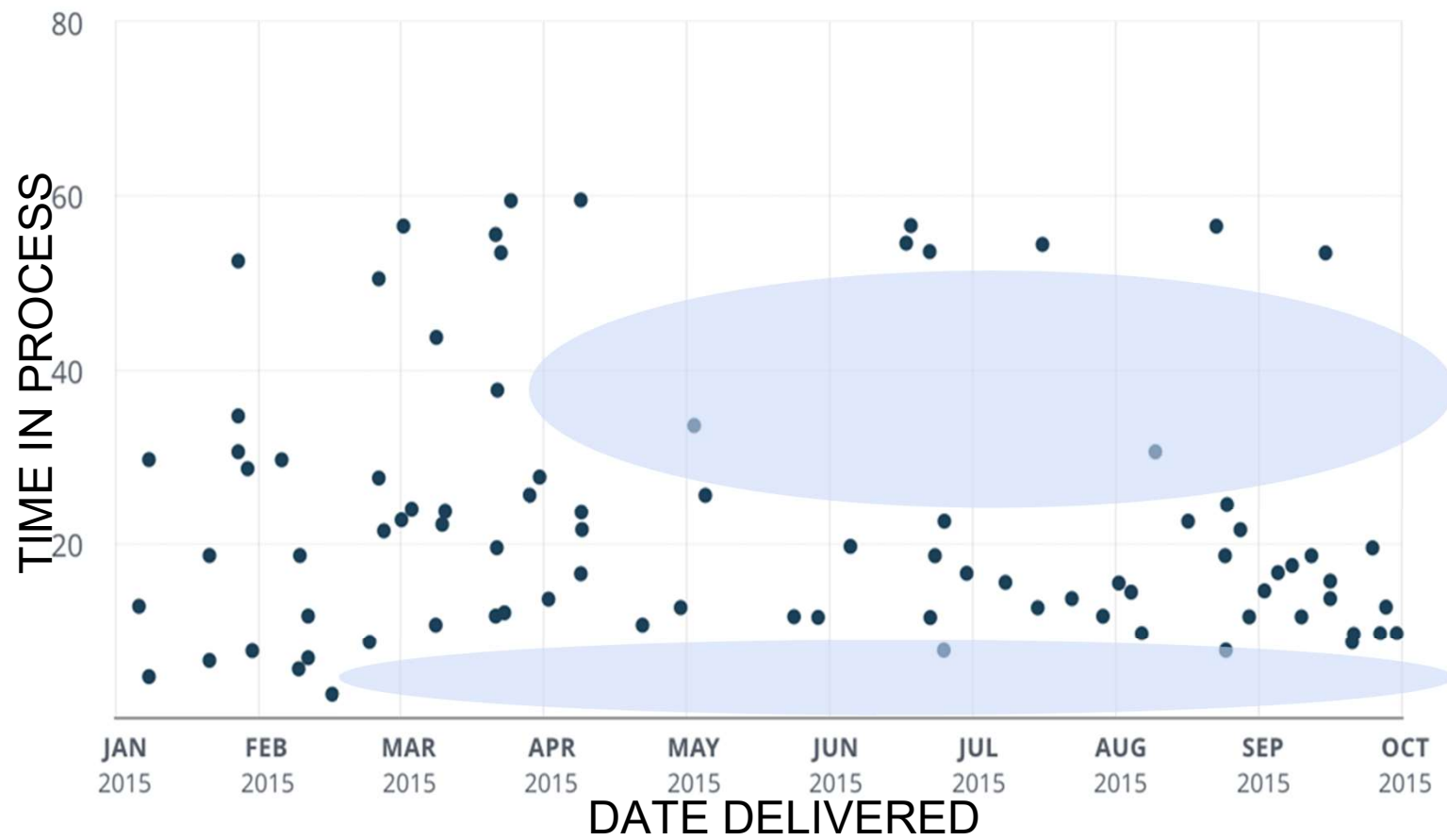
**OPTIONS**

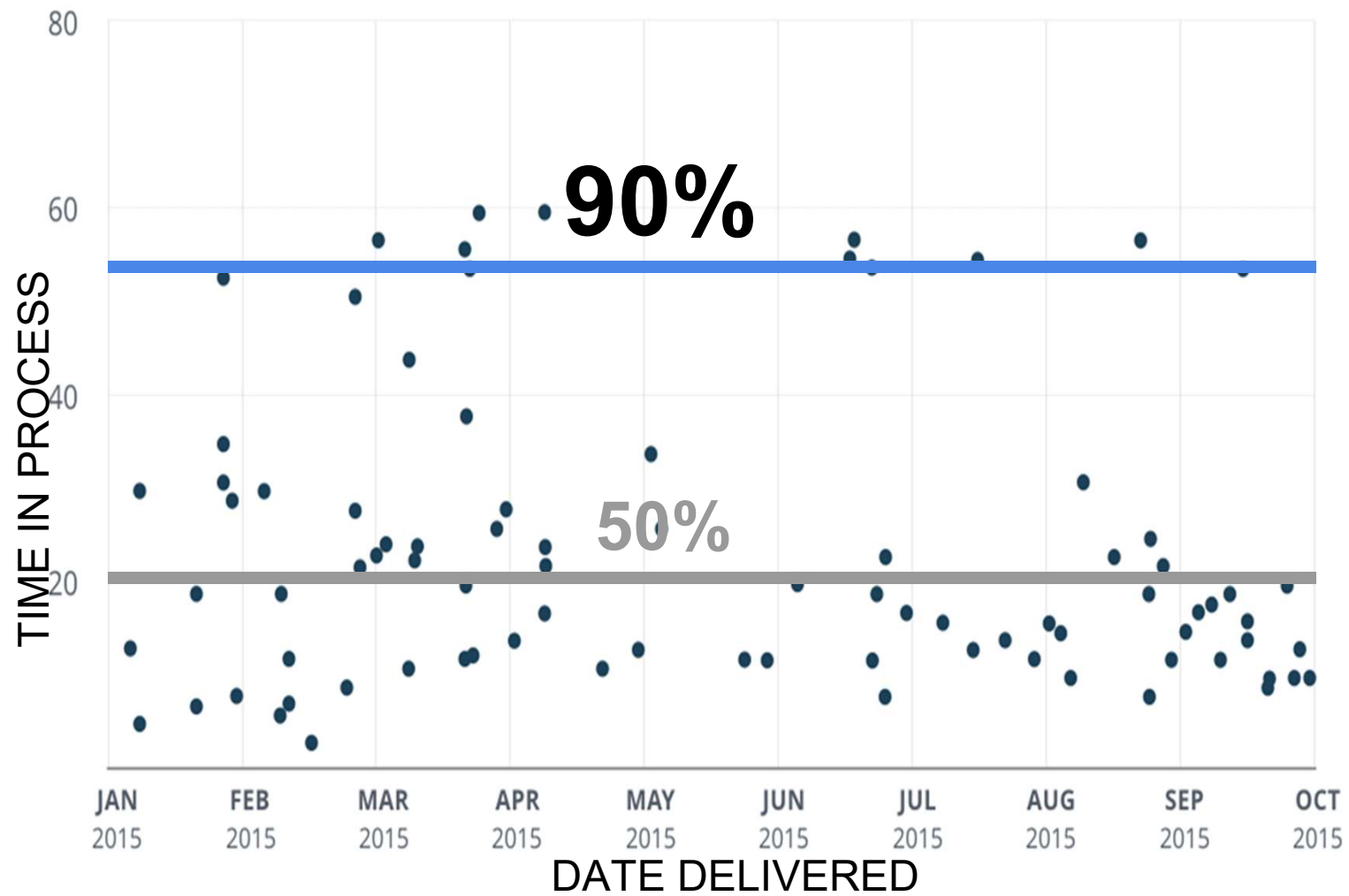
**DECISIONS**

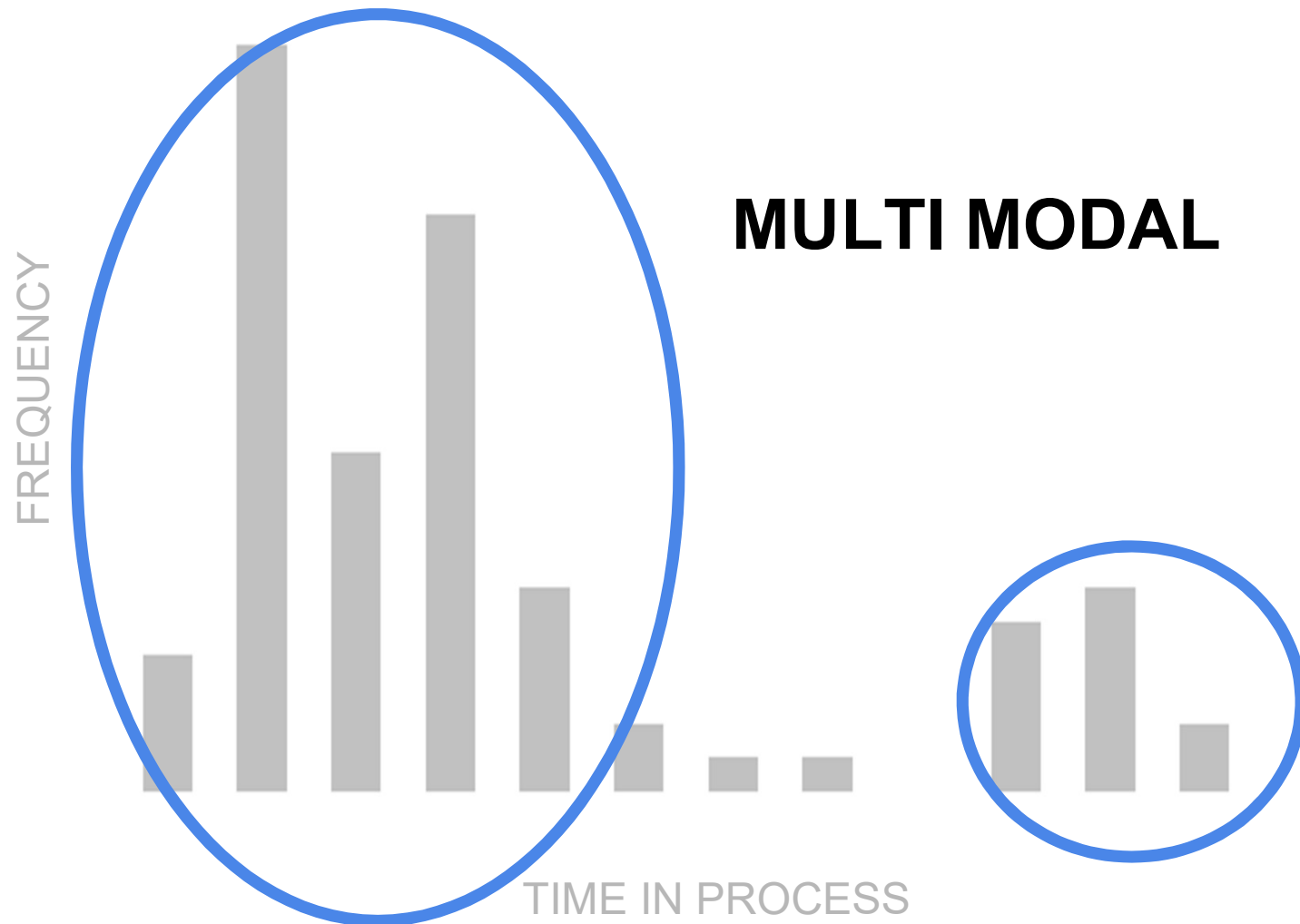
