

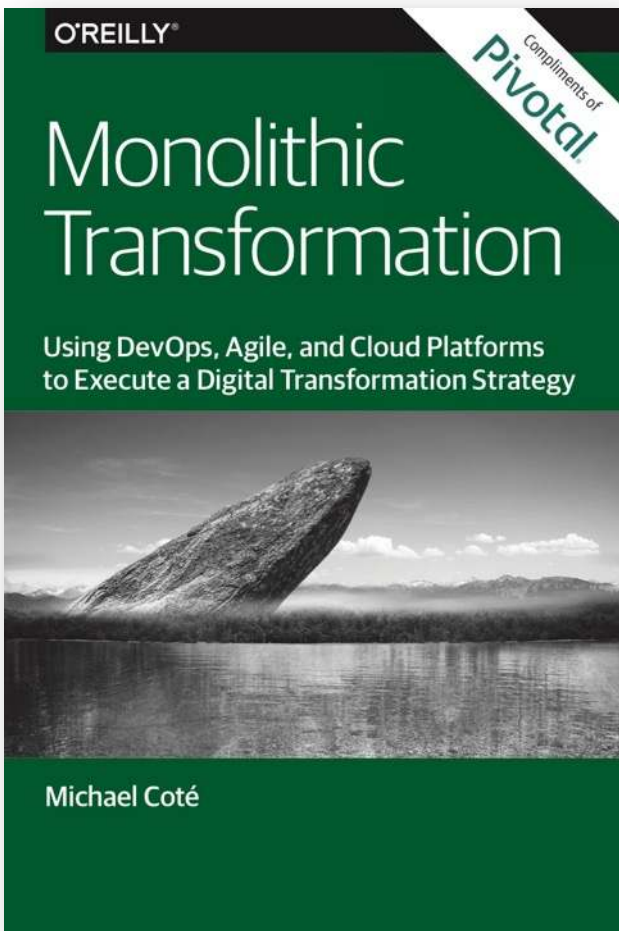
Pivotal

Monolithic Transformation

Changing the culture of large organizations, or, what to do when your meatware stinks

August, 2019

@cote



Free to download

A strategy primer & toolkit of transformation tactics, based on case studies

<http://cote.io/books>

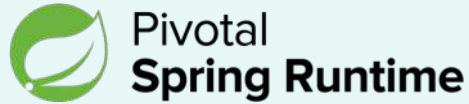
Also, new book WIP:

<https://cote.io/bottleneck/>

start.spring.io



run.pivotal.io



pivotal.io/platform



 Pivotal Labs (Product Design & Development)

AppTX (Modernization)

PCFS (SRE)



25 years of failure (@StandishGroup)



Robot dogs not required



Rabobank

250+ apps supported by 3 ops staff, autonomous DevOps/product teams

THALES

Idea to production In 2 days; 3 months to market vs yrs; 80% of dev time coding

Allianz 

File and pay claims in minutes, not weeks.

DAIMLER

Modernized app, rolled out 20 countries in 5 months.

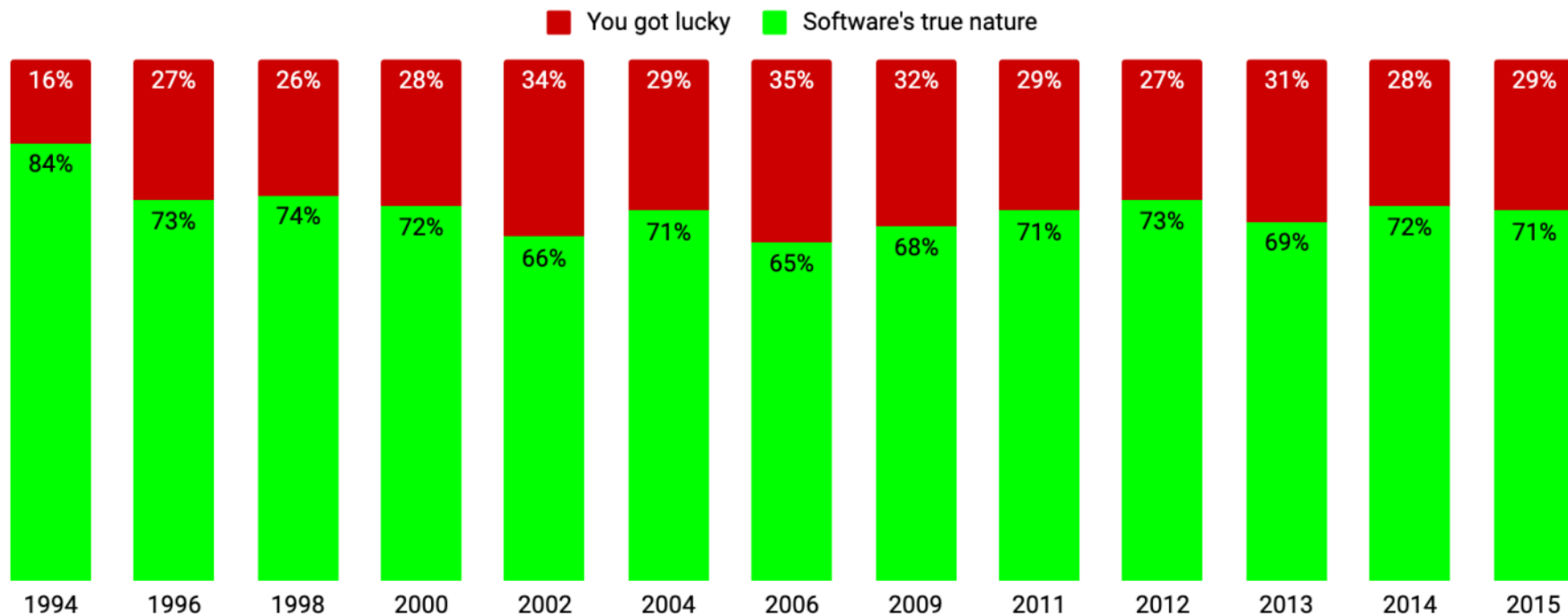
HCSC 
Health Care Service Corporation

40%+ productivity/cost, rebooted member facing app.

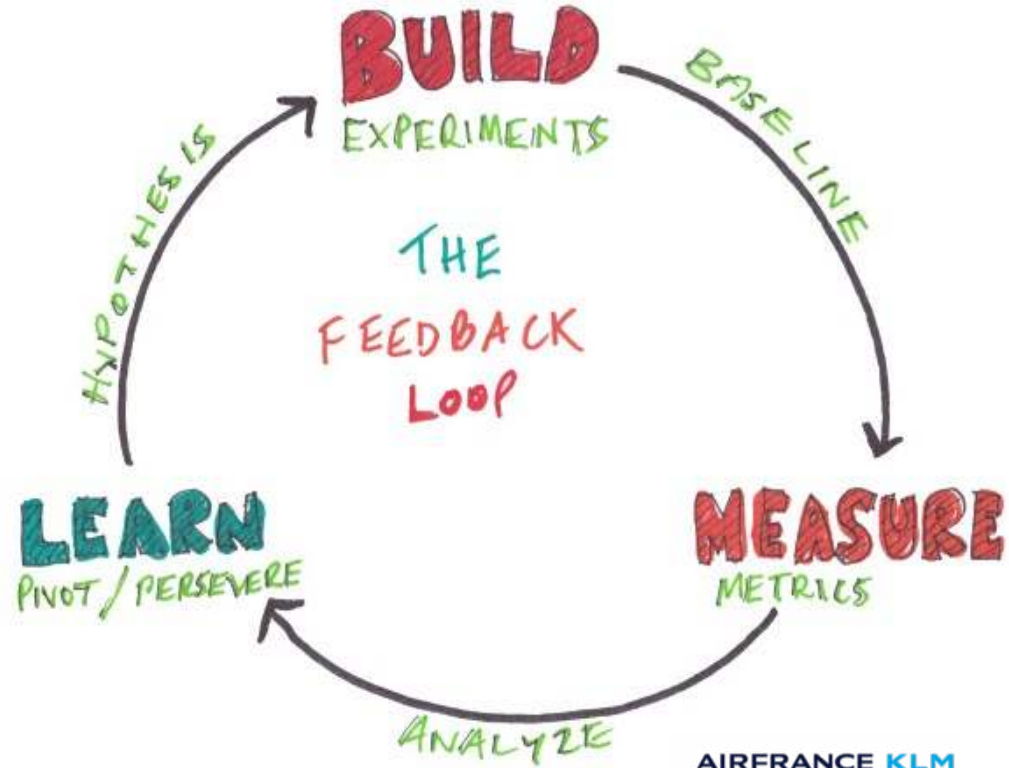
 Liberty Mutual
INSURANCE

40% policy strike rate, vs. 20% industry average.

