

DevOps & Software Delivery in a Global Pandemic





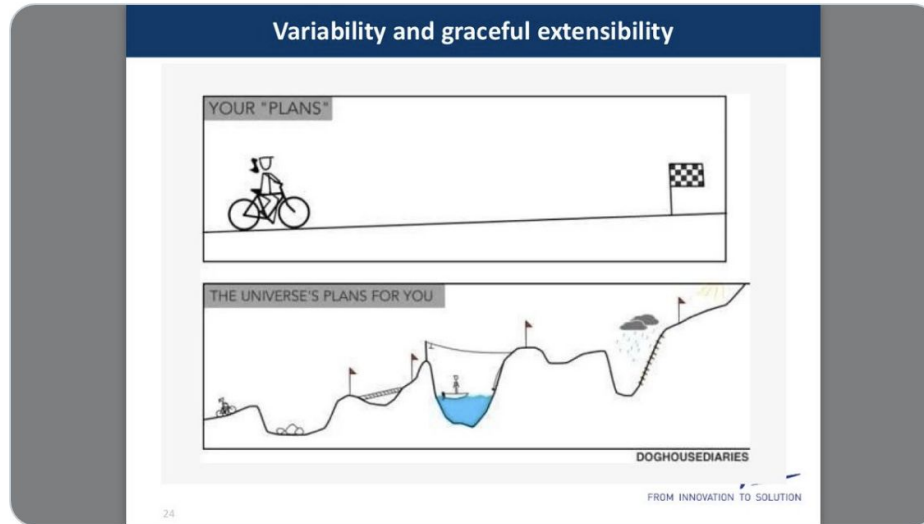
John Allspaw

@allspaw

Normal 0%



Work-as-imagined versus work-as-done



3:00 AM · Apr 28, 2016 · Twitter for iPhone

performance described
VS
performance derived



Jeremy Meiss

Director, DevRel & Community



 @IAmJerdog

2 million

jobs/day

44,000+

orgs

** 40k in 2019*

160,000+

projects

** 150k in 2019*

1,000x

Larger than surveys

Four classic metrics

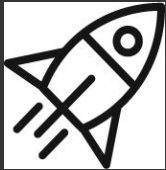
Deployment
frequency

Lead time
to change

Change failure
rate

Recovery
from failure
time

CI/CD Benchmarks for high performance



Throughput

At will



Duration

<10 minutes



Success Rate

> 90%



Mean Time to Recovery

<1 hour

The Data



Photo by: Matthew Henry

Throughput

Percentile	2020 Value	2019 Value
5p	0.03	0.03
50p	0.70	0.80
90p	16.03	13.00
95p	32.125	25.47
Mean	8.22	5.76

***Most teams are not
deploying dozens of times
per day***

Image by Pawan Kolhe from Pixabay



Duration

Percentile	2020 Value	2019 Value
5p	12 sec	10 sec
50p	3.96 min	3.38 min
90p	21.35 min	19.18 min
95p	34.01 min	31.73 min
Mean	24.6 min	26.76 min



Success Rate

Percentile	2020 Value	2019 Value
5p	0%	0%
50p	61%	60%
90p	100%	100%
95p	100%	100%
Mean	54%	54%



Photo by Brett Sayles from Pexels

Recovery Time

Percentile	2020 Value	2019 Value
5p	2.06 min	2.83 min
50p	55.11 min	52.5 min
90p	39 hours	47 hours
95p	3.4 days	3.93 days
Mean	14.85 hours	16.61 hours

