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@rossclanton



# DevOps@TGT

(re)building an engineering culture



## a bit about us



### Target

Omnichannel Retailer  
Fortune 50

**53** years of service

**347,000** team members

**1,799** stores

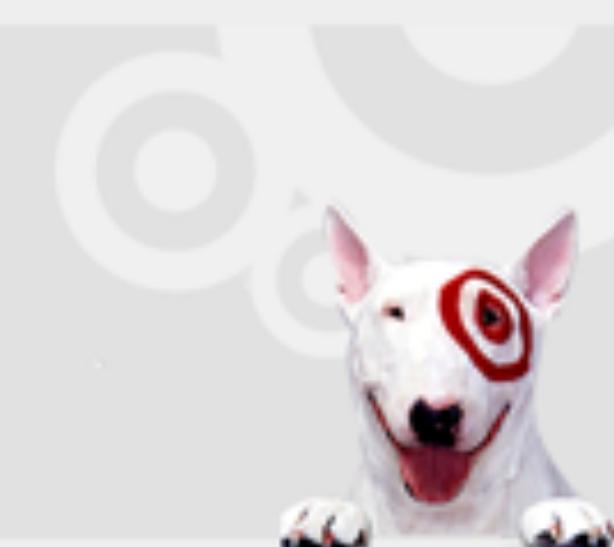
**7** HQ locations

**38** distribution centers

**3** data centers

### our purpose

We fulfill the needs and fuel the potential of our guests. That means making Target your preferred shopping destination in all channels by delivering outstanding value, continuous innovation and exceptional experiences—consistently fulfilling our Expect More. Pay Less.® brand promise.



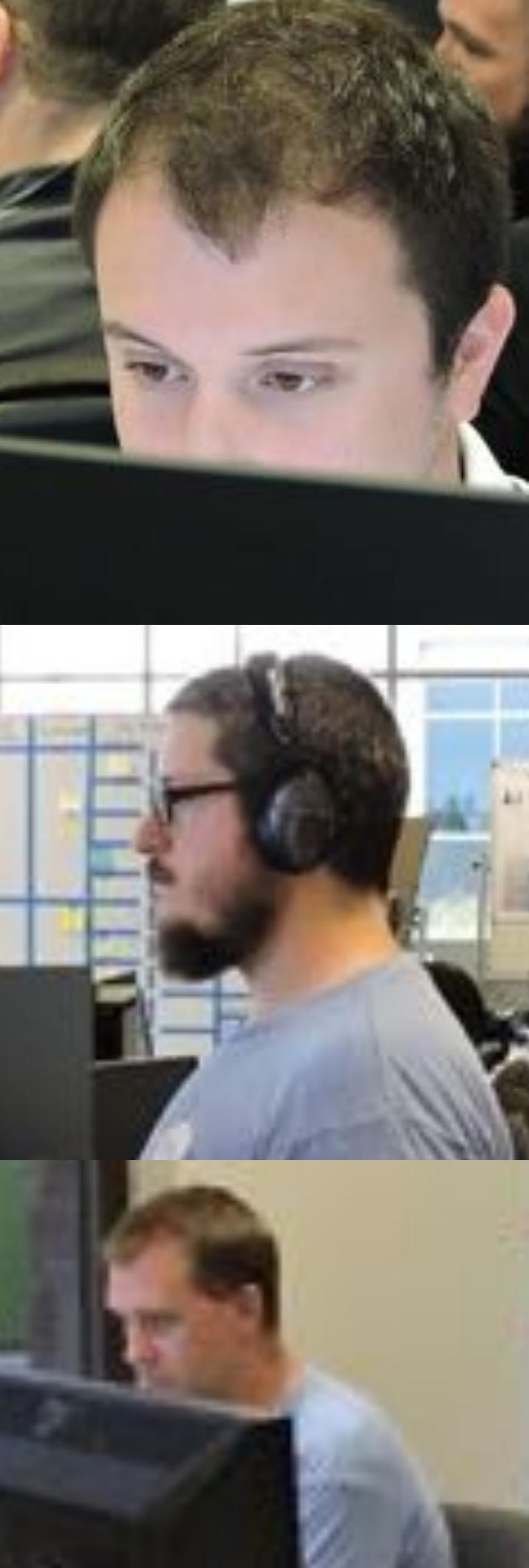
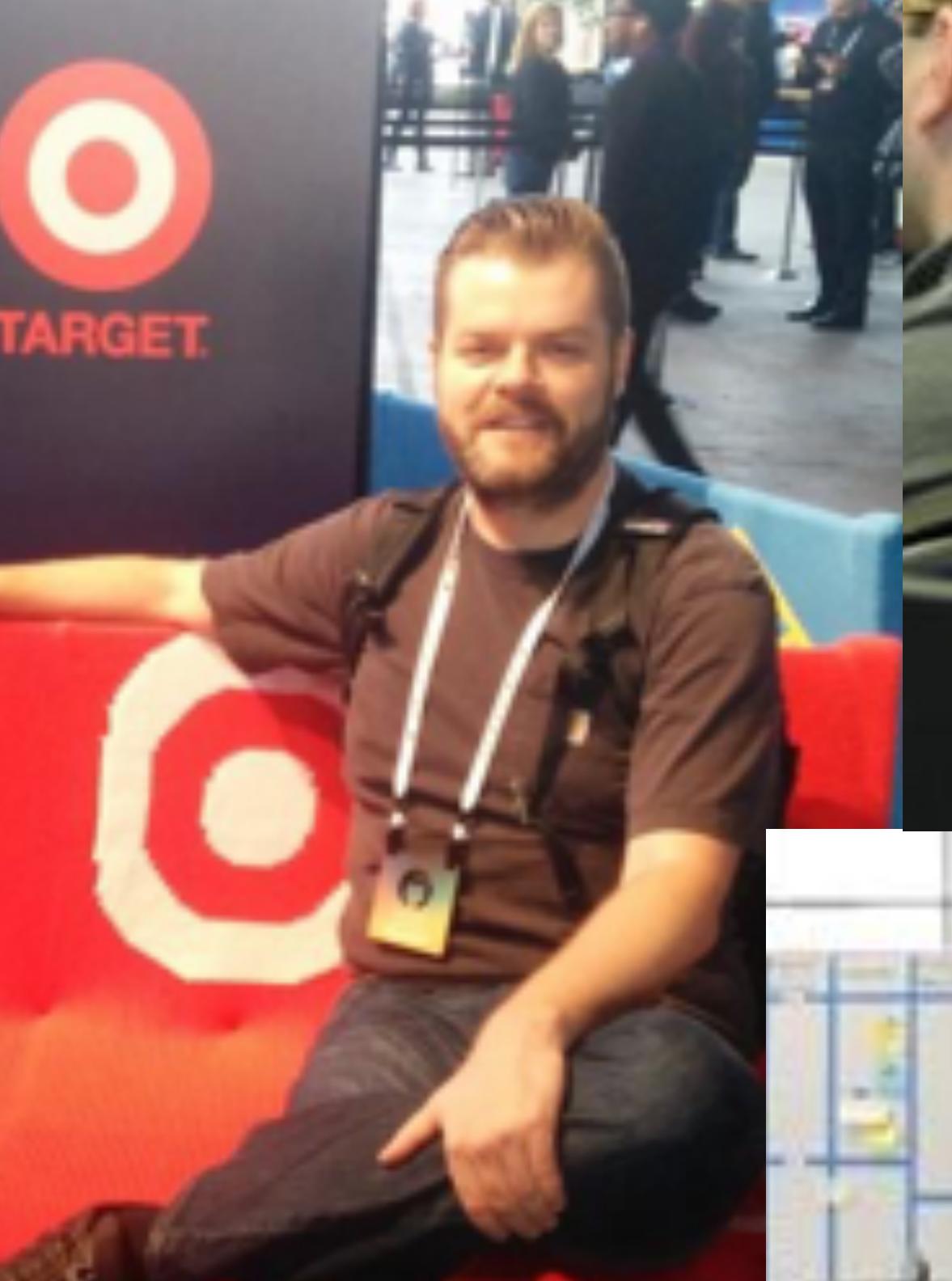
source: [abullseyeview.com](http://abullseyeview.com)