**TRADE OFFS**





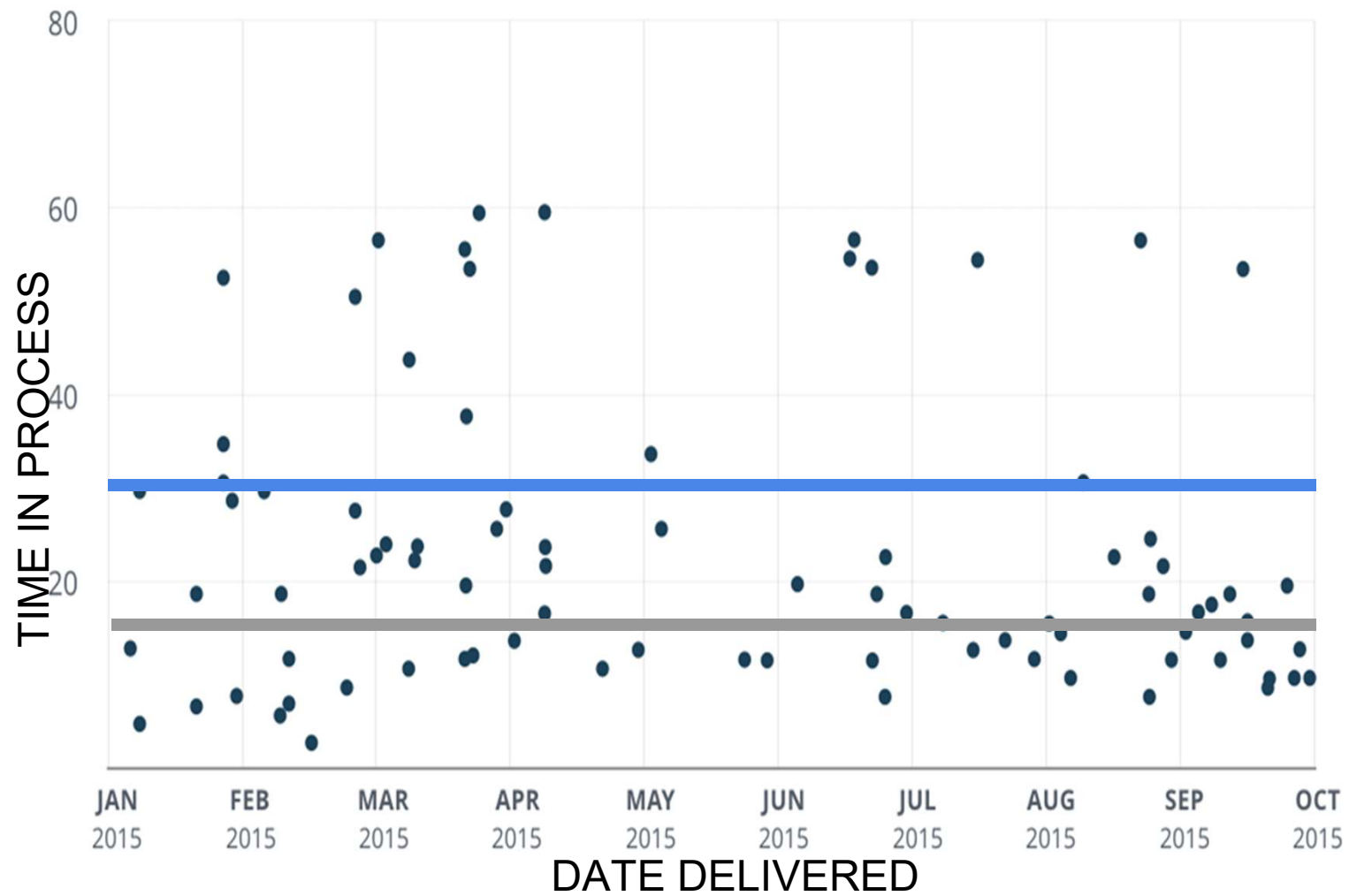






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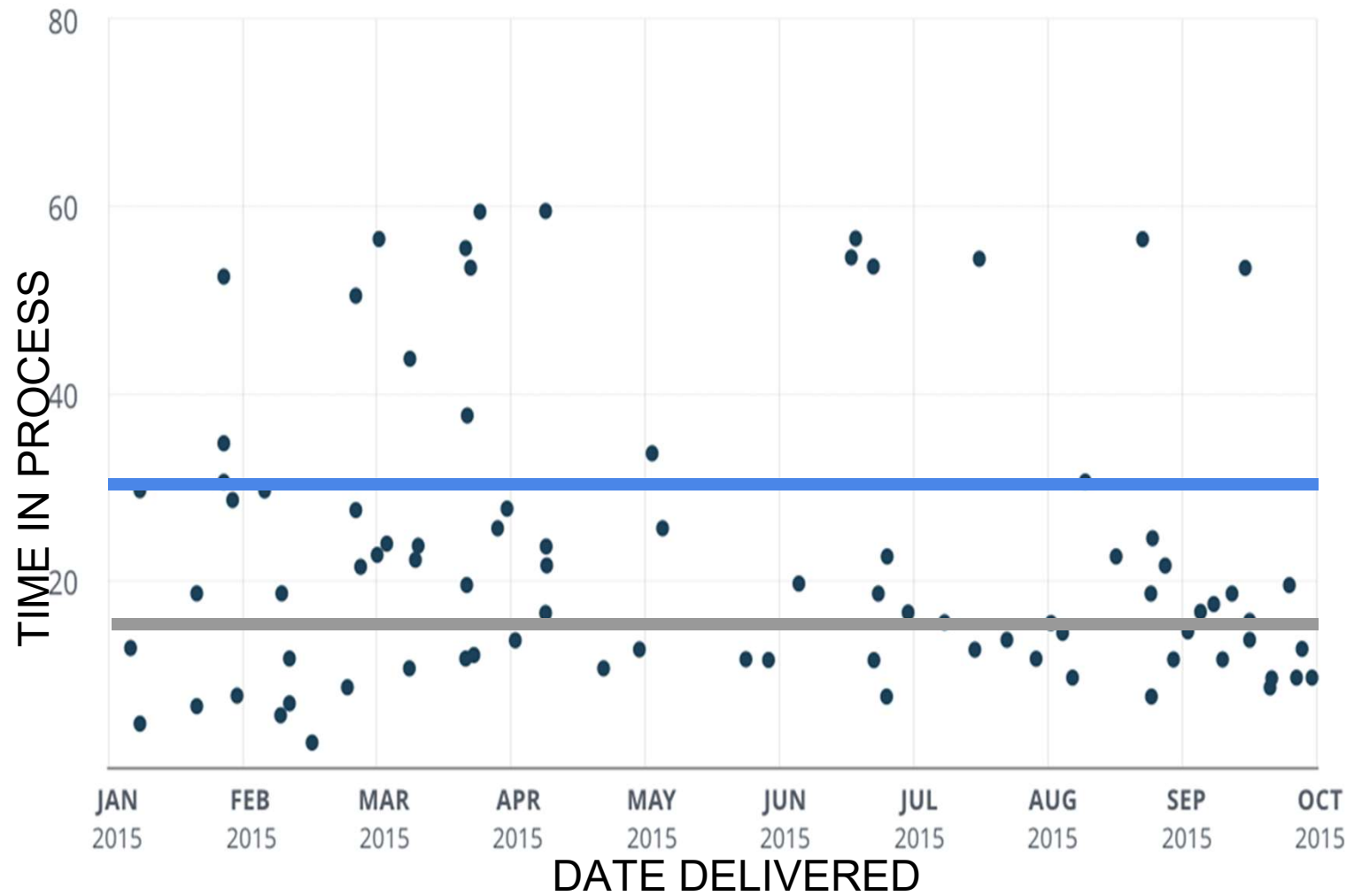