Recovery Time

Percentile	2020 Value	2019 Value
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50p	55.11 min	52.5 min
90p	39 hours	47 hours
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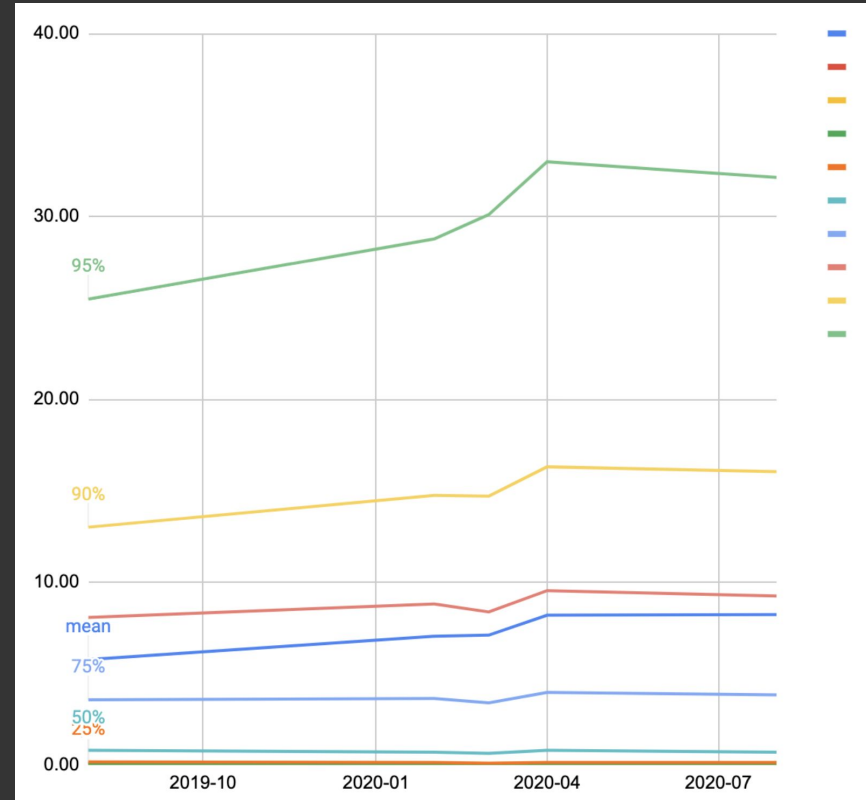
The Insight



2020 has been
a year.