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our story  
involves two  
important  
sets of  
people





and how we  
navigated



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culture

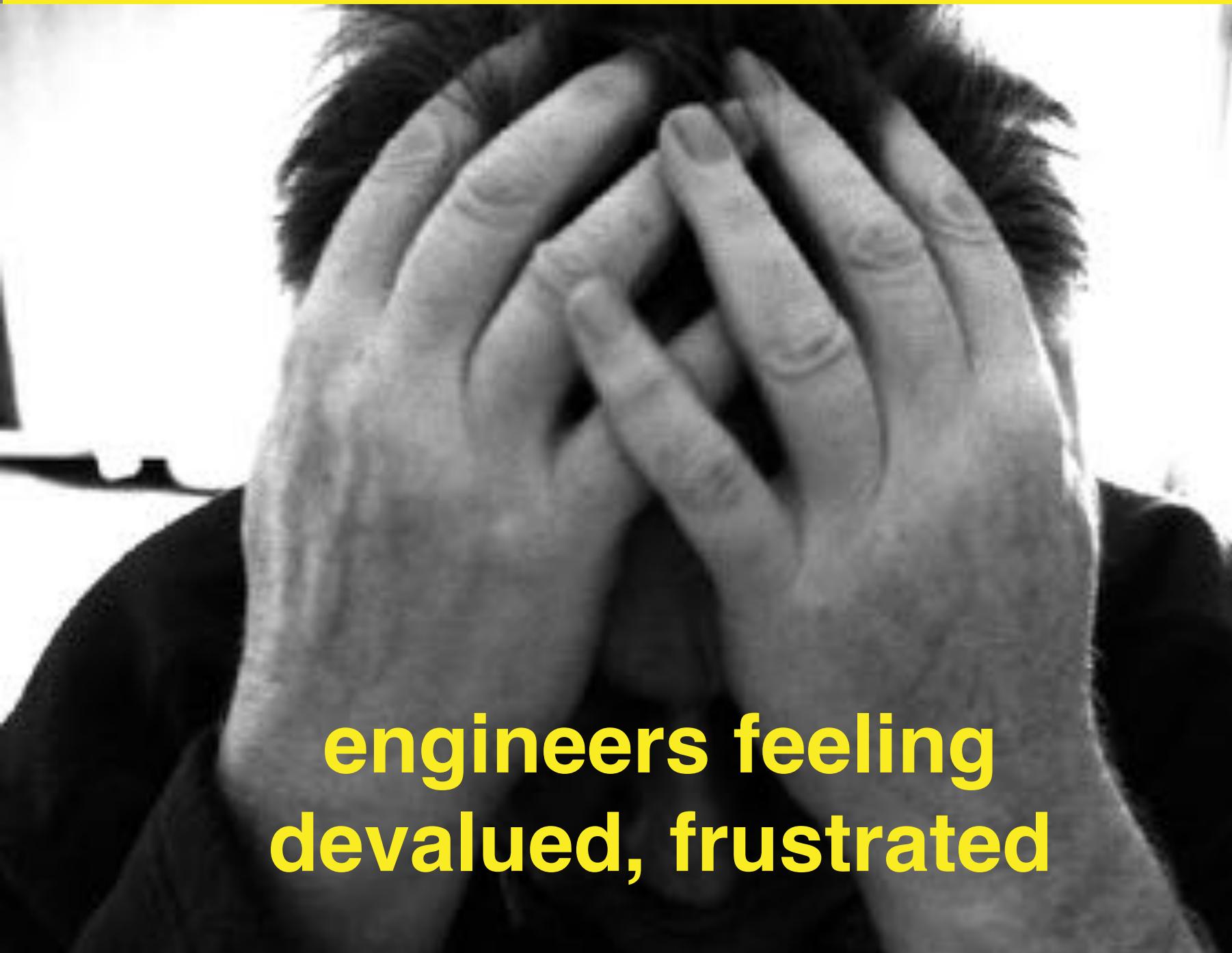
organization

system complexity



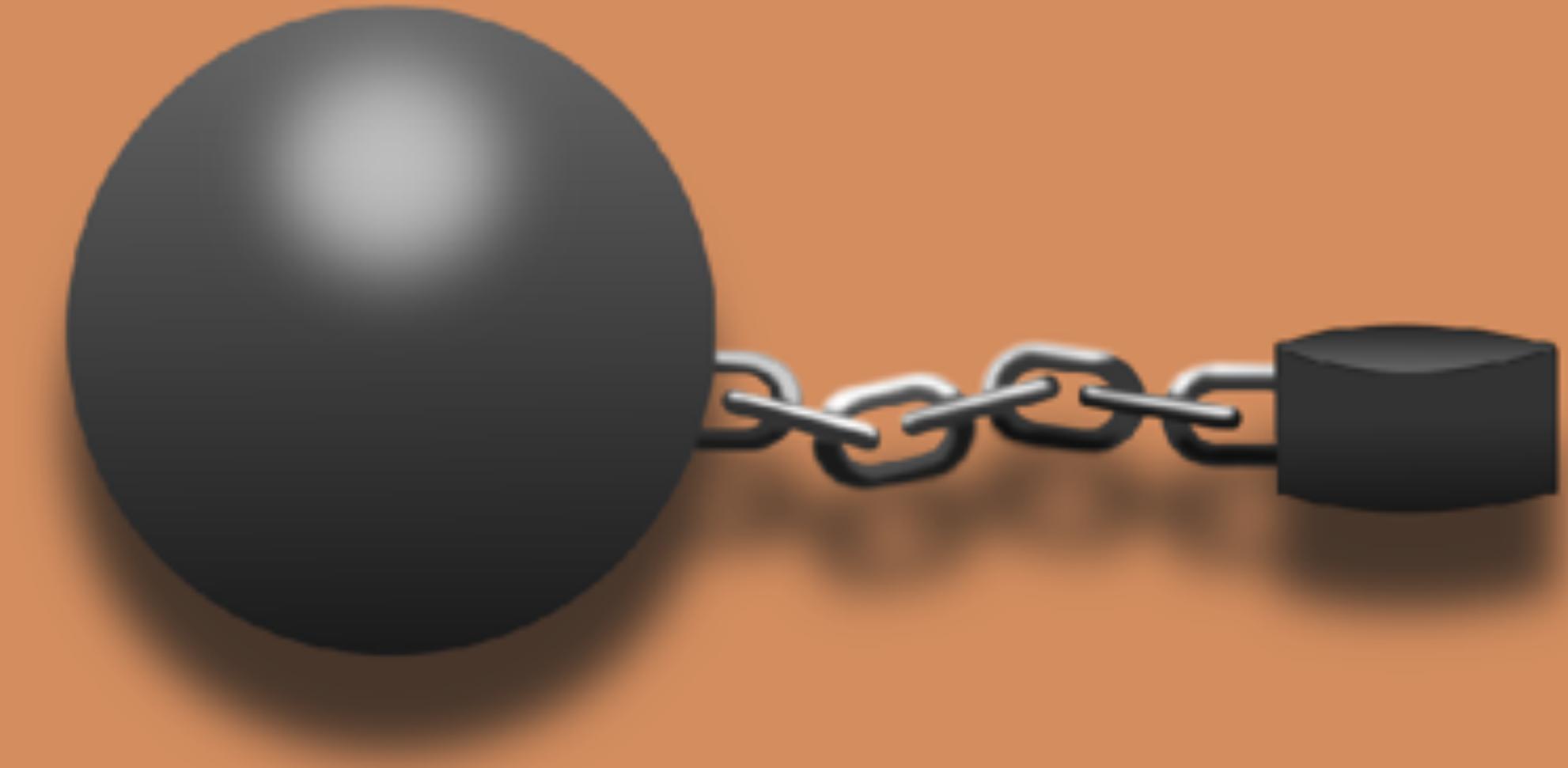
to overcome  
some not so  
unique  
challenges

*zombie projects consuming  
time, money, and people*



**engineers feeling  
devalued, frustrated**

loss of agility



**focus on siloing + local optimization**





the first  
thing we  
knew we  
*had* to do  
was ...





so far our  
journey  
has  
involved

enabling, unleashing



cultivating, growing a



movement

getting



alignment

figuring out how to



across the enterprise



so Target  
wanted to  
create cool,  
digital guest  
experiences

The collage includes:

- A desktop computer monitor showing the Target website for "San Francisco Central CACity Target". It displays a map of the store's location, store hours (Mon-Fri 9AM-10PM, Sat 10AM-11PM), a "weekly ad" thumbnail, and a "coupons & promos" section.
- A tablet device showing a promotional image with the text "get that '70s look." and a "free shipping on orders of \$25+ & free returns on everything." banner.
- A smartphone displaying a grid of "subscription categories" including Baby, Pet, Health, Beauty, Household, and Personal Care.



