

**WANT TO  
SUCCESSFULLY ADOPT  
DEVOPS? CHANGE  
EVERYTHING.**

- ▶ Redefine words for your organization
- ▶ Change your organization to enable DevOps
- ▶ Use modern architectures and technologies
- ▶ Use Continuous Delivery to safely deploy more often

- ▶ From Seattle, Washington, USA
- ▶ Technology Evangelist at ThoughtWorks
- ▶ DevOpsDays Organizer
- ▶ @kmugrage on Twitter



REDEFINE WORDS

FOR YOUR  
ORGANIZATION

# WHAT ISN'T DEVOPS

---



- ▶ A Toolset
- ▶ A Role
- ▶ A Team

developING and operatING

- ▶ Culture
- ▶ Automation
- ▶ Measurement
- ▶ Sharing

<https://blog.chef.io/2010/07/16/what-devops-means-to-me/>

@kmugrage

<https://www.gocd.org>

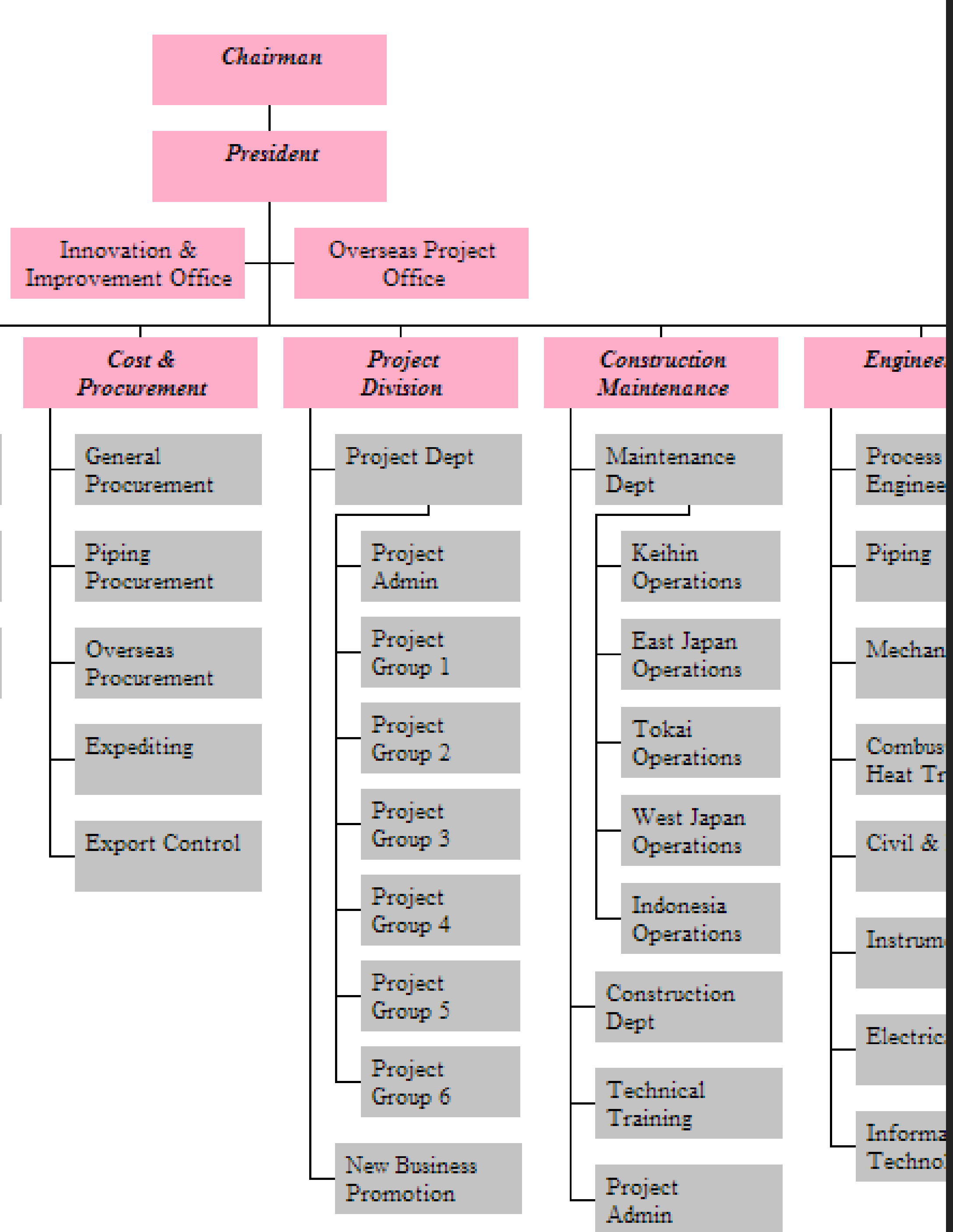
- ▶ Culture
- ▶ Automation
- ▶ Lean
- ▶ Measurement
- ▶ Sharing

<https://blog.chef.io/2010/07/16/what-devops-means-to-me/>



“DEVOPS: A CULTURE WHERE PEOPLE, REGARDLESS OF TITLE OR BACKGROUND, WORK TOGETHER TO IMAGINE, DEVELOP, DEPLOY AND OPERATE A SYSTEM.”