Throughput

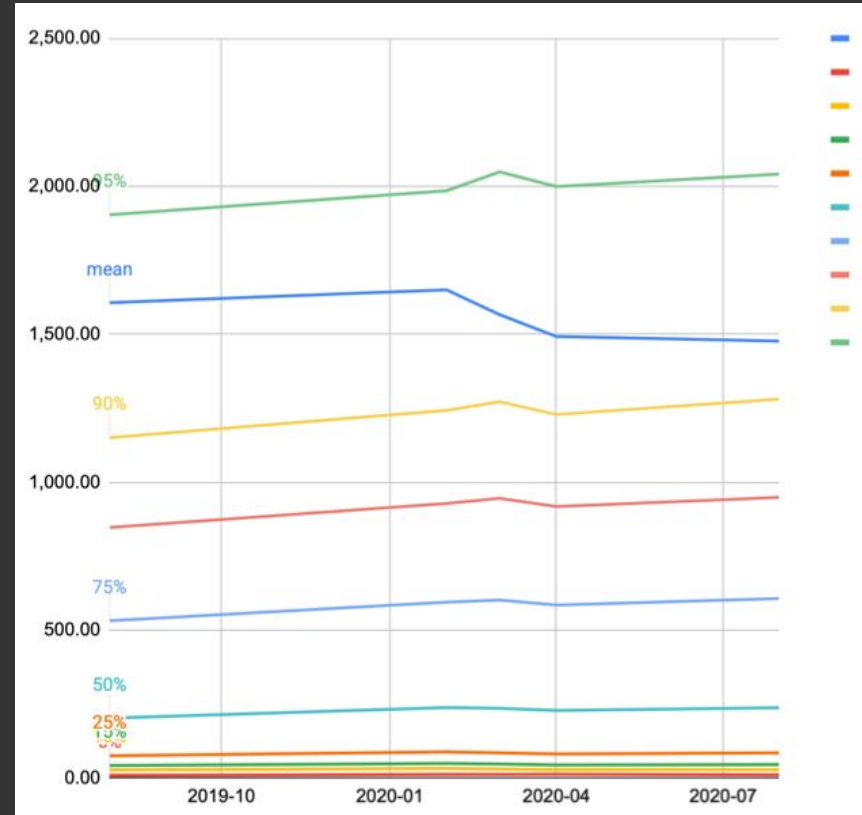
Throughput in a global pandemic



Peak Throughput was in April 2020

Duration

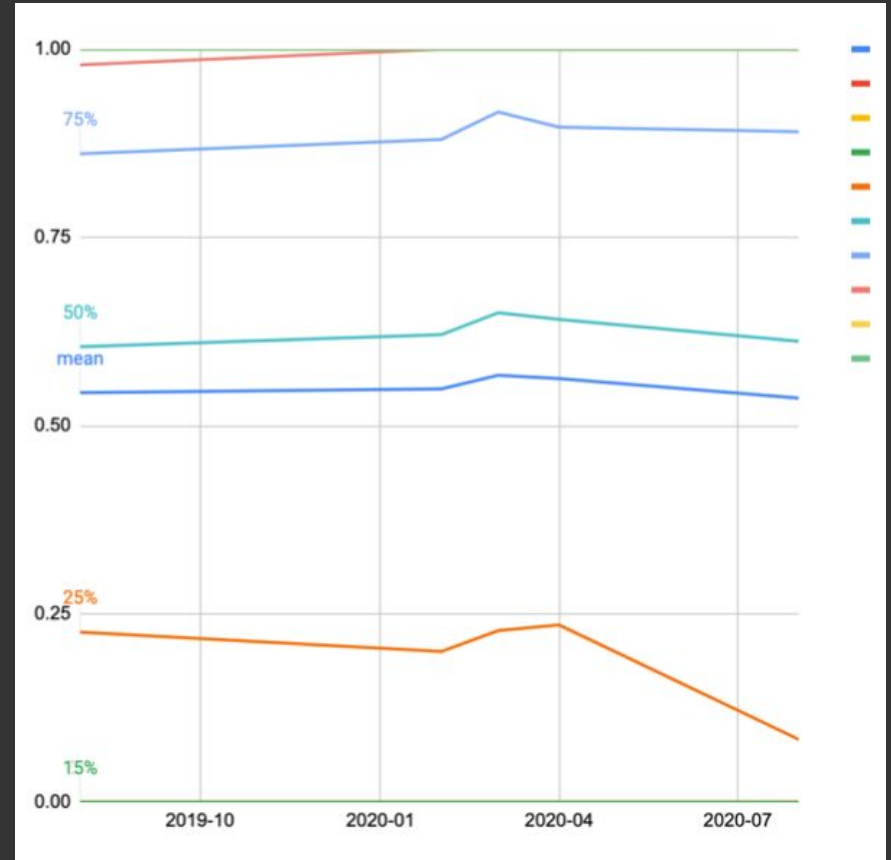