**QUALITY**

**RESPONSIVENESS**

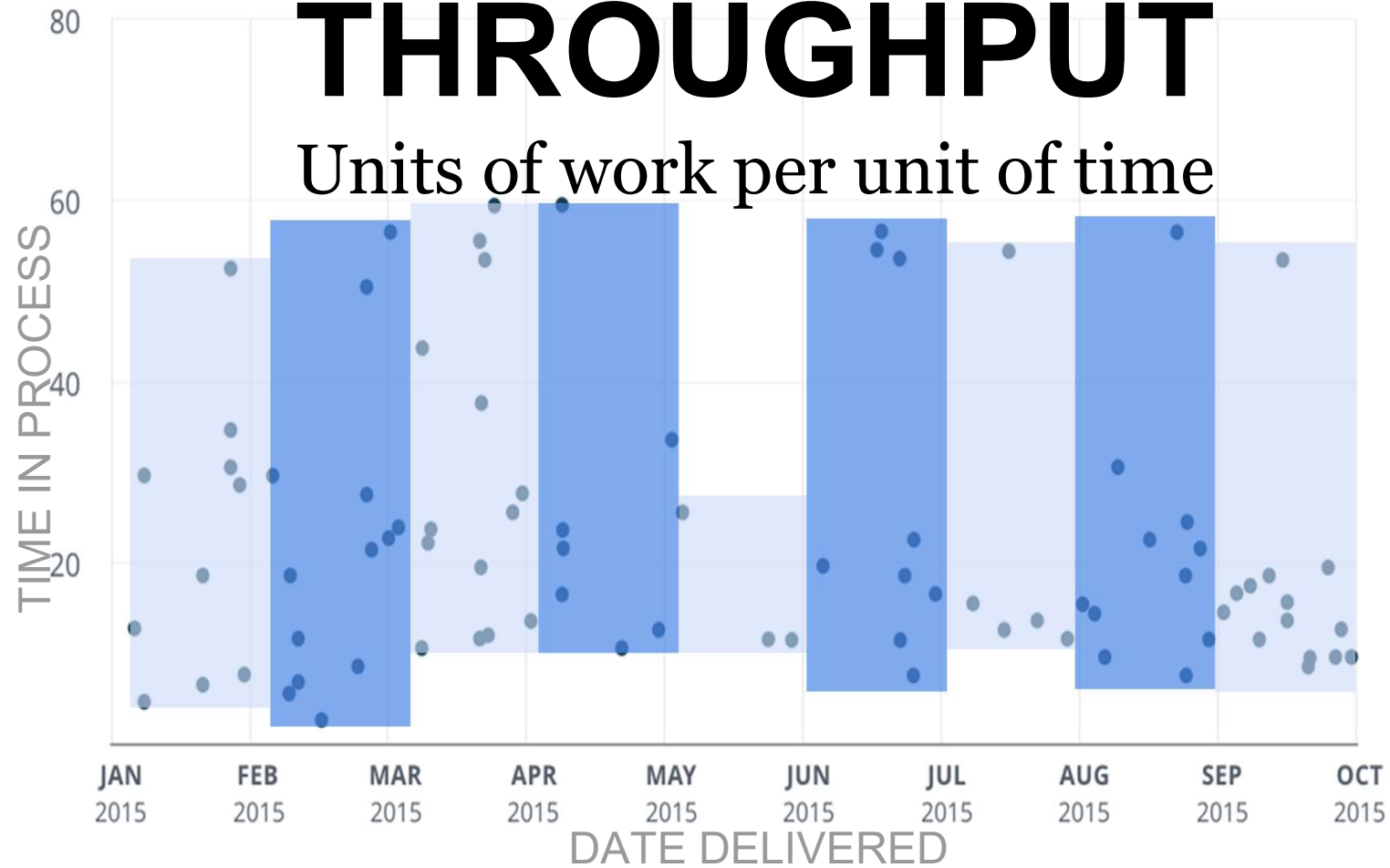
**PRODUCTIVITY**

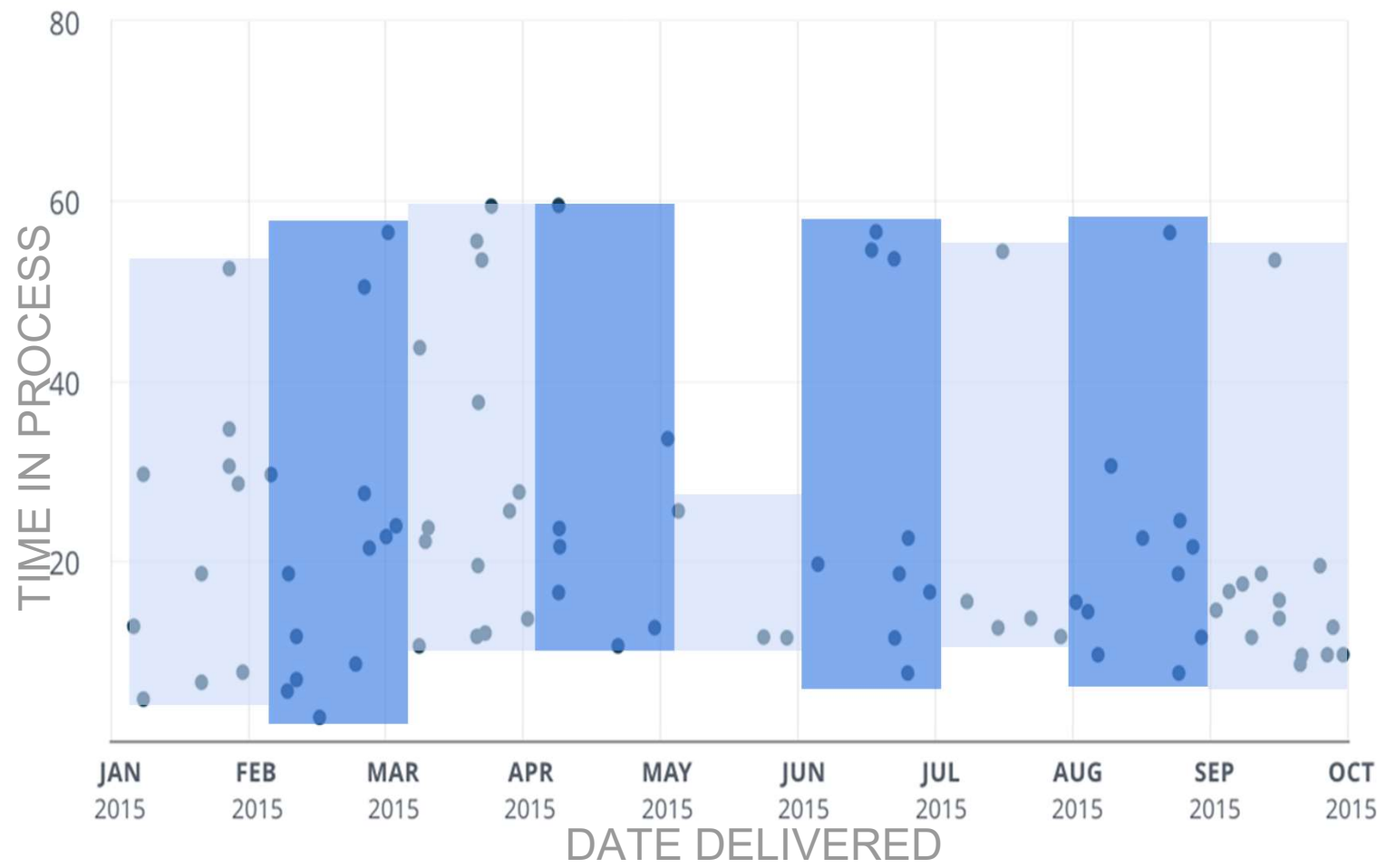
**PREDICTABILITY**

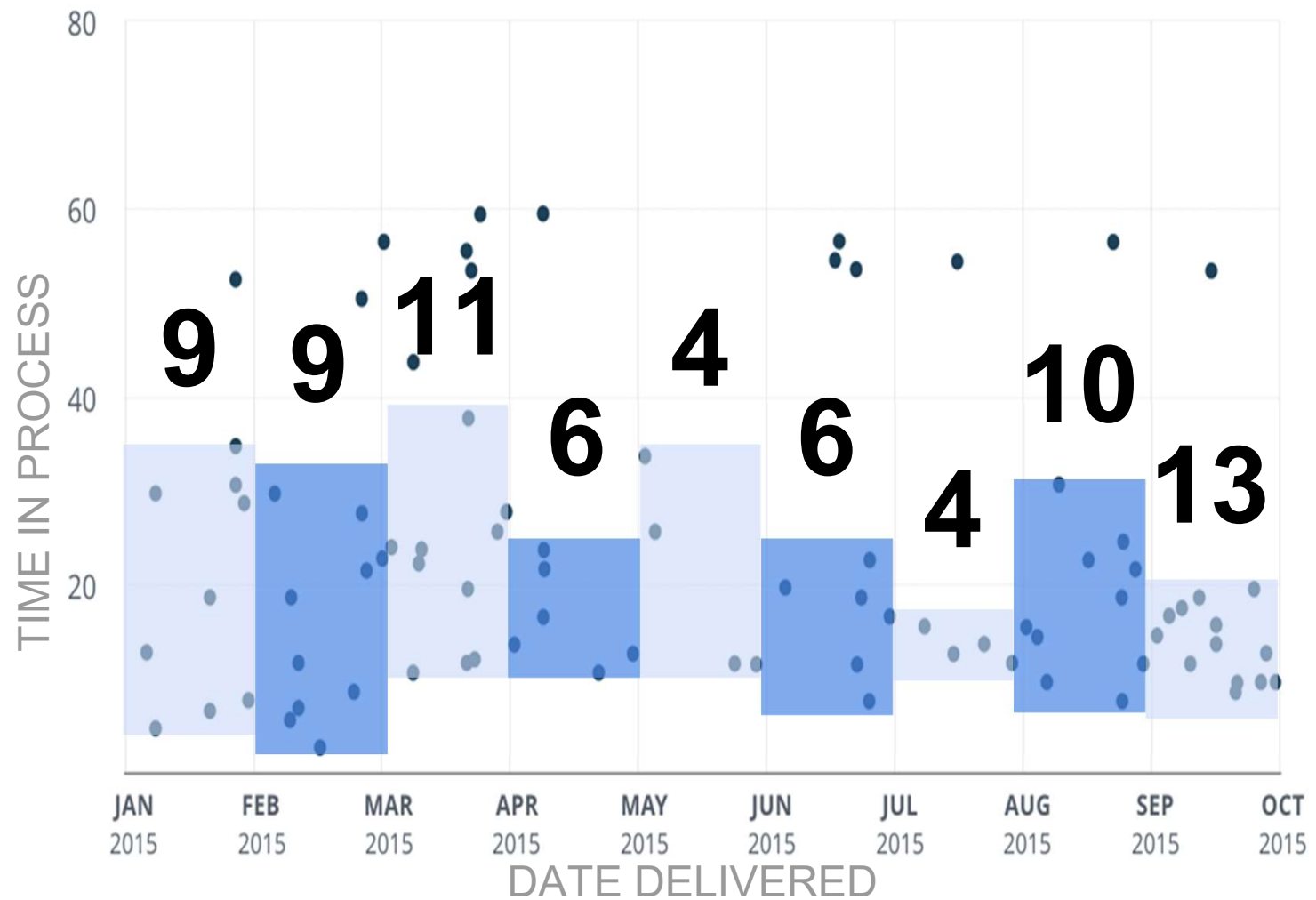


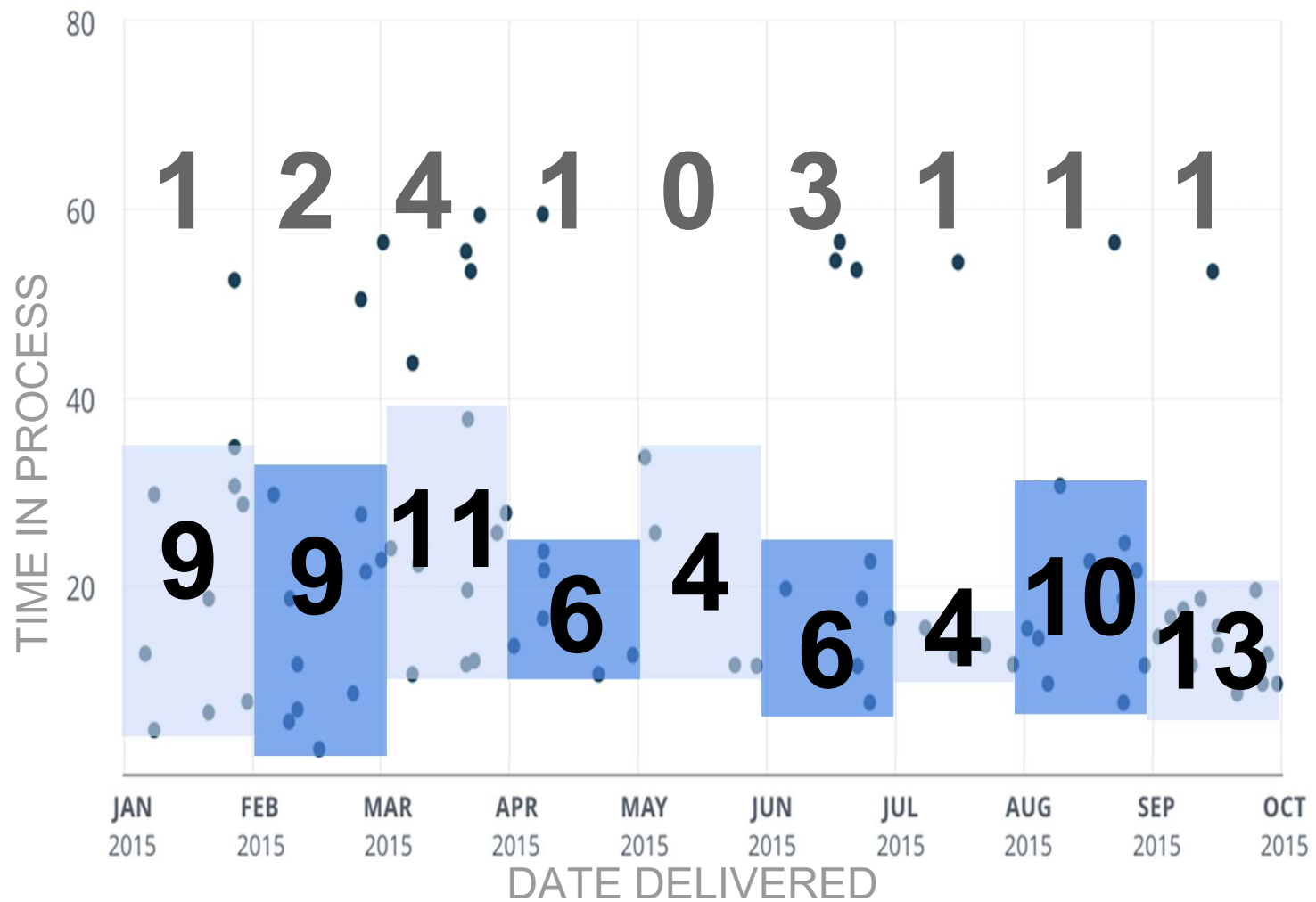
# THROUGHPUT

Units of work per unit of time











Normal is 3 or less failure  
demand work items.

It's only Wednesday, and  
we have already had 3.

We expect at least 2 more  
this week.