—Me

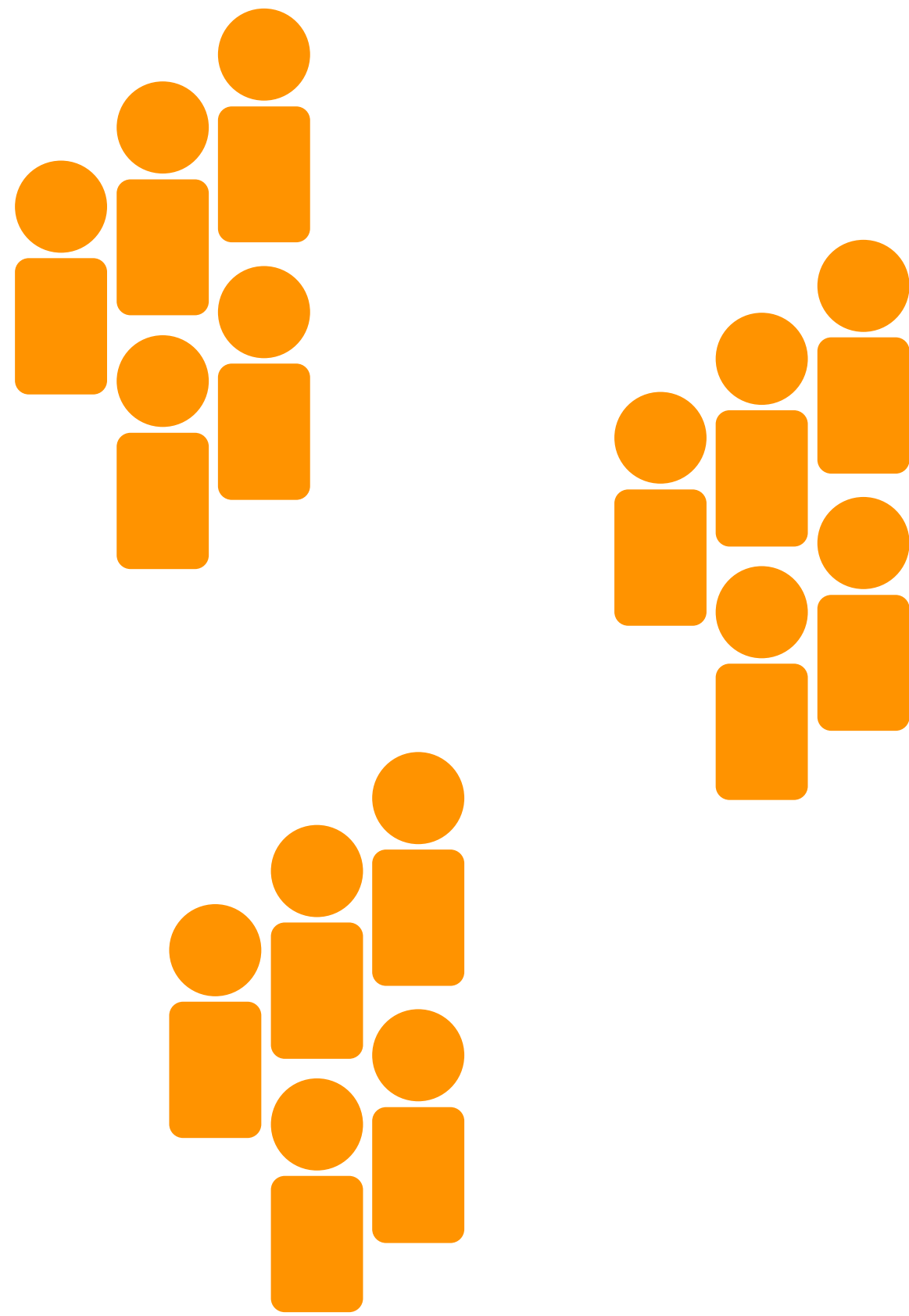


# CHANGE YOUR ORG

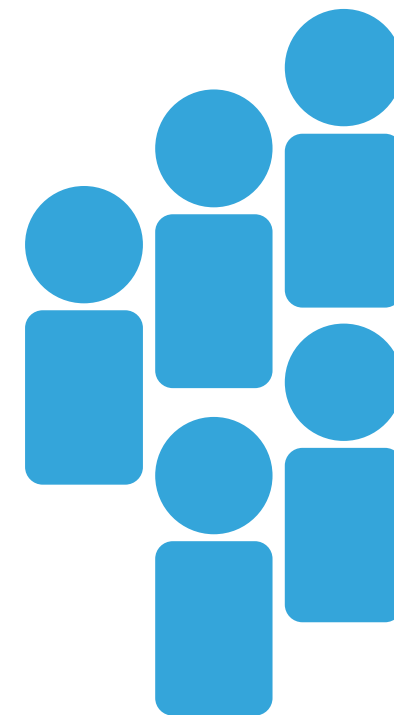
# TO ENABLE DEVOPS

# TRADITIONAL MODEL

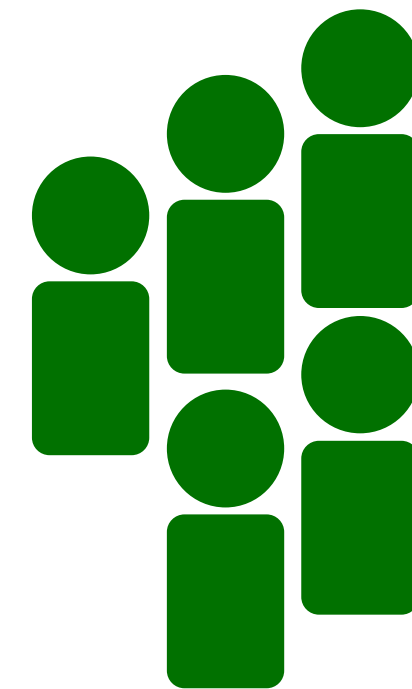
Development Teams



Testing Team



Operations Team

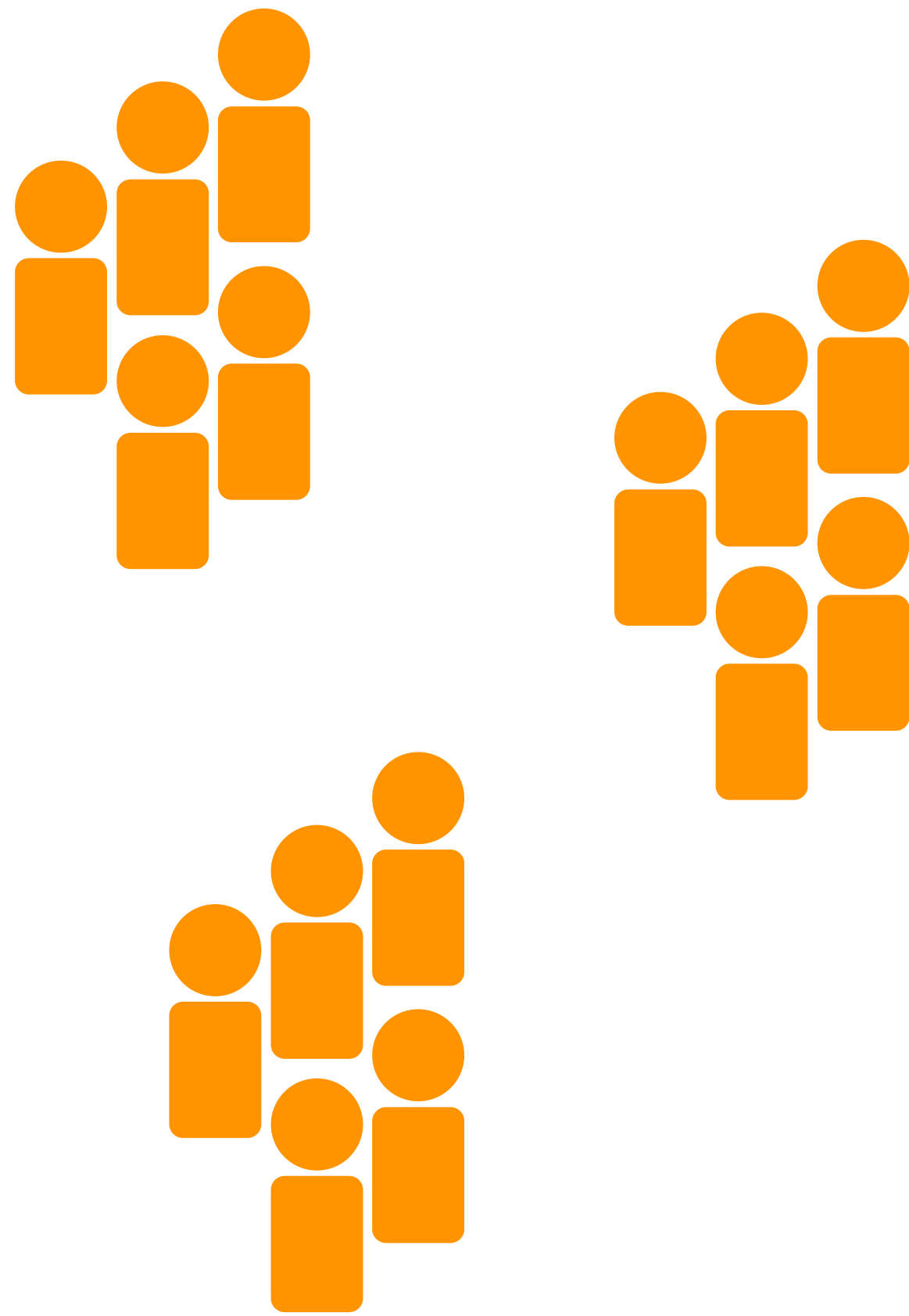


“ANY ORGANIZATION THAT DESIGNS A SYSTEM (DEFINED BROADLY) WILL PRODUCE A DESIGN WHOSE STRUCTURE IS A COPY OF THE ORGANIZATION'S COMMUNICATION STRUCTURE.”

