SRE by Influence, not Authority

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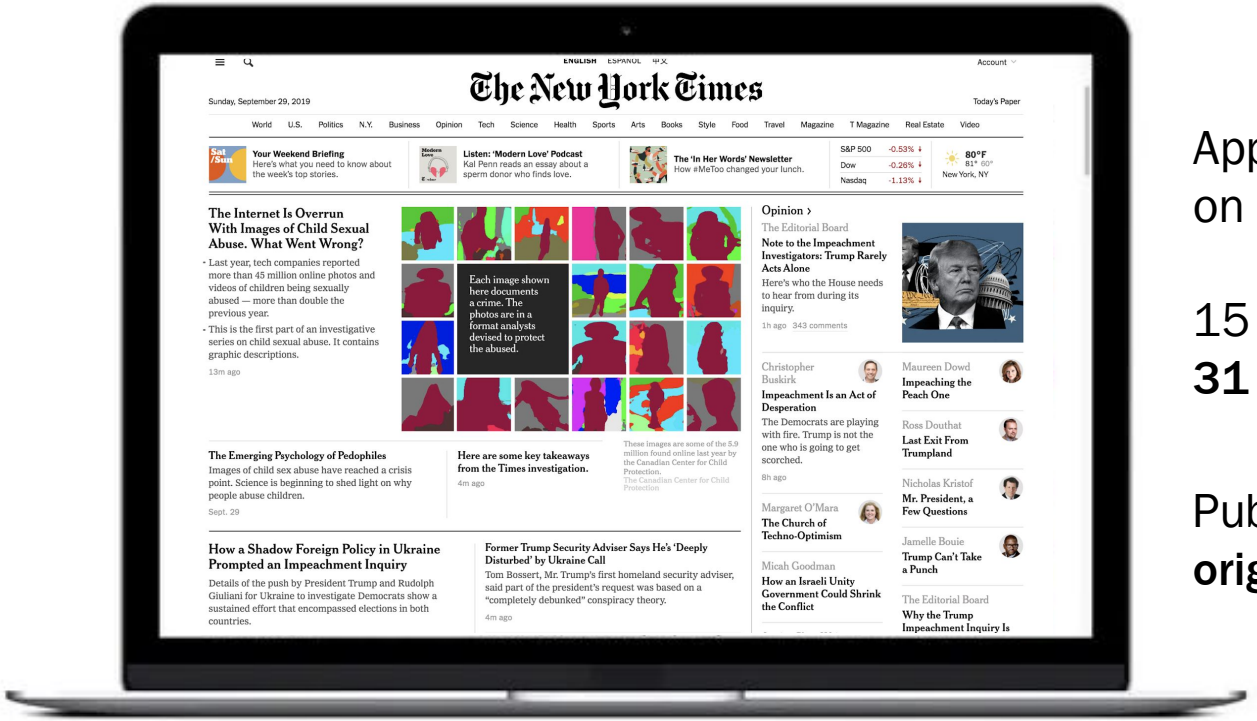
The New York Times | Delivery Engineering

Agenda

- Who We Are
- How We Got Here
- Case Study: Midterms Elections Readiness

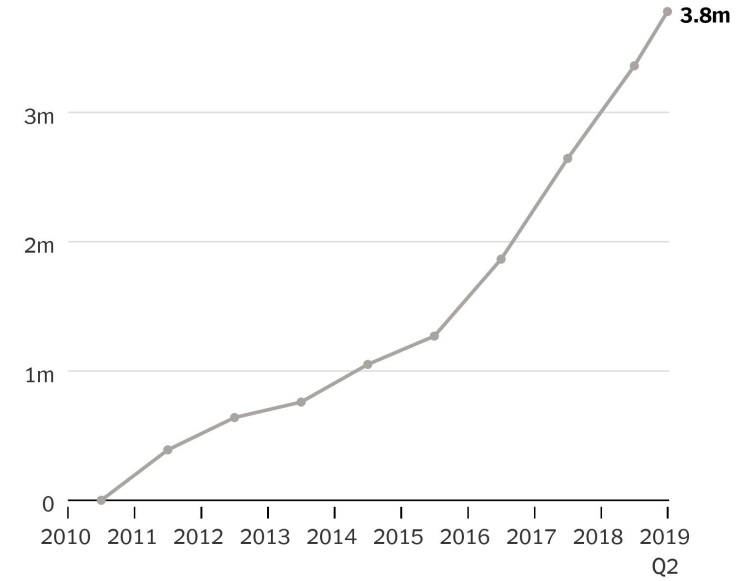


Appx **1,600 journalists** on staff

15 bureaus in the U.S and **31 international bureaus**

Publish around **250 pieces of original journalism each day**

Digital-only Subscriptions to The New York Times



Includes digital-only news, Crossword and Cooking subscriptions

By The New York Times Company

As of Q2 2019, The New York Times has 4.7 million total paid subscriptions of which **3.8 million are digital-only**.