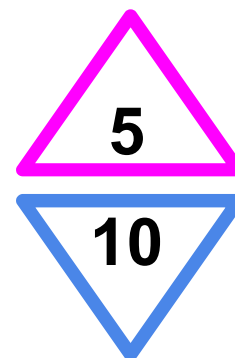
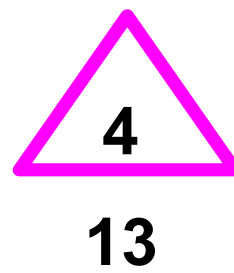
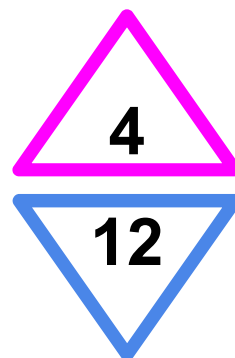
Normal is 3 or less failure demand work items.  
It's only Wednesday, and we have already had 3.  
We expect at least 2 more this week.

**This week's throughput?**

**Time in Process of items already  
in WIP?**

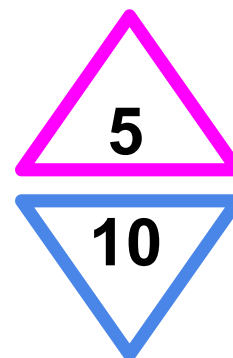
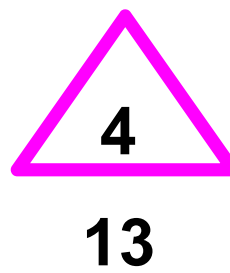
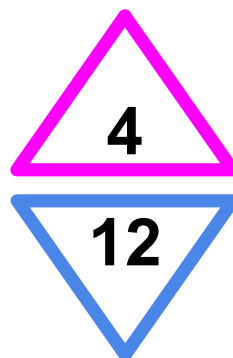
**2**  
**14**

**3**  
**13**



**2**  
**14**

**3**  
**13**



**?**

**QUALITY**

**RESPONSIVENESS**

**PRODUCTIVITY**

**PREDICTABILITY**

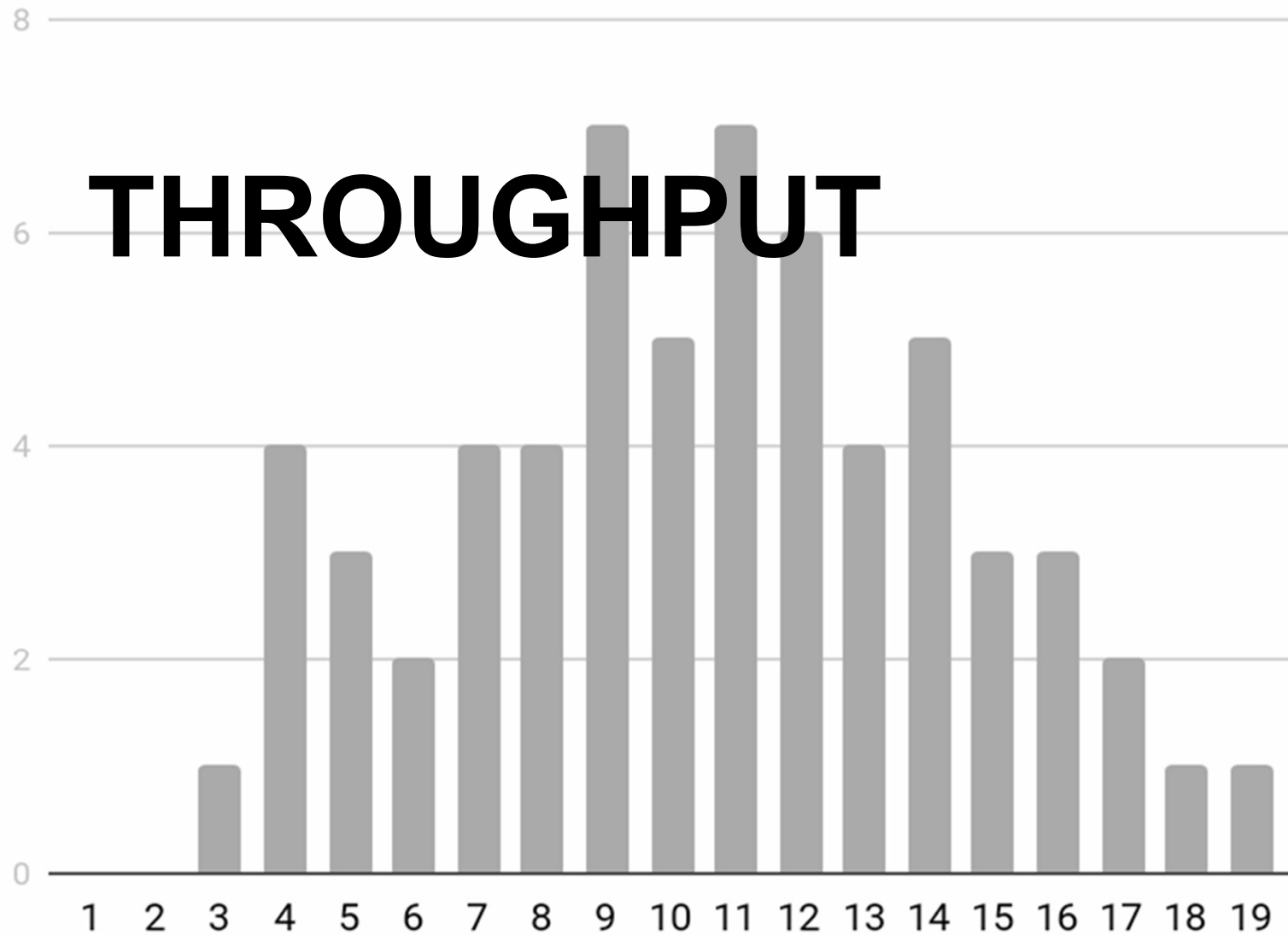
**QUALITY**

**RESPONSIVENESS**

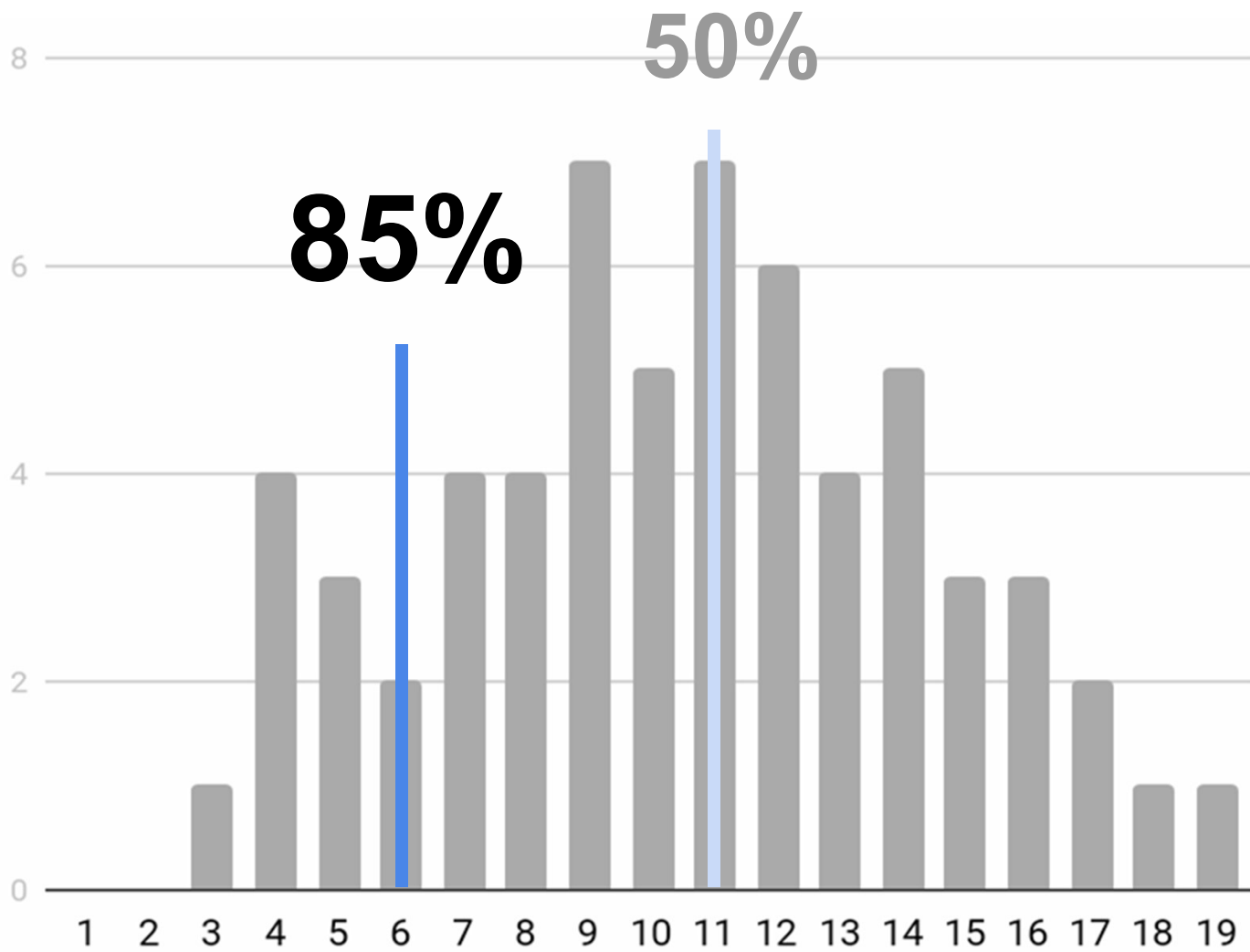
**PRODUCTIVITY**

**PREDICTABILITY**

# THROUGHPUT








**QUALITY**

**RESPONSIVENESS**

**PRODUCTIVITY**

**PREDICTABILITY**



...per state

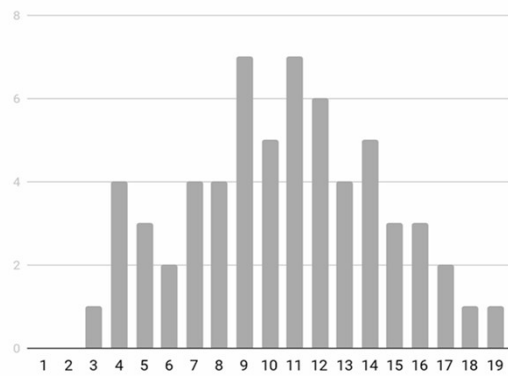
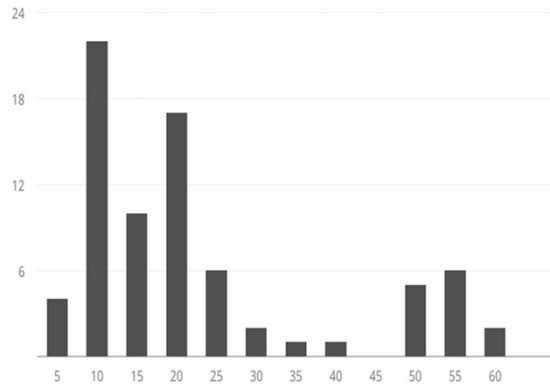
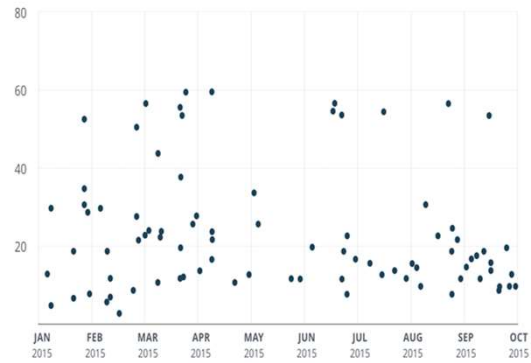
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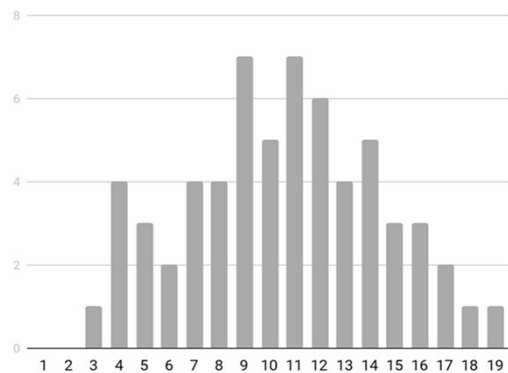
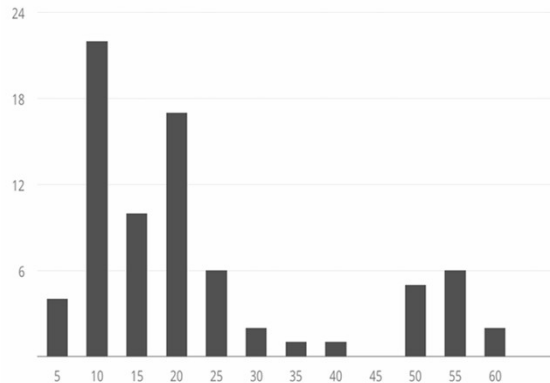
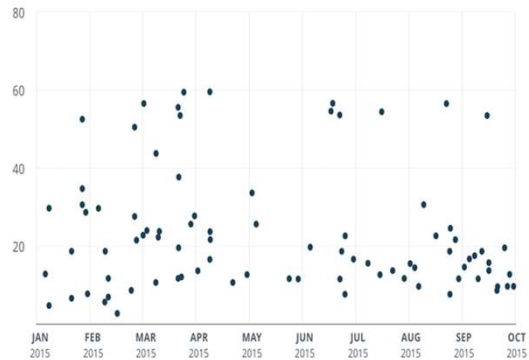
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# PROCESS CYCLE EFFICIENCY