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but getting  
the data  
needed was  
easier said  
than done

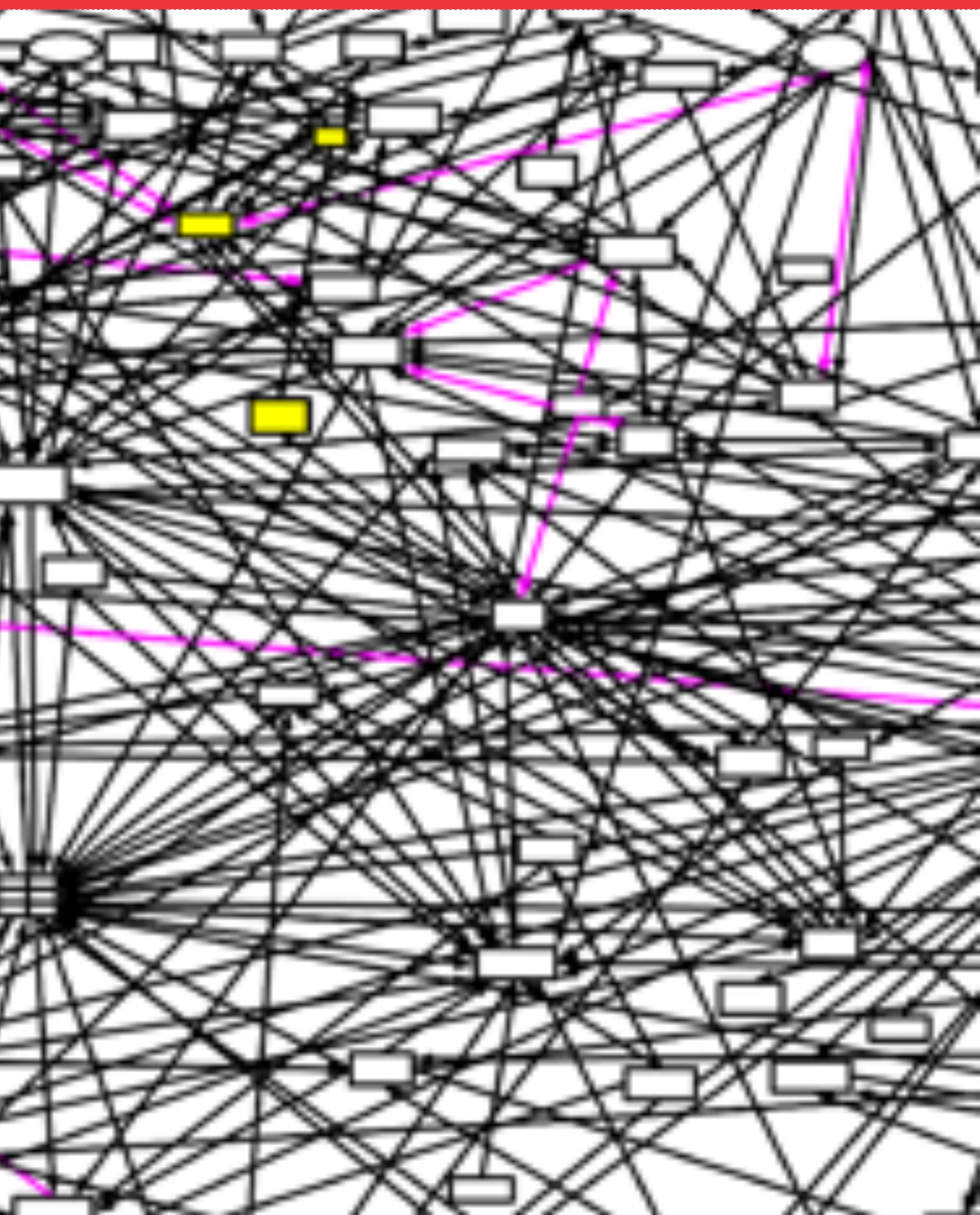


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multiple “sources of truth”



connected by unique  
point-to-point integrations





in addition  
we had a  
matrixed  
operating,  
delivery  
model that  
moved  
slowly

