

# #DATADRIVENDEVOPS

"Without data you are just  
another person with an opinion"

W. Edwards Deming

# SHOWNOTES

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**COBBLER'S  
CHILDREN HAVE  
NO SHOES**





# POLL TIME!



How many of you are software engineers?



How many of you are optimists?



How many of you are self-confident in their work?



# DUNNING-KRUGER EFFECT A.K.A. "OPTIMISM"

“ People suffer from illusory superiority, mistakenly assessing their cognitive ability as greater than it is.

Wikipedia

# SECOND-SYSTEM EFFECT A.K.A. “SELF-CONFIDENCE”

“ The tendency of small, elegant, and successful systems, to be succeeded by over-engineered, bloated systems, due to inflated expectations and overconfidence.

The Mythical Man-Month

# THE CONSEQUENCES

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# DISILLUSION



**Software I like**

**Software I  
know really  
well**

# OVERCONFIDENCE

“ Every software is 80% ready 80% of the time

Every developer, ever

# HARD TO GIVE UP



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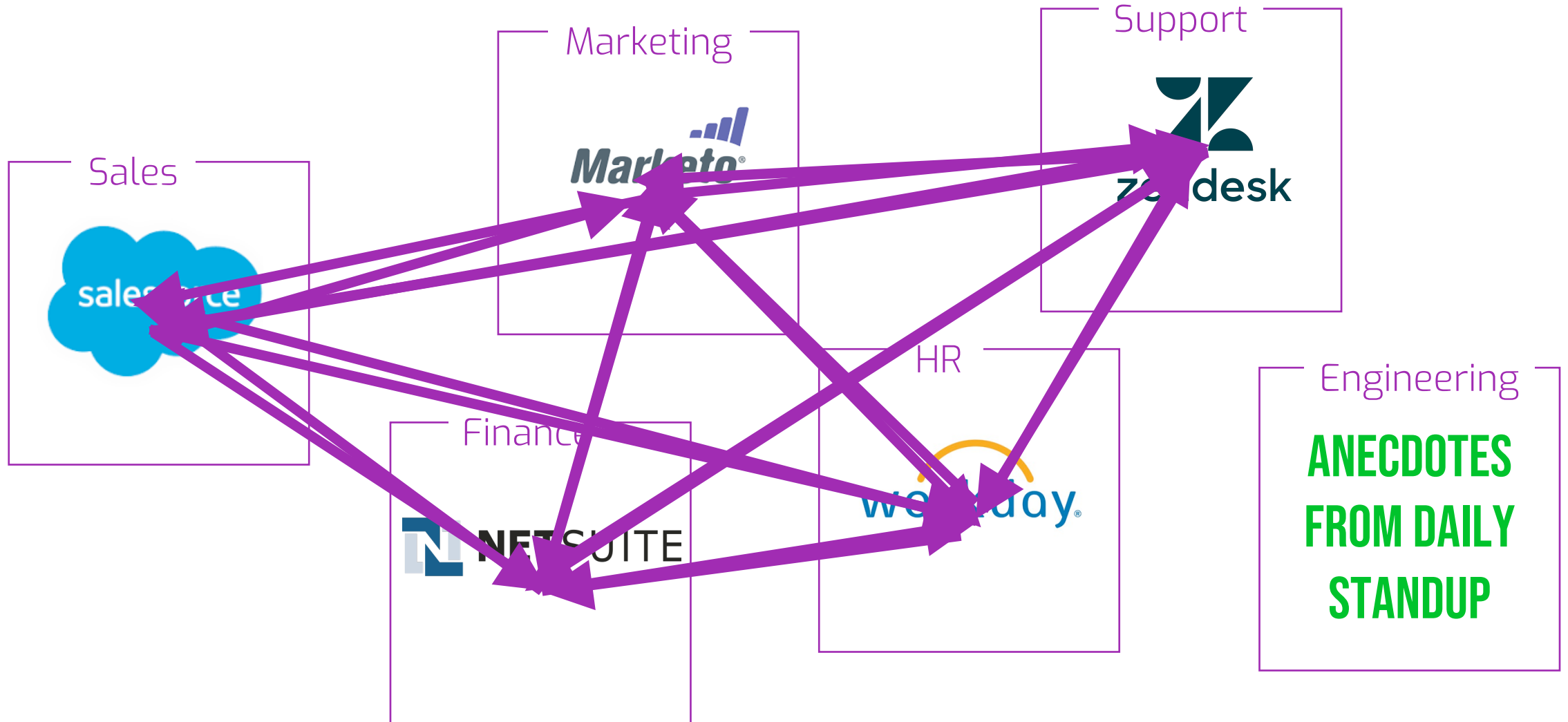
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# HOW DEPARTMENTS MEASURE



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# BARUCH SADOGURSKY

CHIEF STICKER OFFICER

(ALSO, HEAD OF DEVELOPER RELATIONS)