Duration in a global pandemic



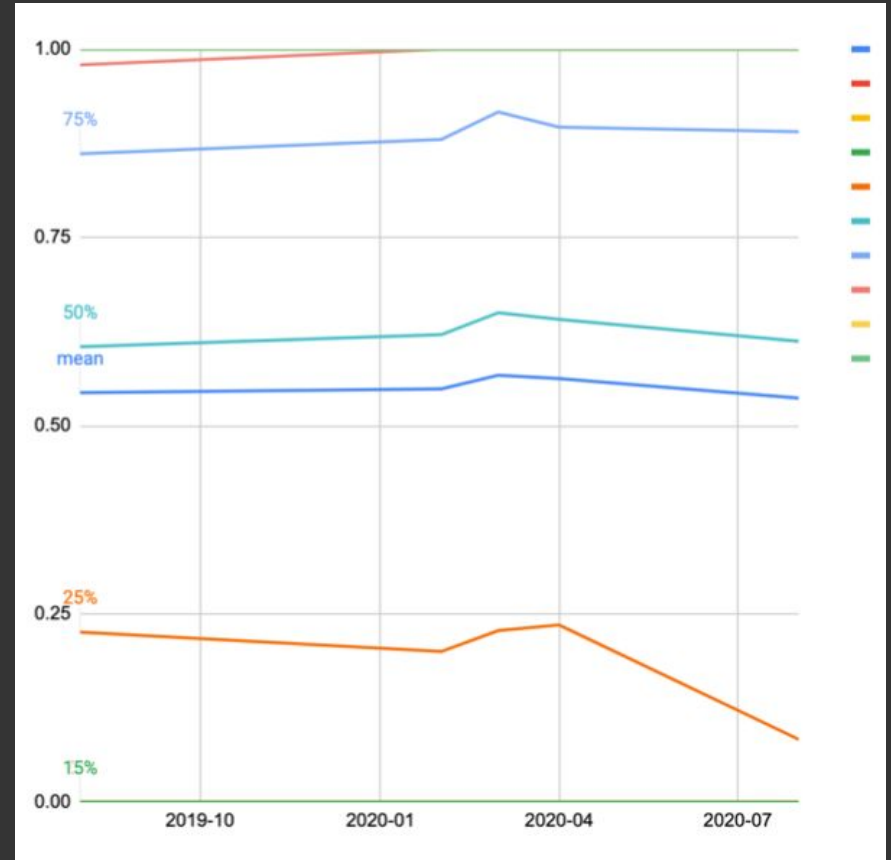
Hypothesis: more tests written in March, driving up Duration. In April, a concerted effort on optimization