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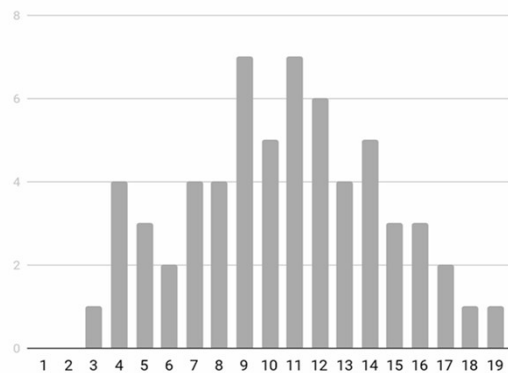
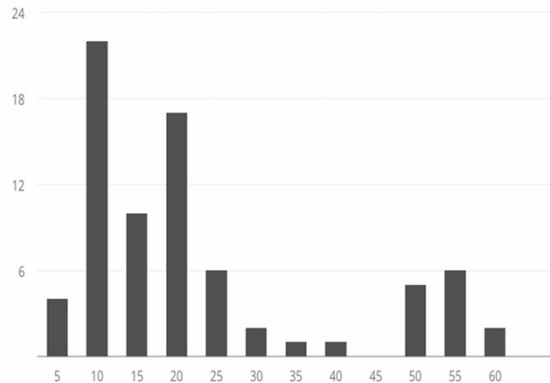
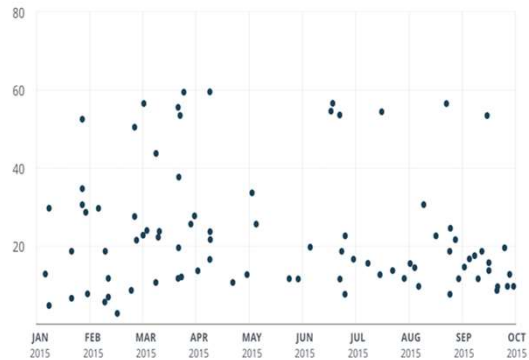


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**Are we there yet?**

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Where should we focus  
improvement efforts?

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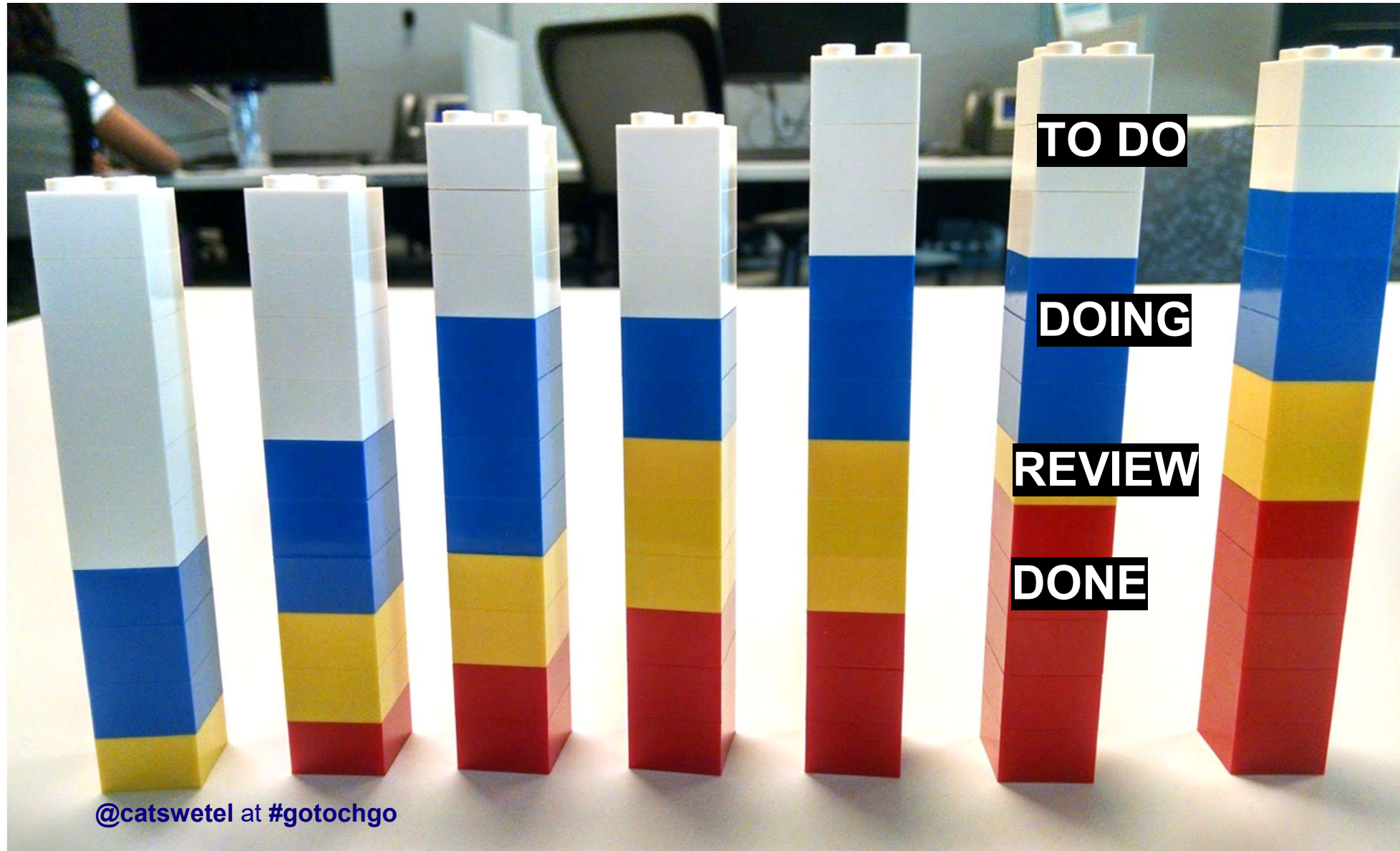
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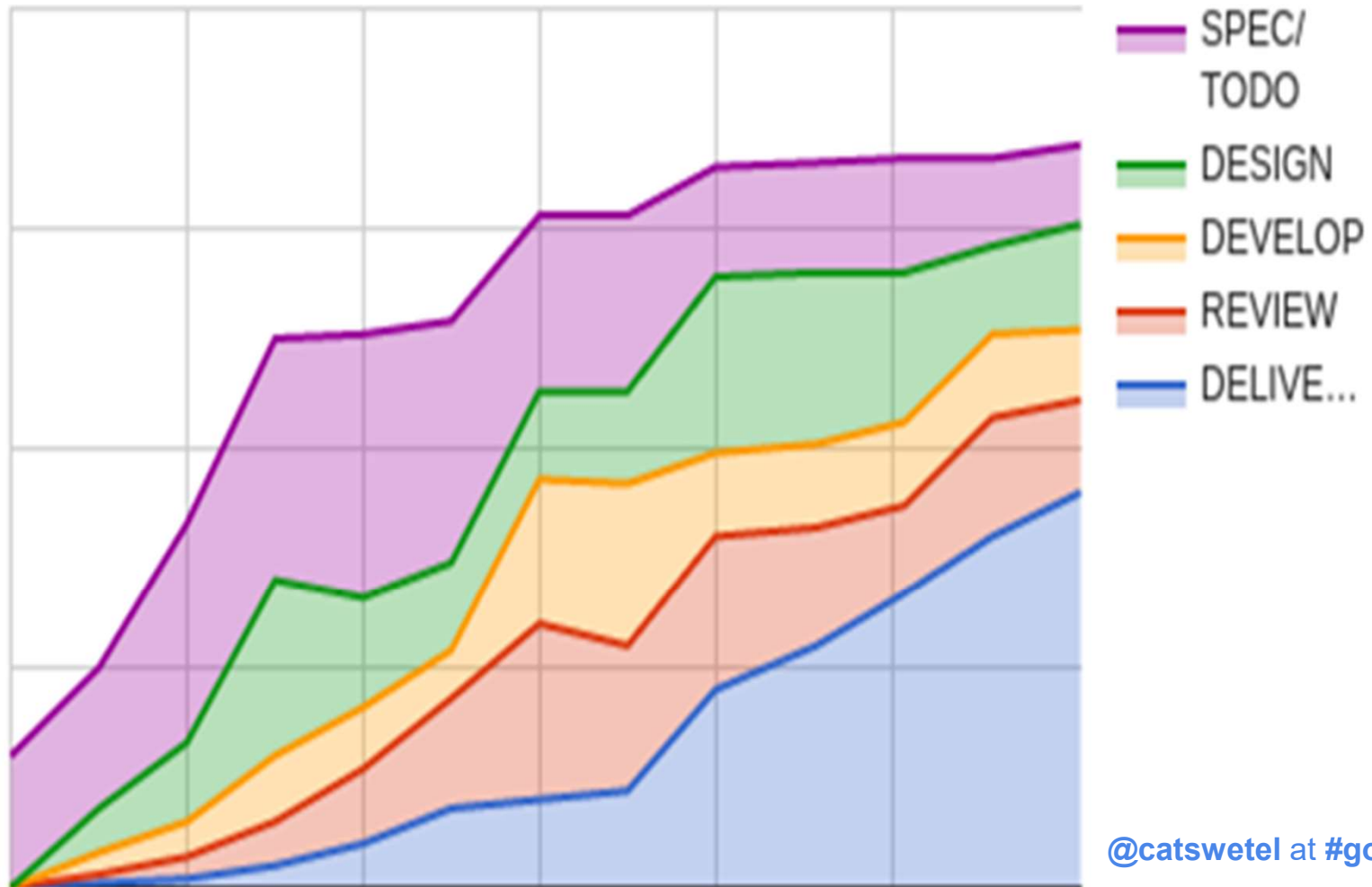
Predicting the movements  
of the **one bee** is nearly  
impossible without the  
context of the **swarm of bees**.