JBARUCH@JFROG.COM

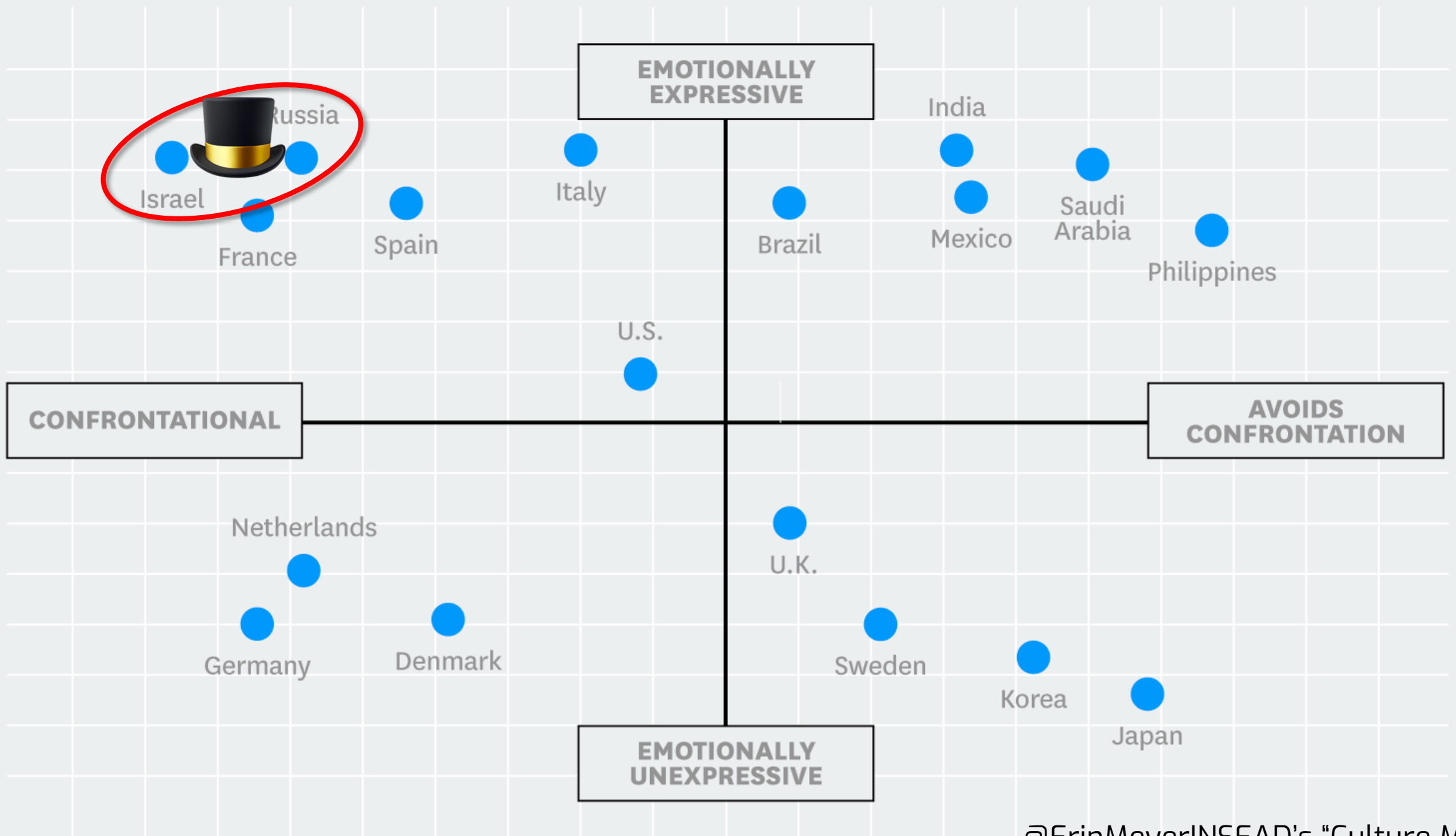


@JBARUCH

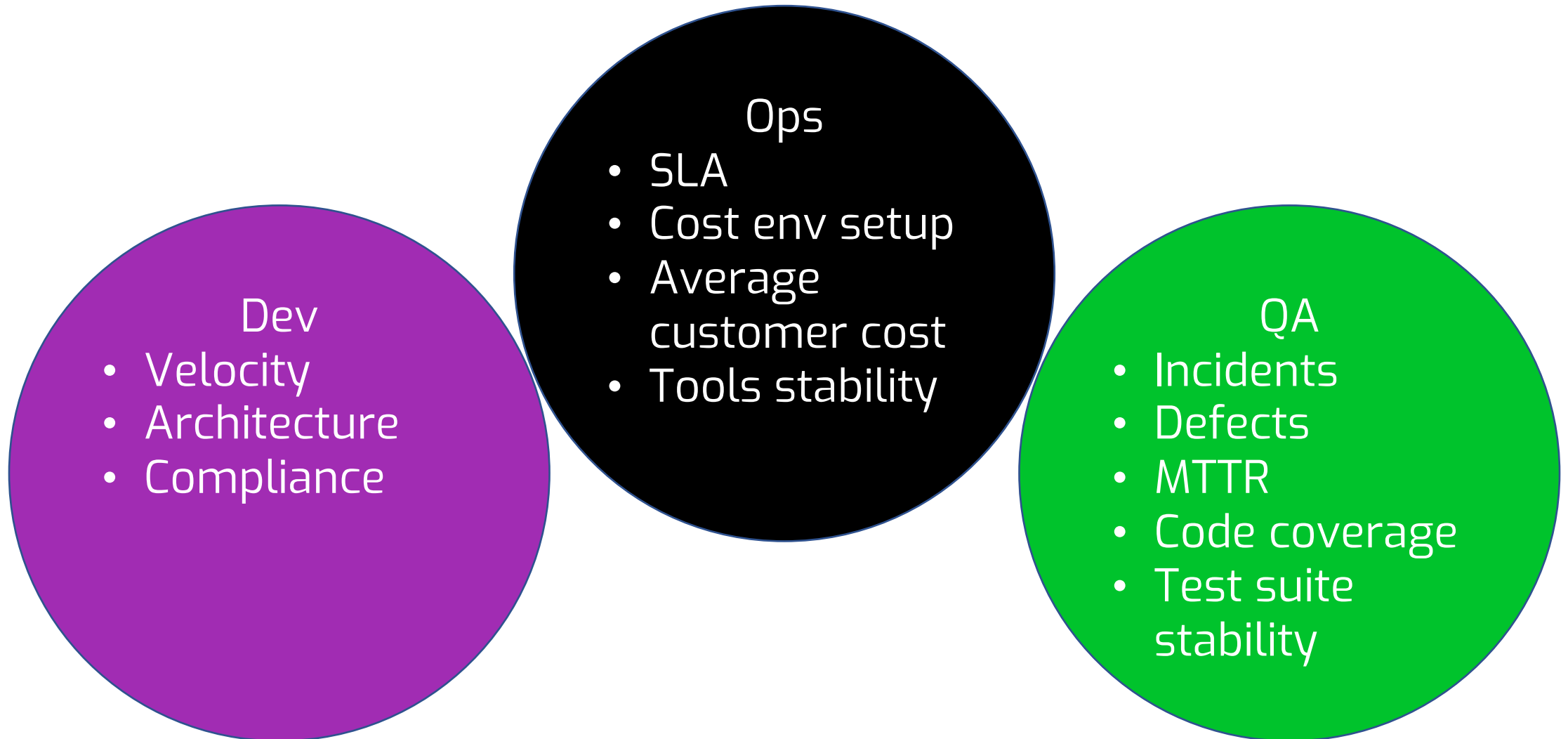


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# ENGINEERING METRICS IN PRE-DEVOPS ERA





# DEVOPS!



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# VELOCITY TO AGILE IS LIKE ? TO DEVOPS...



# VELOCITY TO AGILE IS LIKE FLOW EFFICIENCY TO DEVOPS...



# VERY MUCH ALIKE!

METRIC	EASILY UNDERSTANDABLE	UNITY	
Flow Efficiency	✓	✓	
Velocity	✓	✓	

# POLL TIME!



Who knows what velocity is?



Who knows what burndown chart is?



Who has a burndown chart?



Who looks at the burndown chart?



Who trusts the burndown chart?



Who knows what to do if it doesn't look right?



# WHAT'S THE PROBLEM?



# TRUE FOR BOTH!

METRIC	EASILY UNDERSTANDABLE	UNITY	ACTIONABLE
Flow Efficiency	✓	✓	✗
Velocity	✓	✓	✗