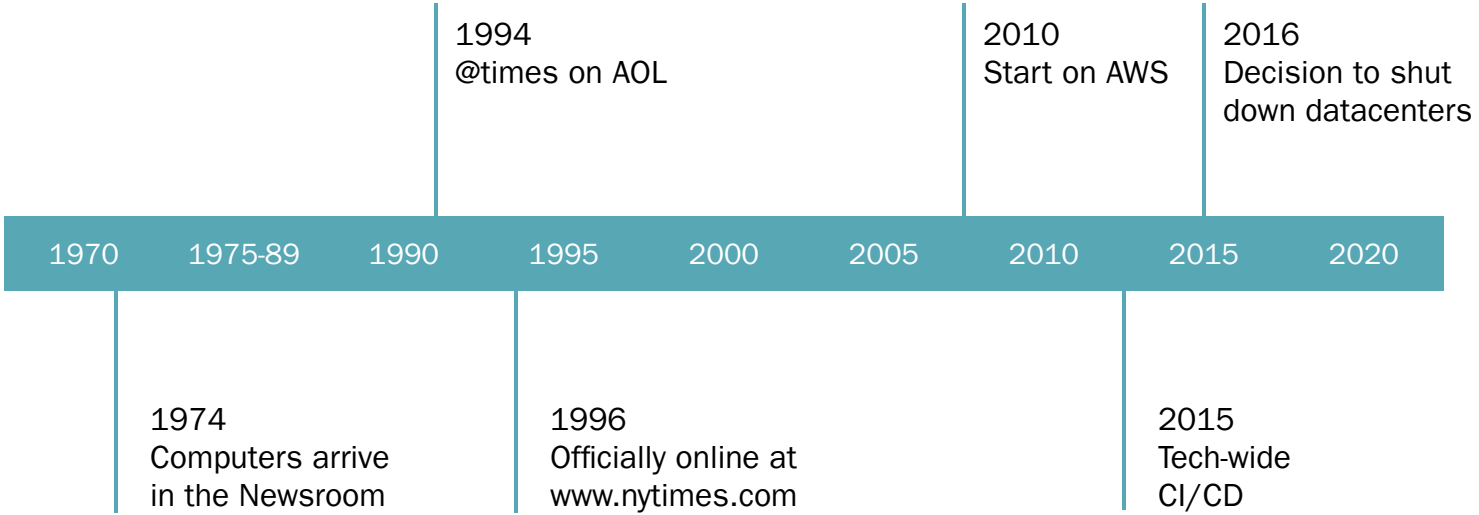
Our Technology Today

500+ in Technology

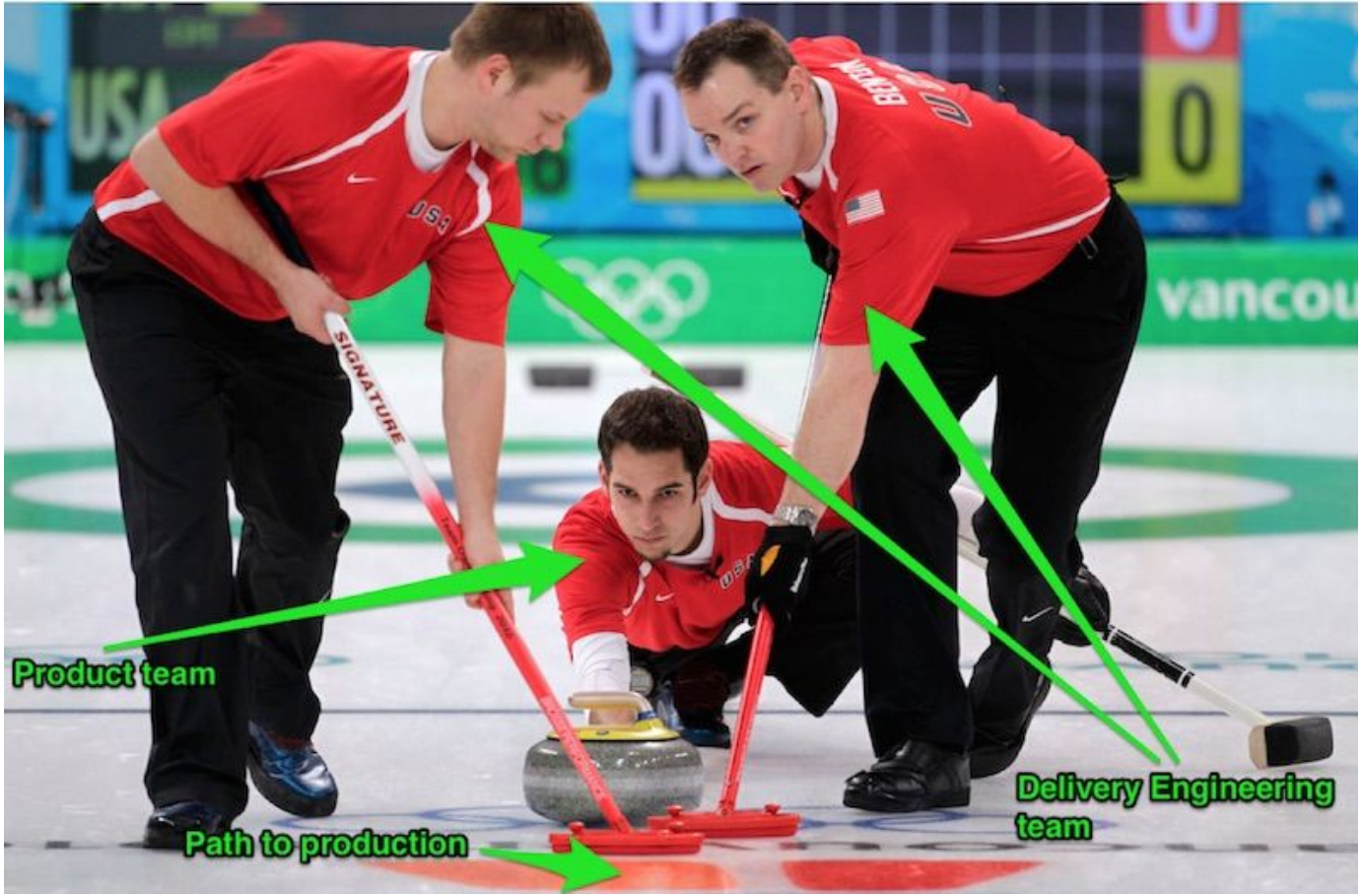
- Content Management and Publishing Systems
- Engagement Experiences, like Personalization and Comments
- Web and Mobile Platforms
- e-Commerce, Brand and Marketing
- Advertising Technology
- Data Analytics
- Customer Care Platforms
- Information Security and Compliance
- New Ventures like Games, Parenting, and Cooking

How did we get here?

Abridged History of NYT on the Internet



Formation of Delivery Engineering

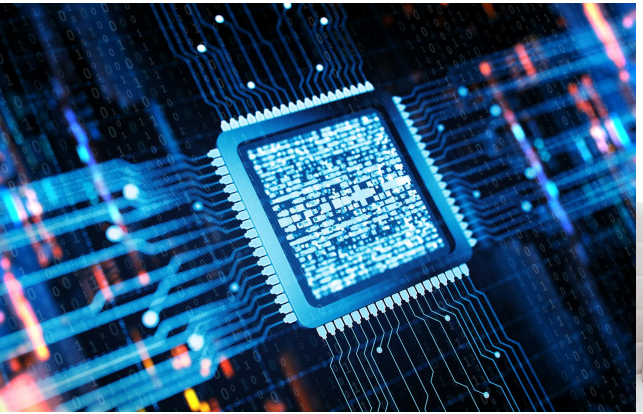


From Greg Dziemidowicz's blog "Delivery Engineering Team"

“Delivery engineering team enables others to deliver business value faster.”