25 years of software's true nature vs “you got lucky” (@StandishGroup)



Shift from *Service* Delivery to *Product* Delivery



AIRFRANCE KLM



Sources: ["Going Cloud-Native at Orange France,"](#)
Pivotal Insights #53, 2018; ["Transformation
Digitale de la Direction Enterprise France,"](#)
Philippe Benaben, Gan Zifroni, Nicolas Gilot,
Orange France, July 2018

“The Business”



Corporate strategy, revenue goals, mission, etc.

Leadership, EAs, etc.

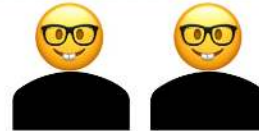


Culture, process, methodology, governance, compensation, etc.

Product teams

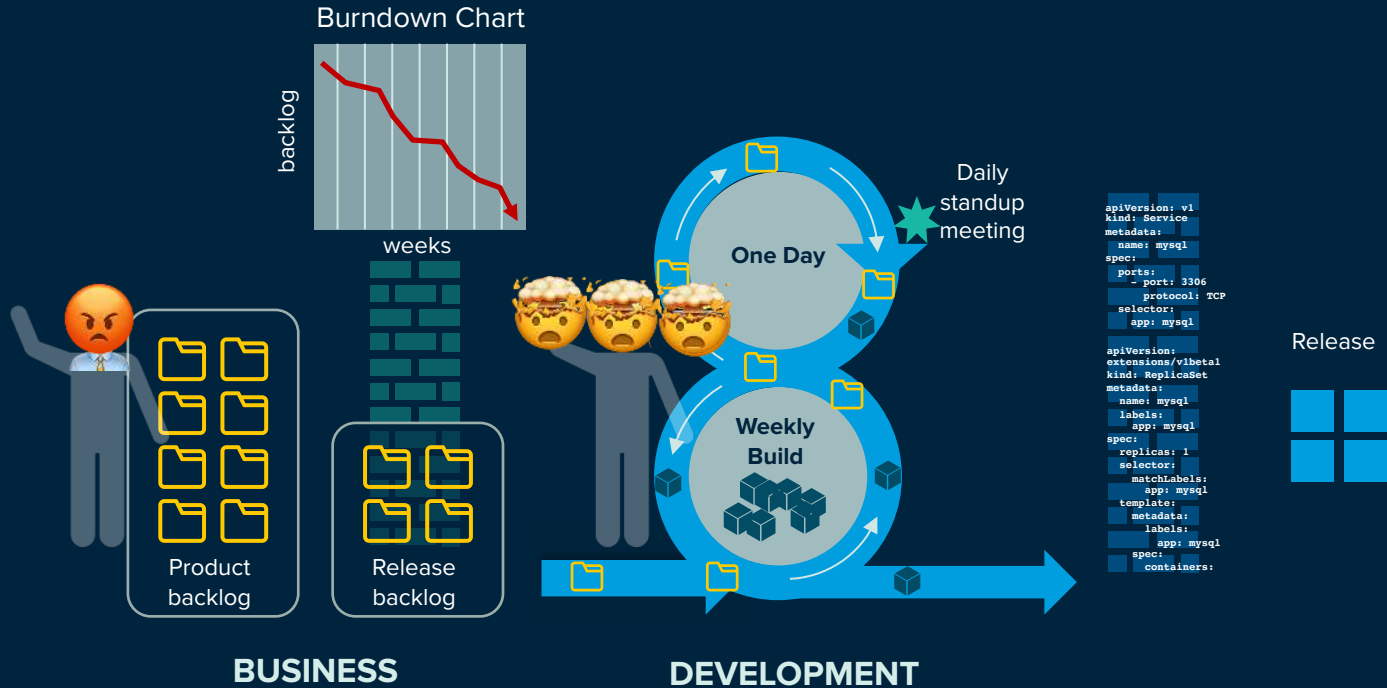


Platform Engineers



☁️ Private or public IaaS ☁️

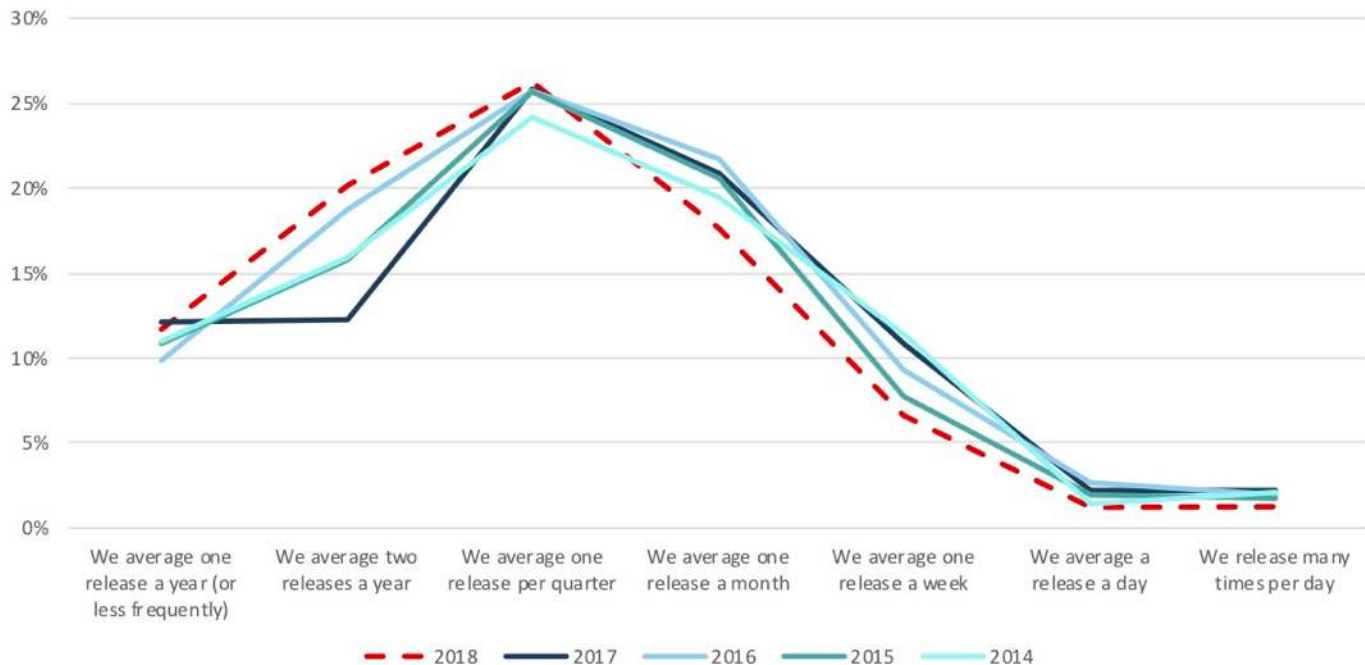
What was once DevOps is becoming Dev and Ops again



BUSINESS

DEVELOPMENT

“How often does your team or teams release applications?”