**TOO COARSE!**



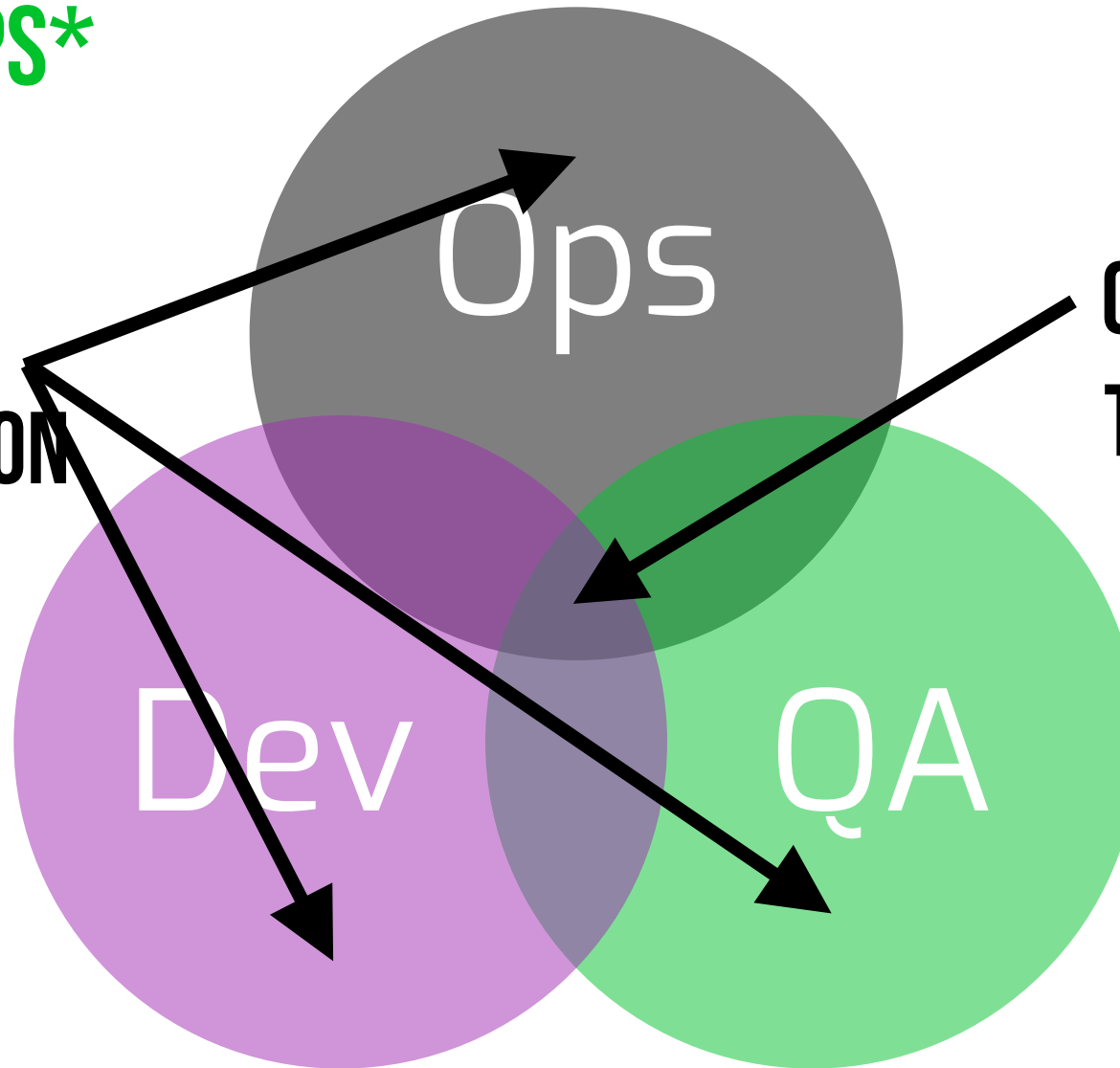
**TOO COARSE!**



DevOps

# THIS IS DEVOPS\*

**DEEP  
SPECIALIZATION**



**COMMON GOALS,  
TOOLS, CULTURE**

**\*UNLESS YOU'RE NETFLIX**

**\*\*YOU'RE NOT**

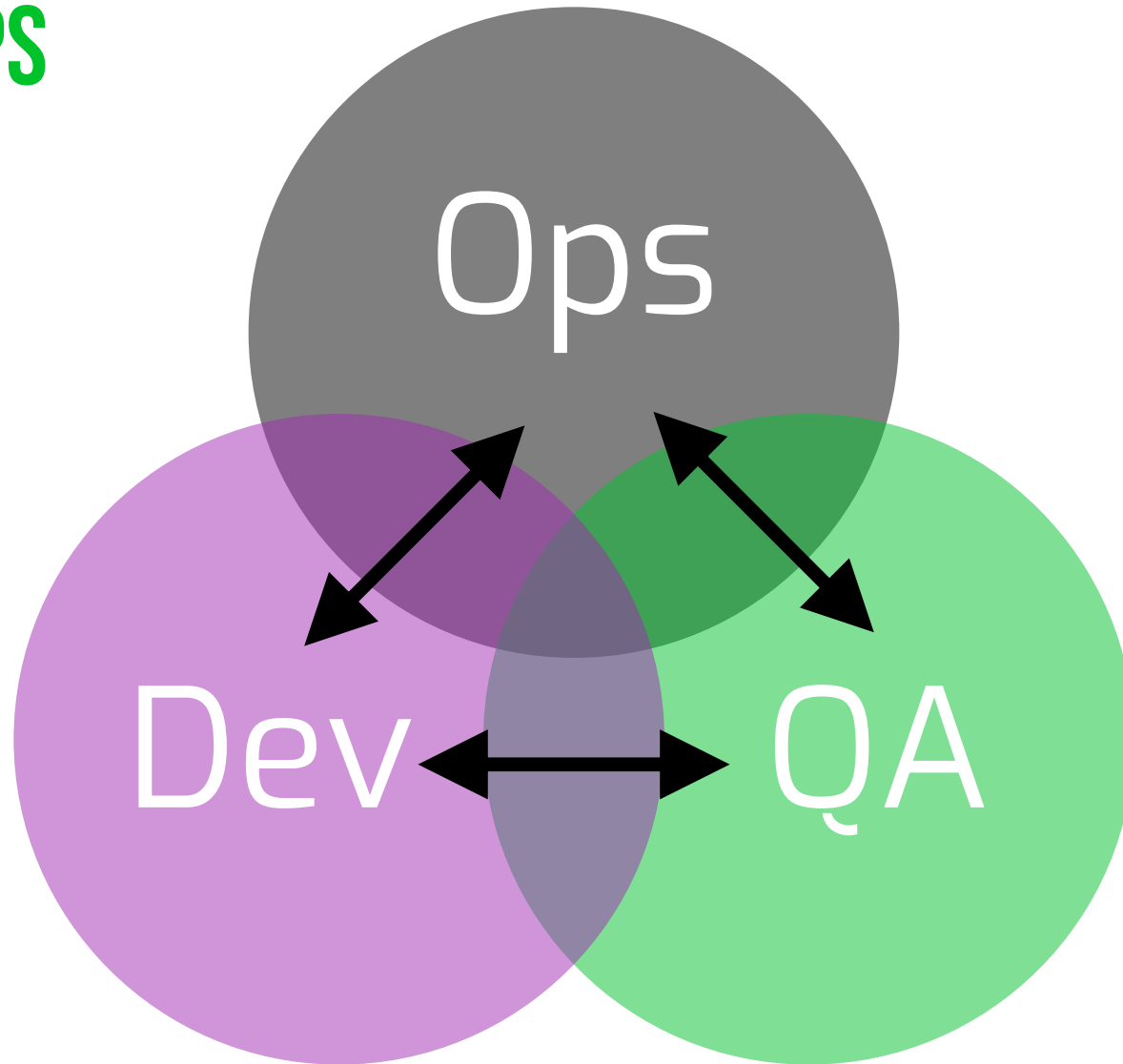
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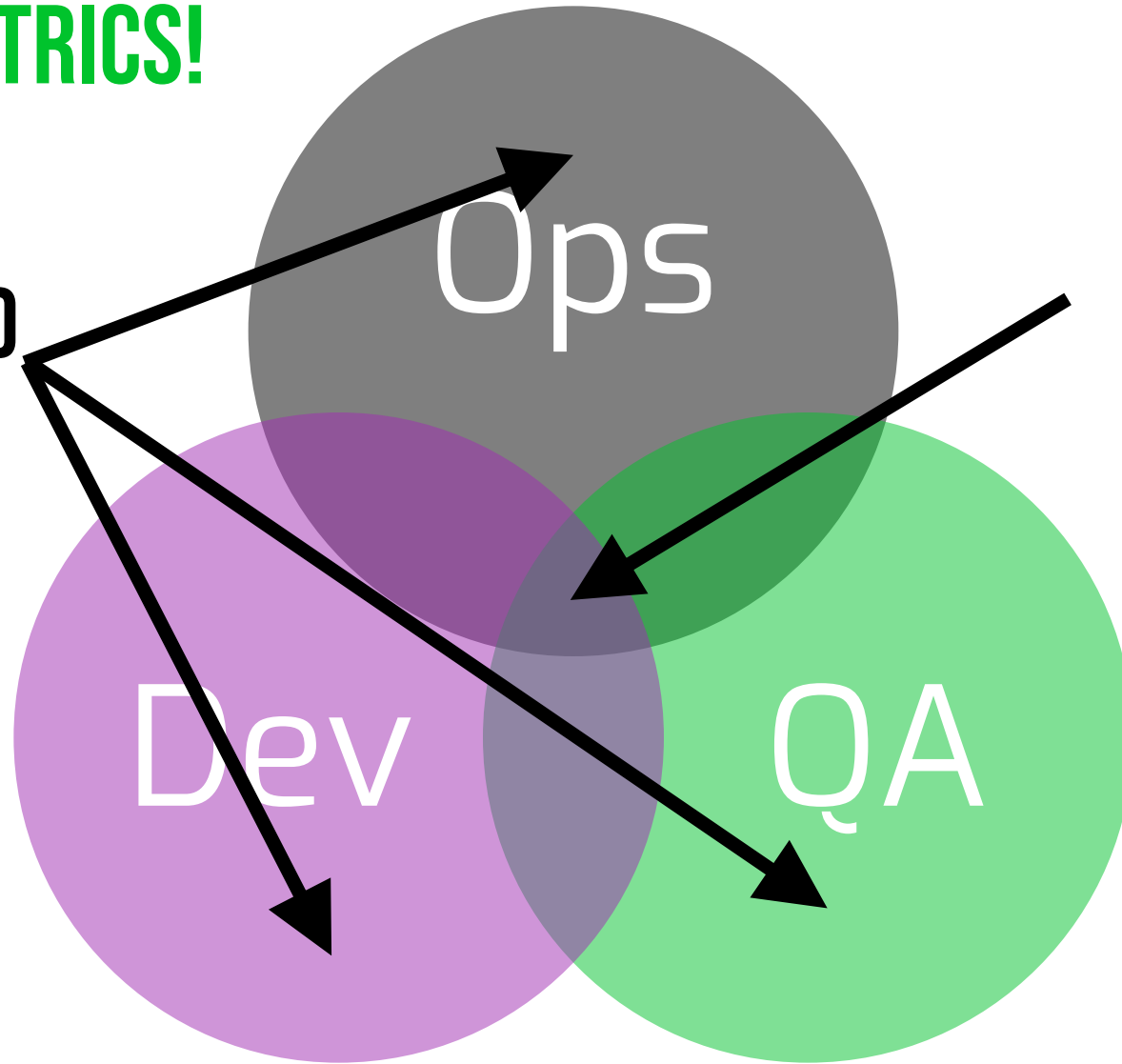
# THIS IS DEVOPS





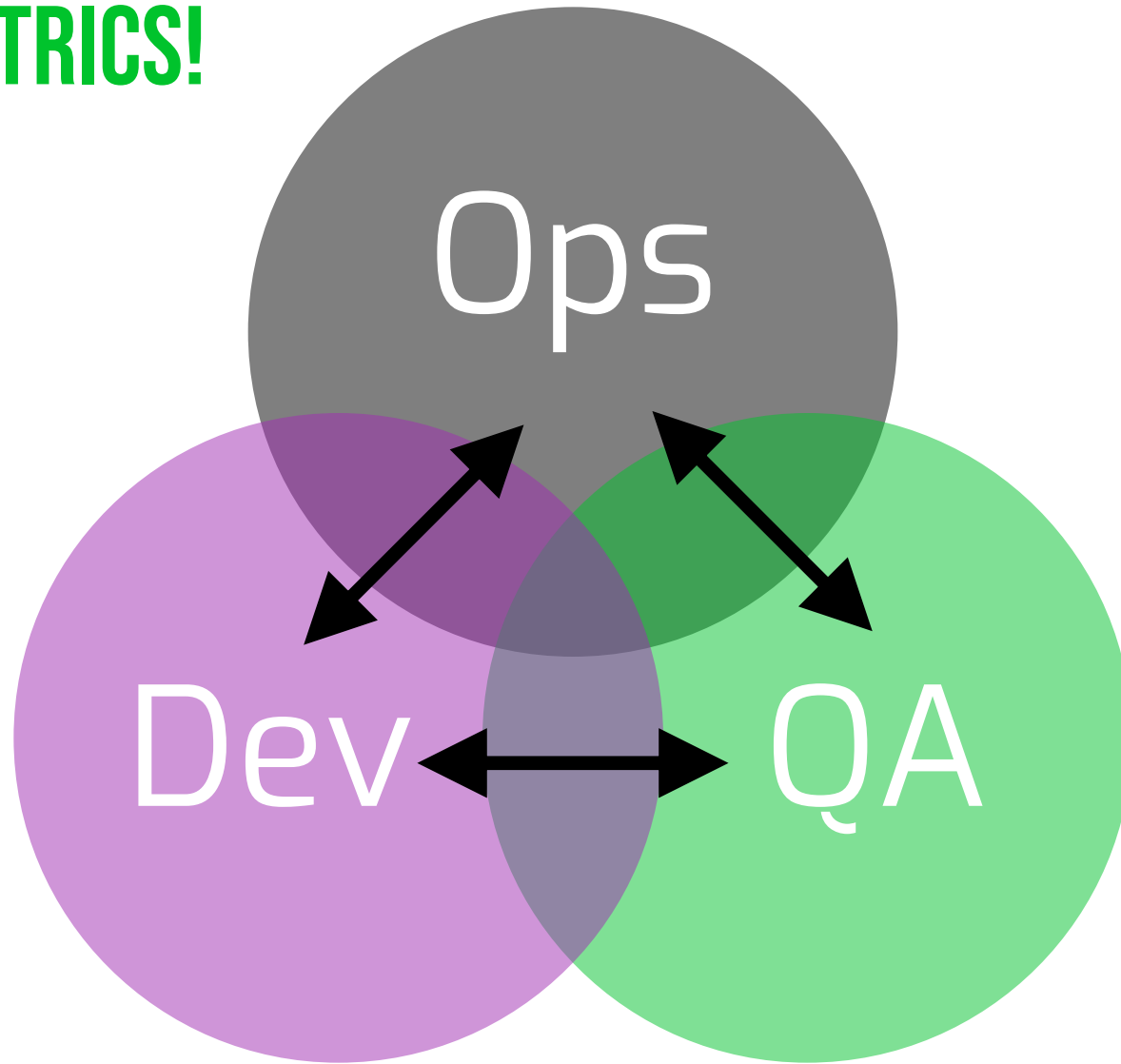
**SAME FOR METRICS!**

**SPECIALIZED  
METRICS**



**FLOW EFFICIENCY**

**SAME FOR METRICS!**



# HOW DO METRICS COLLABORATE?

<b>INFLUENCED AFFECTED</b>	<b>DEV</b>	<b>OPS</b>	<b>QA</b>
<b>DEV</b>		<ul style="list-style-type: none"><li>• Time to build</li><li>• Release pipelines stability</li><li>• Artifact replication topology</li></ul>	<ul style="list-style-type: none"><li>• False reopen count</li><li>• QA coverage</li></ul>
<b>OPS</b>	<ul style="list-style-type: none"><li>• Avg cost of customer</li></ul>		<ul style="list-style-type: none"><li>• Smoke tests quality</li></ul>
<b>QA</b>	<ul style="list-style-type: none"><li>• Test suite stability</li><li>• Incoming defect velocity</li><li>• Test execution time</li></ul>	<ul style="list-style-type: none"><li>• Time to create new QA lab</li></ul>	



# COOKING WITH METRICS



## METRICS CATEGORIZATION

Fresh  
125 mL

Leafy vegetables  
Cooked: 125 mL (½ cup)  
Raw: 250 mL (1 cup)

Fresh, frozen or  
canned fruits  
1 fruit or 125 mL (½ cup)

100% Juice  
125 mL (½ cup)

Bread  
1 slice (35g)

Flat breads  
½ pita or ½ tortilla (35 g)

Cooked rice,  
bulgur or quinoa  
125 mL (½ cup)

Cereal  
Cold: 30 g  
Hot: 175 mL (¾ cup)

Cooked pasta  
or couscous  
125 mL (½ cup)

Milk or powdered  
milk (reconstituted)  
250 mL (1 cup)

Canned milk  
(evaporated)  
125 mL (½ cup)

Fortified soy  
beverage  
250 mL (1 cup)

Yogurt  
175 g  
(¾ cup)

Kefir  
175 g  
(¾ cup)

Cheese  
50 g (1 ½ oz)



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# WHY?