From Greg Dziemidowicz’s blog “Delivery Engineering Team”

What We Do



Tooling & Automation

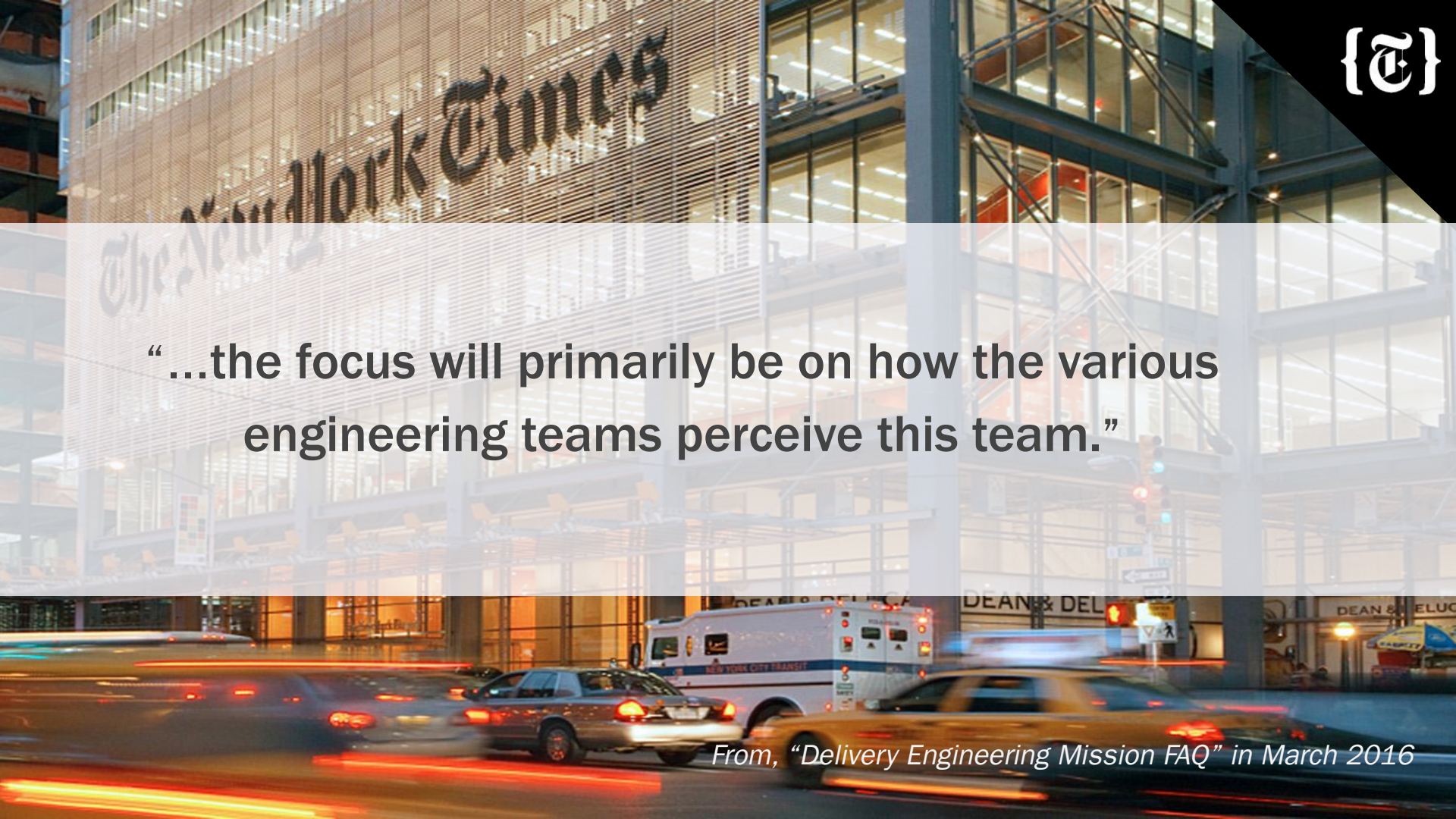
Engagements

Process & Guidance

What We Are Not

- Infrastructure
- Networking
- Systems

The New York Times
"The output of this team are tools and processes that developers use to be more productive and happier in their daily jobs."
From, "Delivery Engineering Mission FAQ" in March 2016


The New York Times
"...the focus will primarily be on how the various engineering teams perceive this team."
From, "Delivery Engineering Mission FAQ" in March 2016

Product Management Mindset

Migration to the Cloud in 2018

In 2018, www.nytimes.com becomes cloud native

300+

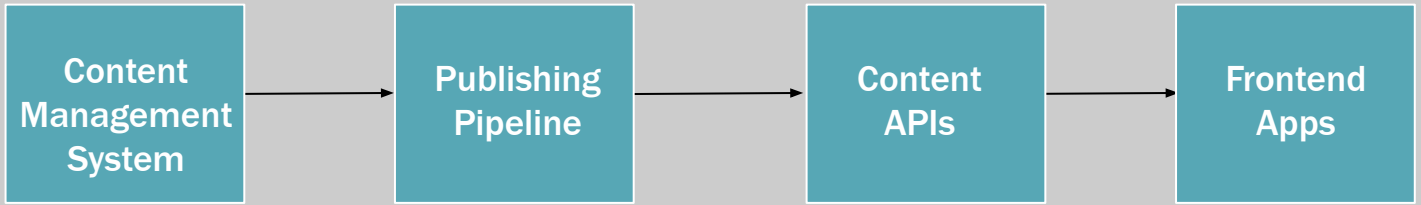
Applications Migrated

We shut down 140+ apps and rolled out common tools and guidance.

EVERYTHING IS
AWESOME!

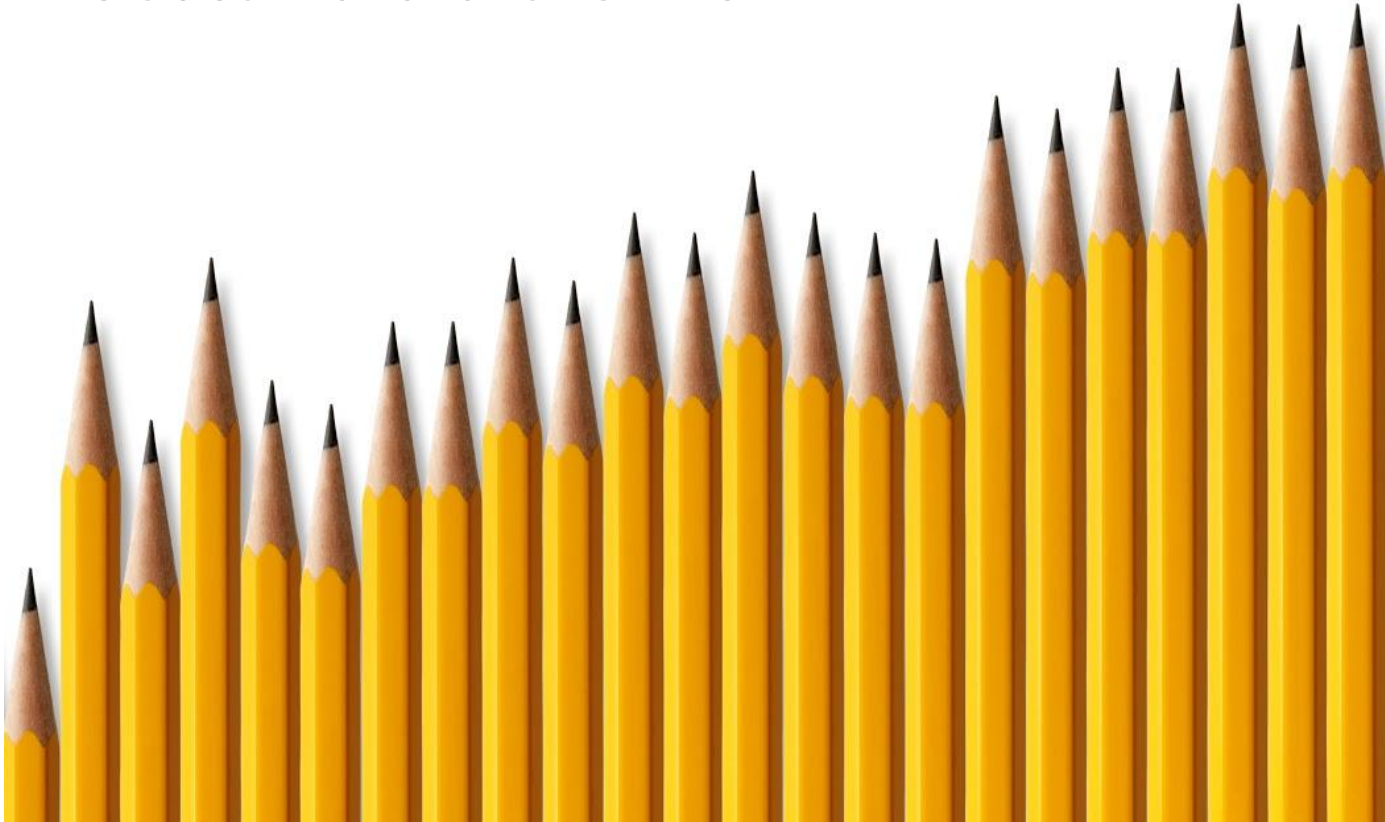
While migration was successful, there was still significant of work to be done.