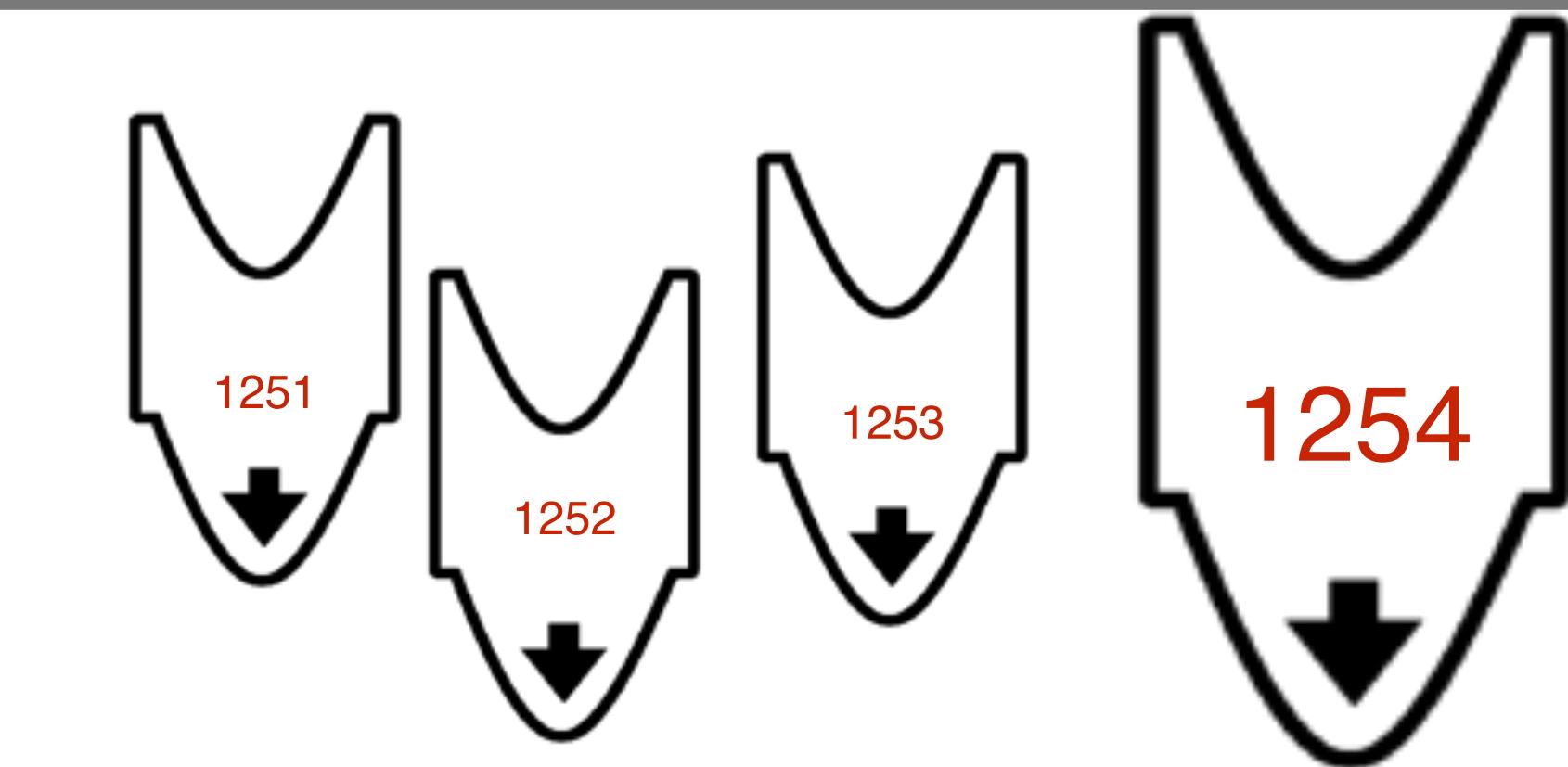
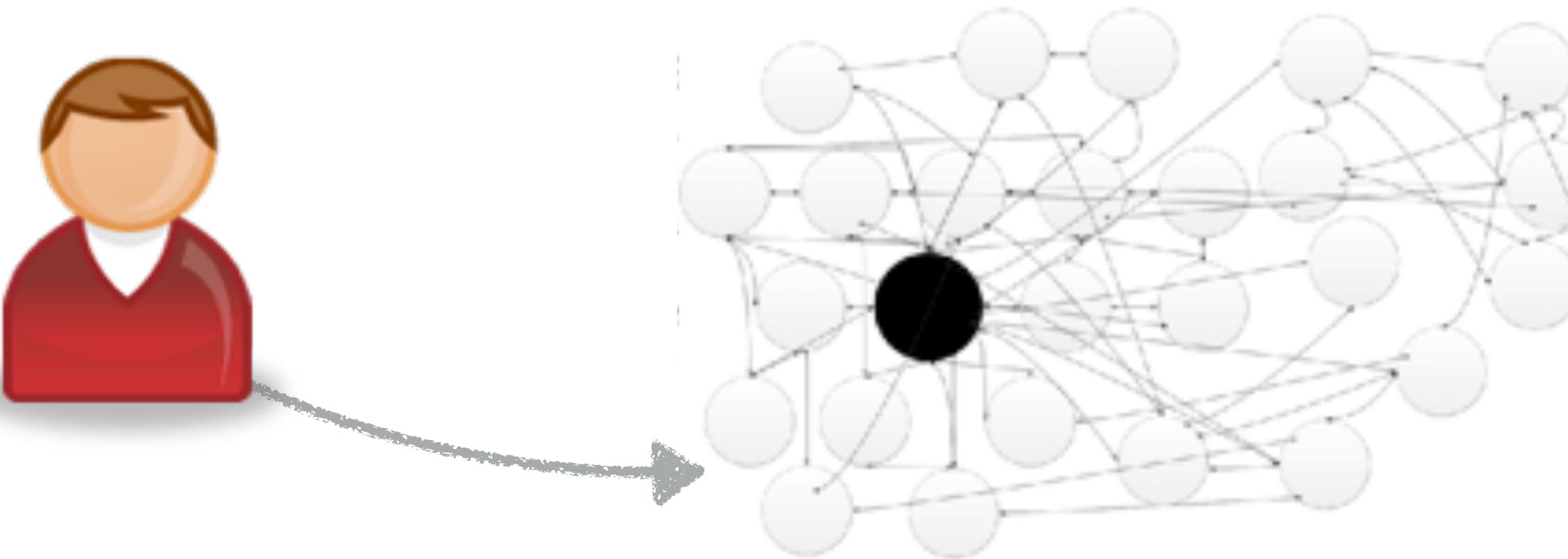
shared  
services

which led to

queues

which led to

having to



Created by James Keeling  
from Noun Project

DUVAL



# discovering the power of APIs



there's got to be a  
better way to get to  
our data!

that would be the  
API I've almost  
finished coding ...



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to solve  
meant  
listening to a  
radical  
group of  
change  
agents (aka  
engineers)