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**ROI – IS THIS ACTIVITY IS THE RIGHT THING TO DO?**





**CONTINUOUS IMPROVEMENT**





TRUST

# SAMPLING

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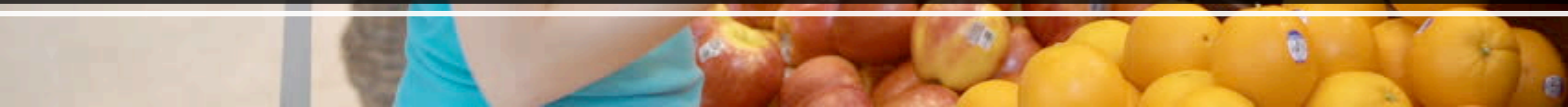
#DataDrivenDevOps

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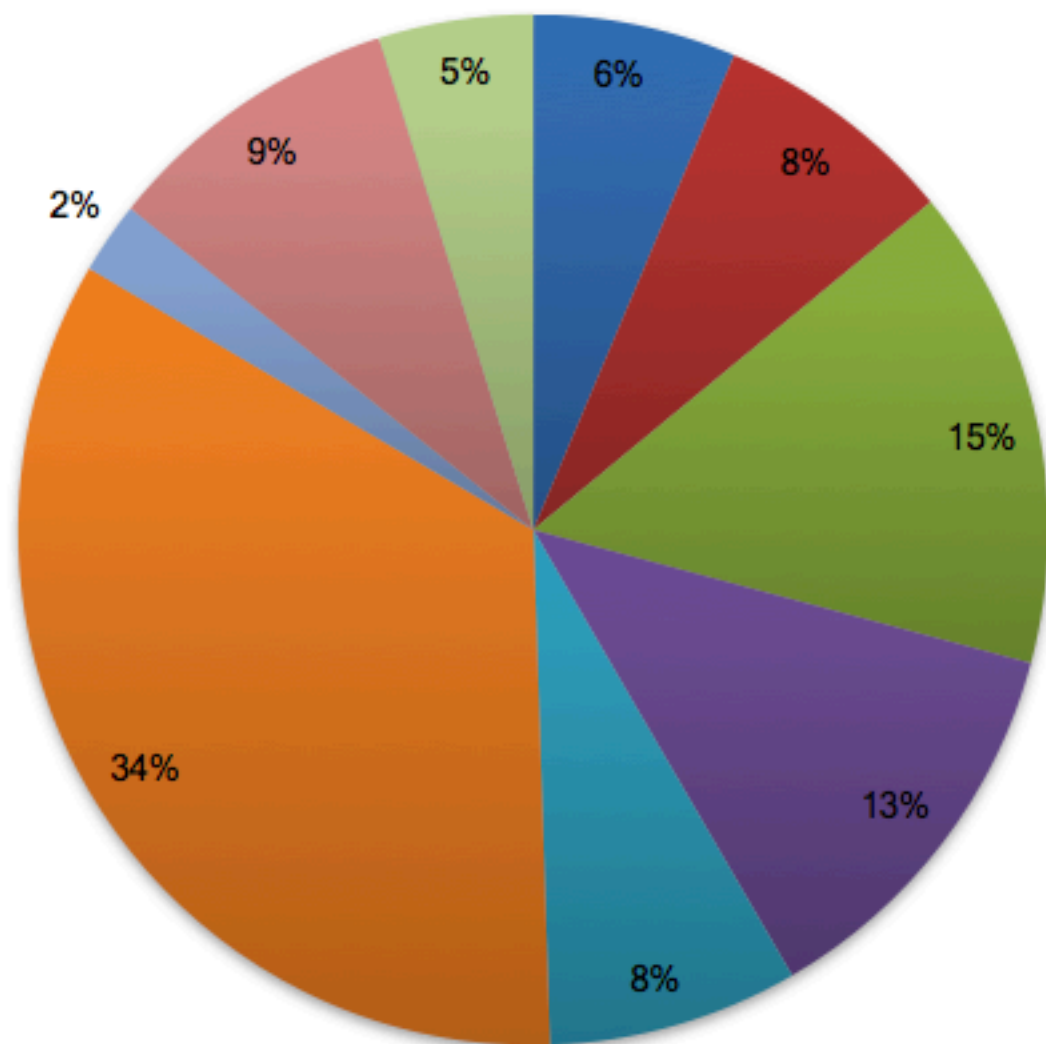


**COMPLETE SAMPLE**





## Engineering effort allocation



- Improve Eng. Velocity
- Decrease Customer MTTR
- Reduce TCO
- Big Feature A
- Fulfull customer and field commitments
- Keep the lights on
- Corporate Initiatives
- Quality Improvements
- Uncategorized + Research for Future Releases



**REPRESENTATIVE SAMPLE**

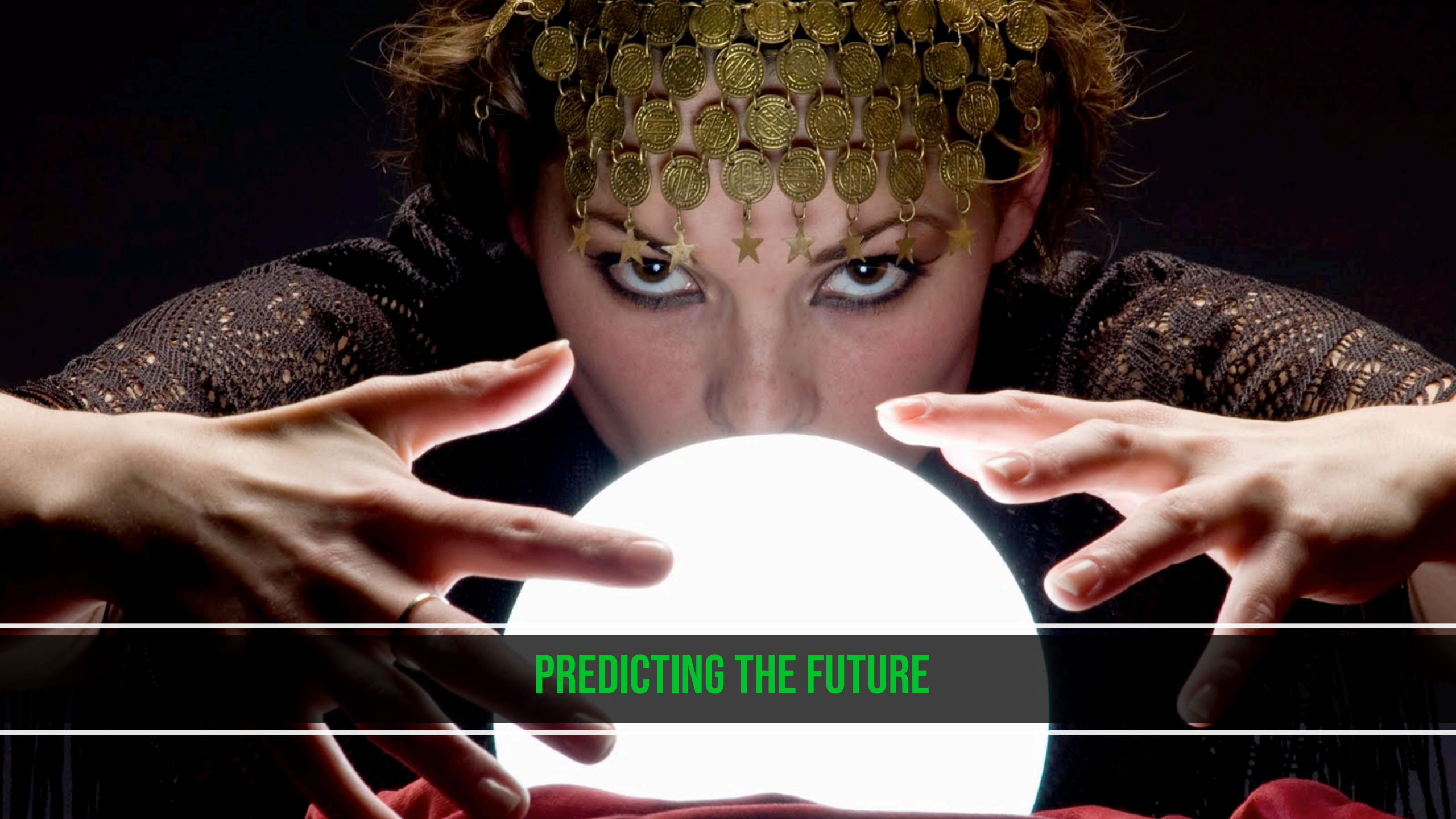
# HOW EFFECTIVE ARE WE?