Success rate

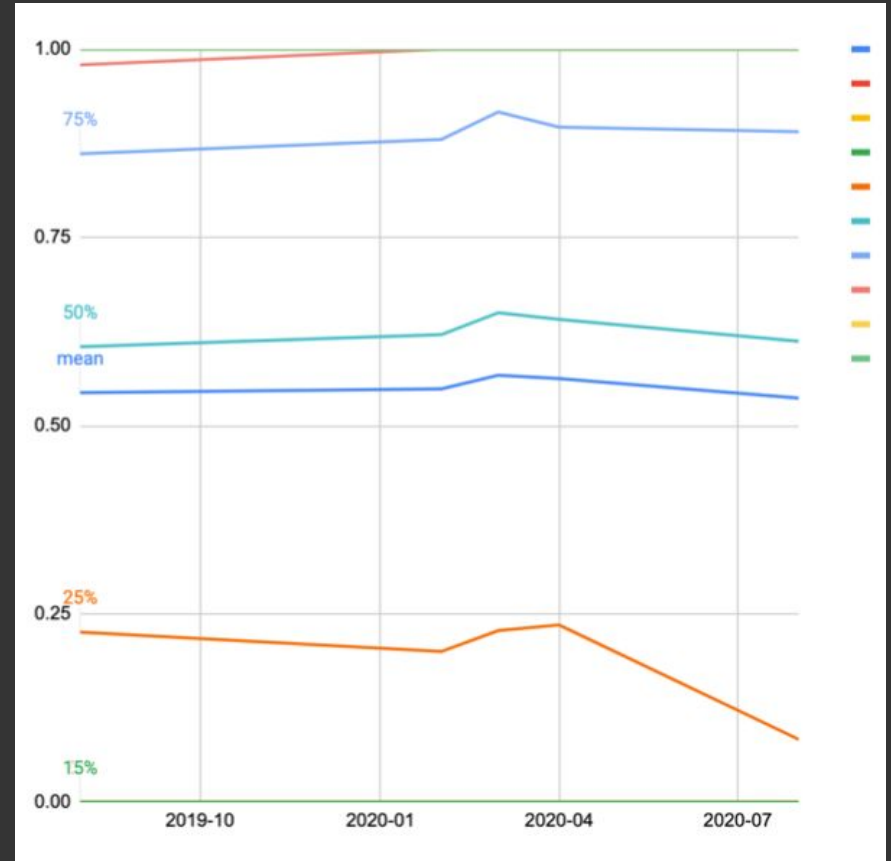
Success rate in a global pandemic



Success rate in a global pandemic



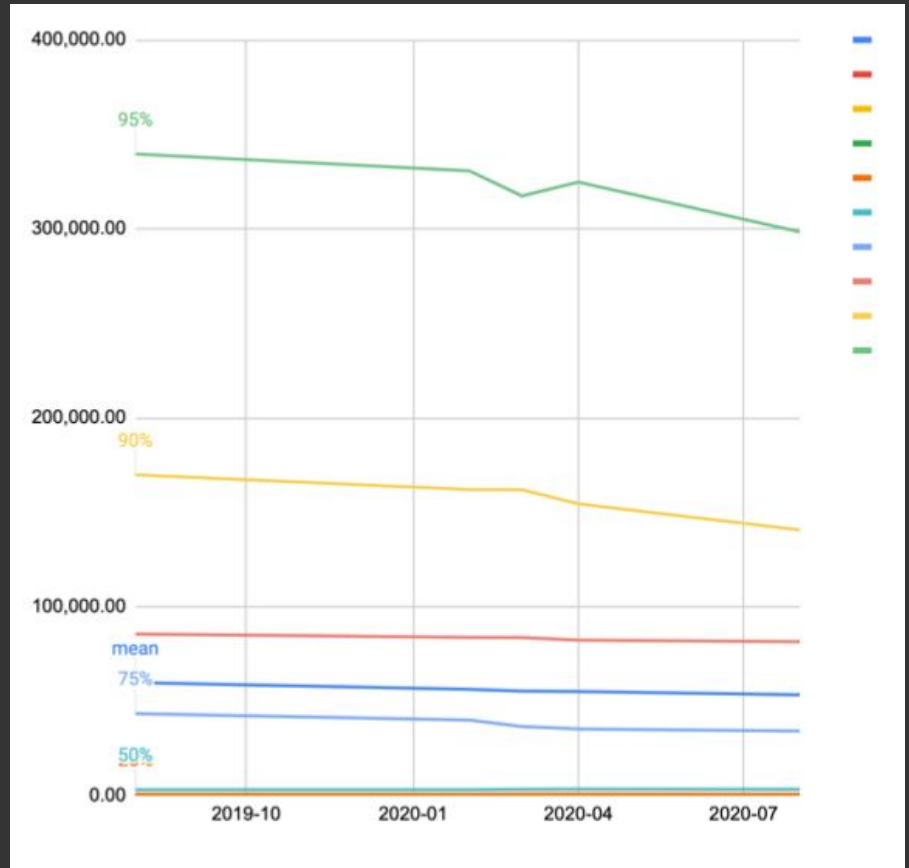
Success rate in a global pandemic



**Hypothesis: people working hard
on core business stability**

Recovery Time

Recovery time in a global pandemic



**Hypothesis: few distractions*
working at home**

Things that make you go 🤔

Branch information

No significant change in default
branch from **master**... yet.

Success Rate on default branch
higher than on non-default

Duration on default branches *faster*
at every percentile

Recovery Time lower on default
branches at every percentile

**What development
practices definitively work?**

Success Rate does not correlate
with company size

Duration is longest
for teams of one

Recovery Time decreases with
increased team size (up to 200)

Performance is better
with >1 contributor

**Software is
collaborative**

**“Don’t deploy on Friday” is
not a thing.**

“Don’t Deploy on Friday” is not a thing

- 70% less **Throughput** on weekends
- 11% less **Throughput** on Friday (UTC)
- 9% less **Throughput** on Monday (UTC)

Full Report



<https://circle.ci/ssd2020>

Thank you.