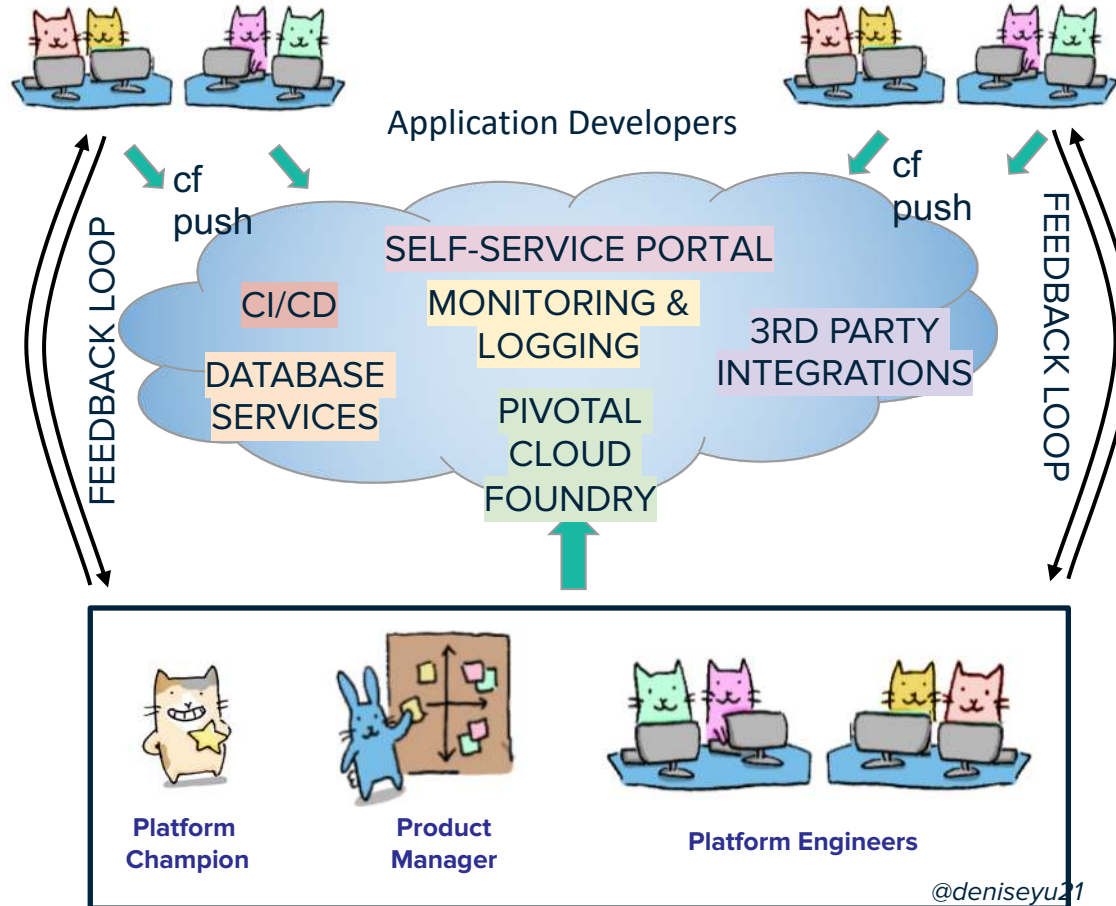
Base (2018): 3,228 Developers

Base: 546-719 Developers who work for a software company, for internal IT, or in technology services

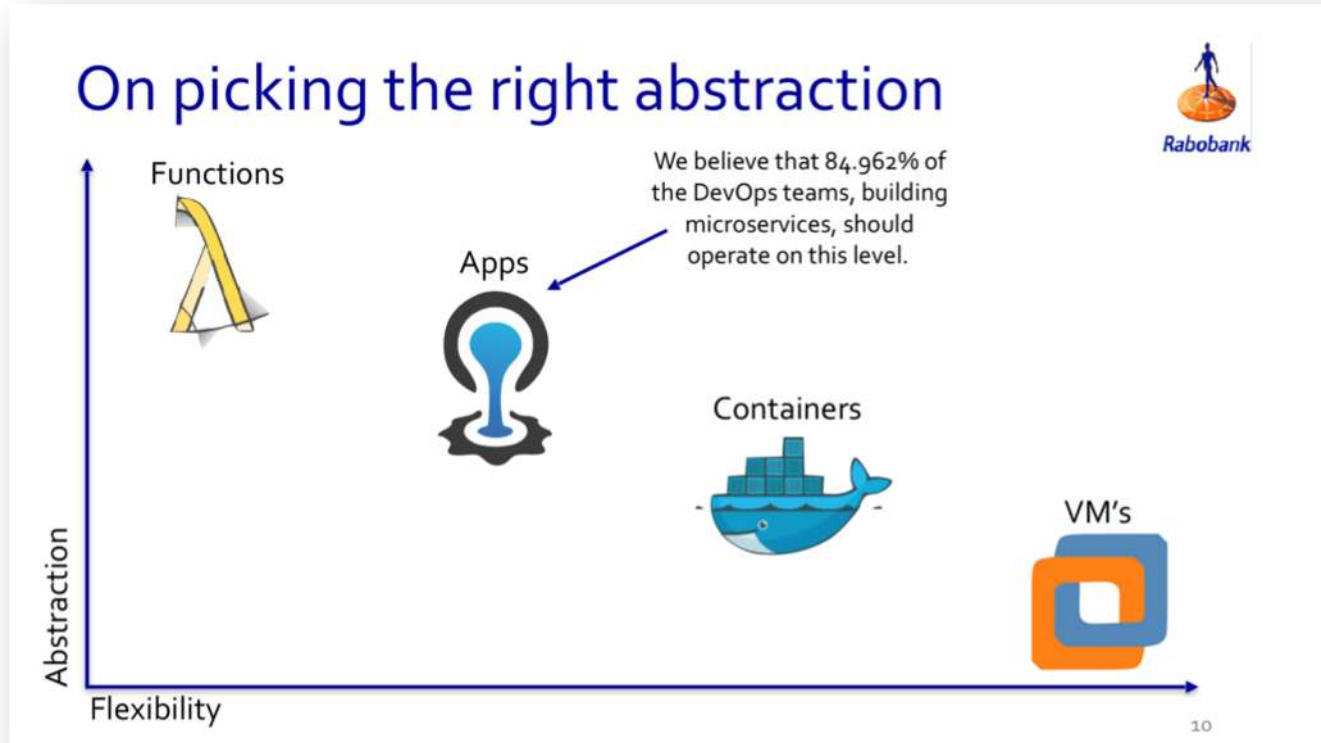
Source: Forrester Business Technographics Developer Survey, 2014-2018.

“The code to accomplish these tasks might be dozens of lines of JavaScript, which would be a trivial amount of development compared to what it takes to set up the servers with the proper environment to run the code.”

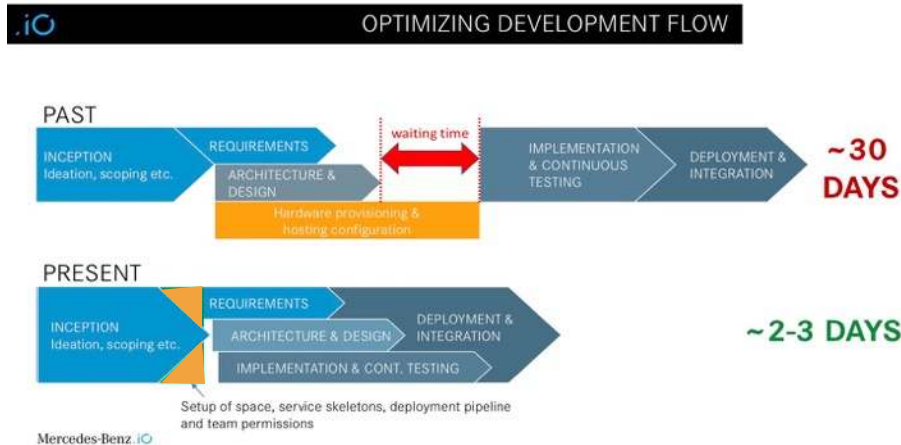
Apply Platform as a Product approach to ops



First, choose, govern, and garden the right platform



Eliminating toil to free up time for product development, speed up developers



DAIMLER

Functions

- Removes toil with automation & programming
- Stands up & manages the platform
- Creates shared services/middleware/etc.

Insane staff efficiency

- T-Mobile USA: 8 ops to 300 developers, 11k containers.
- Dick's Sporting Goods: 6 ops to 120 devs.
- Well Fargo: repaves production every 3 days

“The Business”



Corporate strategy, revenue goals, mission, etc.

Leadership, EAs, etc.