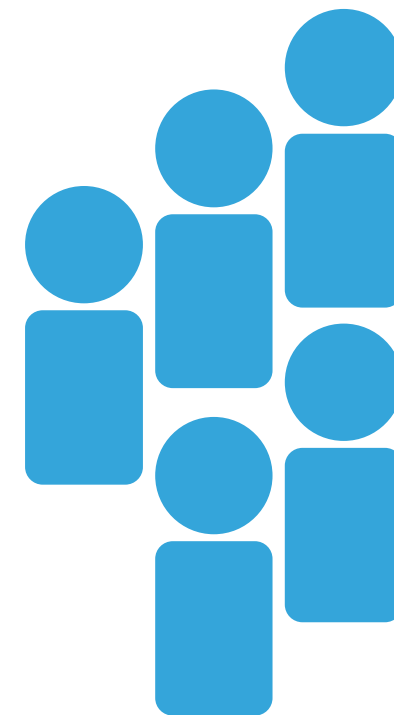
—Mel Conway

# TRADITIONAL MODEL

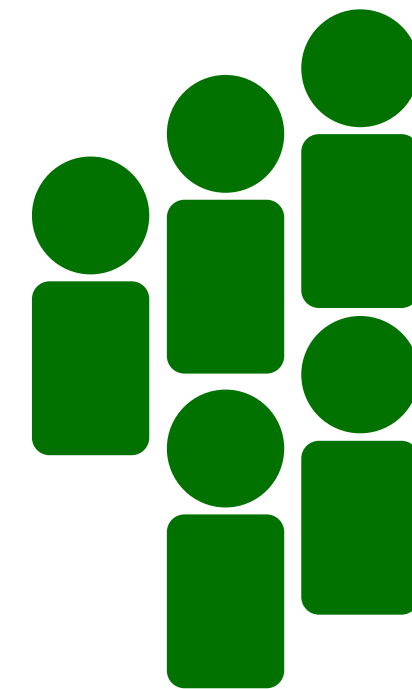
Development Teams



QA Team

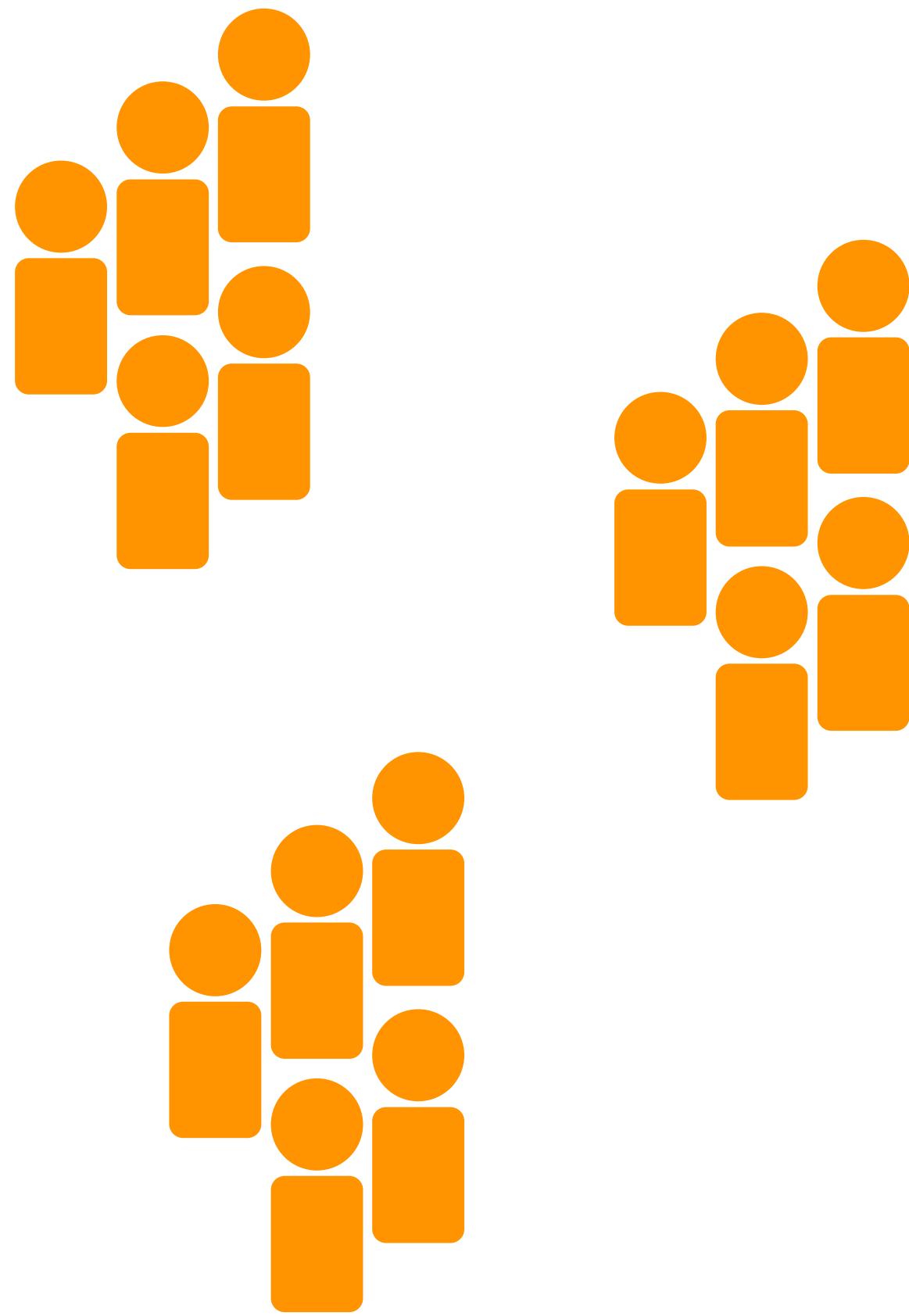


Operations Team

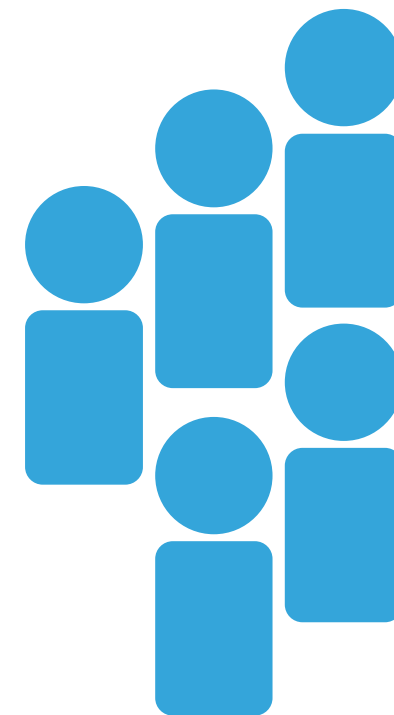


# RENAMING OPS WON'T SOLVE THE ISSUE

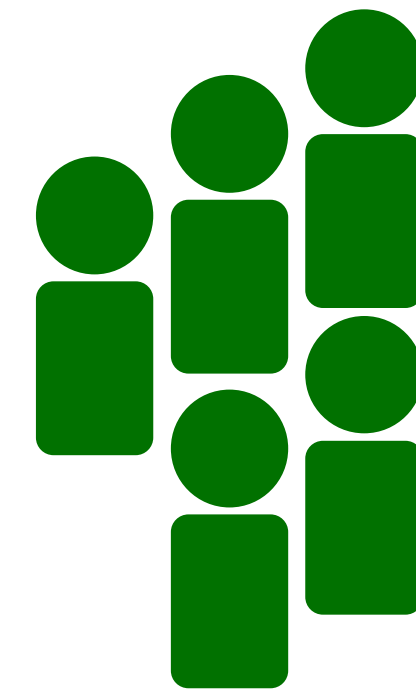
Development Teams



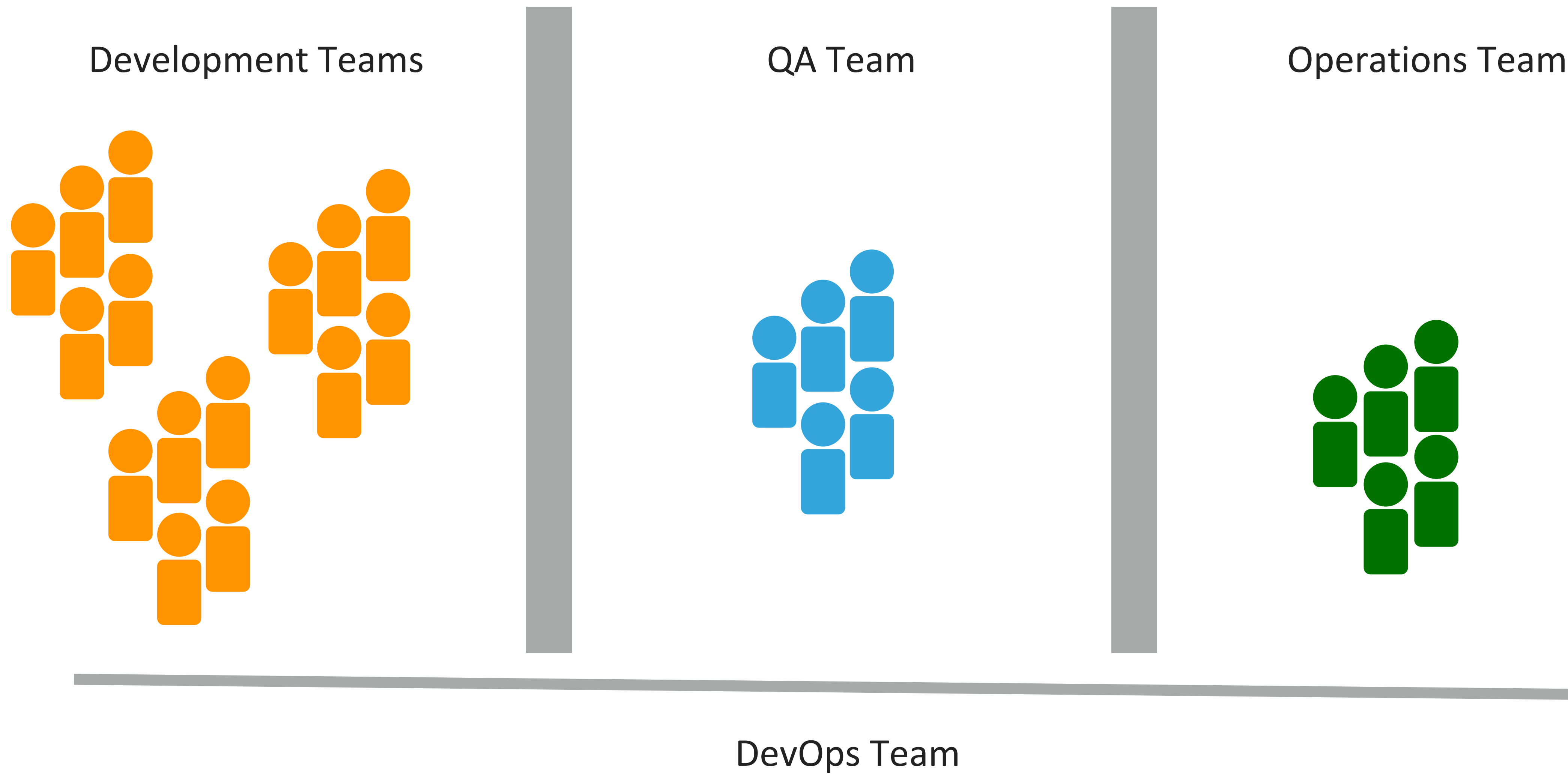
QA Team



DevOps Team

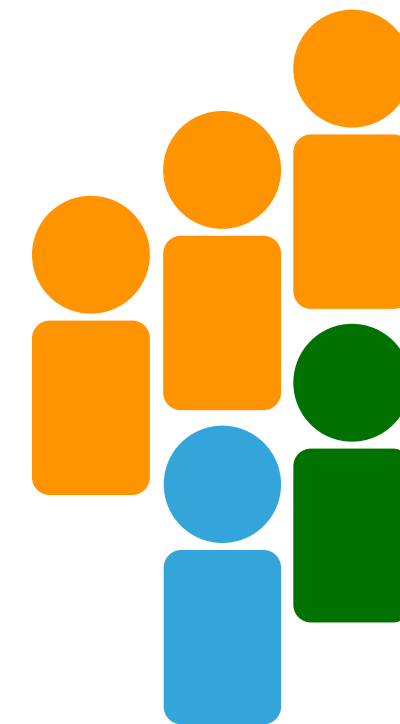
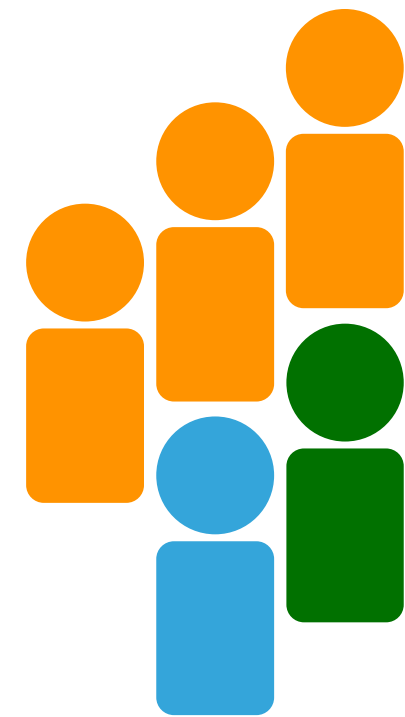
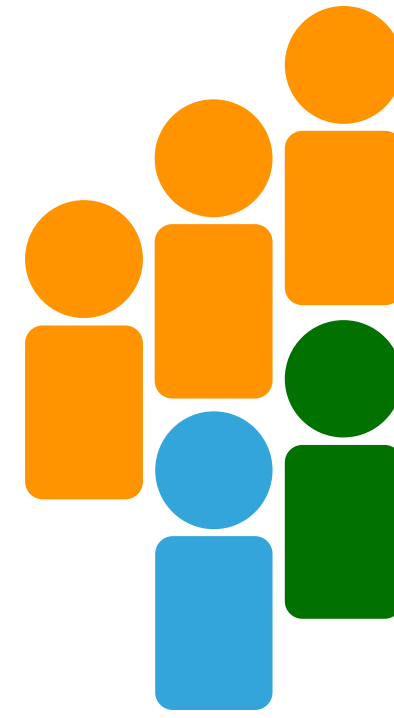
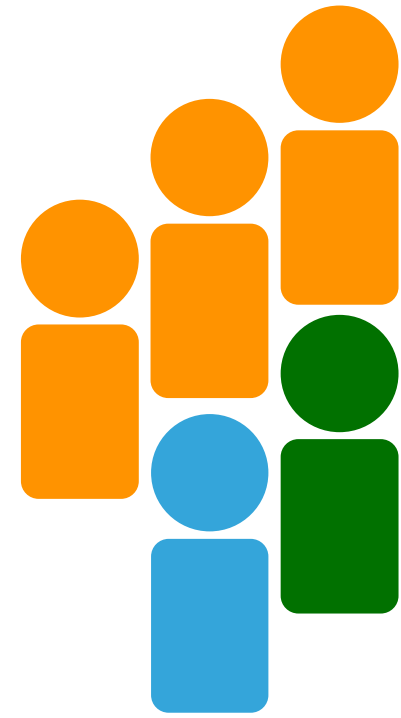


# CREATING ANOTHER SILO DOESN'T SOLVE SILOS



# PRODUCT TEAMS

---





“YOU BUILD IT, YOU RUN IT”

—Werner Vogels, Amazon

“GIVING DEVELOPERS OPERATIONAL RESPONSIBILITIES HAS GREATLY ENHANCED THE QUALITY OF THE SERVICES, BOTH FROM A CUSTOMER AND A TECHNOLOGY POINT OF VIEW. THE TRADITIONAL MODEL IS THAT YOU TAKE YOUR SOFTWARE TO THE WALL THAT SEPARATES DEVELOPMENT AND OPERATIONS, AND THROW IT OVER AND THEN FORGET ABOUT IT. NOT AT AMAZON.

YOU BUILD IT, YOU RUN IT.

THIS BRINGS DEVELOPERS INTO CONTACT WITH THE DAY-TO-DAY OPERATION OF THEIR SOFTWARE. IT ALSO BRINGS THEM INTO DAY-TO-DAY CONTACT WITH THE CUSTOMER. THIS CUSTOMER FEEDBACK LOOP IS ESSENTIAL FOR IMPROVING THE QUALITY OF THE SERVICE.”