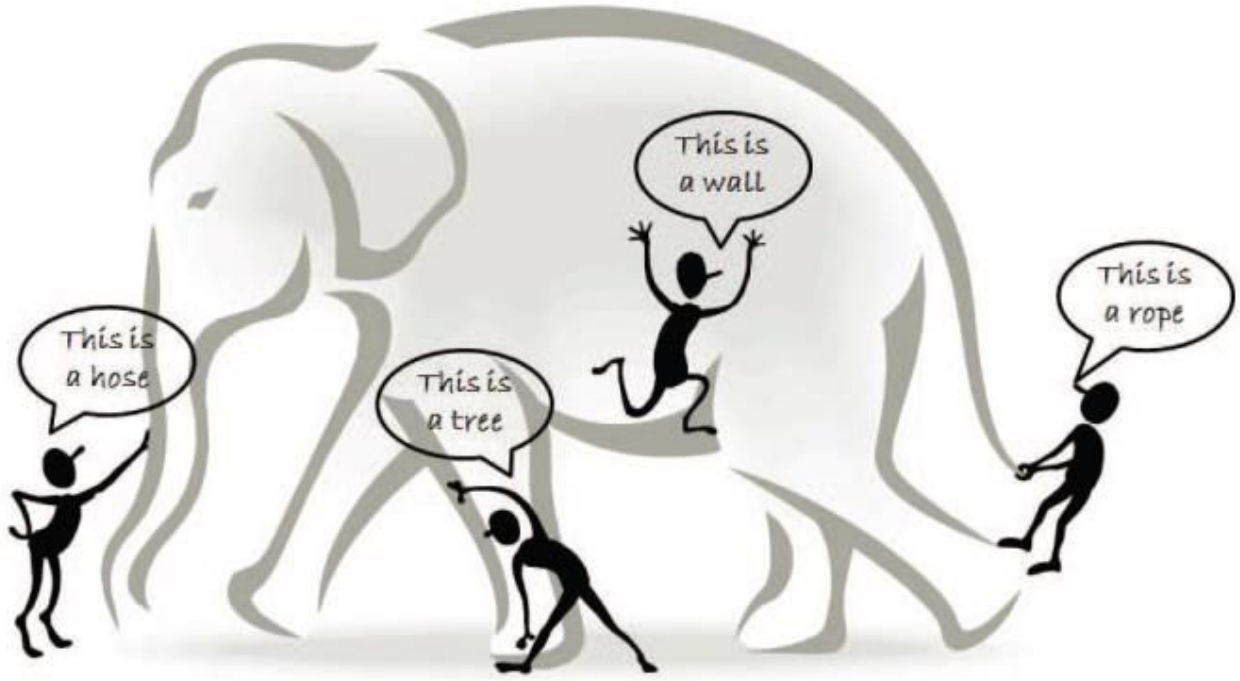
Business workflows span across multiple teams



Processes still reflect the datacenter ops model

Not every team is at same level of SRE skill




This is a hose
This is a tree
This is a wall
This is a rope

Trouble appears...

The New York Times
Opinion
I Am Part of the Resistance Inside the Trump Administration
I work for the president but like-minded colleagues and I have vowed to thwart parts of his agenda and his worst inclinations.
Sept. 5, 2018
15039
Leer en español
阅读简体中文版
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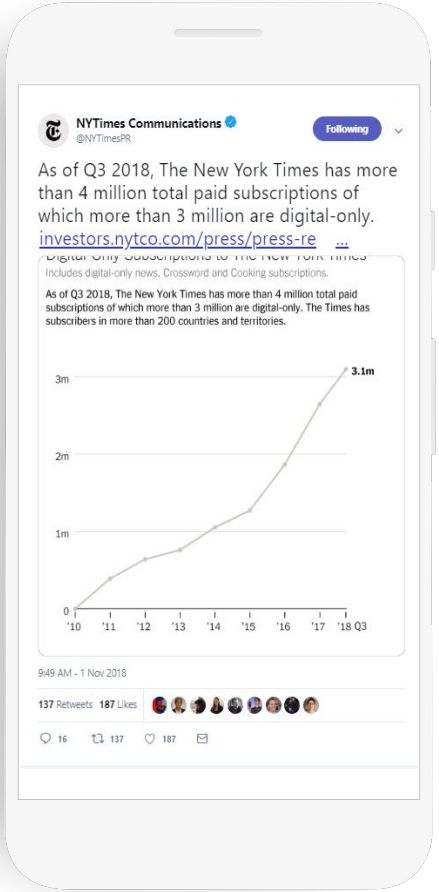
~2x Digital News Subscribers

since the 2016 Presidential Election

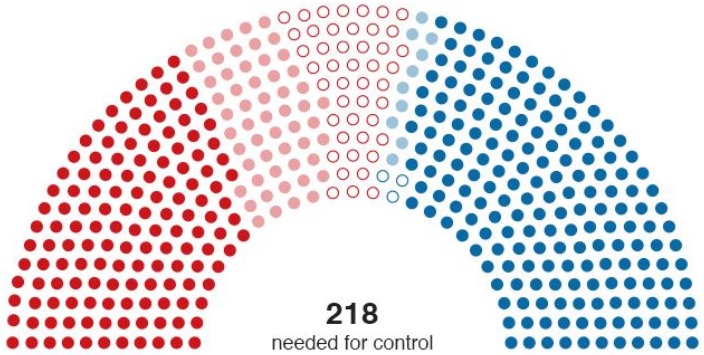


Midterms and Political Climate

The battle for the House

All 435 seats are up for election in November

Republicans		Democrats	
140	Safe	182	Safe
55	Seats they'll probably win	10	Seats they'll probably win
45	Could go either way	3	Could go either way