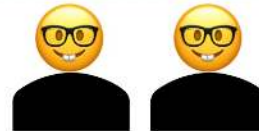


Culture, process, methodology, governance, compensation, etc.

Product teams



Platform Engineers



Pivotal

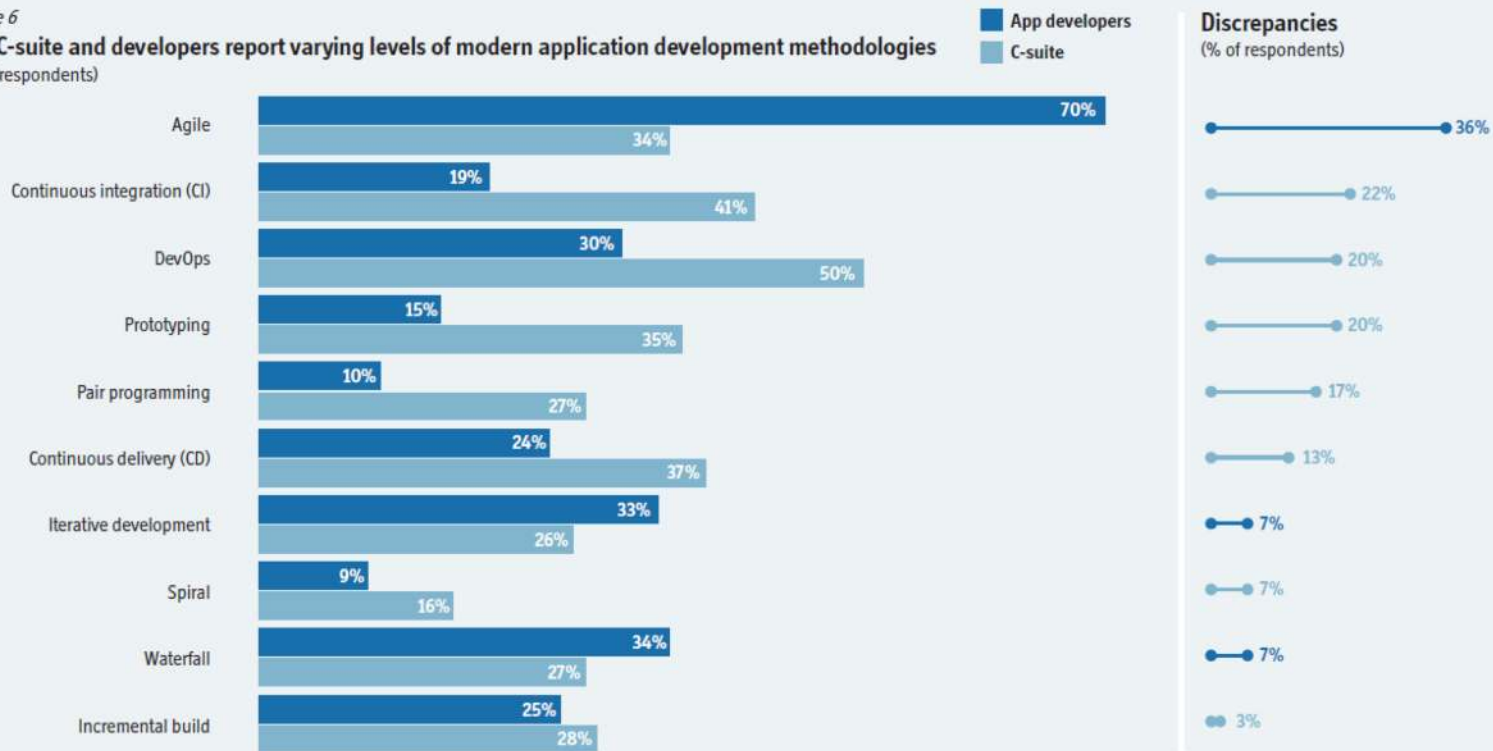
☁️ Private or public IaaS ☁️

Executives are overly optimistic about agile in practice

Figure 6

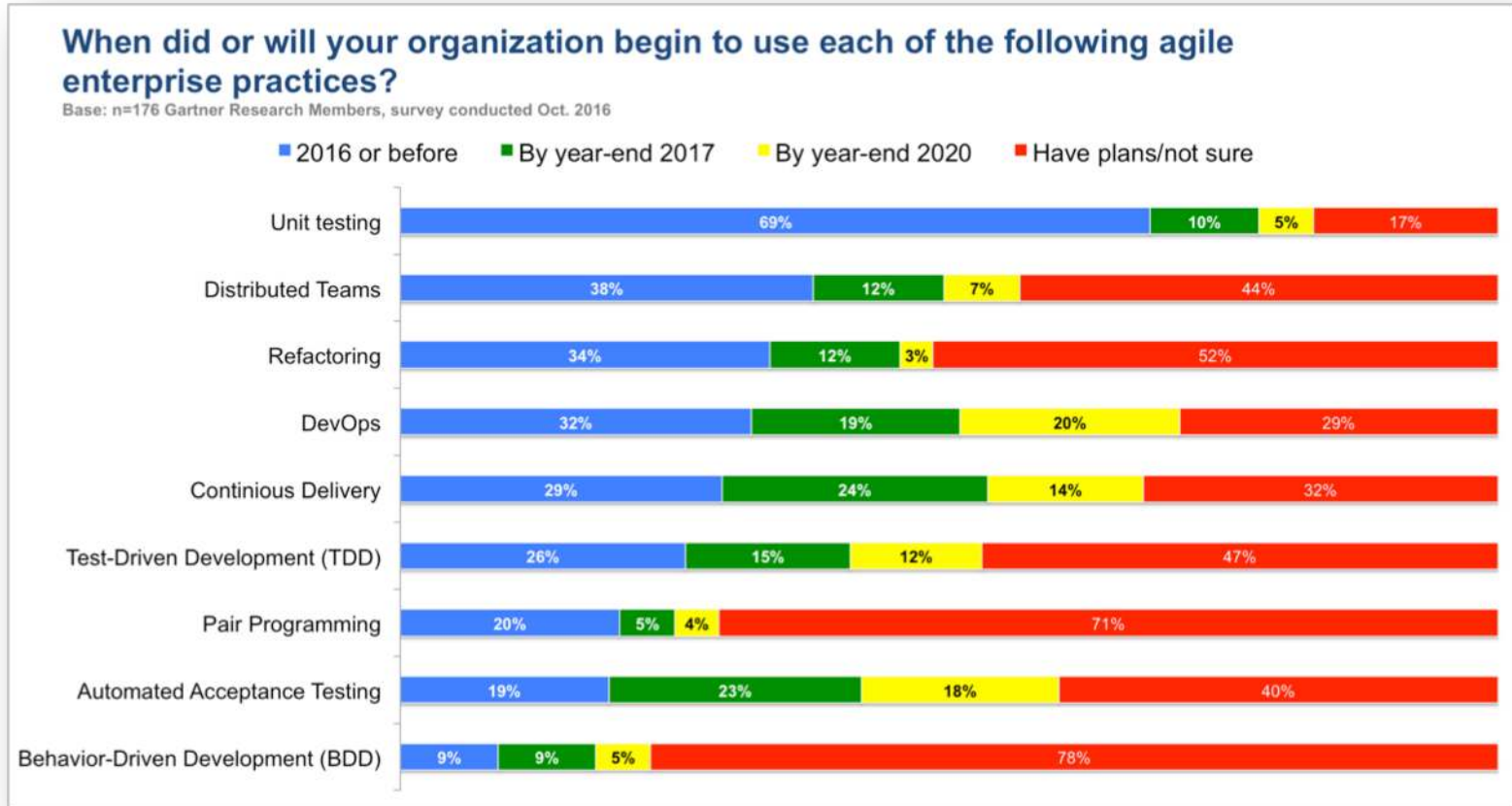
The C-suite and developers report varying levels of modern application development methodologies

(% of respondents)