—Werner Vogels, Amazon



USE MODERN

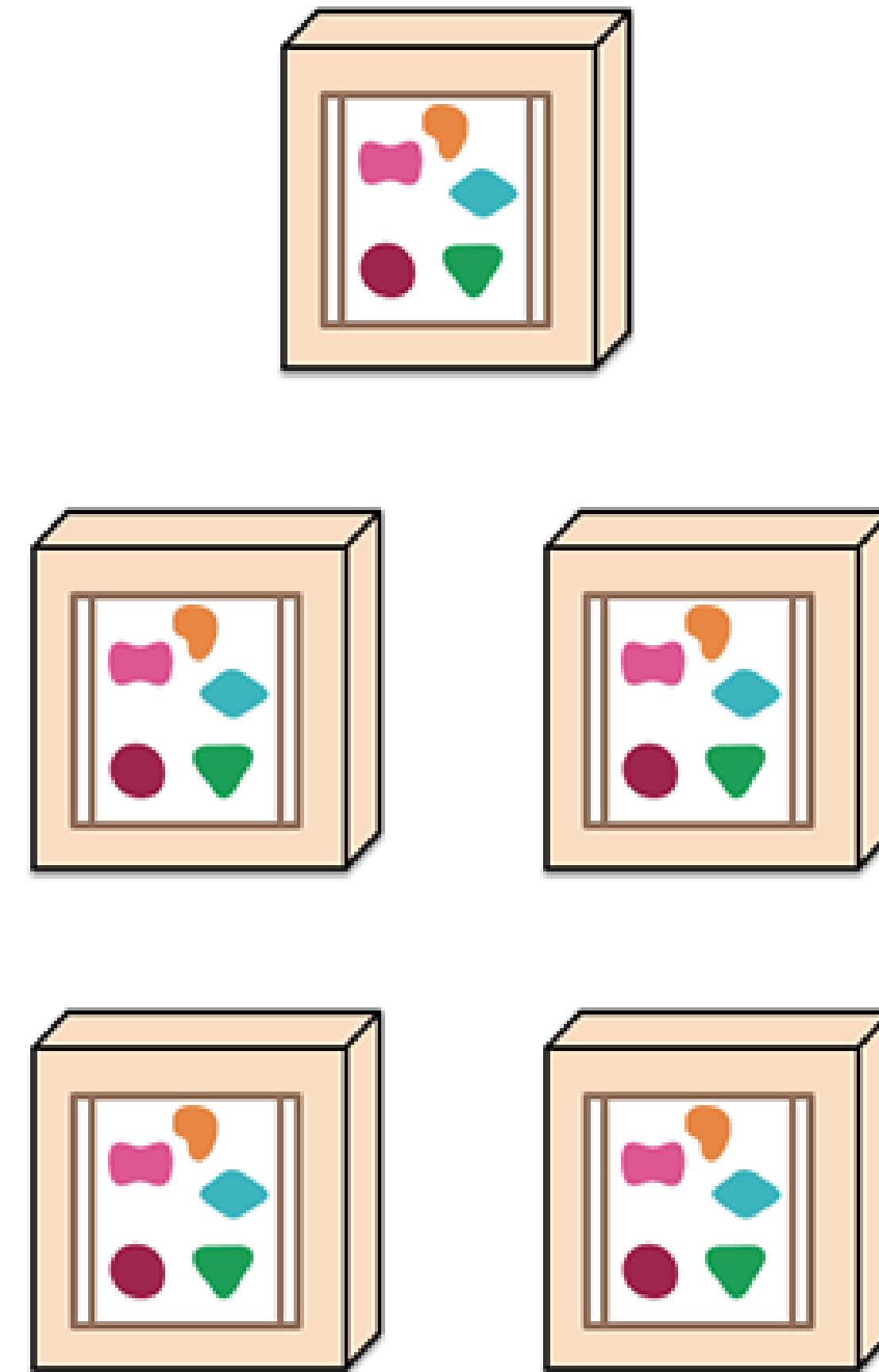
---

ARCHITECTURES  
AND  
TECHNOLOGIES



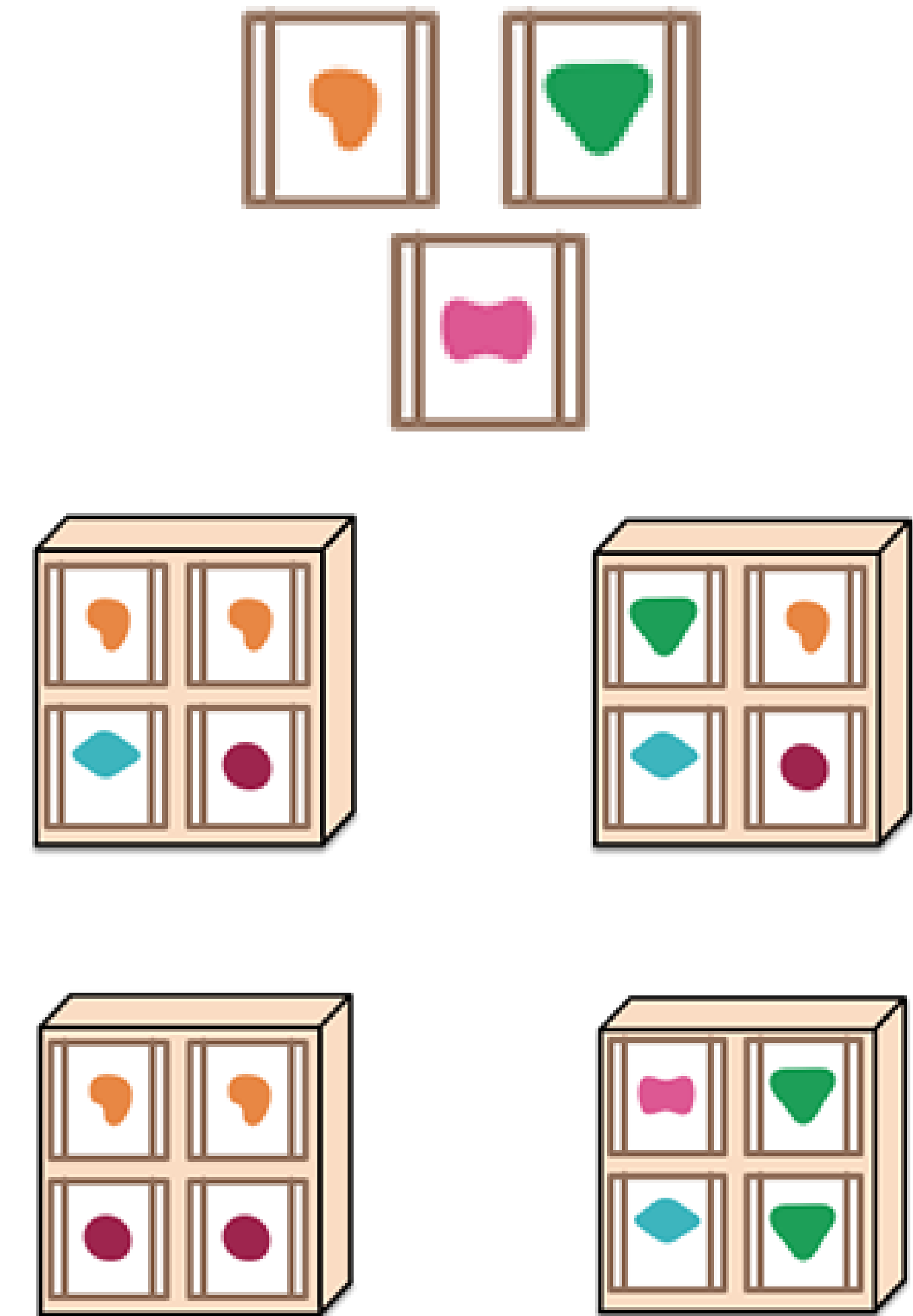
# MONOLITHS CAN BE HARD

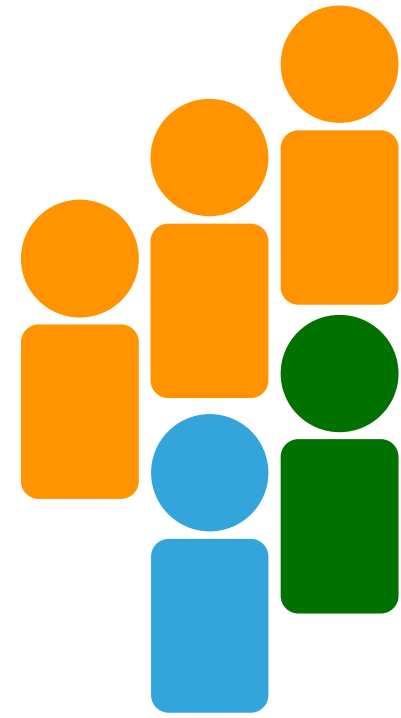
- ▶ All functionality is in one process
- ▶ Scale by replicating the monolith on multiple servers



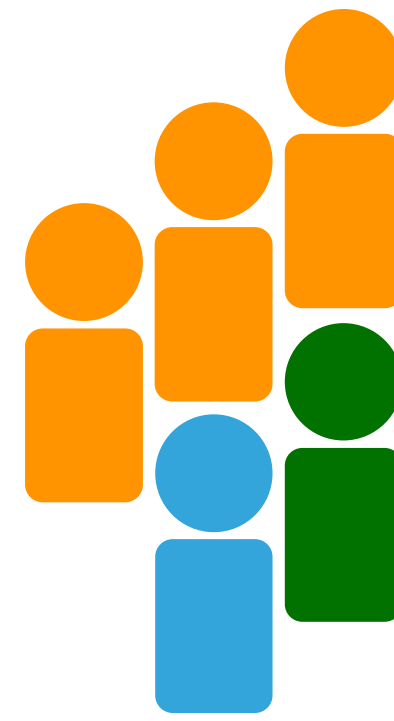
## MICROSERVICE ARCHITECTURE

- ▶ Each element of functionality is in a separate service
- ▶ Scale by distributing these services across servers, replicating as needed