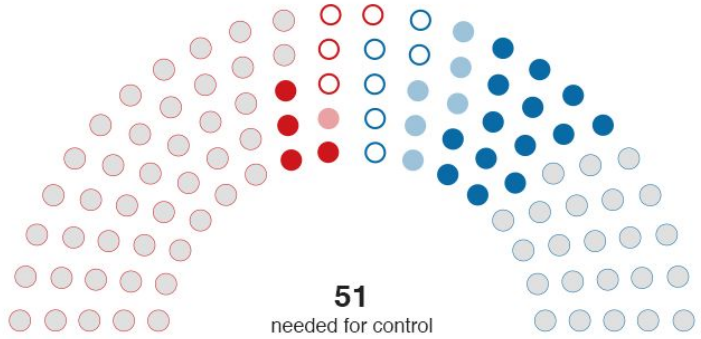
Source: Cook Political Report (updated 30 October)

BBC

The battle for the Senate

Just 35 of 100 seats are up for election in November

Republicans		Democrats		Uncontested
4	Safe	14	Safe	
1	Seats they'll probably win	6	Seats they'll probably win	
4	Could go either way	6	Could go either way	



Source: Cook Political Report (updated 26 Oct)

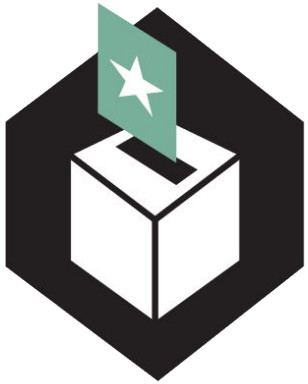
BBC

Changes in Business Strategy

POST-MIGRATION GROWING PAINS + SUBSCRIBER GROWTH + POLITICAL CLIMATE + CHANGES IN BUSINESS STRATEGY

POST-MIGRATION GROWING PAINS + SUBSCRIBER GROWTH + POLITICAL CLIMATE + CHANGES IN BUSINESS STRATEGY

With only **8 weeks** to prepare over **20 teams**



The New York Times

MIDTERM ELECTIONS 2018

Execution: Structure

Project Design Principles

- Move quickly to find weaknesses
- Trust teams
- Drive collaboration

What we needed to do quickly...

Architecture Reviews

Cross-functional working sessions evaluated systems prior to Midterms to find quick resiliency wins.

Incident Training

Trained Engineers and Newsroom on how to respond in case of an incident or outage.

Partner with vendors on incident response and night of coverage.

Stress Tests + Learning Reviews

Conducted stress tests in production.

Held learning review to walk through timeline and identify how to improve.

Architecture Reviews

Architecture Review Template

Application Overview

Diagrams

Repositories

Documents & Resources

- RFCs
- Documentation
- SLOs *(If they exist)*
- Monitoring
- Logging
- Projects & Accounts
- Load
  - Load Test results
  - Normal traffic graphs

Questions

- ❑ What part of the application is most likely to fail?
- ❑ How do you determine if the application is healthy?
- ❑ Are these health checks automated? Could you provide an endpoint for us to scrape?
- ❑ What systems does your application rely on?
- ❑ Can your application survive if a dependent system fails? If so how long?