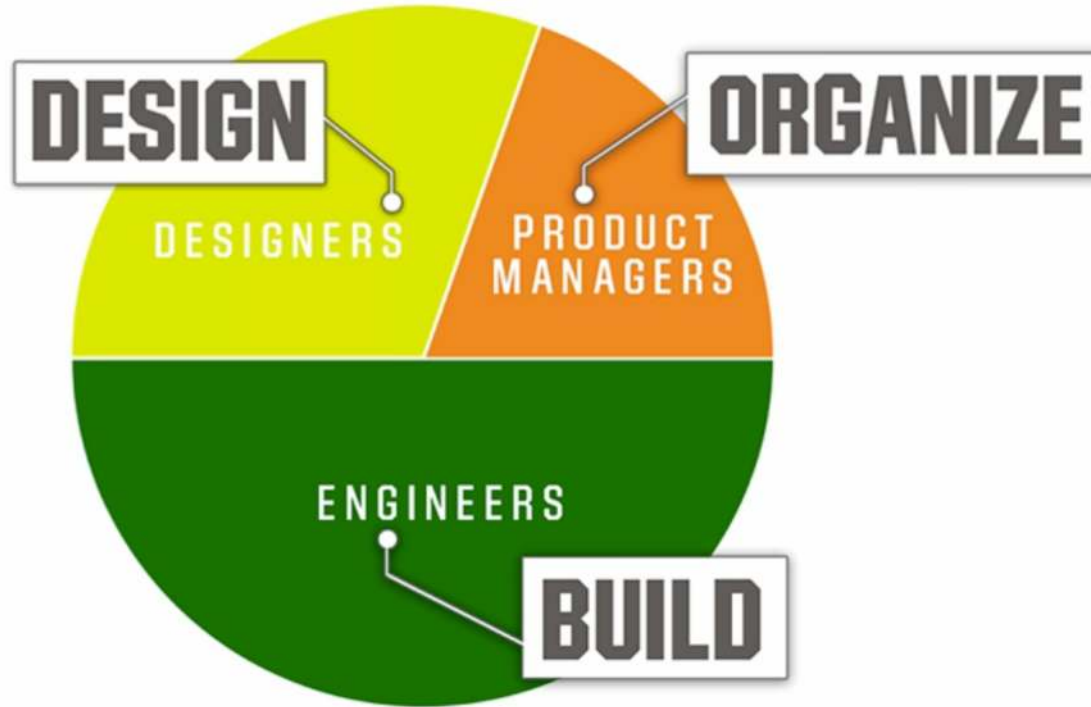


"What development models and methodologies are used by your organisation's application developers?"

25+ years later, agile practices are still not standard



Product centric, balanced teams



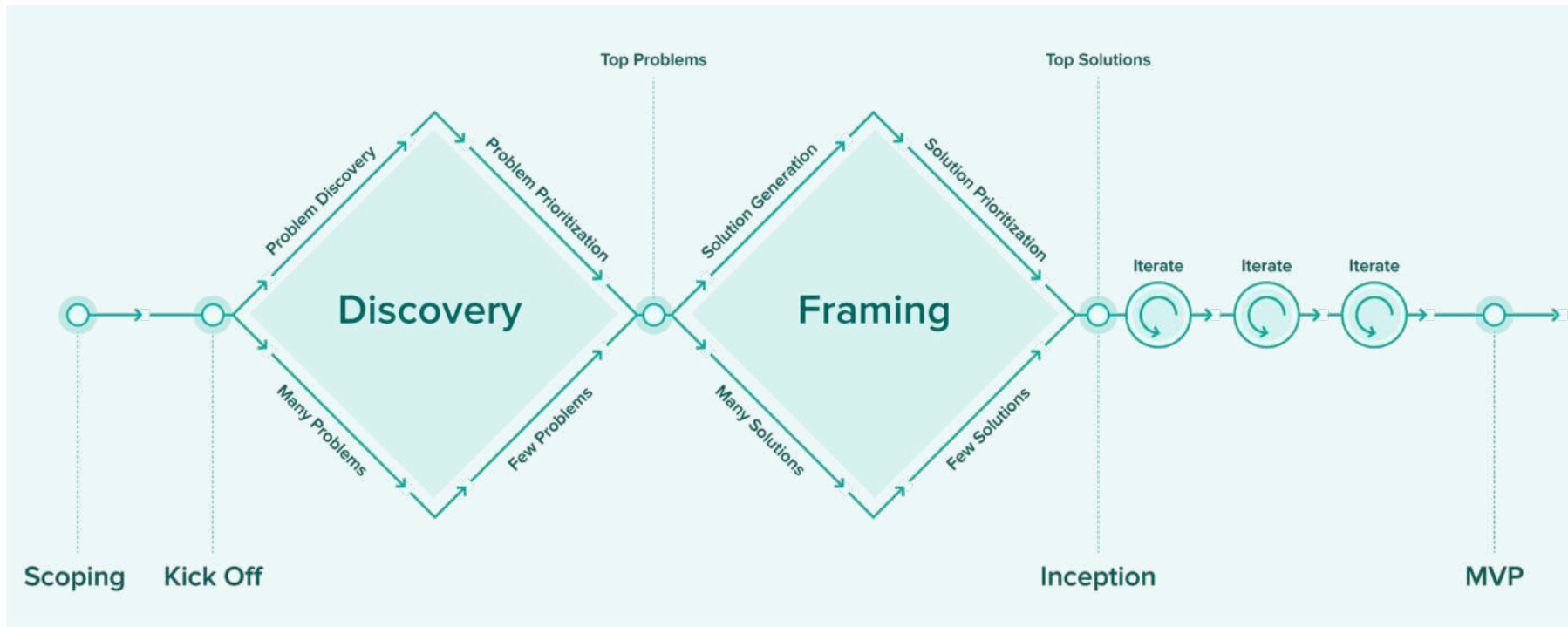
From coding 20% of the time coding to coding 90% of the time



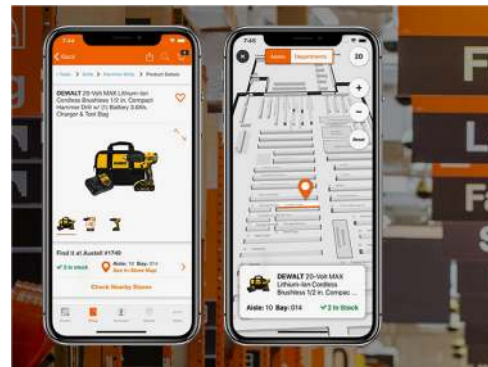
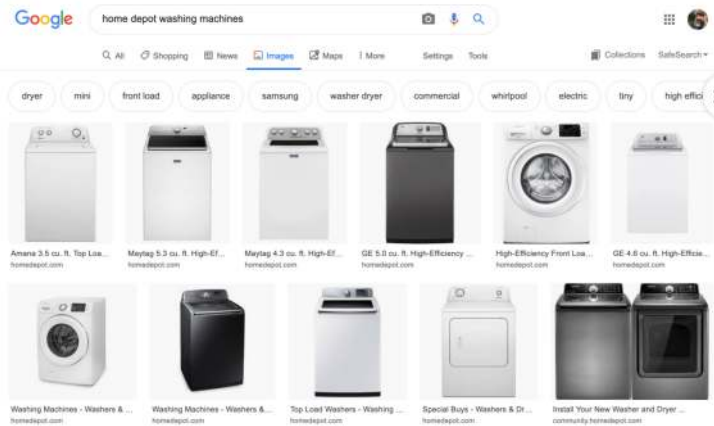
An agile methodology, proven over 25+ years:

- Balanced teams w/all roles needed, dedicated to the product
- Paired programming, & beyond
- Test-driven Development
- Short iterations
- Continuous Integration & Continuous Delivery

Disciplined focus to find the highest value, smallest path to learn the best way to move pixels on the screen



Touching washing machines, finding toilets



“The Business”



Corporate strategy, revenue goals, mission, etc.

Leadership, EAs, etc.

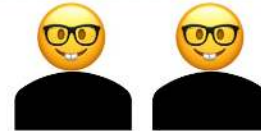


Culture, process, methodology, governance, compensation, etc.