 Samples are good enough for that

 As long as they are representative

 Need to be collected over time





**PREDICTING THE FUTURE**





MEET SCRUM TEAM "AVENGERS"

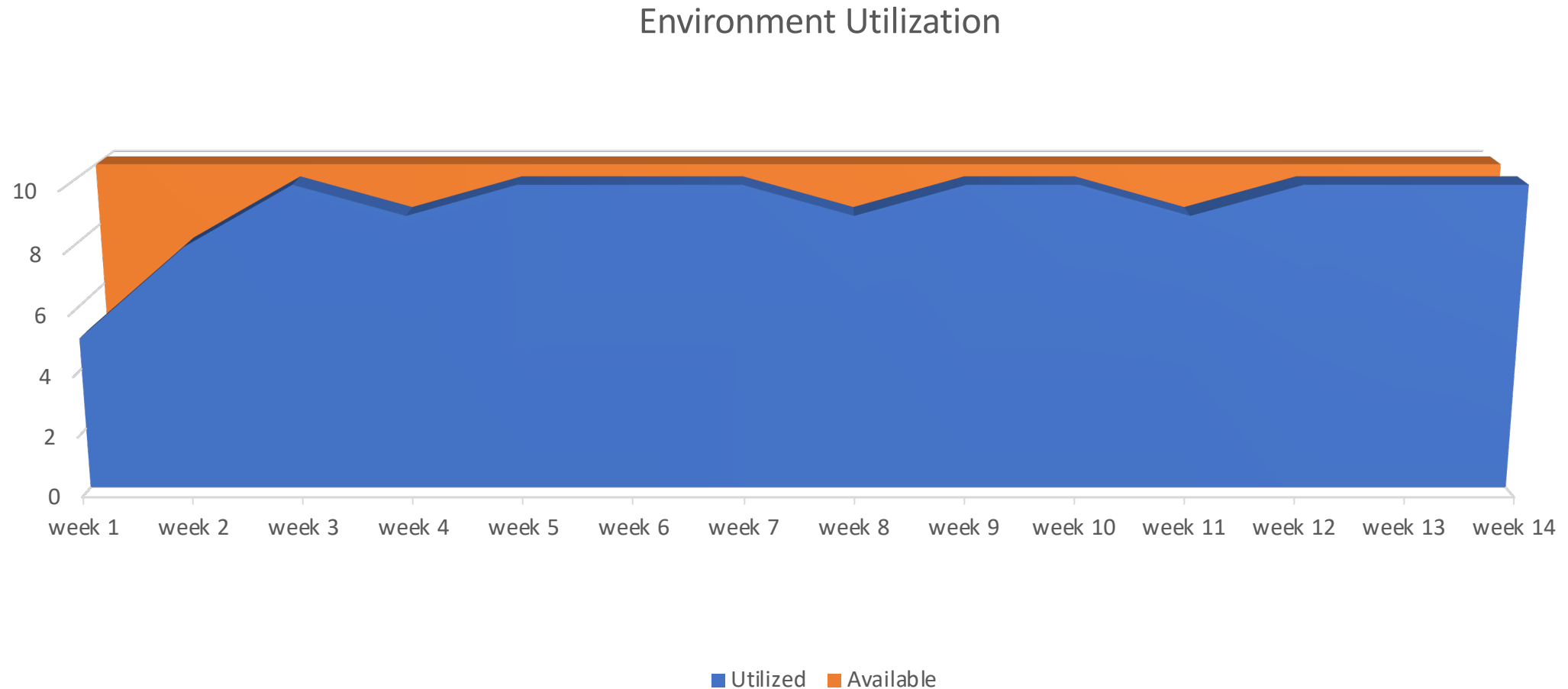
# ANECDOTES FROM THE DAILY SCRUM STAND-UPS

“ We never get enough testing environments from Ops, QA is suffering.

Scrum team “Avengers”



# LET'S GATHER SOME DATA!



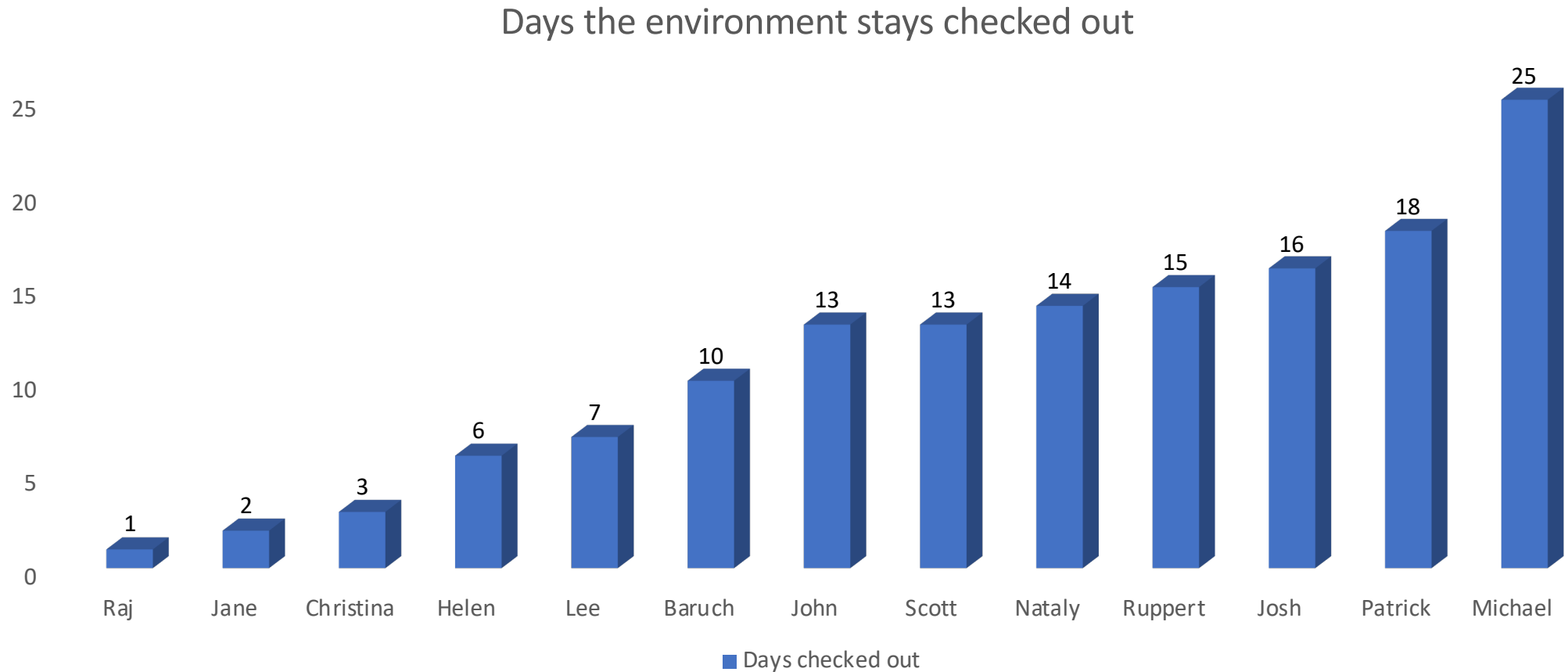
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# THAT DOESN'T LOOK GOOD! BUT WHY?



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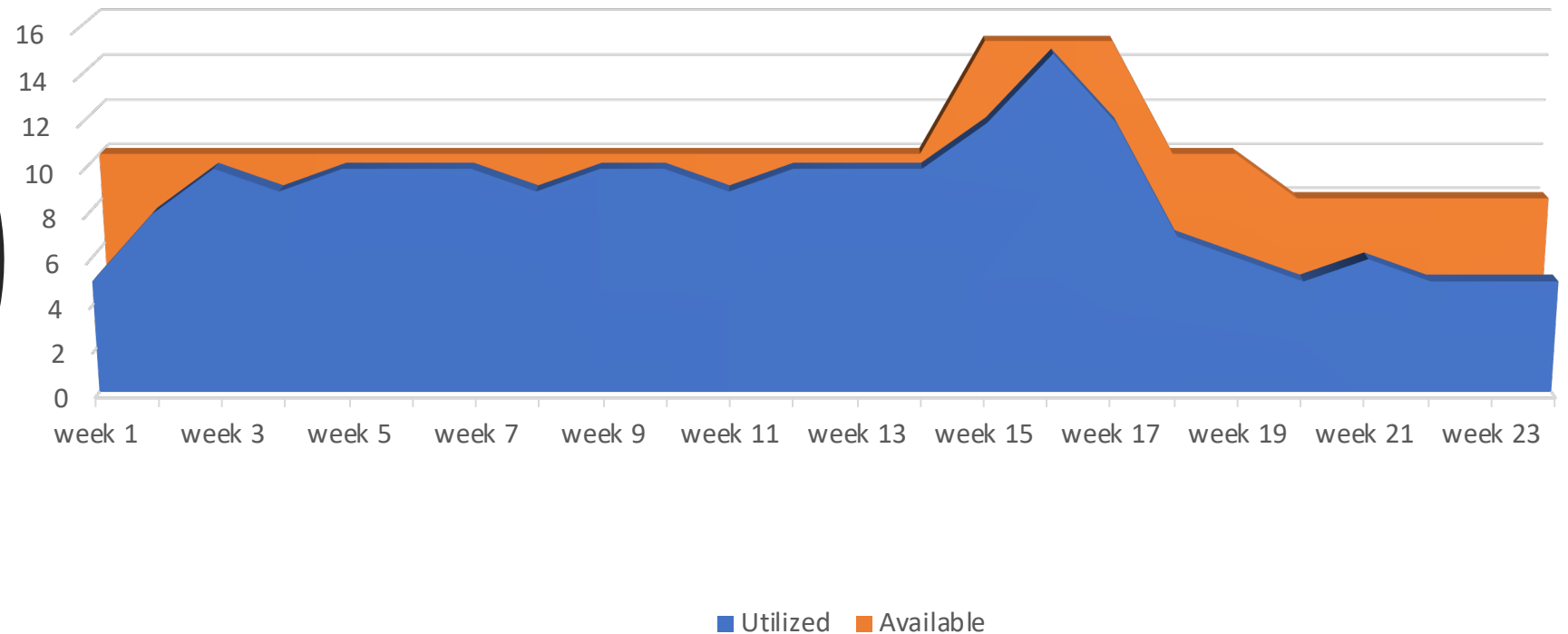
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CONTINUOUS  
IMPROVEMENT

## Environment Utilization



# ANECDOTES FROM THE DAILY SCRUM STAND-UPS

“ Tests are failing, because the test suite is not stable, QA makes our builds fail without reason.