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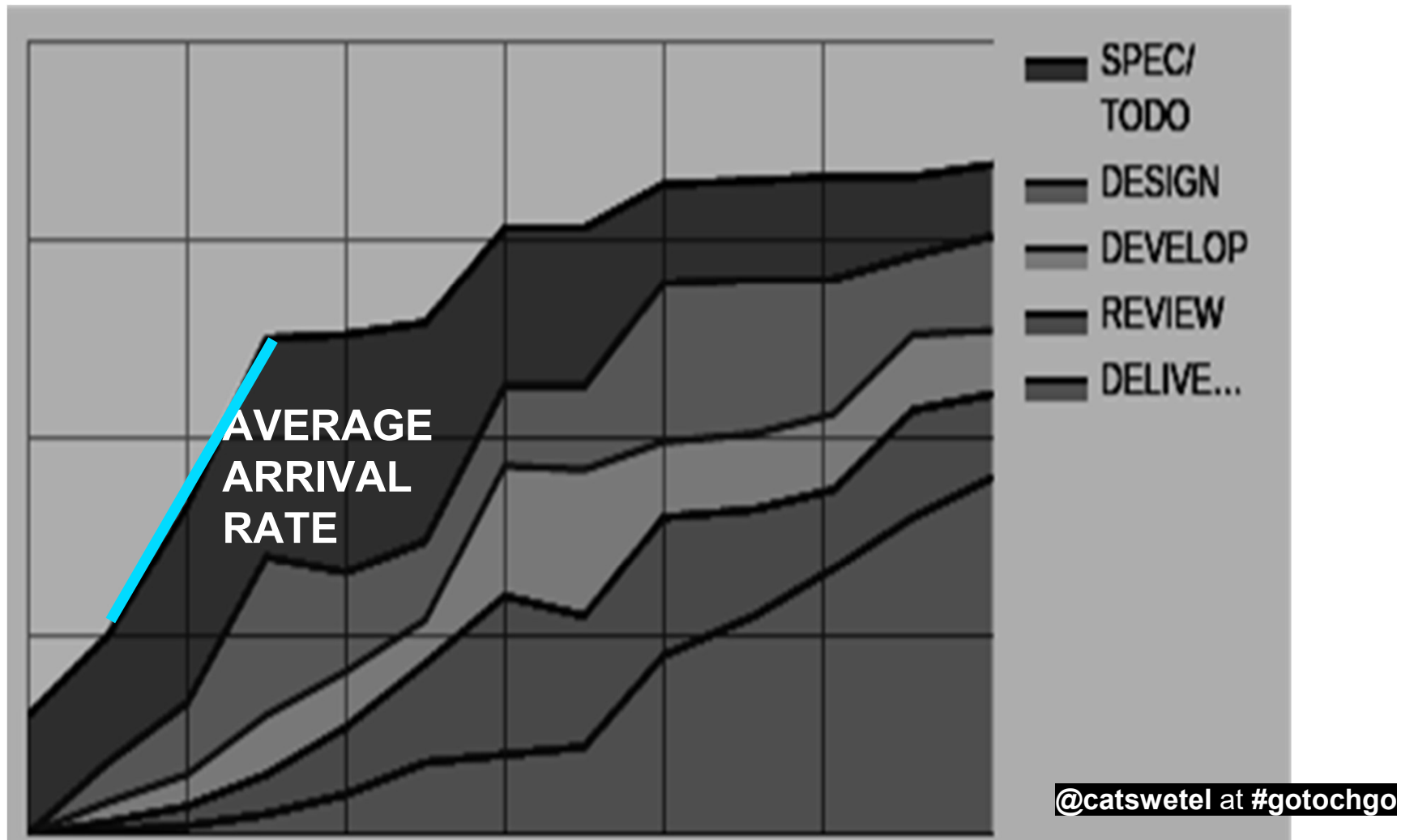
# CUMULATIVE FLOW DIAGRAM



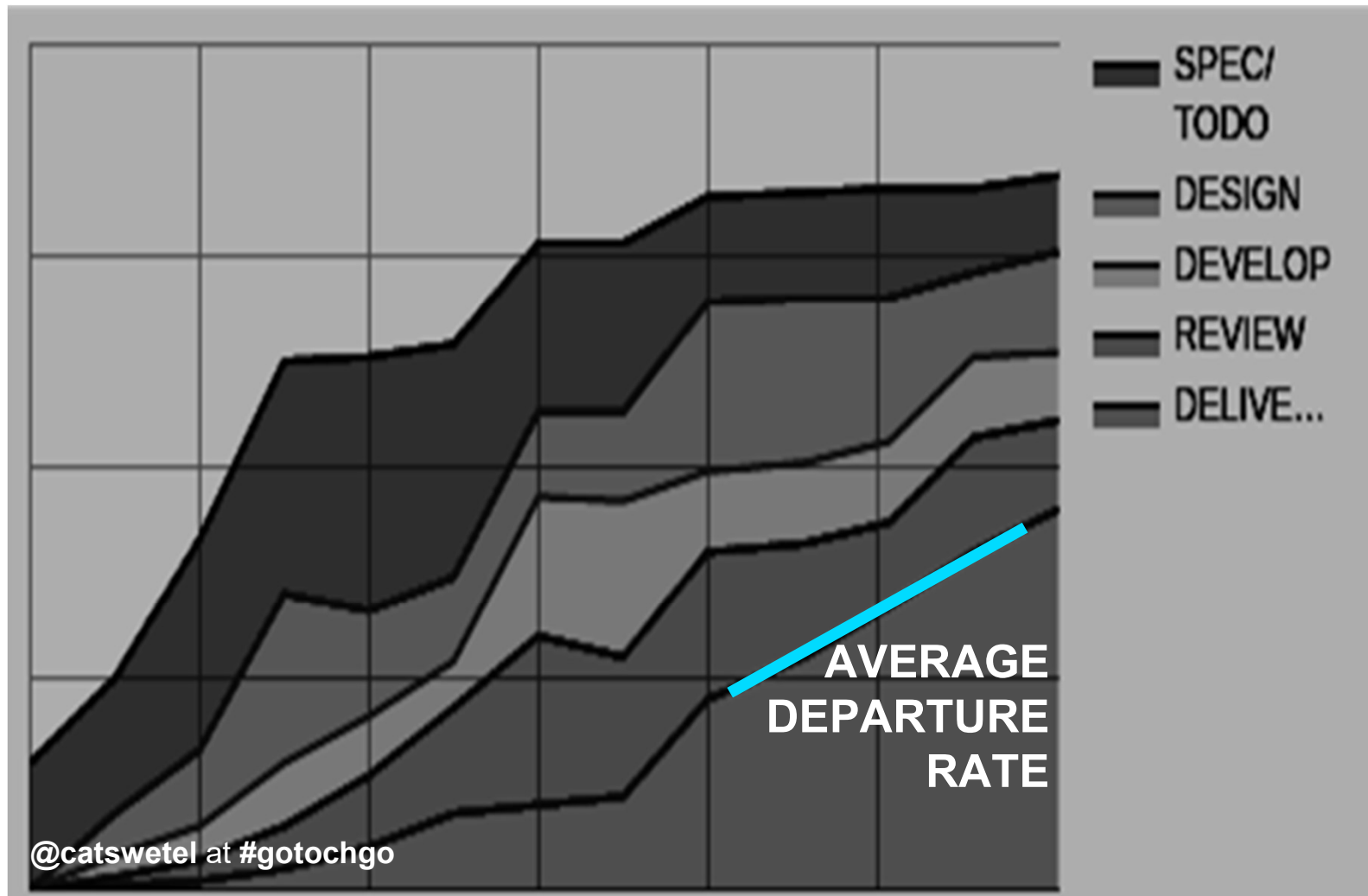
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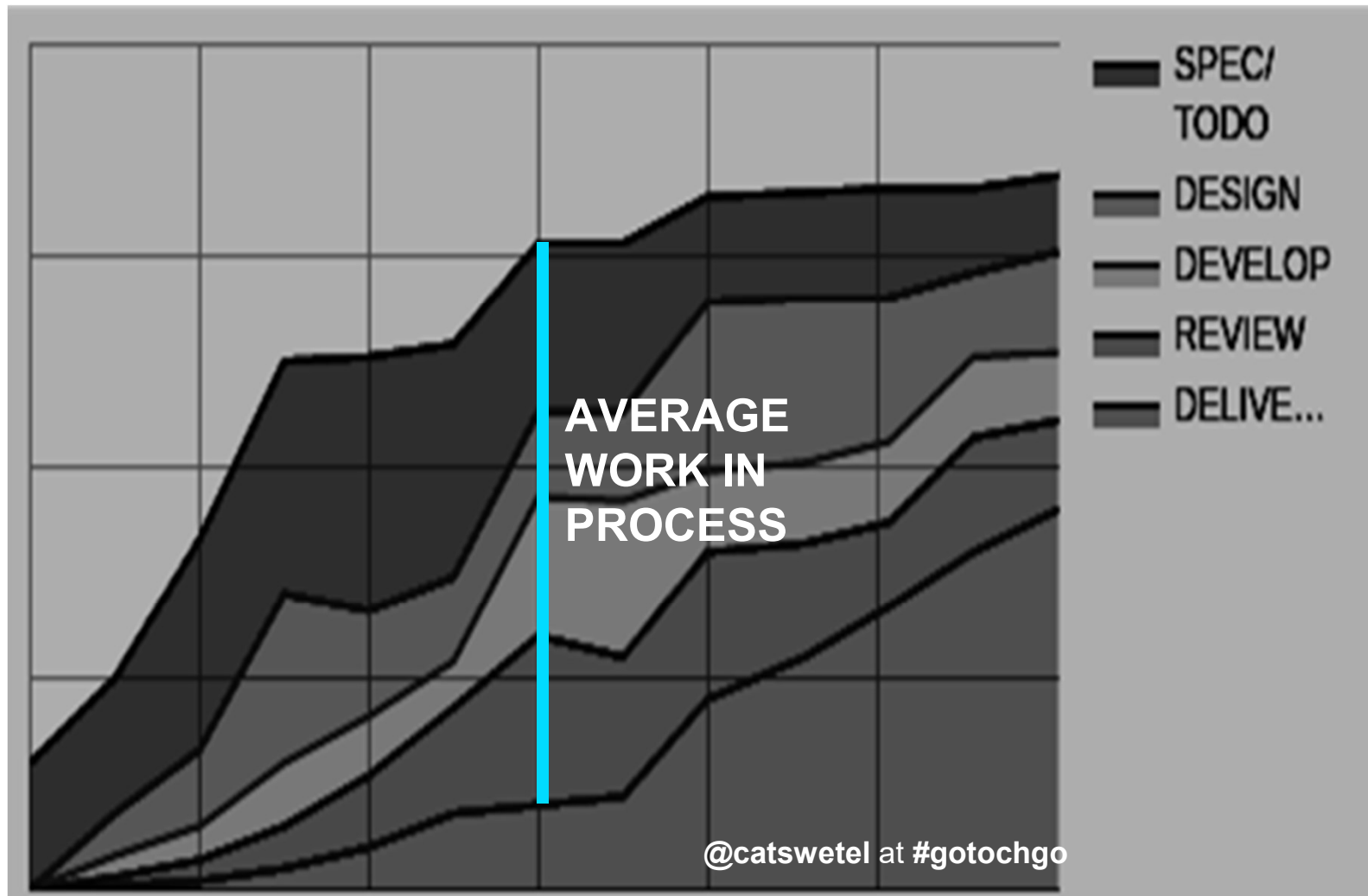
# CUMULATIVE FLOW DIAGRAM