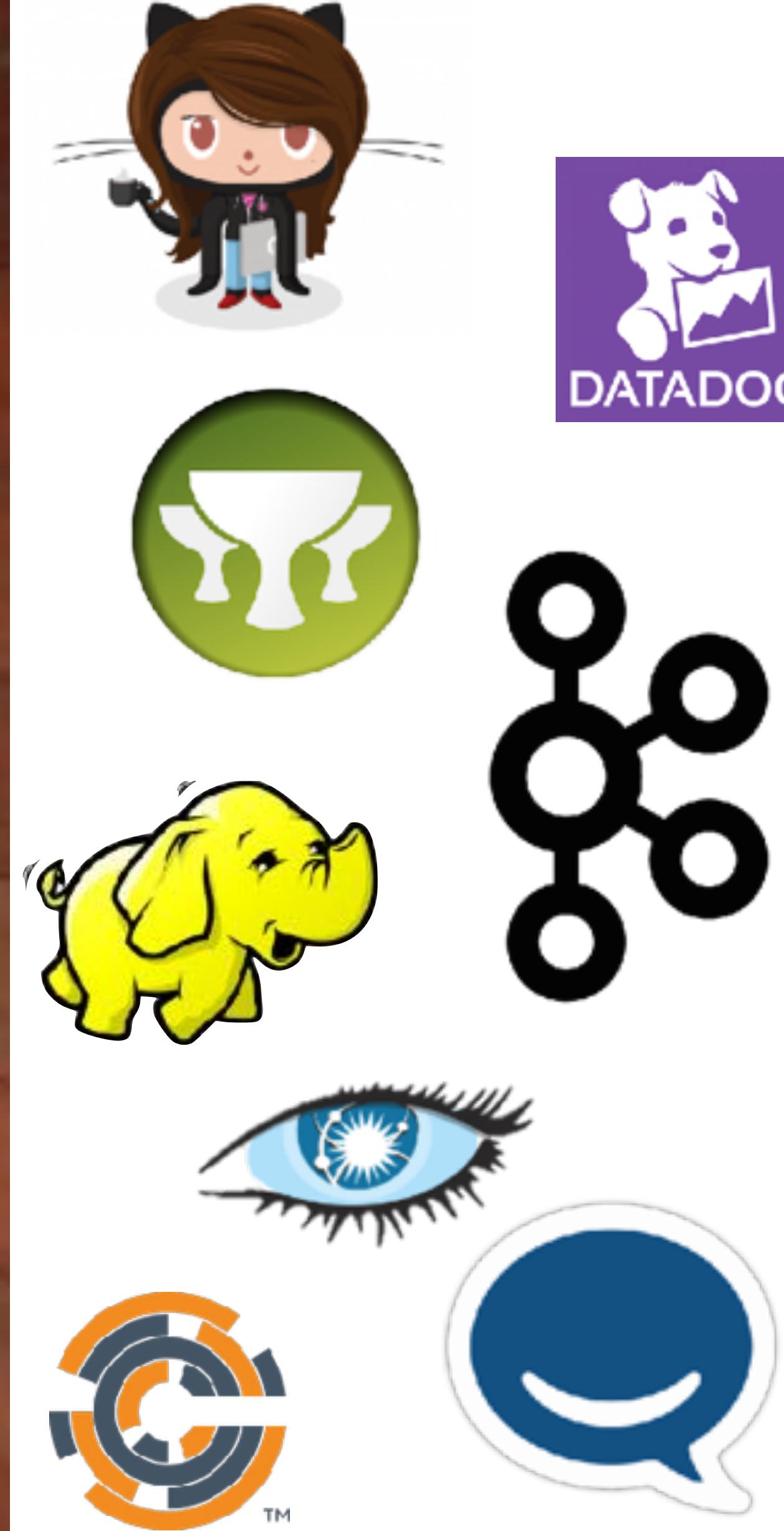


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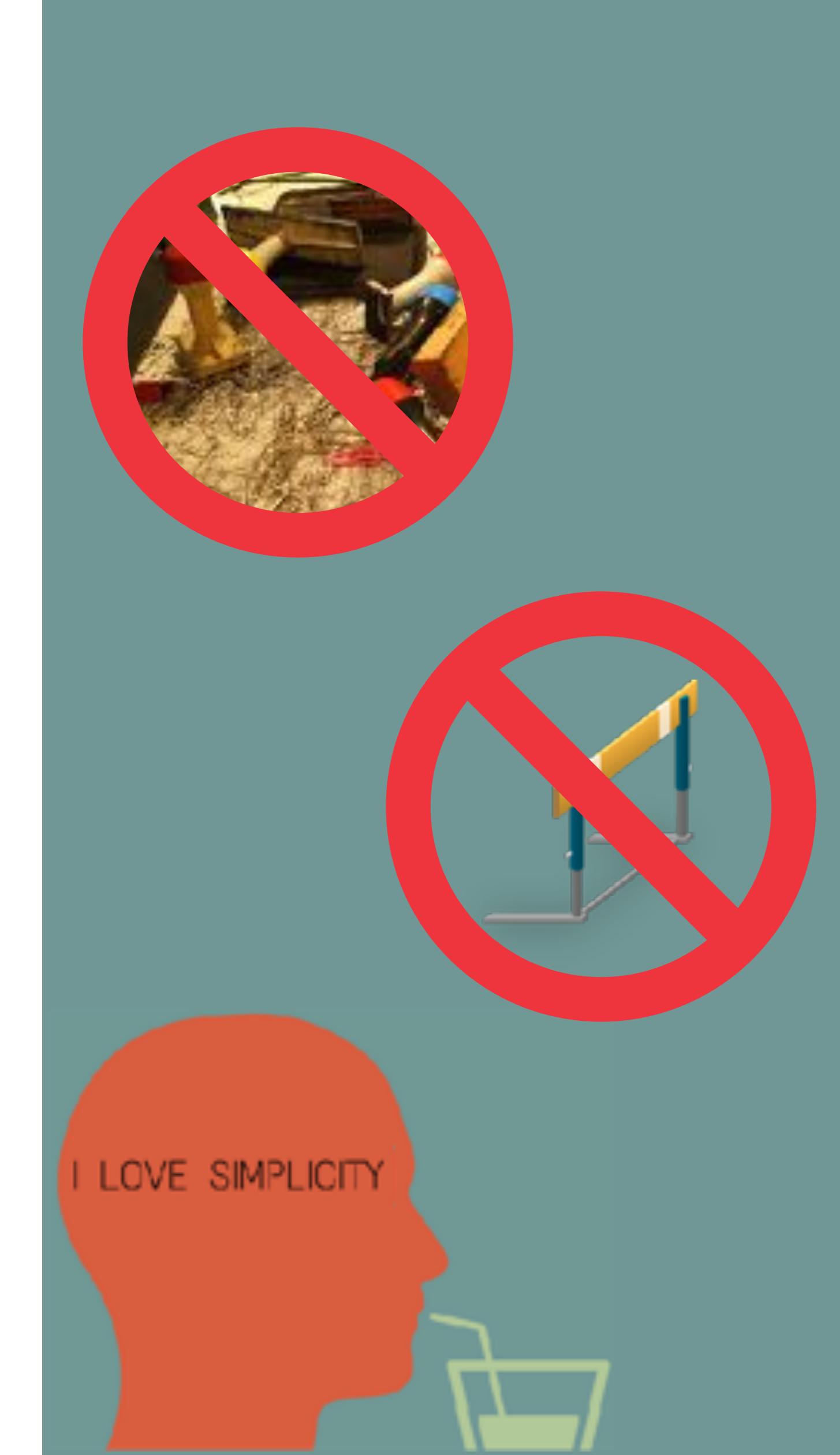
## “alien” concepts



## new tools



## simplifying





our focus: enable market, not business, disruption

we aren't driving the increase but our APIs have to be ready

and the results speak volumes

traffic up  
**42%**  
in 2014



**280k**

orders fulfilled 2014  
Black Friday weekend



source: comScore Key Measures, October-December 2014

holiday 2015

> 90 API products  
> 80 deployments per week  
> 17 billion monthly API calls  
< 10 incidents per month

APIs built  
to handle  
serious  
traffic

we continue to focus on enabling new business capabilities

business  
capabilities  
enabled

**53**

including

*Instacart*



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we had to  
transform  
pockets of  
change  
agents

A photograph of a large, diverse audience seated in rows, facing a stage where a speaker is presenting. The setting appears to be a professional conference or seminar.

into a **BIG** grassroots movement using

**internal in-conferences**  
**#DevOpsDays**  
Connect. Share. Learn.

**DevOps@TGT**  
internal social media

**monthly share-outs**  
**automation**  
demo spotlight

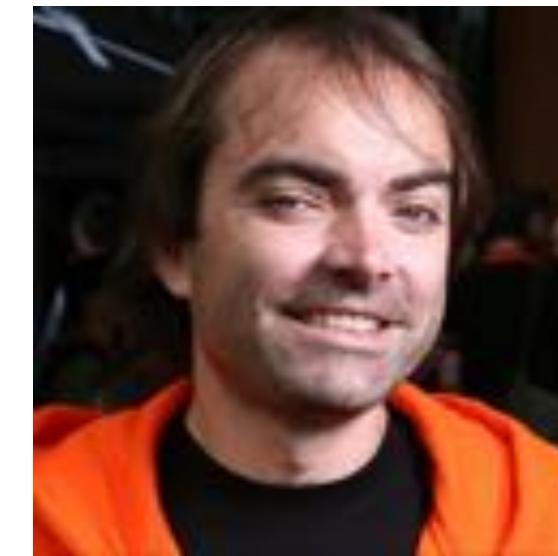
**quarterly hackathons**  
**automation**  
make day



bringing in  
outside  
voices, we  
made it fun



Rob Cummings



Michael DUCY



Ian Malpass



Jez Humble



Just heard the news.  
**#DevOpsDays**

is on Thursday, October 2

(Got so **excited** she spilled Starbucks on her laptop.)



Fletcher Nichol



Jeff Sussna



Sean O'Neil



Tom Duffield



Matt Konda



Andy Domeier



[“hip”, “hip”]





sharing our  
story,  
nurturing the  
grassroots  
to grow

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OUTAGE RESOLUTION  
THROUGH AUTOMATION

TARGET FLASHBUILDS

TARGET JOINS THE W3C

TUNING CASSANDRA @  
TARGET

ROBOTICS ANALYTICS @  
TARGET

AUTOMATING  
CASSANDRA



Josh Pederson @JoshPederson21 · Oct 21  
Devops@Target pushing enterprise retail technology forward. Great story  
#DOES14



O'REILLY®  
Community

Enterprise DevOps @Target

By Greg Larson, Ross Clanton | May 06, 2015  
Heather Mickman and Ross Clanton will share their perspective on those questions based on their experiences at Target as well as their discussions with other enterprise DevOps practitioners.