Scrum team “Avengers”

# LET'S GATHER SOME DATA!

Create Issue

Configure Fields

Project\*

Artifactory Binary Repository ...

Issue Type\*

Test Suite Stability

?

Summary\*

Component/s

Start typing to get a list of possible matches or press down to select.

Description

Style B I U A A Link List Bulleted List Emoji +

?

Priority

Normal

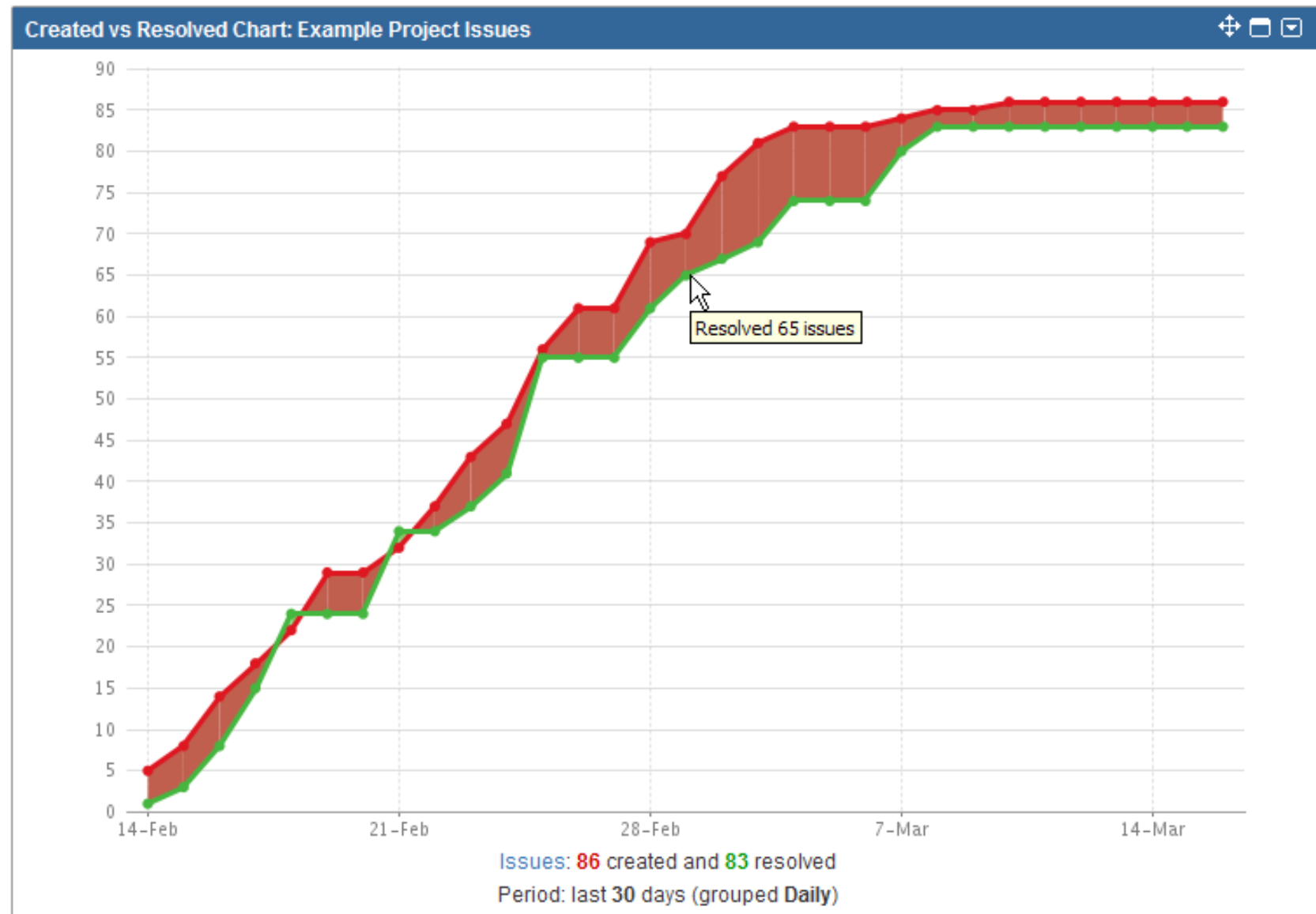
?

Create another

Create

Cancel

## RETURN ON INVESTMENT



# ANECDOTES FROM THE DAILY SCRUM STAND-UPS

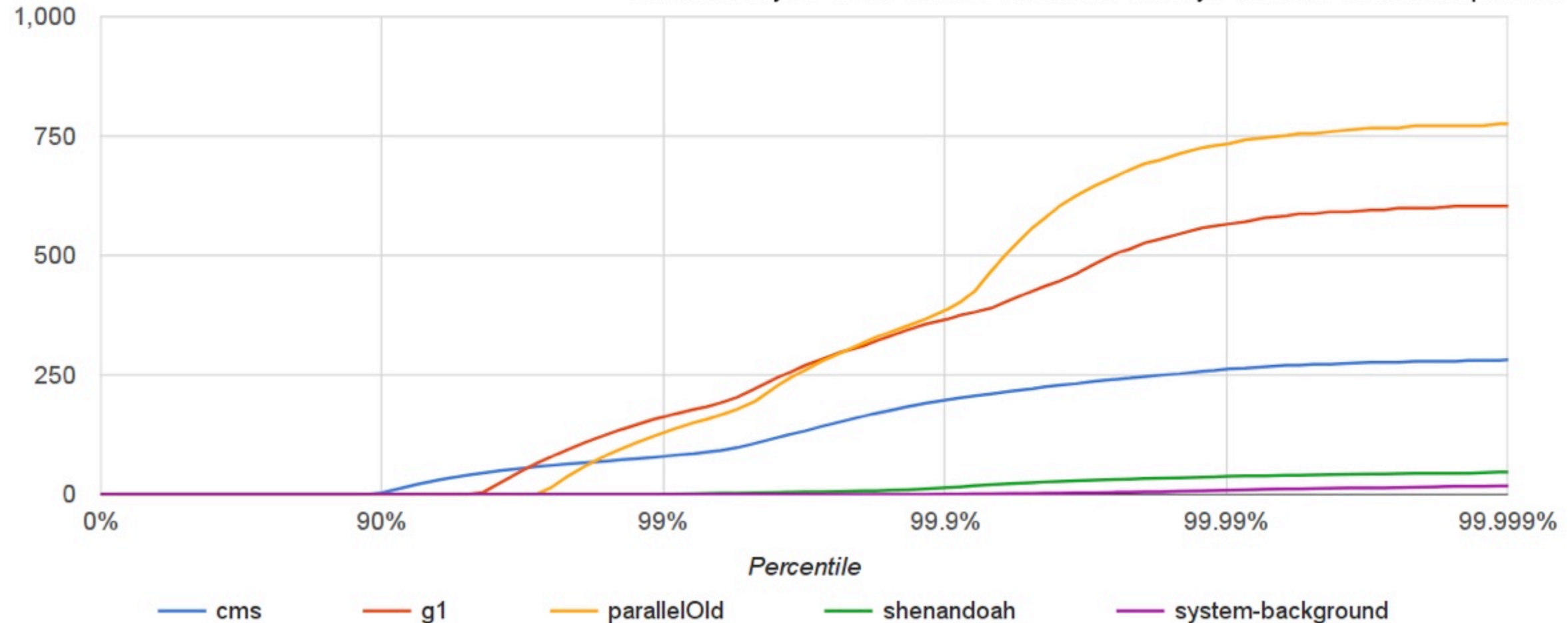
“ Those developers want to deploy new GC, its tons of work, without any profit.

Scrum team “Avengers”