Product teams



Platform Engineers

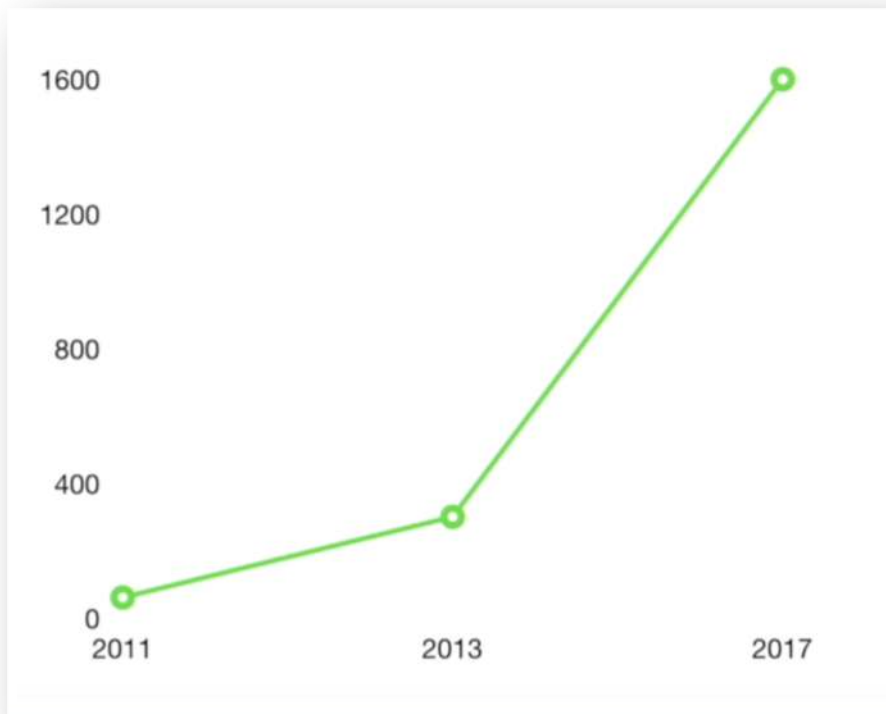


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☁ Private or public IaaS ☁



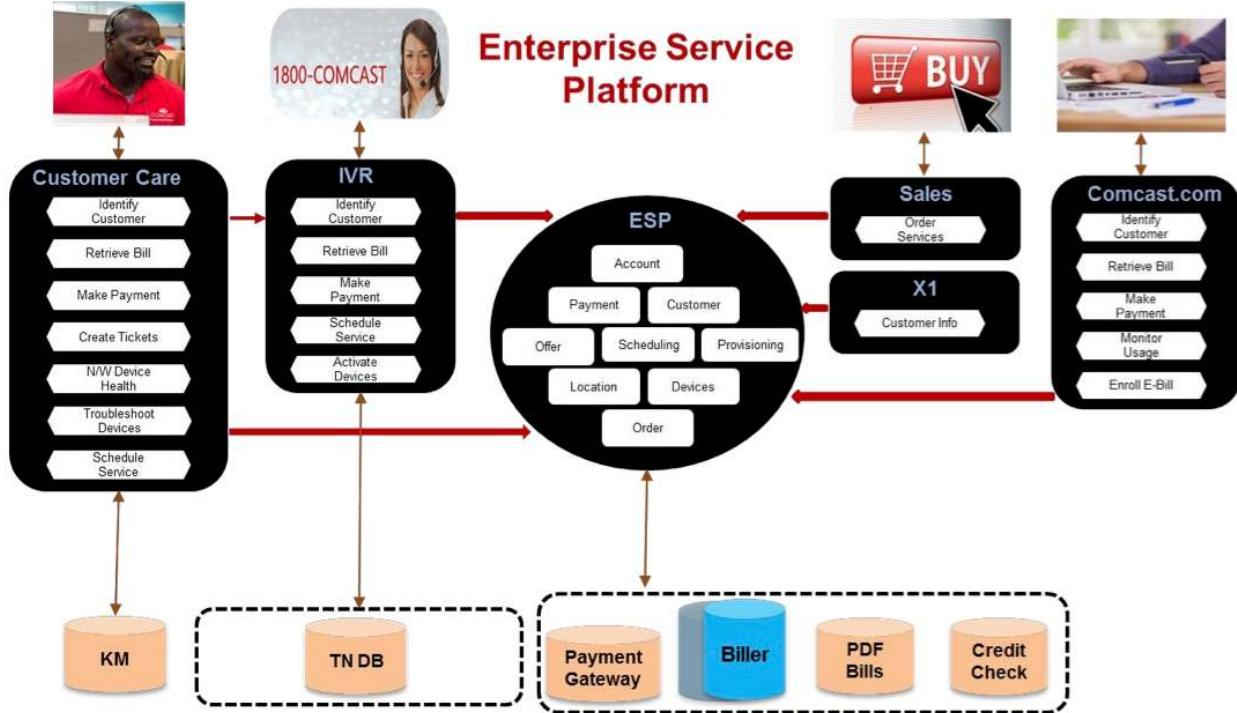
Tech staff growth



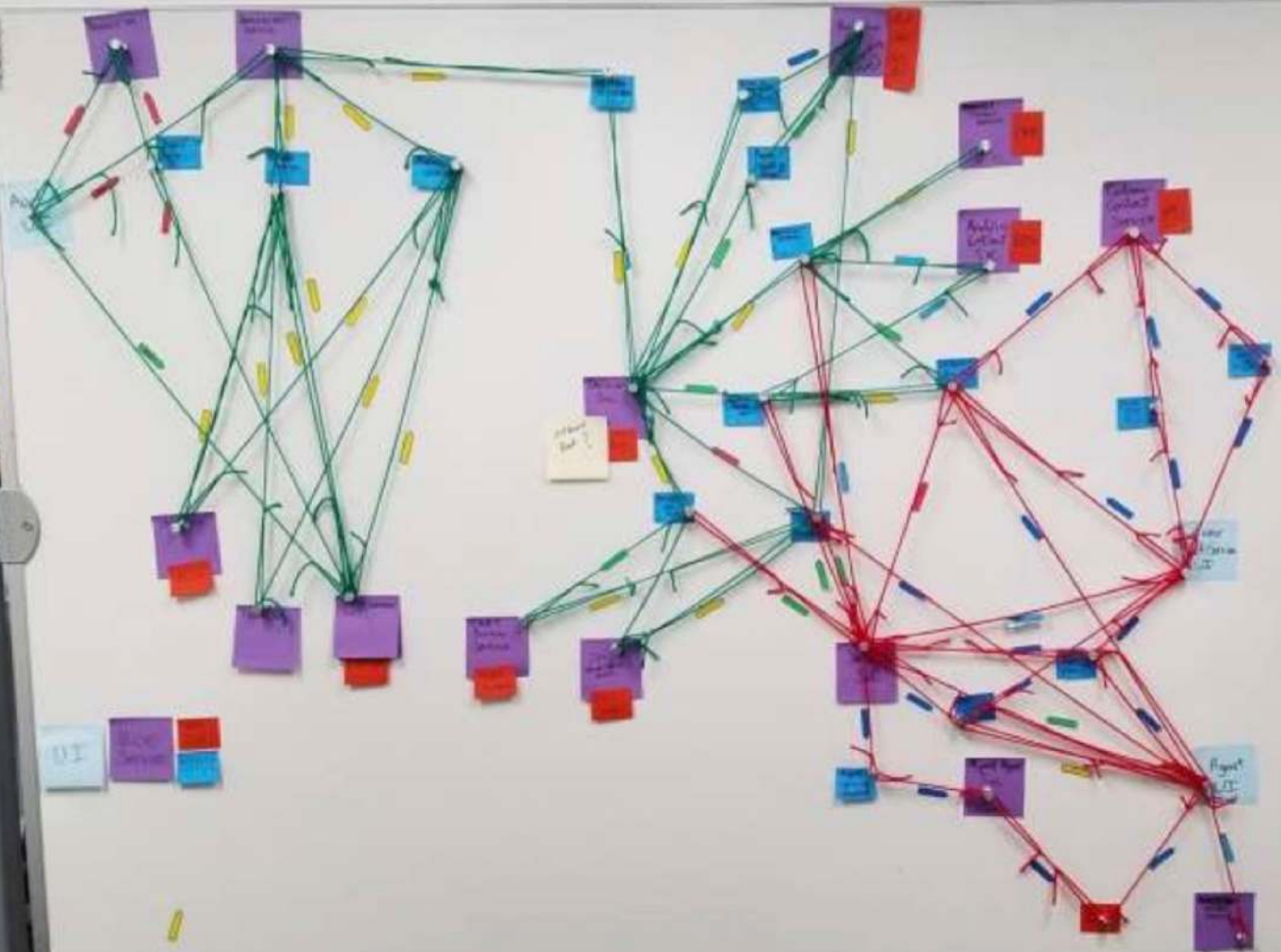
“J.P. Morgan CFO Marianne Lake said the US bank now employs **40,000 technologists**. That's an **increase of 10,000 in two years** (in a 2013 investor letter, JPM said it employed 30,000 technologists). **18,000 of those 40,000 are developers**, said Lake.”