MAY 27-29, 2015  
SANTA CLARA, CA  
VELOCITYCONF.COM



community members  
internal event attendance

37  
February  
2014

June  
2014

October  
2014

February  
2015

June  
2015

975

October  
2015

Michael Duce @mld - Apr 1

Shout out to @target's open source contributions #ChefConf



Mary Margaret Barnes @mary.margaret · Aug 12  
Innovation in the Large Enterprise @TechCrunchDOFDT <http://bit.ly/1nqykw>

[LinkedIn](#) [Follow](#)





and  
connecting  
with larger  
issues  
facing  
company



we needed **tops down** engagement to move forward

under pressure to **fundamentally change** our  
**approach to technology delivery** from the  
most important, demanding, savvy people in the world

ourselves

internal customers

competitors

**Target Guests**

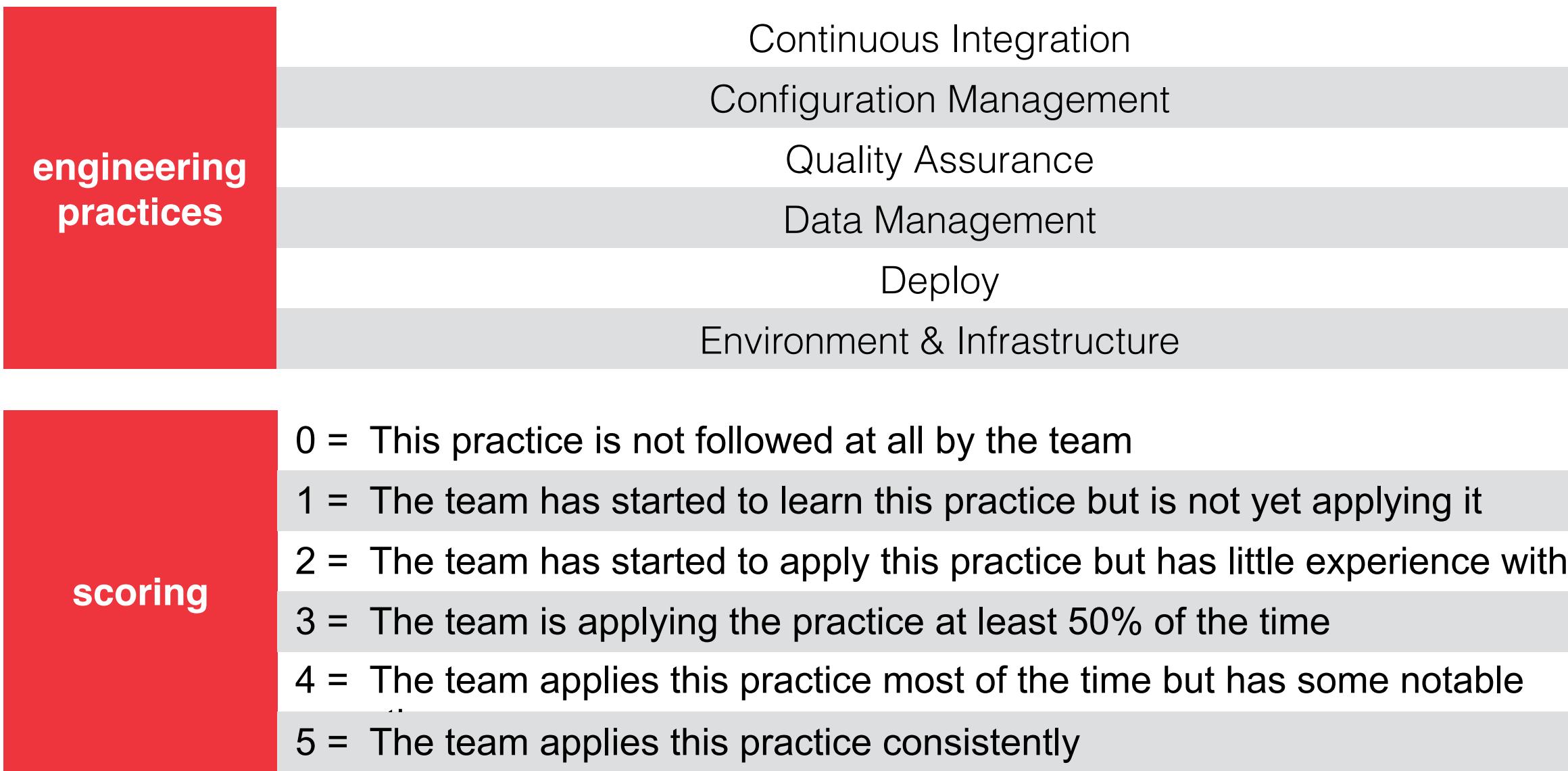


and align  
executives  
to set  
direction,  
course

direction

course

# CI/CD maturity framework, assessment toolkit



4-8 weighted  
data points  
per practice  
to assess maturity

CI/CD  
adoption score  
calculated  
using data points

identified, aligned champions to work with senior executives to:

- **establish** DevOps and automation goals and priorities
- **drive** continuous delivery maturity assessment
- **champion** DevOps and Automation within their portfolio



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then align  
our peers by  
drawing on  
external  
expertise

# DEV OPS ENTERPRISE

Presented by Electric Cloud and IT Revolution



TTS Leadership DevOps Summit

Brooklyn Park, MN • March 19, 2015



## Keynote

- Gene Kim

## Speakers

- Jason Cox
- Scott Prugh
- Jonny Wooldridge
- Courtney Kissler
- Nicole Forsgren



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thus  
combining  
tops down  
support with  
a strategic  
focus

modernize tools,  
methodologies

adopt Agile and DevOps

increase speed, agility

pay down tech debt

the

**BIG**

question

“How in the **hell** are we going to **scale**?”



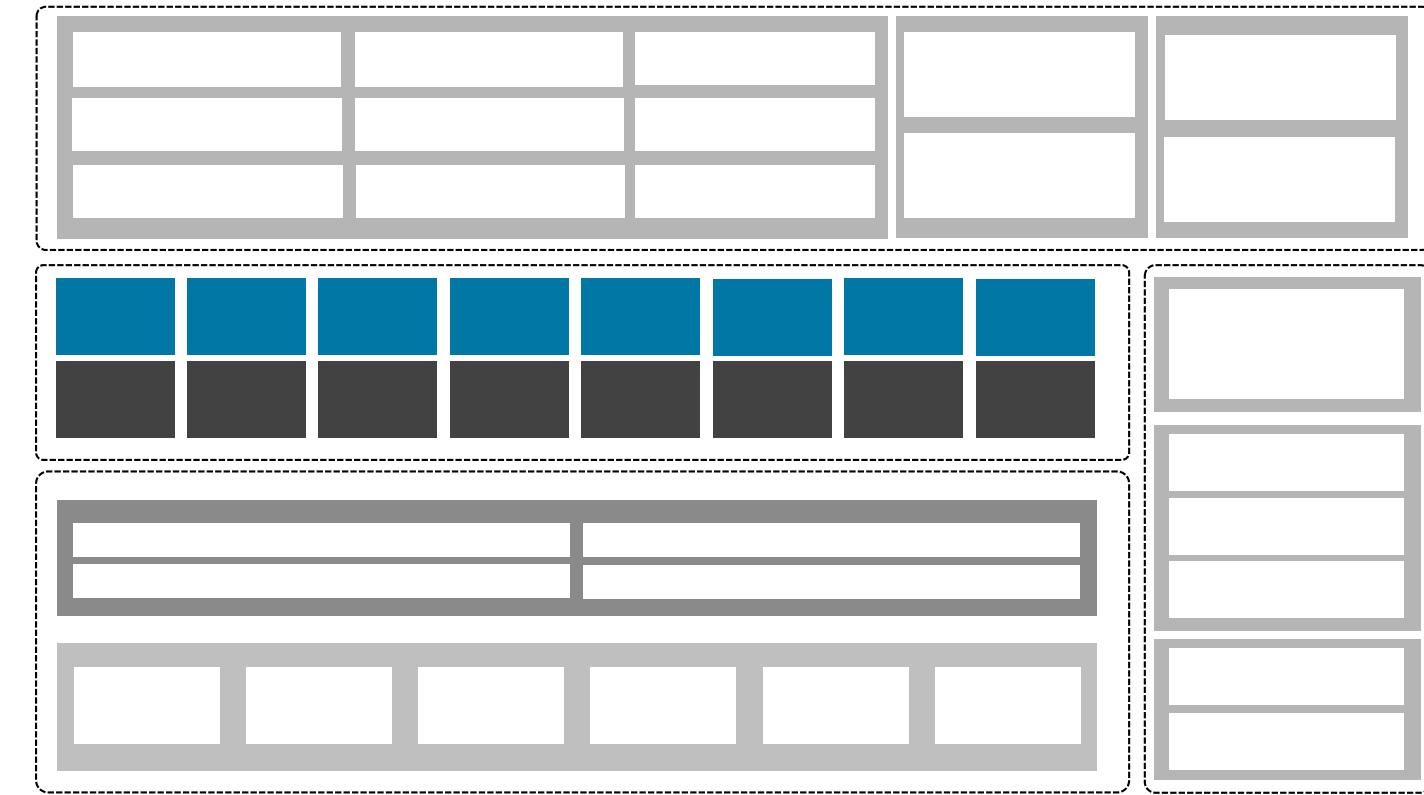
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## 1. make structural changes