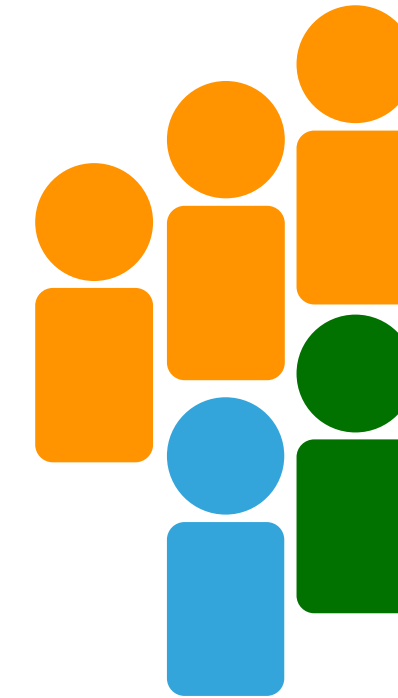




Rental Cars



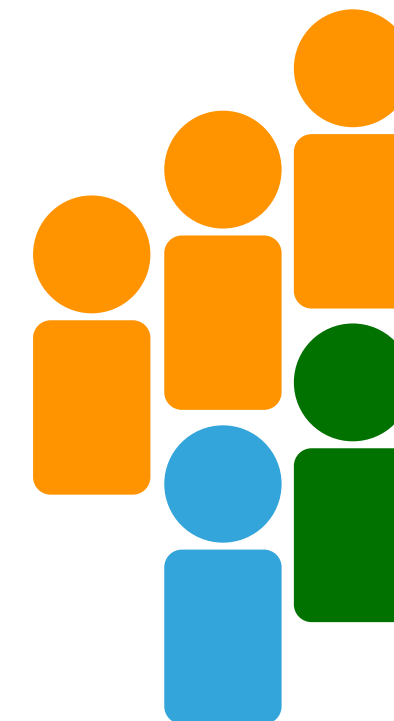
Tax  
Payments



Consumer  
Business to Business

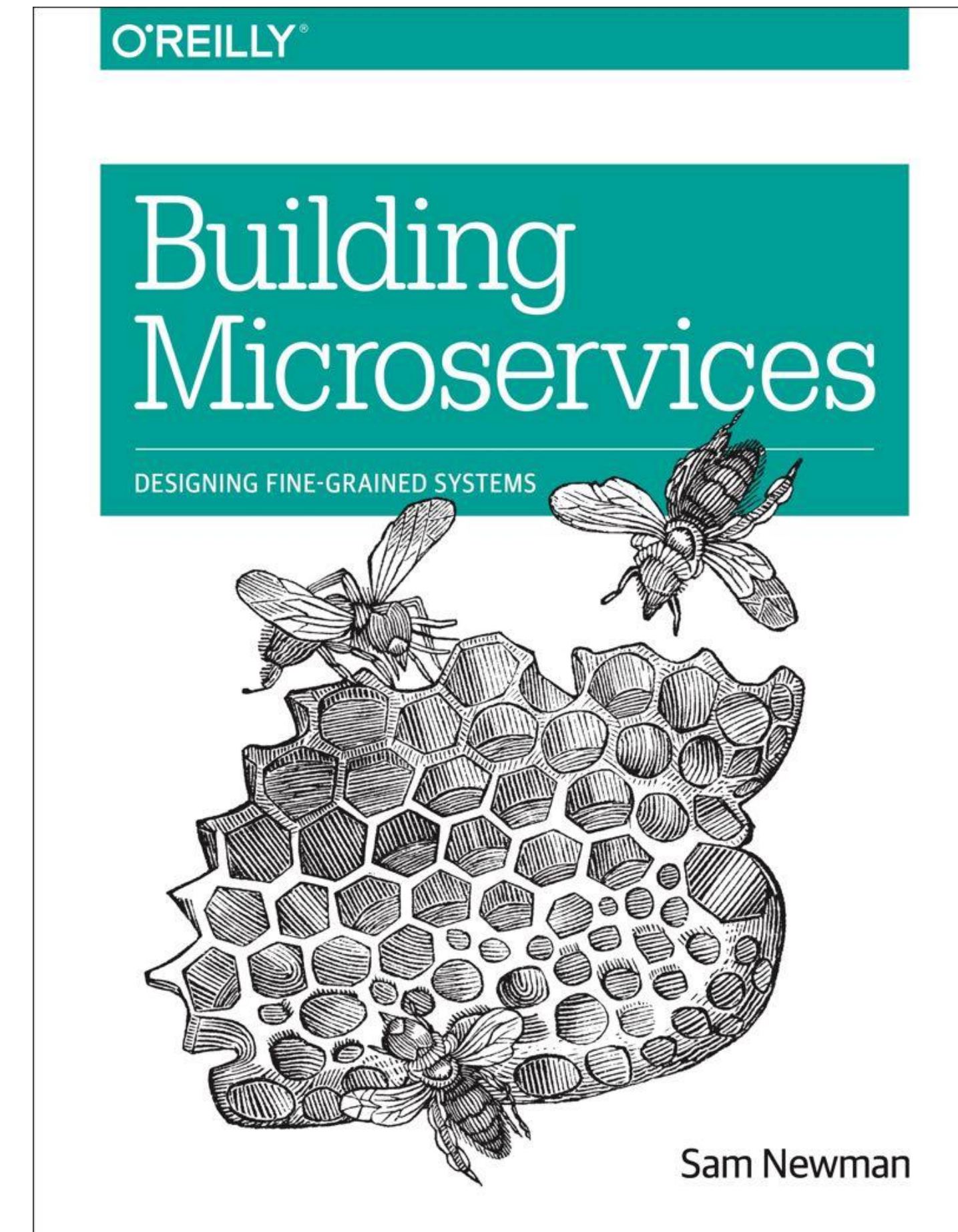
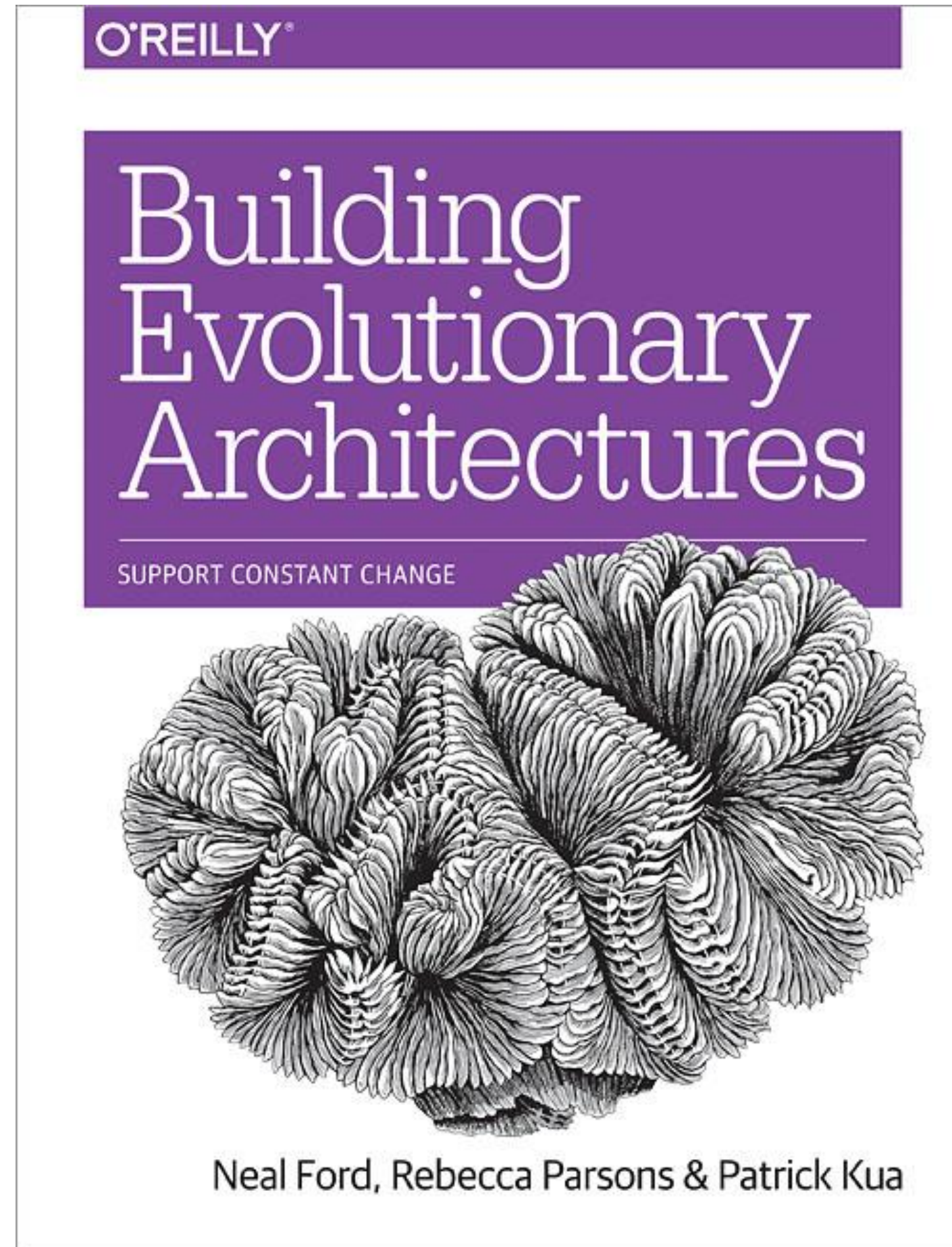