Enterprise architects

What is ESP?



- **Monolithic SOA powering the Comcast Back Office**
- **65+ services**
- **250M+ transactions/day**
- **200+ internal and external consumers**
- **150+ back ends**
- **256+ servers**
- **50+ Domains**
- **1,000+ JVMs**



Handwritten notes on purple and blue sticky notes, including:

- Audio Control
- Audio Control 2
- Audio Control 3
- Audio Control 4
- Audio Control 5
- Audio Control 6
- Audio Control 7
- Audio Control 8
- Audio Control 9
- Audio Control 10
- Audio Control 11
- Audio Control 12
- Audio Control 13
- Audio Control 14
- Audio Control 15
- Audio Control 16
- Audio Control 17
- Audio Control 18
- Audio Control 19
- Audio Control 20

Vertical text on the right side of the whiteboard, possibly a legend or key:

- Red line
- Green line
- Blue line

Handwritten notes on purple and blue sticky notes, including:

- IO
- Audio Control
- Audio Control 2
- Audio Control 3
- Audio Control 4
- Audio Control 5
- Audio Control 6
- Audio Control 7
- Audio Control 8
- Audio Control 9
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- Audio Control 11
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- Audio Control 14
- Audio Control 15
- Audio Control 16
- Audio Control 17
- Audio Control 18
- Audio Control 19
- Audio Control 20

EAs do the same work, shifting from policing to partnering



Govern process & platform



Automate governance



Manage “technical debt”

Management & org. transformation

“Executive sponsorship for us was absolutely critical. Without that we could not have gotten anywhere that we needed to be.”



Brendan Aye



“We believe that we need to reimagine banking to make banking simple, seamless, as well as invisible to allow our customers to **live more bank less.**”

Siew Choo Soh, DBS Bank



Transform by doing, then cloning & seeding

HEATMAP OF DEVOPS TRANSFORMATION STRATEGIES BY PERFORMANCE PROFILE

	Low	Medium	High	Elite
Training Center	27%	21%	18%	14%
Center of Excellence	34%	34%	20%	24%
Proof of Concept but Stall	41%	32%	20%	16%
Proof of Concept as a Template	16%	29%	29%	30%
Proof of Concept as a Seed	21%	24%	29%	30%
Communities of Practice	24%	51%	47%	57%
Big Bang	19%	19%	11%	9%
Bottom-up or Grassroots	29%	39%	46%	46%
Mashup	46%	42%	34%	38%

Further analysis of just high and elite performers shows the following use profiles:

- 46% - Communities of Practice, Grassroots, and PoCs
- 23% - Grassroots efforts and Communities of Practice
- 22% - all by Big Bang and DOJOs, but inc. PoC but stall
- 9% Centers of Excellence, Communities of Practice, and Training Centers

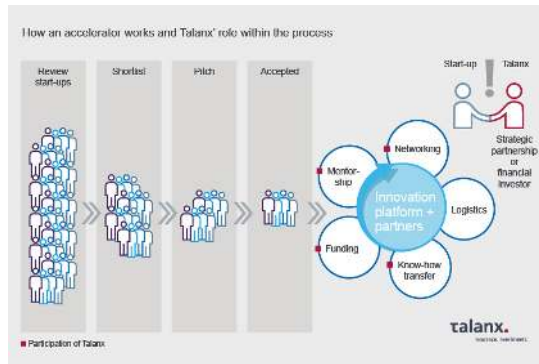
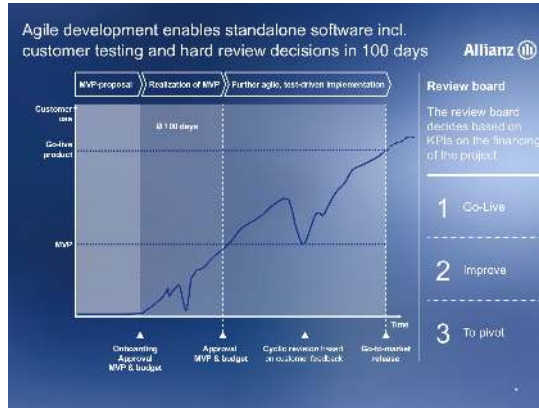
Changing is often too hard, so create a new organization



Internal marketing, branding, etc.



Use a systematic, small batch finance & strategy process

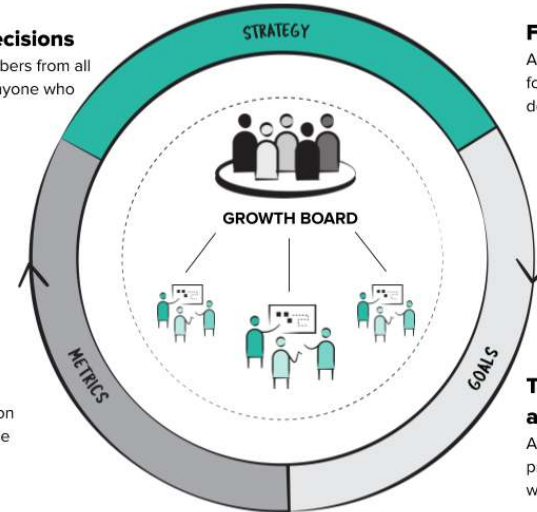


Cross-functional decisions

Board should include members from all key stakeholder groups: anyone who can affect the decision

Focused on value

A single problem area or goal focuses the growth board's decisions



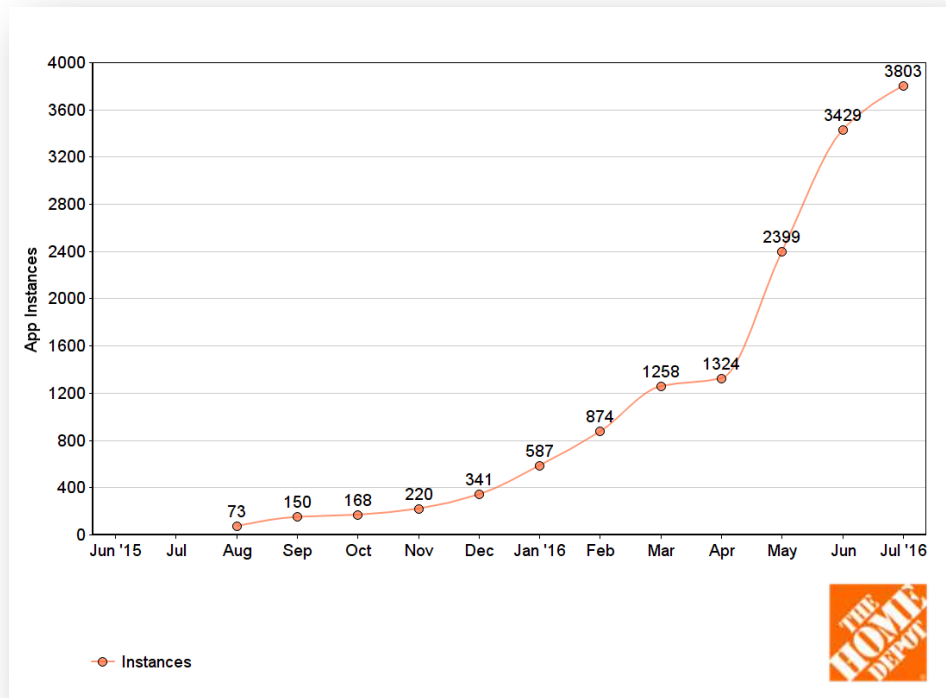
Informed by data

Team presentations focus on evidence, learnings, provide context for conversation

Tackles the riskiest assumptions

Are these even the right problems to solve? How would we know?