STATUSPAGE
COMMISSION
FOR HUGOPS
FOR HUGOPS
HUGS
Squash
BUGS

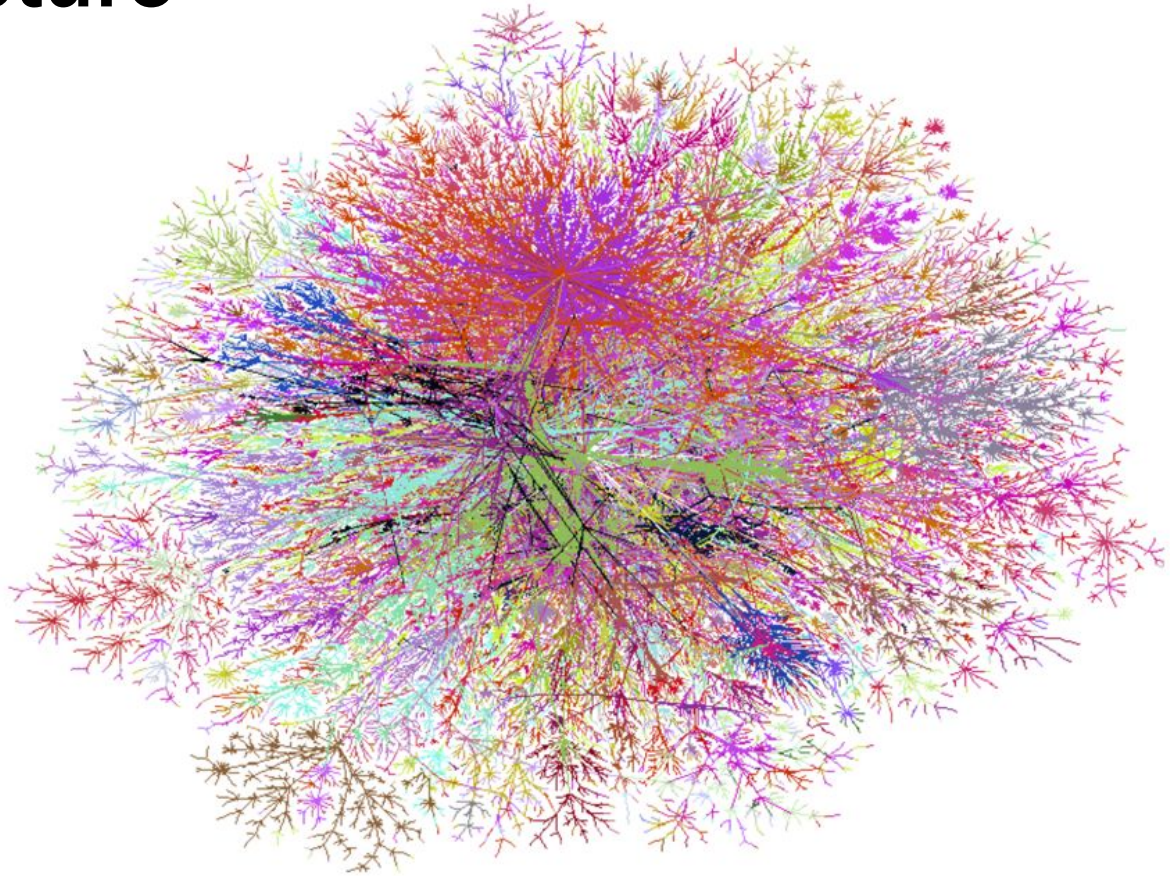
Let engineers raise lurking issues

Raise and prioritize things we find

- Create tickets for reliability improvements across teams and systems

- Scrum-of-Scrums - 2x weekly reviews - Talk through blocker issues

Architecture



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Plan Degradation Strategy

Incident Training

Things go wrong - be ready

Goal: develop a shared understanding of incident lifecycles and roles

Understand Roles

Roles

Incident Commander

- Brings order to chaos
- The IC will ensure that an incident is being managed appropriately.
- The IC will setup communication channels and steer people towards these channels.
- The IC will collect application status information & proposed solutions from various SMEs associated with an incident.
- The IC will delegate the necessary actions required to help bring an incident to closure.

DV Ops Day 2019

Subject Matter Experts (SMEs)