# CUMULATIVE FLOW DIAGRAM

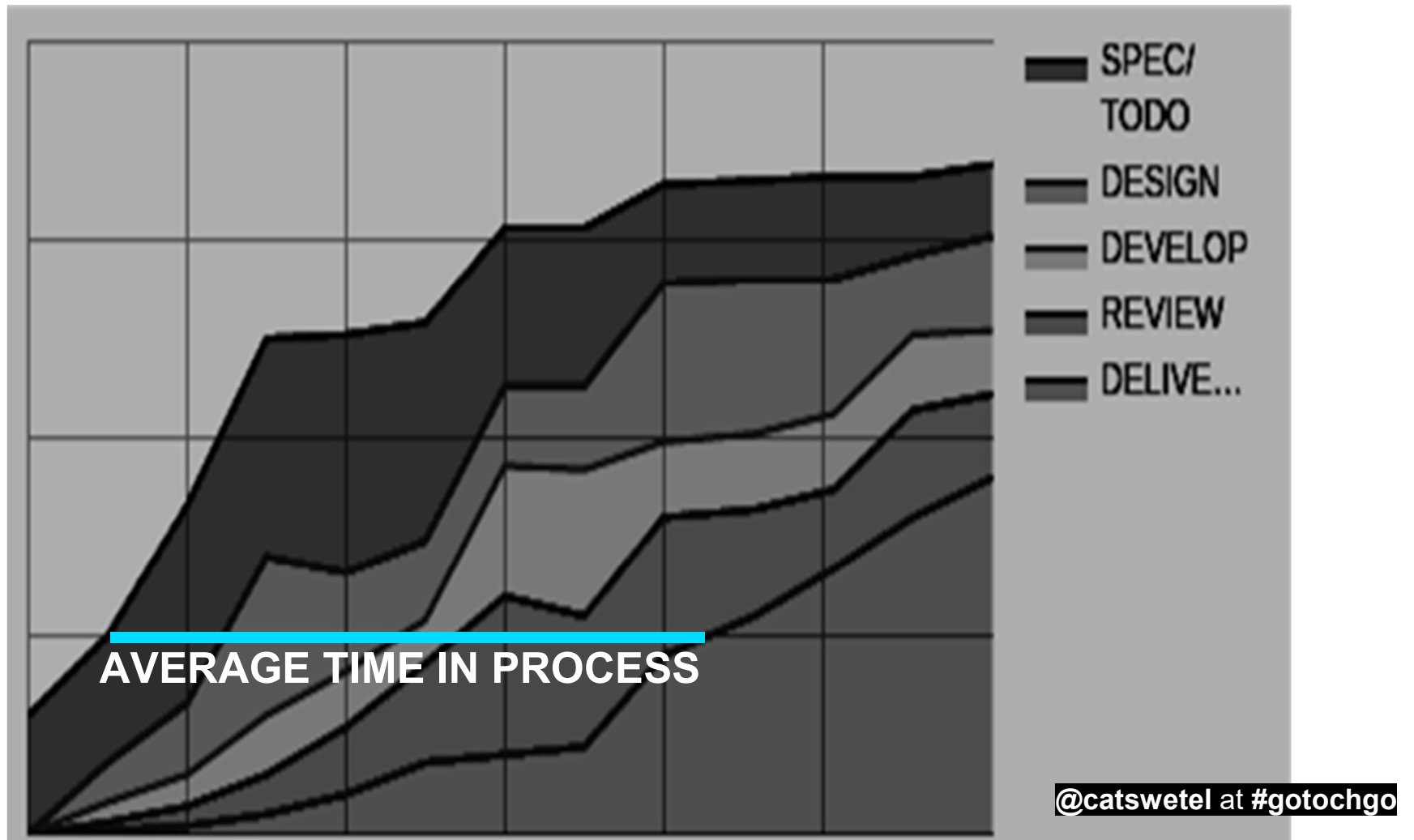


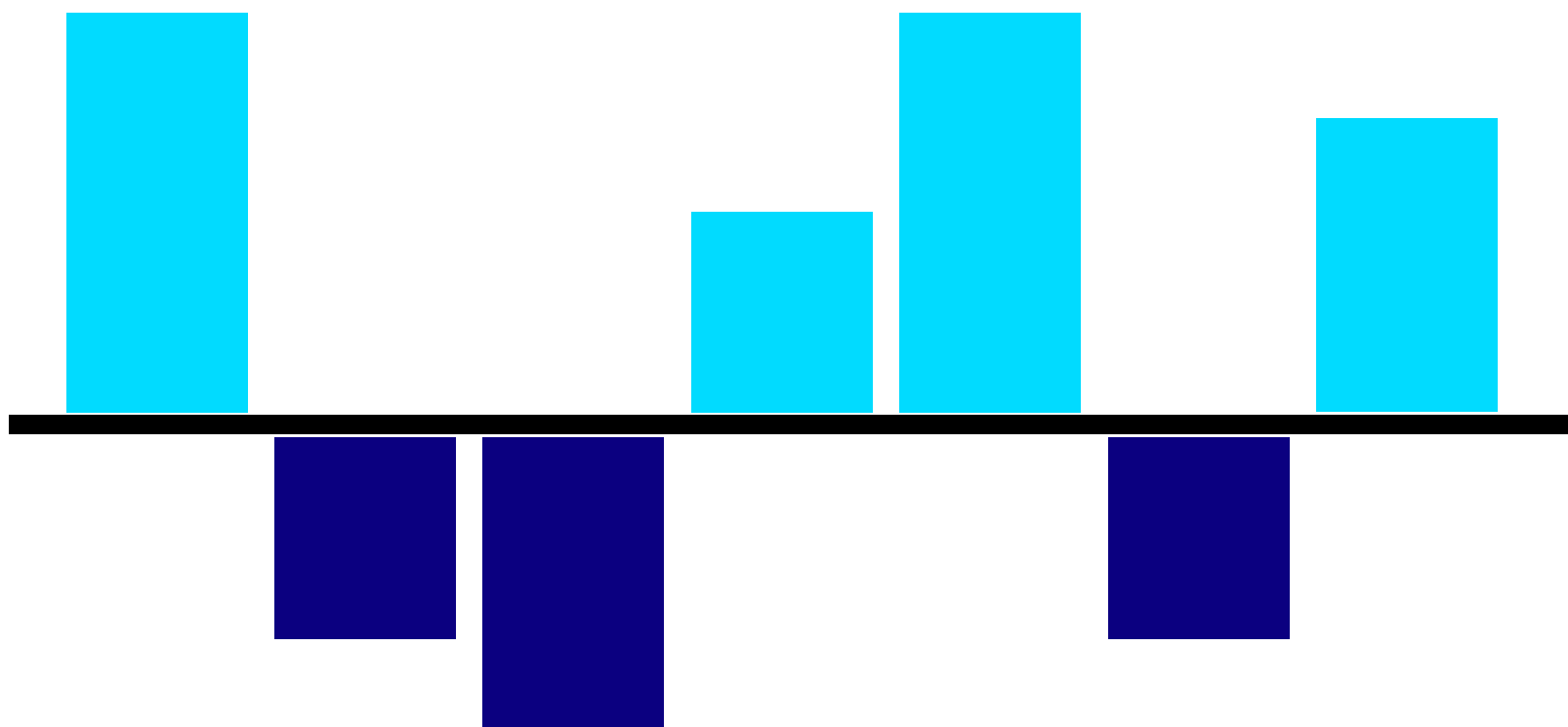
# CUMULATIVE FLOW DIAGRAM





# CUMULATIVE FLOW DIAGRAM



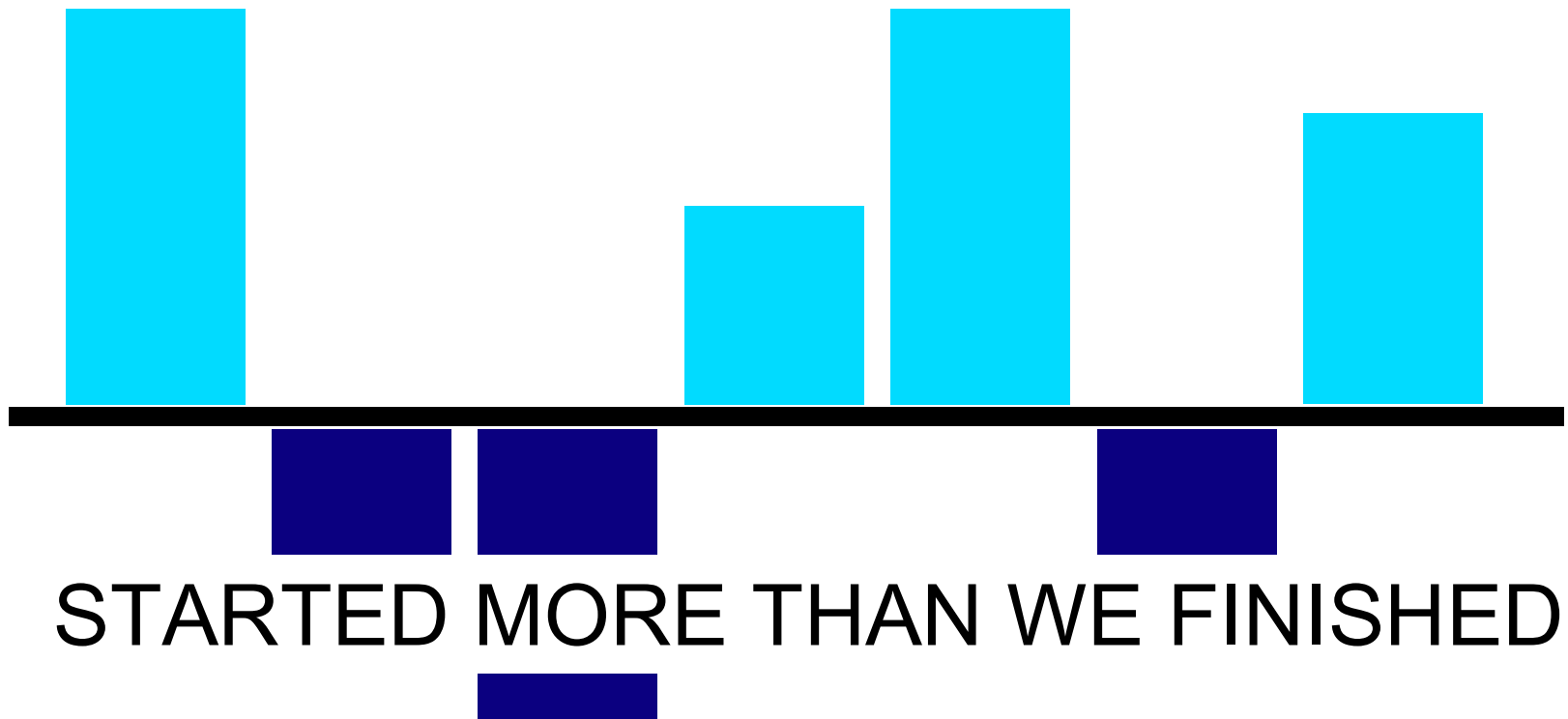


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FINISHED MORE THAN WE STARTED

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**QUALITY**

**RESPONSIVENESS**

**PRODUCTIVITY**


**PREDICTABILITY**

# LITTLE'S LAW

$$\begin{array}{l} \text{Average \#} \\ \text{of items in} \\ \text{a system} \end{array} = \begin{array}{l} \text{Average} \\ \text{arrival rate} \end{array} * \begin{array}{l} \text{Average time} \\ \text{spent in the} \\ \text{system} \end{array}$$

$$\begin{array}{l} \text{Average} \\ \text{time spent} \\ \text{in a system} \end{array} = \begin{array}{l} \text{Average \#} \\ \text{of items in} \\ \text{a system} \end{array} / \begin{array}{l} \text{Average} \\ \text{throughput} \end{array}$$

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“Constraints work then by modifying  
either a system’s phase space or the  
probability distributions of events  
and movements within that space.”