Starting: “pilot low-risk apps, & ramp-up.” E.g. store finder.



2016:

130 apps & services,
estimated

2019:

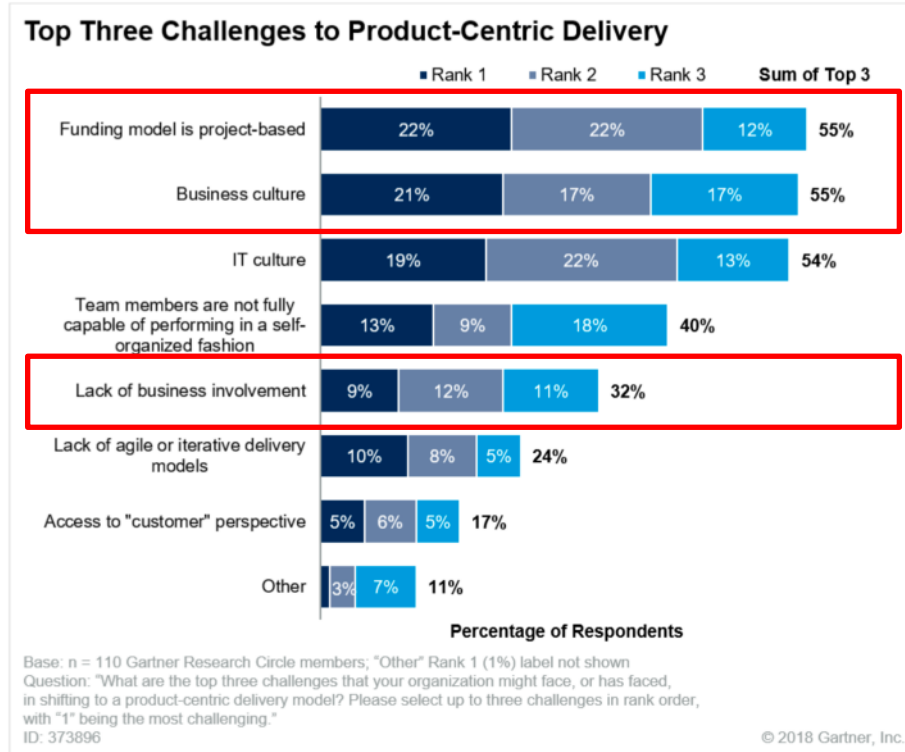
4,000 apps & services,
estimated

Sources: [Home Depot meetup, Oct 2015](#); [Humana at CF Summit 2015](#); [“Getting started.”](#) Coté, Oct 2016; [Comcast's Christopher Tretina at SP1 2016](#); [“Cloud-Native at Home Depot, With Tony McCulley”](#); [“Bottom Up Enterprise Transformation.”](#) Kyle Campos, CSAA Insurance, CF Summit EU, Oct 2017; [“Running the platform at The Home Depot.”](#) Tony McCulley interview, June 2019. 2016 estimated apps & services: # of AI's equates to ~130 apps composed on ~900 services; 4k in 2019 from Tony.

Work in Progress

The Business Bottleneck:
finance, strategy,
executives

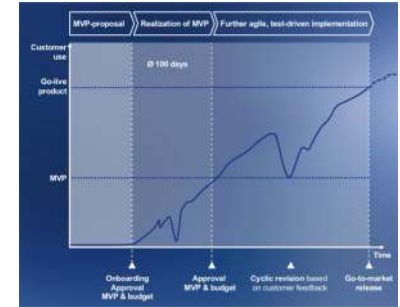
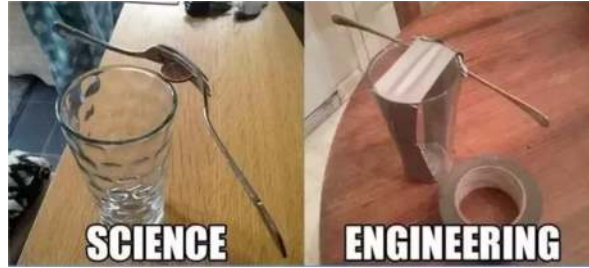
“The Business” is blocking transformation



Note: Due to rounding, numbers may not add up precisely to the totals shown.

Source: Gartner (October 2018)

Finance, work in progress



“I got a *good buy*” ROI

vs.

responsible, aligned
spending

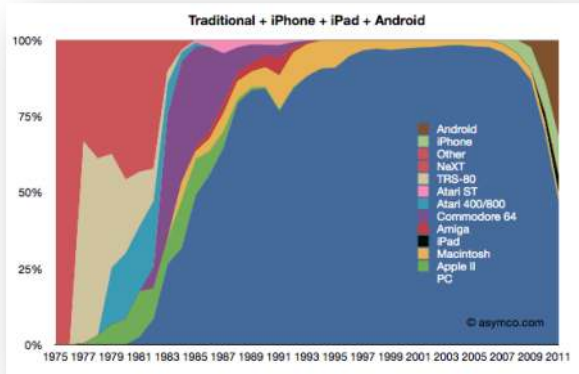
Cheap hope

vs.

Validated spending

Small funding cycles

Chaos strategy: move strategy from PowerPoint to prod.



Monitor The Dediu Cliff

175

**Know your customer
&
Try new things**



**Strategy validation with
experimentation**

Transformation is easy, you just have to do the hard work

Comcast: 83% increase in release velocity from average 3-4 months release cycle to 15 days

Liberty Mutual: Revenue-generating MVP in one month; 1K production deploys per day across 600 applications

Mercedes-Benz: 90% improvement in release velocity from ~30 days to 2-3 days

Boeing: 80% reduction in 'time to value' (cycle time)

Verizon: 87% reduction in 'time to value'

Allstate: Developers spending 80% of time coding vs. 20% (4X improvement)

Scotiabank: In 10 months, scaled to 29 teams in 4 countries with 3X product deploys per month

Scotiabank: 3X product deploys per month

Verizon: 96% improvement in patching frequency, from patching every 6 months to weekly

Express Scripts: 89% reduction in security patching lead time from 45 days to 5 days

Comcast: 47% reduction in 'mean time to repair' (MTTR); 44% reduction in product defect incident frequency; 81% reduction in customer-facing downtime

Comcast: 1,500 developers supported by 4 operators = ~375 developers per operator

T-Mobile: 11,000 AIs handled by an operations team of 8; also achieved 83% reduction in product defect incident frequency; 67% reduction in time to resolve incidents

RaboBank: 3 operators supporting 250+ apps in PCF

Boeing: 6X (600%) improvement in asset utilization

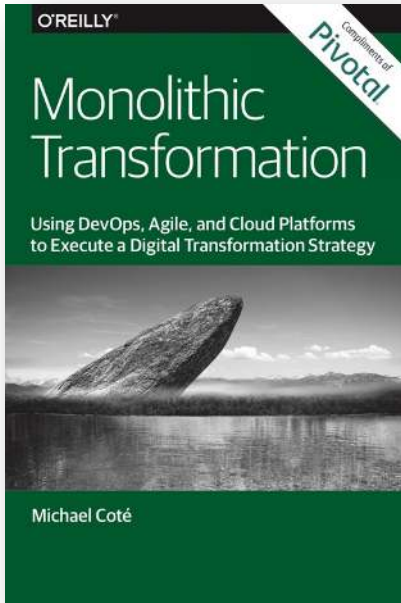
Cerner: Time to recover down VM nows takes 10m with no manual intervention. (Previously 6-8 hours with 4 resources).

Yahoo Japan: Reduced SRE team platform install & update work by 85%

Dicks Sporting Goods: 90% reduction in time and effort to scale;



More details



- Book (free!): <http://cote.io/books>
- Platform as a Product:
 - [Recorded, more detailed presentation.](#)
 - [“Why You Should Treat Your Platform as a Product.”](#)
- Management:
 - [Recorded enterprise architecture talk.](#)
 - [Recorded Creating a DevOps Culture talk.](#)
- Strategy, finance, & executives:
 - [The Business Bottleneck](#) work in progress.

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