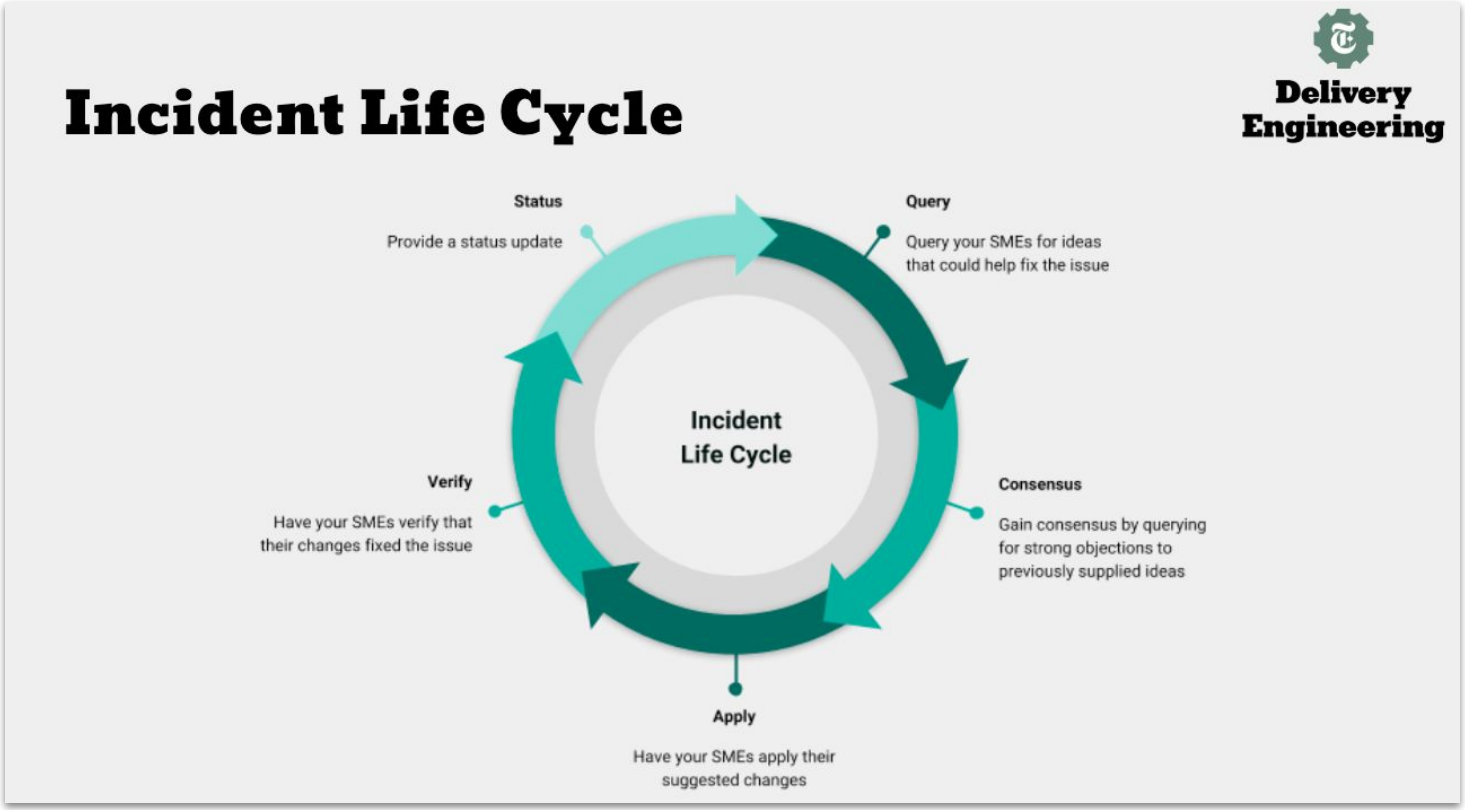
Deputy

Scribe

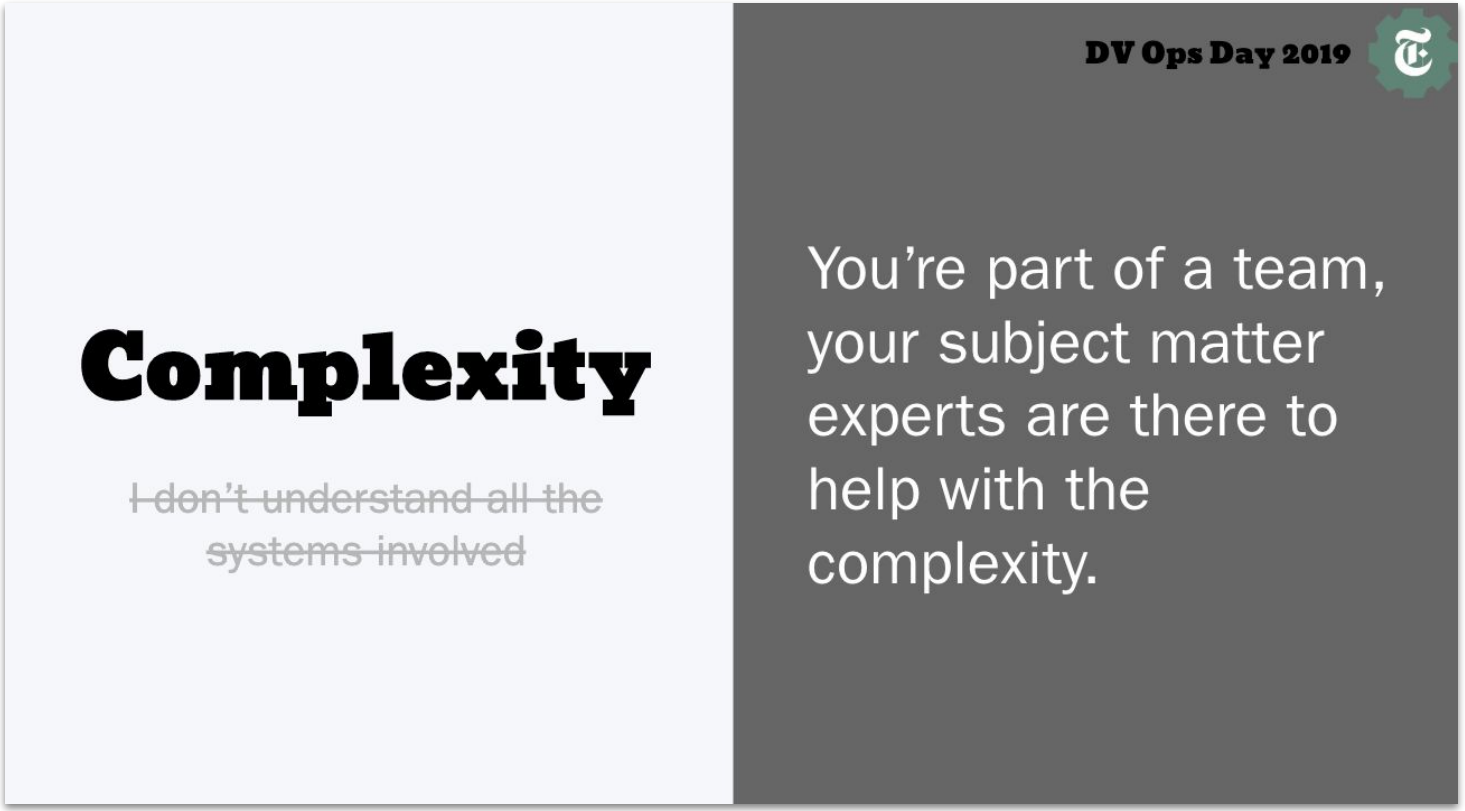
Internal Liaison

External Liaison

Focus on bigger picture



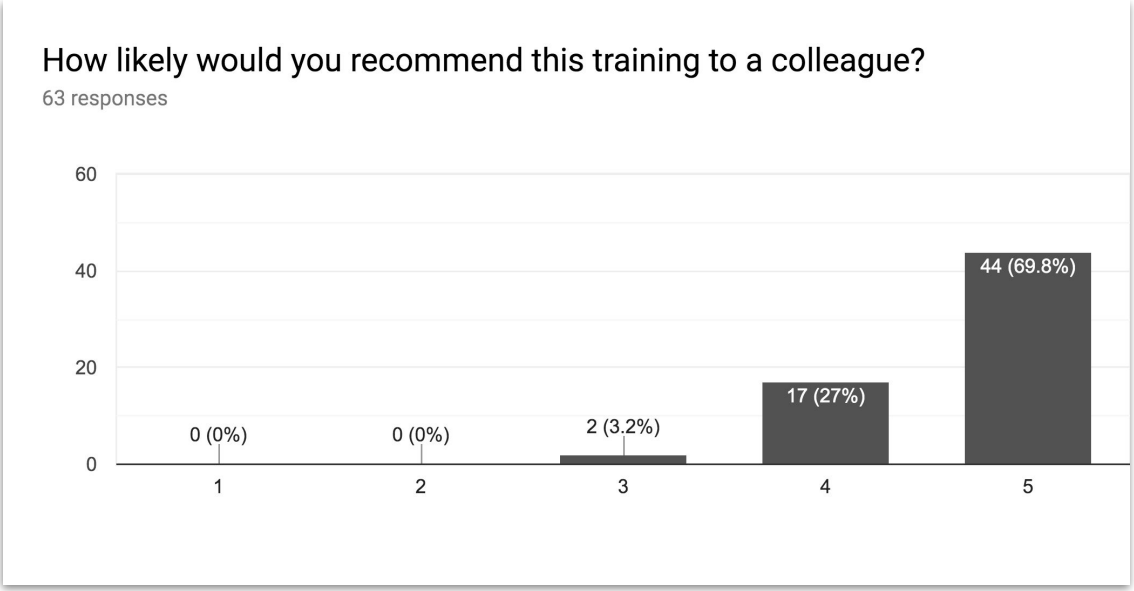
Emphasize non-engineering bits



Some stats

Sessions held: 11

Technical Staff trained: 120



Stress Testing and Review

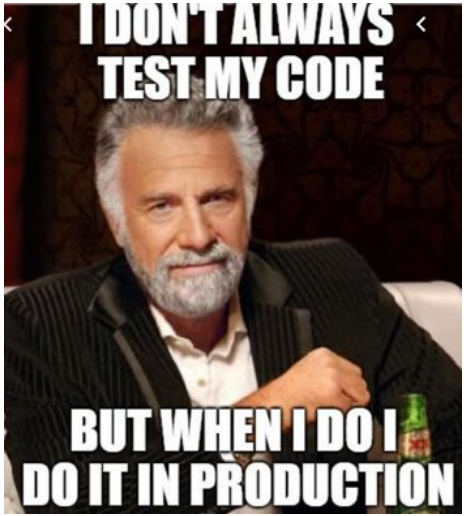
See What Breaks

LOAD TESTING	STRESS TESTING
Test system behavior under expected load	Test capacity limits under extreme load
Determine throughput, understand resources needed, etc.	Identify bottlenecks in the system, prepare for anticipated high traffic events
Things *might* brake	Thing *will* break

Approach

- Test as a whole system
- Test in production
- Test during the day when folks are in office

I don't always test my code
But when I do,
I make sure it's in production


I DON'T ALWAYS
TEST MY CODE
BUT WHEN I DO I
DO IT IN PRODUCTION

TEST IN PRODUCTION
WHAT COULD GO WRONG

ONE DOES NOT SIMPLY
TEST IN PRODUCTION

Stress Testing in Production:
The New York Times Engineering Survival Guide for Midterm Elections 2018
Shesh Patel
ENGINEERING MANAGER
THE NEW YORK TIMES
BY DATADOG