Hotels



Airlines





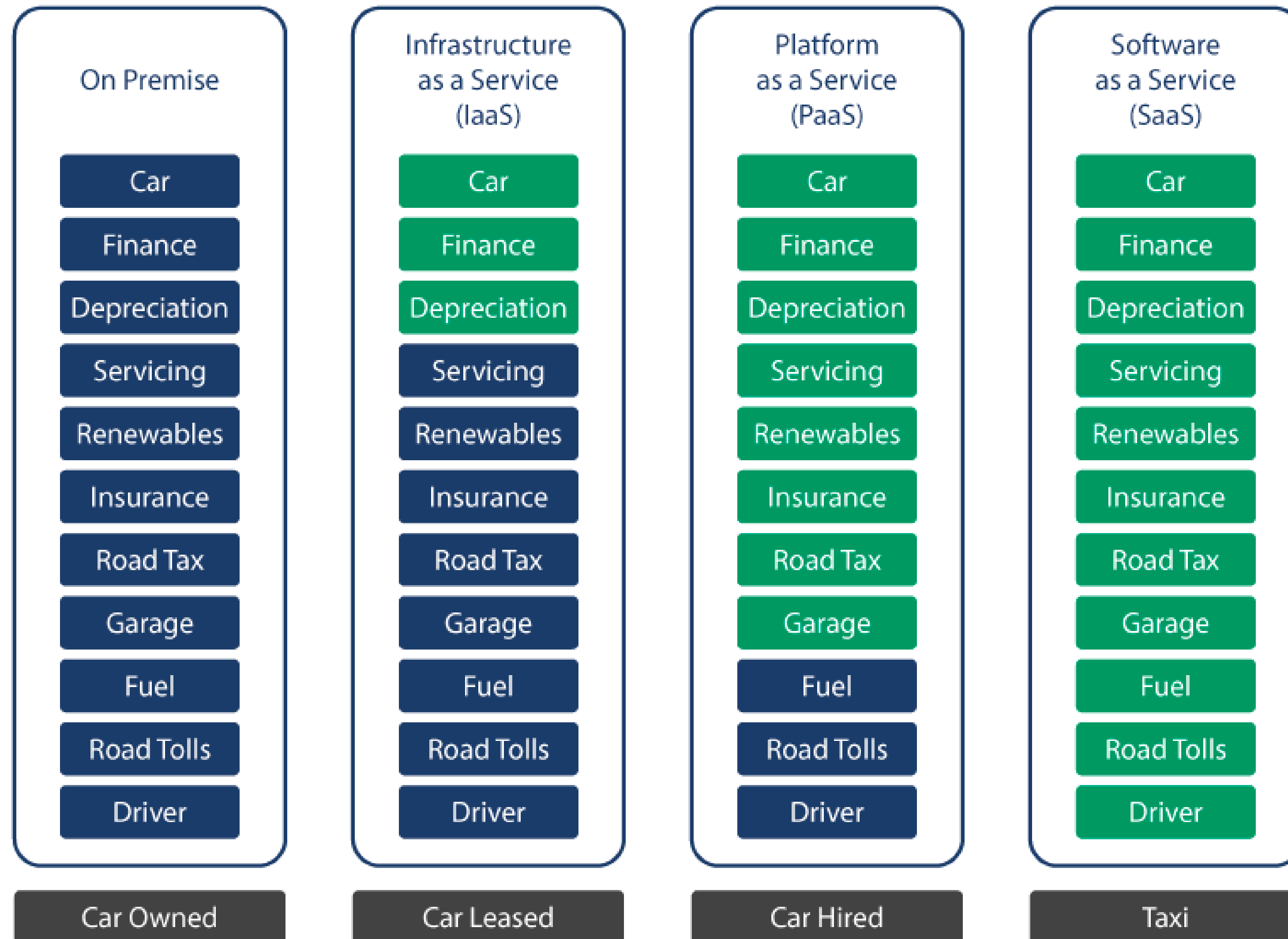


---

WE STILL HAVE TO DEPLOY  
SOMEWHERE



# CAR AS A SERVICE

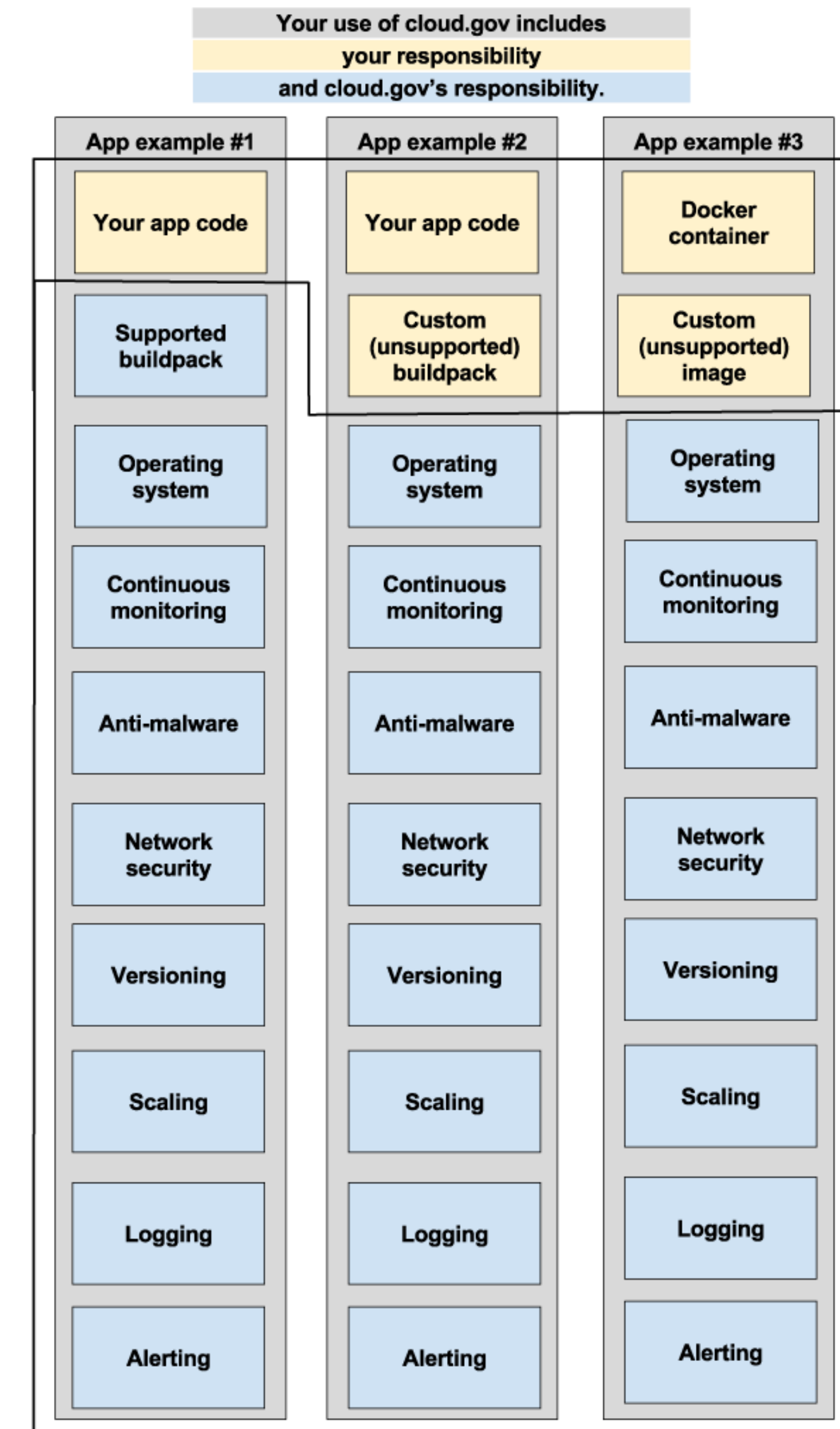


# AN EXAMPLE OF PLATFORM AS A SERVICE



## CLOUD.GOV

- ▶ Official service of the US Government
- ▶ 325 required security controls
  - ▶ 269 handled by cloud.gov
  - ▶ 41 shared
  - ▶ 15 handled by customer

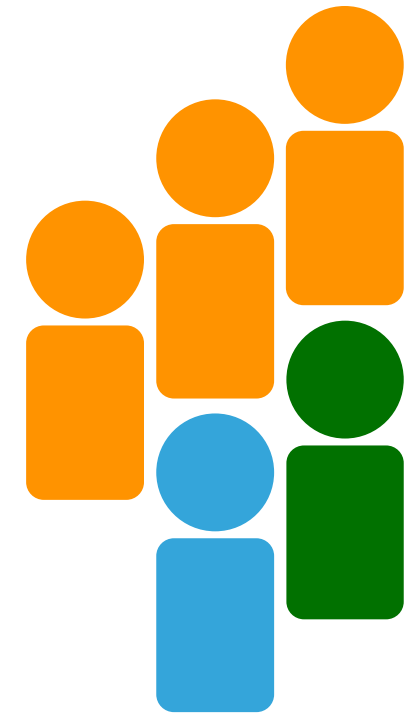
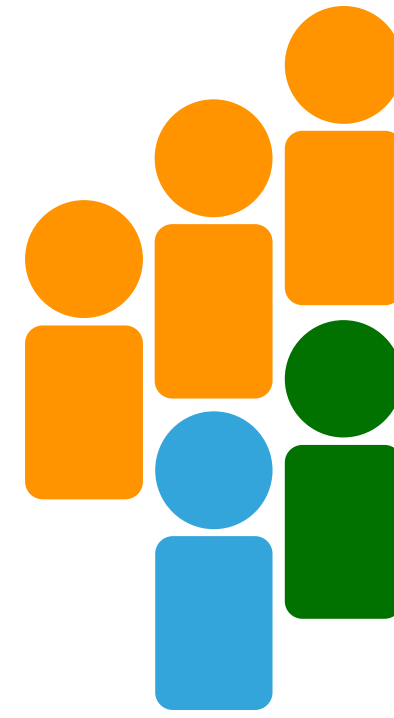
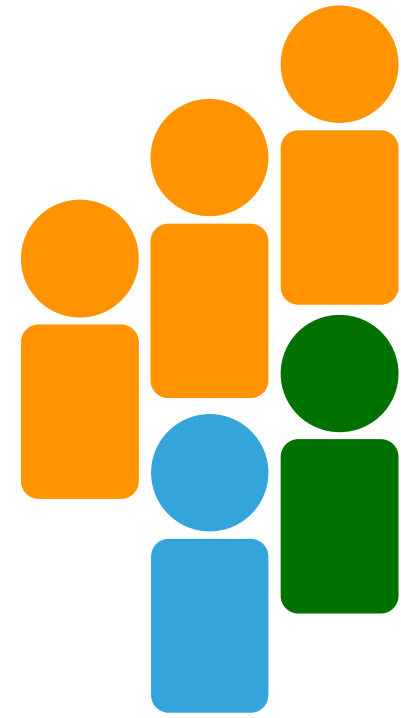