# LET'S GATHER SOME DATA!

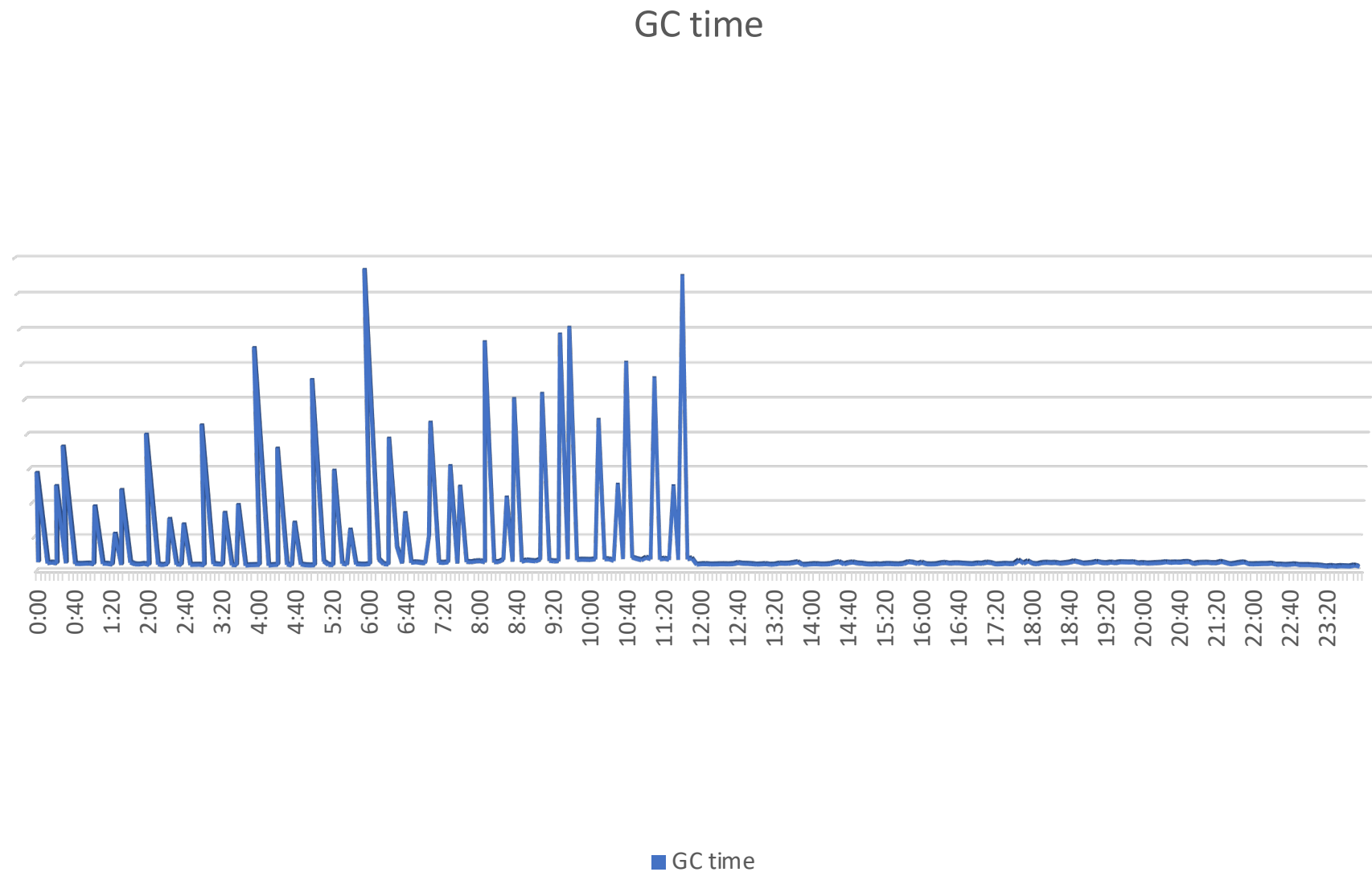
**Latency by Percentile Distribution**

1x2x2 4.0 GHz i7-4790K, Linux x86\_64 4.4  
jbb15, preset IR = 4K, 10 minutes, 20 GB heap, ~4 GB LDS  
shenandoah/jdk9 (2017-05-18), +UseTHP, +AlwaysPreTouch, +DisableExplicitGC





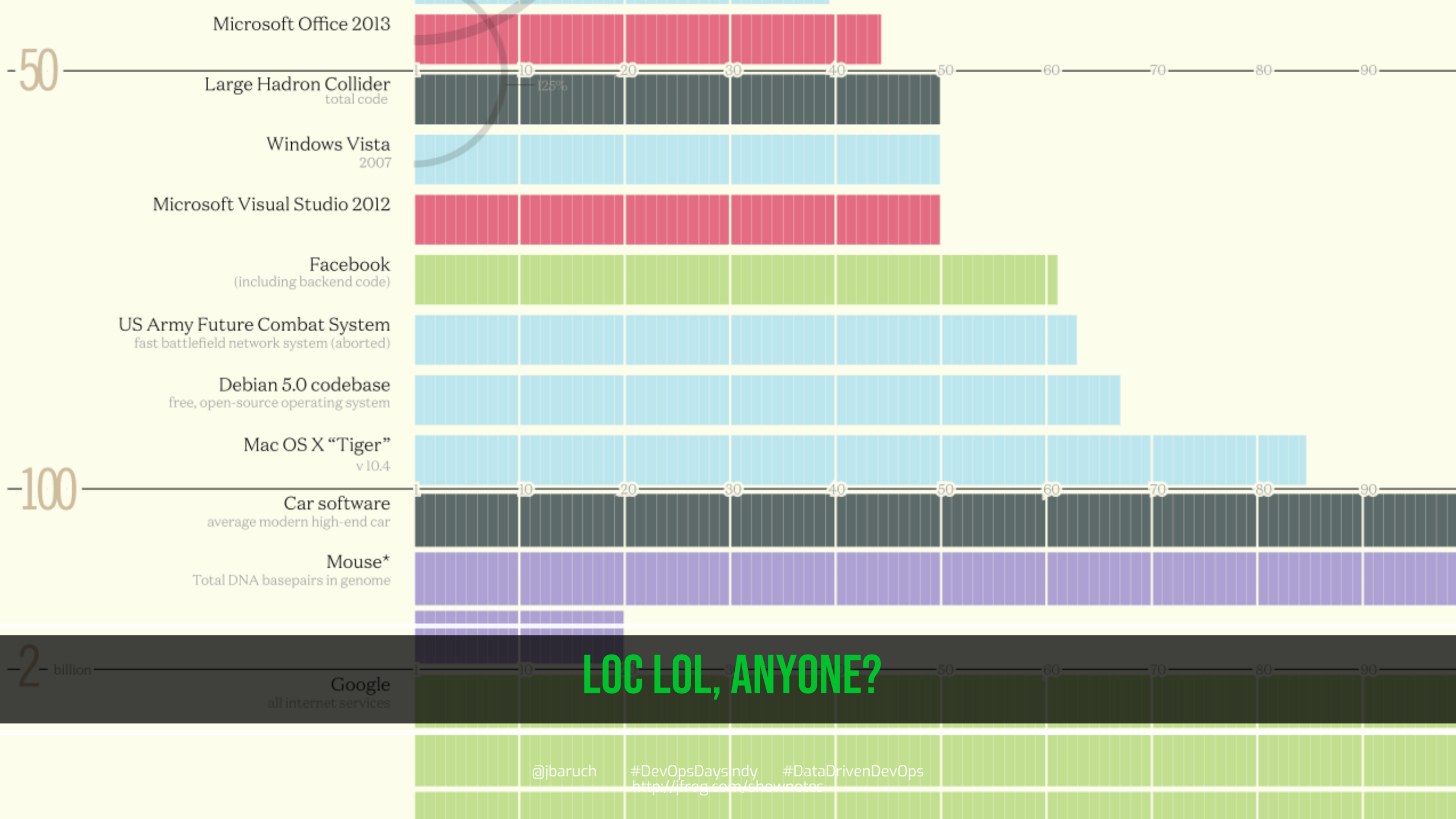
## TRUST AND PREDICTABILITY



# DOS AND DON'TS



**MEASURING THE RIGHT THING**

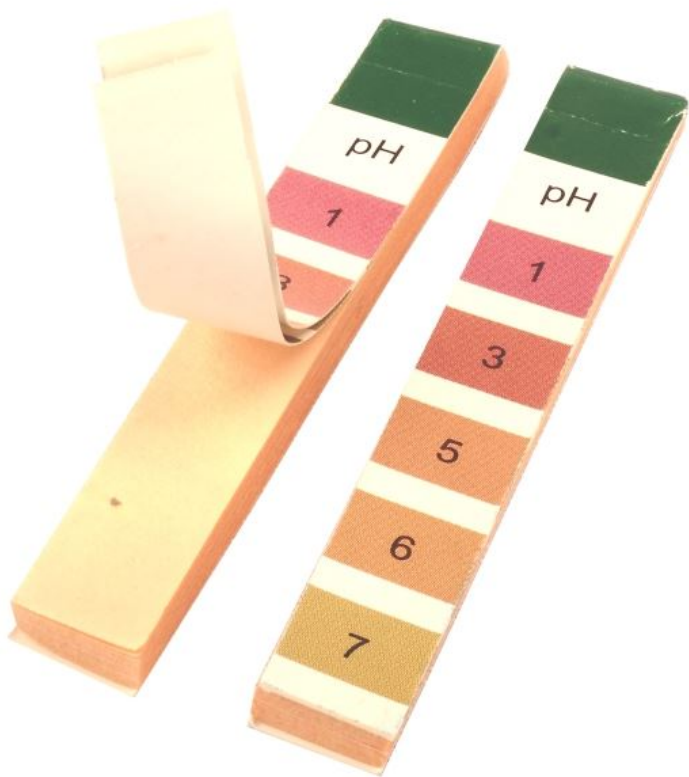


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**AVOID DATA OVERLOAD**





**USE RELIABLE DATA**





**"MEDIUM" IN BRAZIL**



**"MEDIUM" IN RUSSIA**

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**COMMON VOCABULARY IS IMPORTANT**