Little warning for the news

Preparations

Teams' Prep

Provide data to help design stress tests

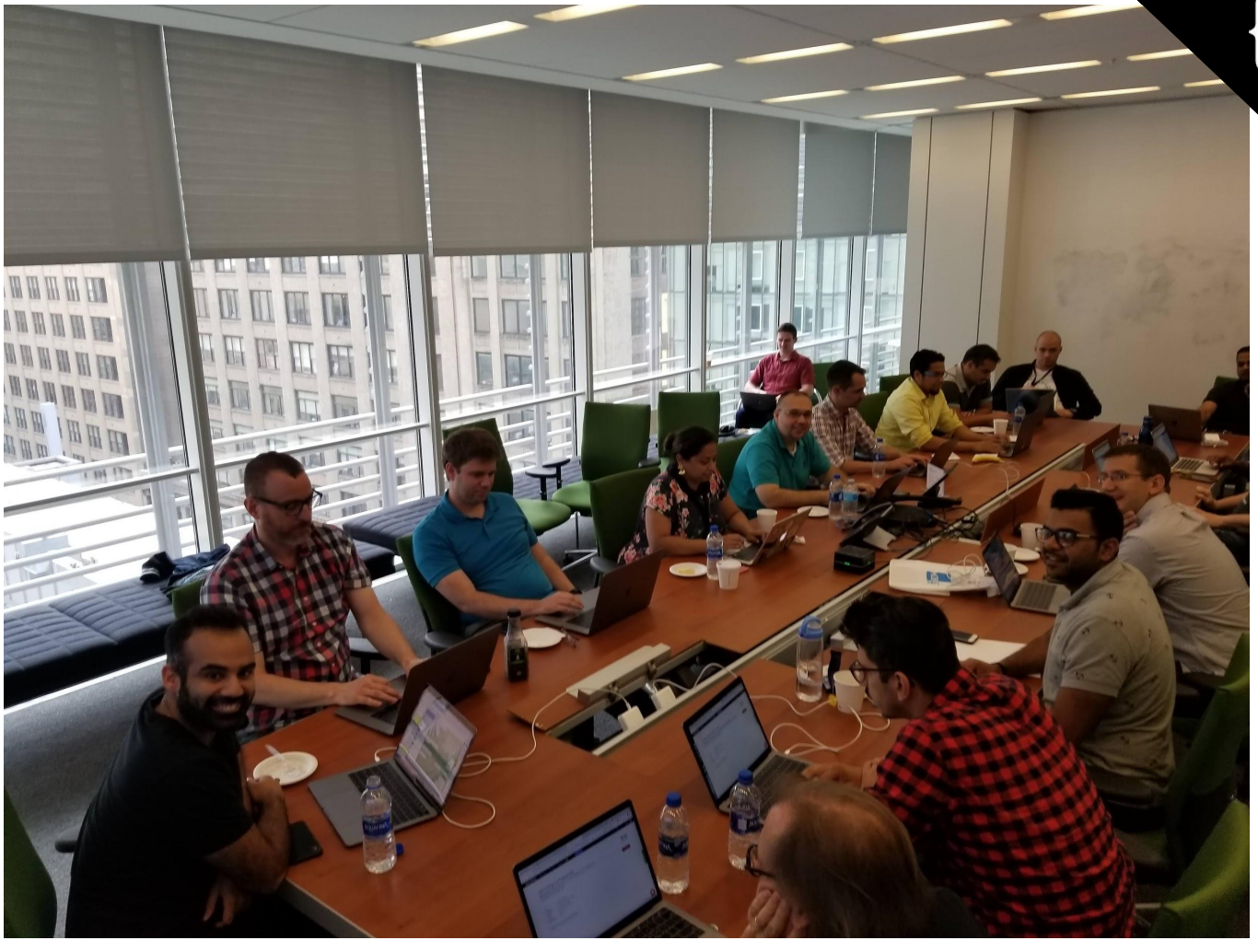
- Endpoints
- Typical load

Our Prep

Partner with teams to:

- Implement tests
- Productionalize the stress testing

The “War Room”



Learning from Results

All good on Systems and Preparations/Communications. **We are confident for Elections.**

Minor risks/issues. **But we feel confident they can be resolved by Elections.**

Significant risks/issues; potentially inconclusive results. **Management attention needed.**

System	Overall	Test Preparations & Communications	Systems Readiness for Elections
Bulbasaur			
Ivysaur			
Pidgey			
Oddish			
Jigglypuff			
Bellsprout			
Psyduck			
Eevee			

Learning Reviews + Re-test

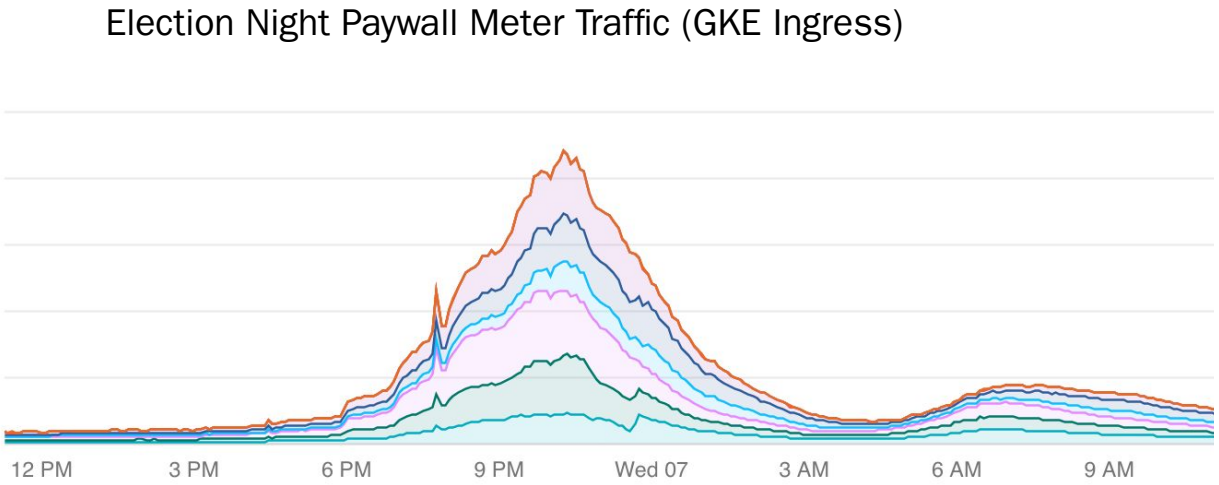
- Coordinated learning reviews
- What went well? What didn’t?
- Tickets for action items and improvements
- Re-test

Results and Outcomes

Election night

The Results

- Record traffic for Midterms
- Registration Paywall Meter 40x traffic
- Significant registration growth
- Fast incident response with minimal user disruption
- Demand for more operational maturity exercises



Backend request count per zone

“In my 7 years at The Times, I have never seen people come together and work towards a common goal in the way everyone came together for these elections. **I'd love to … enable this way of working as a norm for our org**…”

Looking Forward

We’re hiring

nytco.com/careers

@NYTDevs | developers.nytimes.com

@timesopen | open.nytimes.com

Thank you!

Please reach out if you have questions.

Brett Haranin @BrettHaranin | Vinessa Wan @vnessawithaneye