Alicia Juarrero in Dynamics in Action

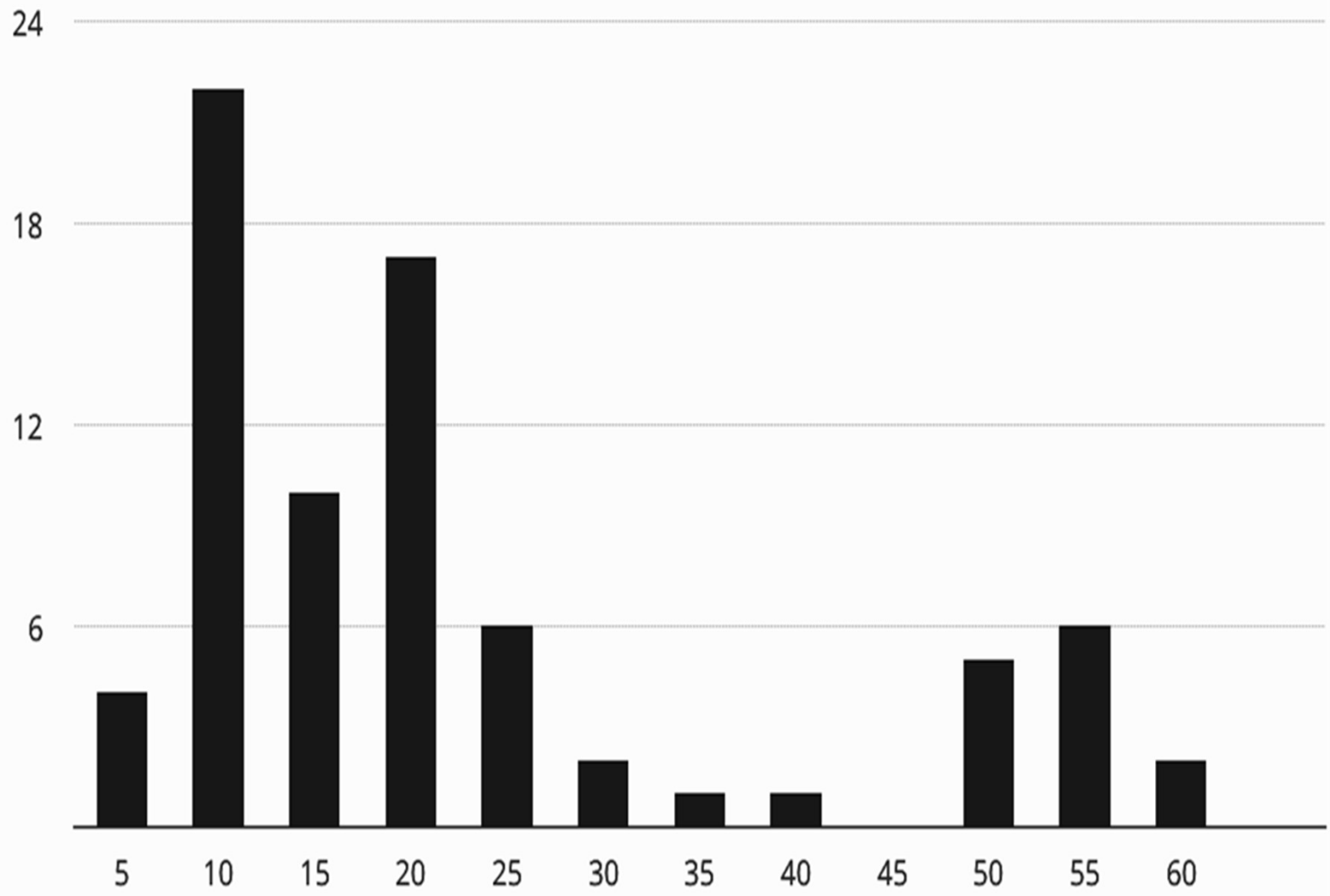
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# #NOESTIMATES

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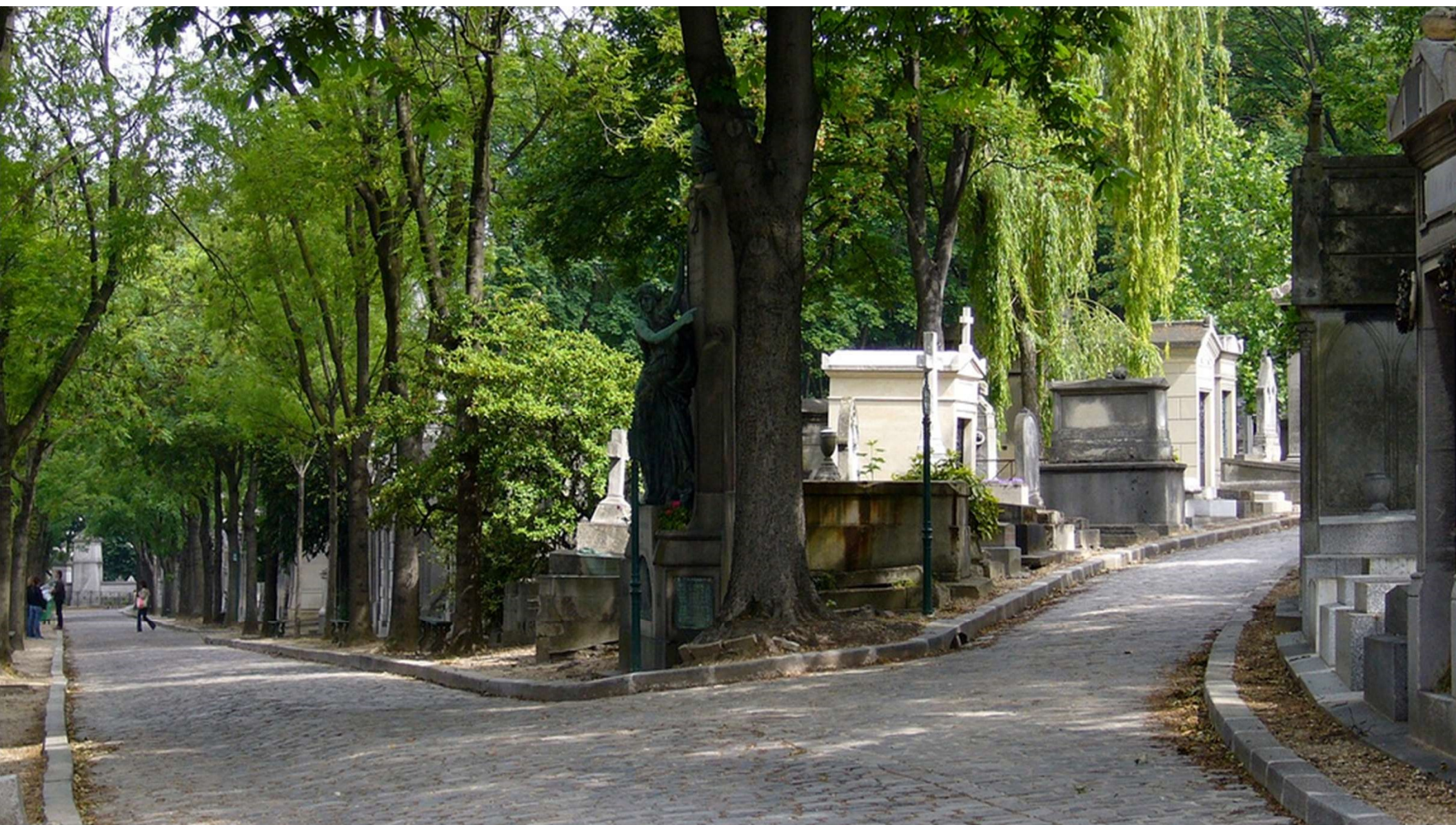
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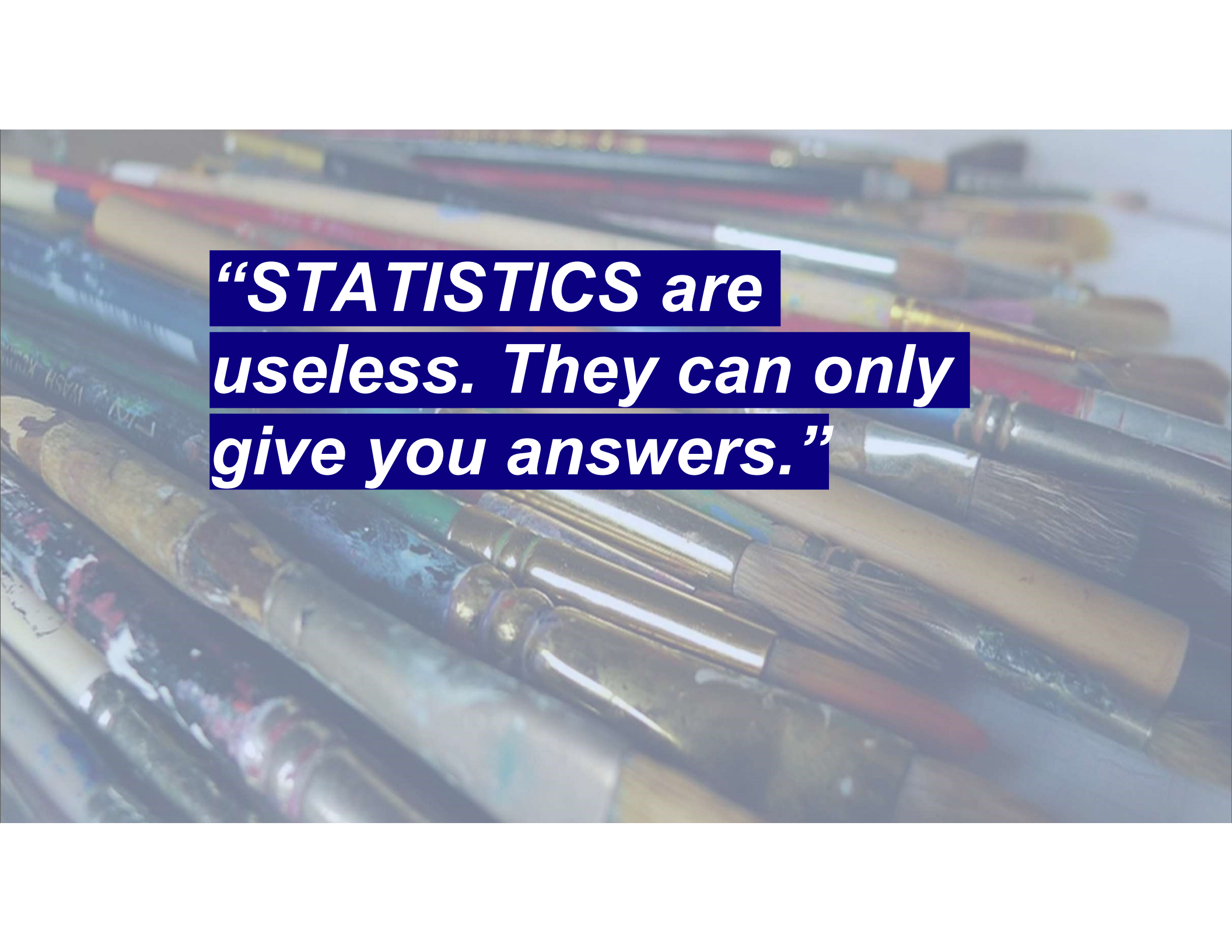
*Pablo Picasso*

***“Computers are useless.  
They can only give you  
answers.”***









***“STATISTICS are  
useless. They can only  
give you answers.”***



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**[catswetel@gmail.com](mailto:catswetel@gmail.com)**

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chicago



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and ask questions.**



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