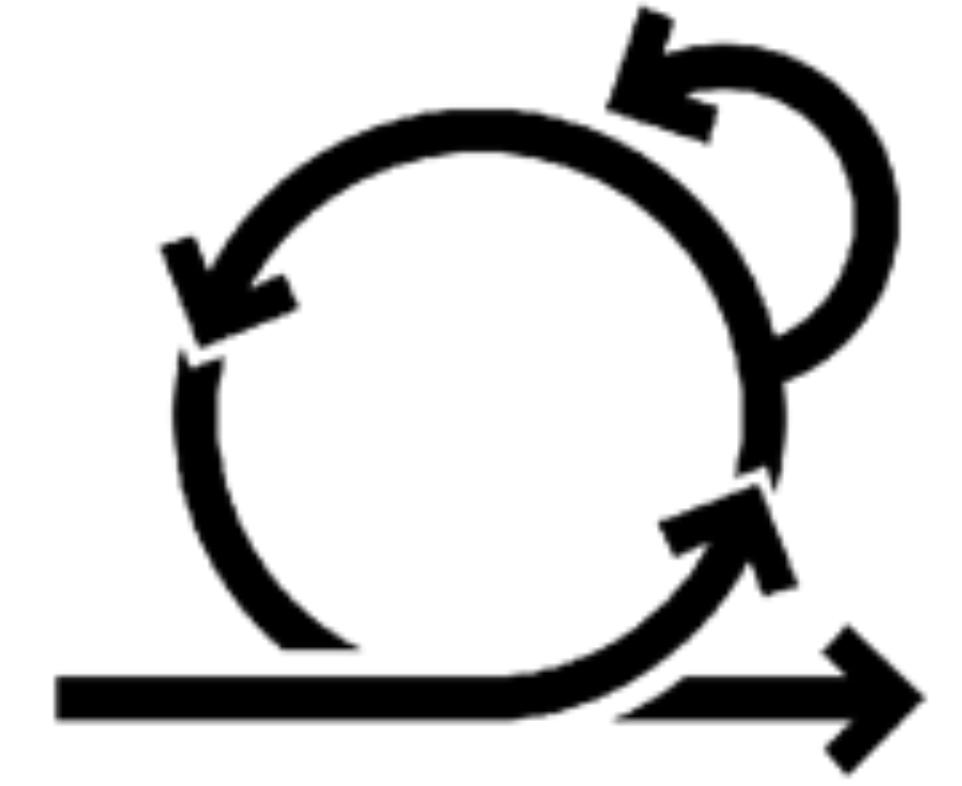
### operating model

- **simplify** structure, accountability
- **enable** full-stack product ownership
- **standardize** services
- **establish** practices area



### delivery model

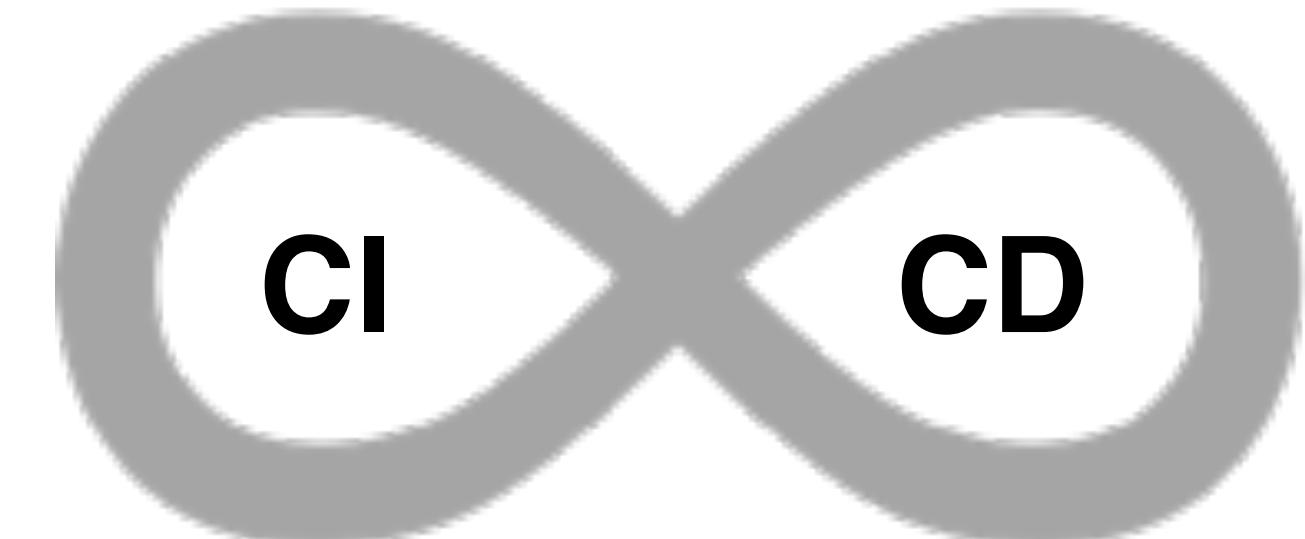
- **shift** to product focus
- **drive** end-to-end accountability
- **adopt** Scrum framework



Created by Björn Andersson from Noun Project

### modernization strategy

- **loosely coupled** architecture
- **APIs**
- **cloud ready**
- **self-service, lightweight tools**





## 2. connect important dots

converge movements  
grow pool of coaches

connect experts  
drive learning



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align priorities  
maintain laser focus



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### 3. build an internal incubator environment



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4. develop,  
expand  
learning  
service  
offerings