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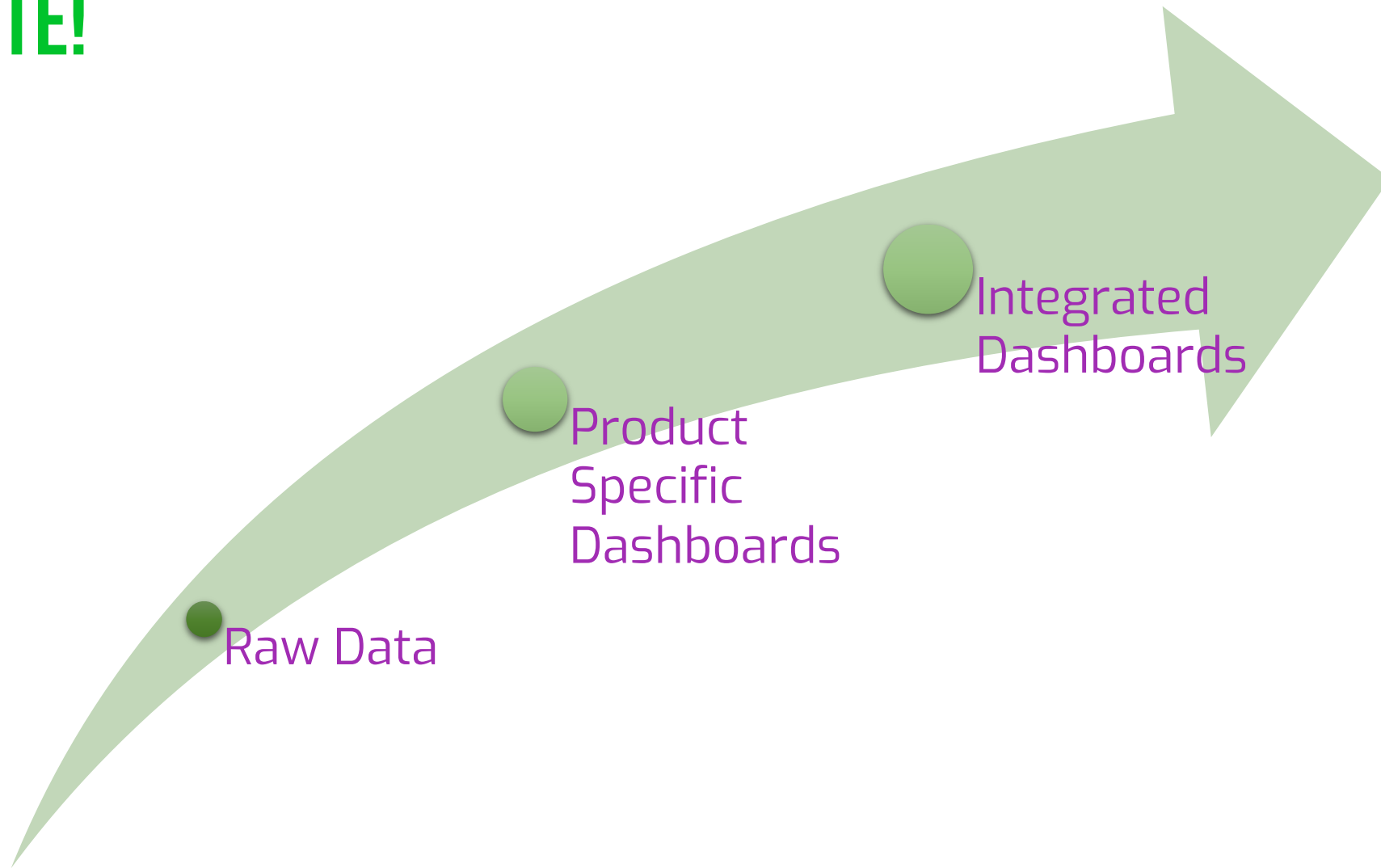
**METRICS  
GENERATE  
INCENTIVES, BE  
AWARE!**





**TWEAK AS YOU GO**

# ELEVATE!



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# demo-application

Time Range:

Last Year

Show Builds:

step2-create-docker-image-te... X

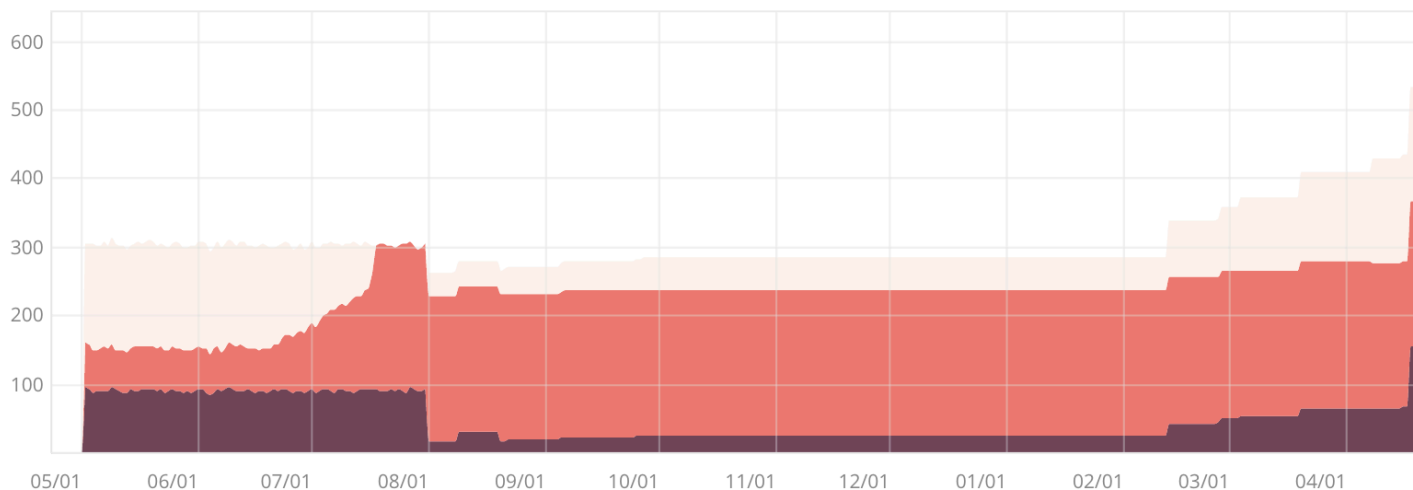
Status:

All

Actions

Last time refreshed: Tue Apr 23 2019 17:45:33 -0700 GMT

## Build Runs Promotion



default Staged Released

Apr 23 2019

Stage	Build	Total Run... %
>	Released	157
>	default	156

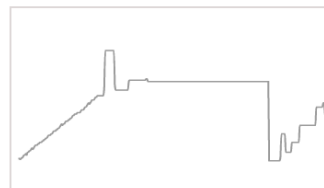
691

Total commits



00:01:23

Average build duration



45

Total dependencies



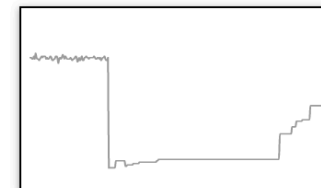
908.72MB

Average build storage



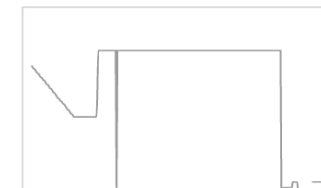
99.36%

Average build promotions

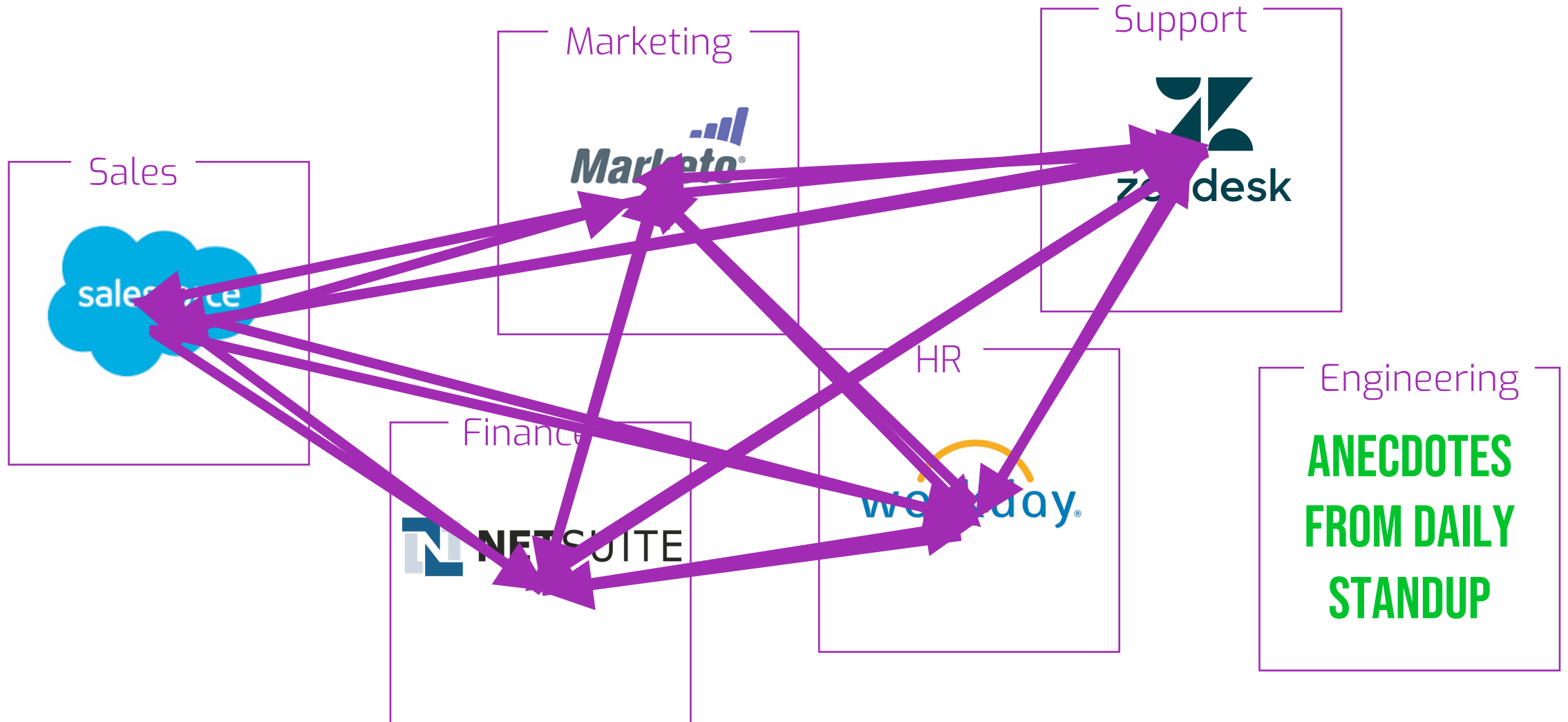


238

Average vulnerabilities count



# HOW DEPARTMENTS MEASURE



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# STEP INTO DATA-DRIVEN LIFE



Removes blame game



Builds accountability and trust



Creates common base for discussion



Enables DevOps

# Q&A AND TWITTER ADS

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 <http://jfrog.com/shownotes>