**challenges**

# immersive learning

**30+ day experience** introducing, leveling up Agile Scrum, DevOps, Lean skills

**flashbuilds\***

**1-3 day events** to create a usable feature, solve a problem

**open labs**

**90-minute sessions** twice weekly for questions, answers, and good old fashioned inspiration



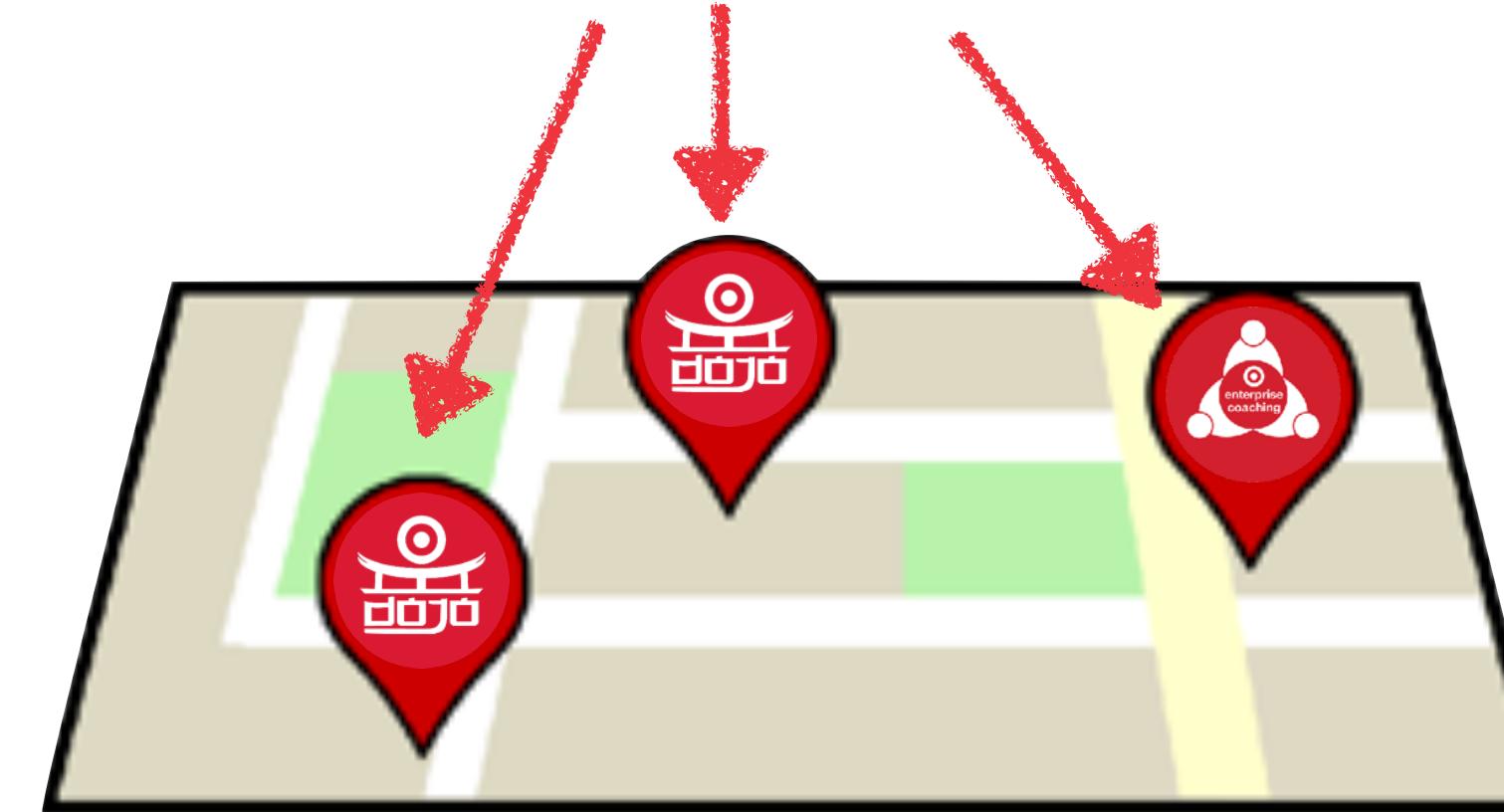
key partners include coaches working with teams who are able to connect the Dojo with teams ...

5. prioritize demand based on constraints

aligned with strategic priorities

and folks ready to #DO

## Strategic Roadmap



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which has  
helped move  
fast

## results so far

(since April 2015)

throughput

14

challenges

6

flashbuilds

200+

learners

### consistency

outcomes  
**from** 3-month process involving 2-3 dozen requests to other teams with inconsistent results

**to** 30-minutes to deploy consistent full-stack environment

### building team

personal  
**from** delegating tasks to individuals to get things done  
**to** working as team to come up with the best solution, one that all supported

*lead engineer*

### velocity

**from** single person spending 6-12 hours to merge/promote code every 2 weeks

**to** everyone being able to merge/promote code in minutes

### confidence

**from** worrying about calls in the night during production deployments

**to** being able to go to bed knowing what's ready for deployment works and there will be no calls

*senior engineer*

### foundation

**from** having an idea that sounds really great in theory

**to** being able to use new tools to be successful in reality (including uncovered unknown required work)

### collaboration

**from** environment not conducive to real-time collaboration

**to** environment that enables face-to-face communication, progress

*scrum master*

and a first round of immersive learning for our senior executives





what have  
we learned  
in 6 months?

MVPs rock

a successful  
Challenge needs  
a good charter



don't  
overly  
focus  
on one  
area

expect the  
unexpected

befriend your  
landlord



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next step in  
scaling



global



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Target India



our advice  
to others?



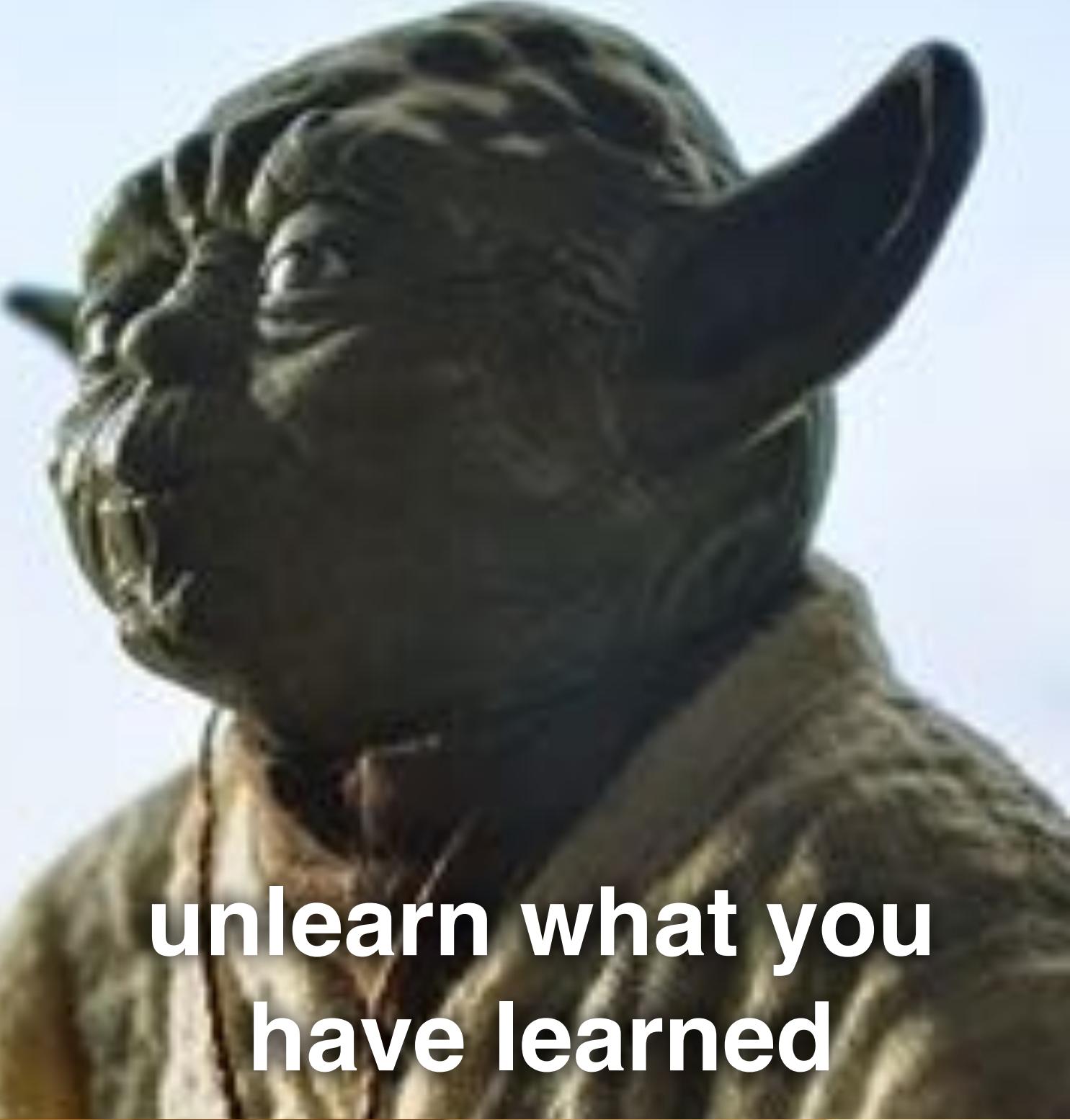
don't wait to



be exclusively  
inclusive



empower your  
change agents



unlearn what you  
have learned



connect with broader DevOps  
Enterprise community



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here's  
what we're  
looking for  
help with

# how do you scale across an enterprise?



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@hmmickman



@RossClanton

tweet us

and follow our journey

Target Tech Blog  
<http://target.github.io>

The Goat Farm  
<http://goatcan.do>