THE CLOUD IS JUST  
SOMEBODY ELSE'S  
COMPUTER

Someone at every conference

# PRODUCT TEAMS

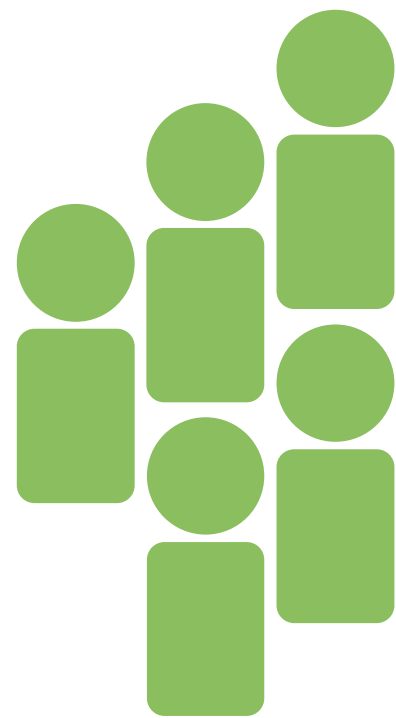
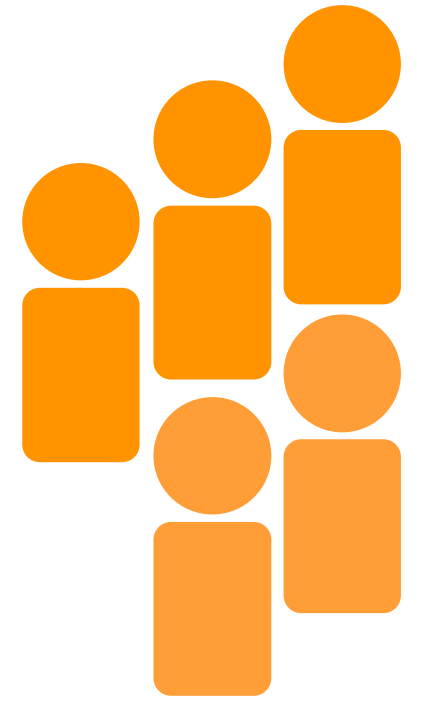
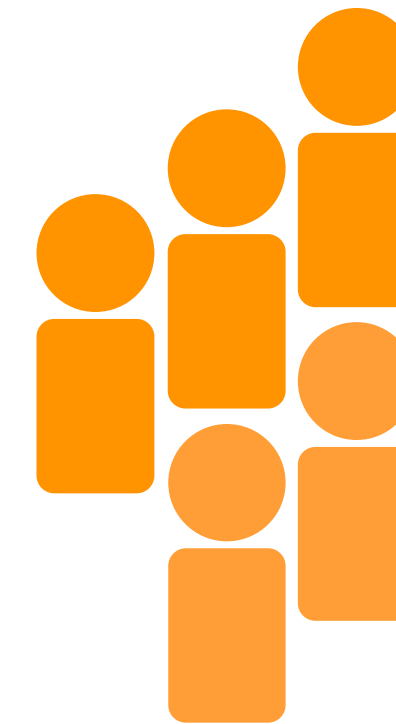
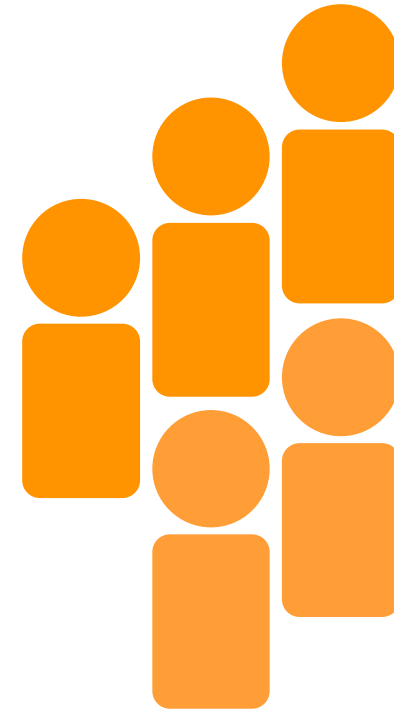
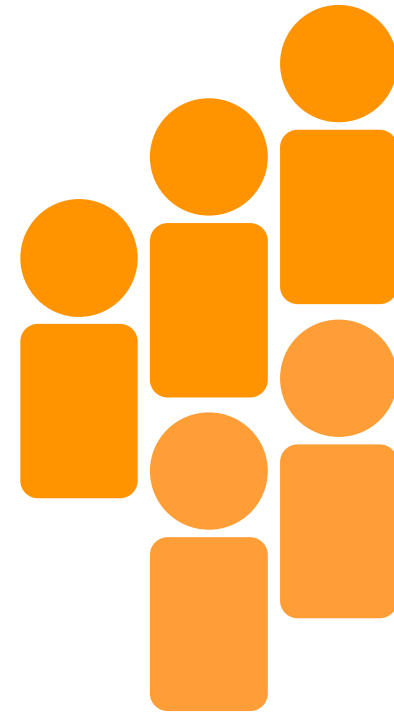
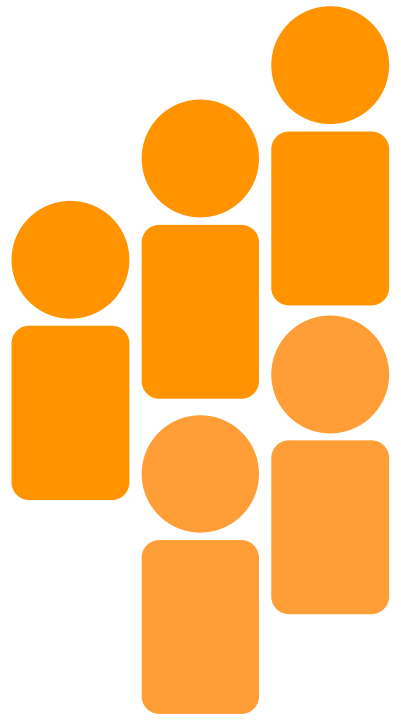
---



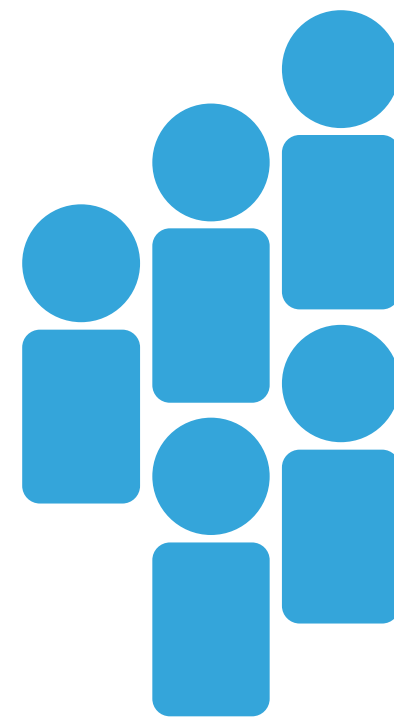
# PRODUCT TEAMS

---

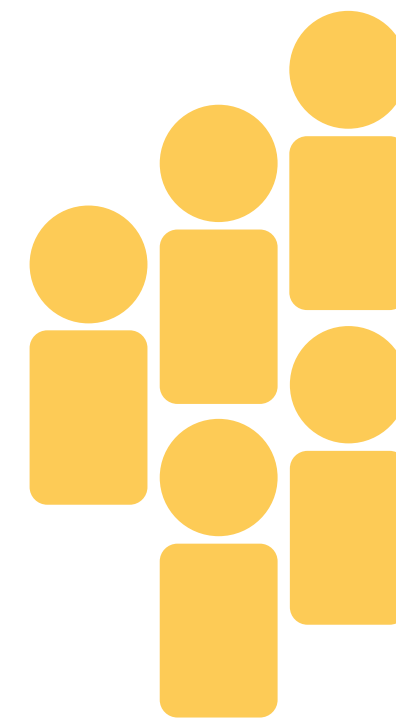
➤ go



Platform Team



Compliance Team



Security Team



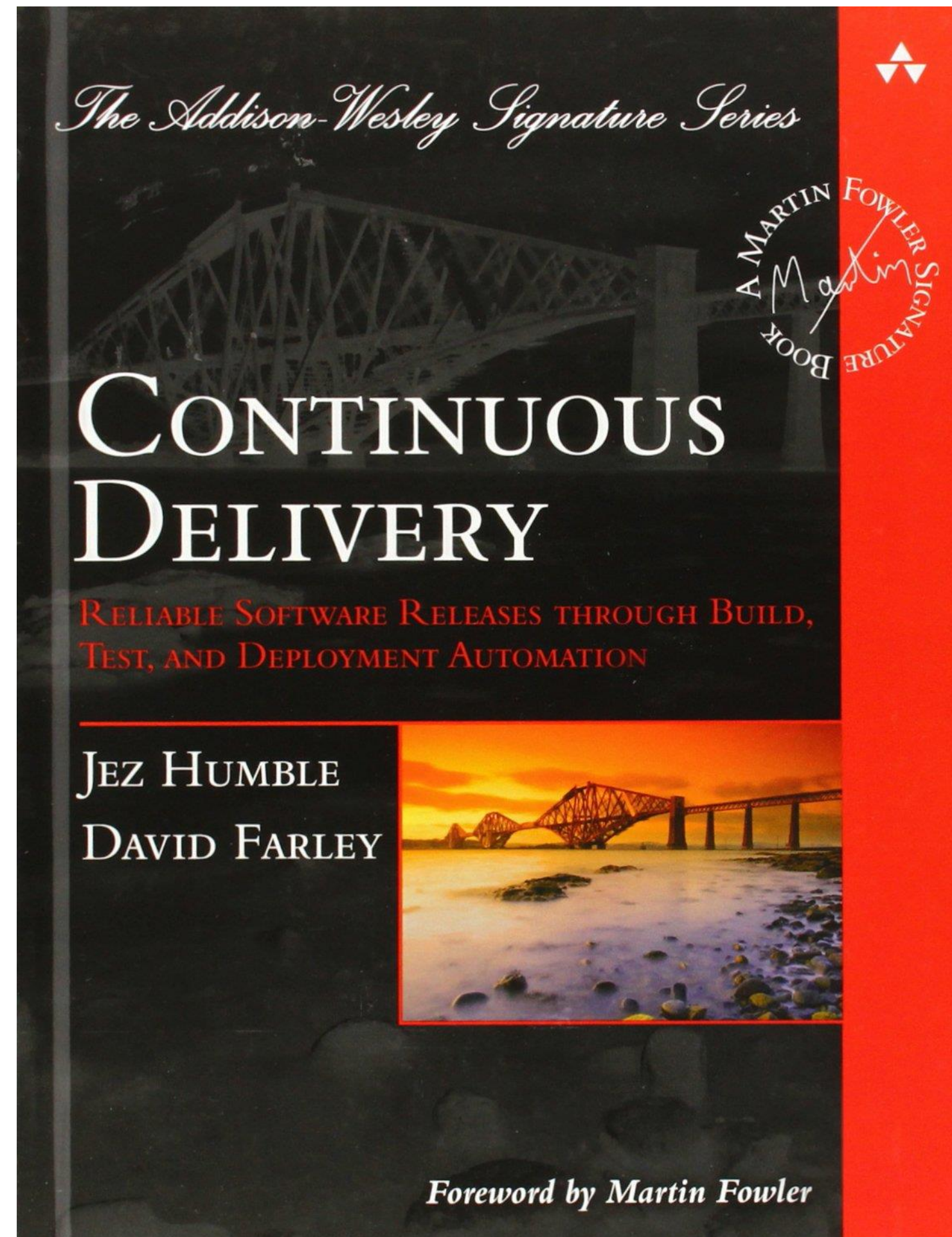






CONTINUOUS DELIVERY IS THE ABILITY TO GET CHANGES OF ALL TYPES—INCLUDING NEW FEATURES, CONFIGURATION CHANGES, BUG FIXES AND EXPERIMENTS—INTO PRODUCTION, OR INTO THE HANDS OF USERS, SAFELY AND QUICKLY IN A SUSTAINABLE WAY.

**Jez Humble**





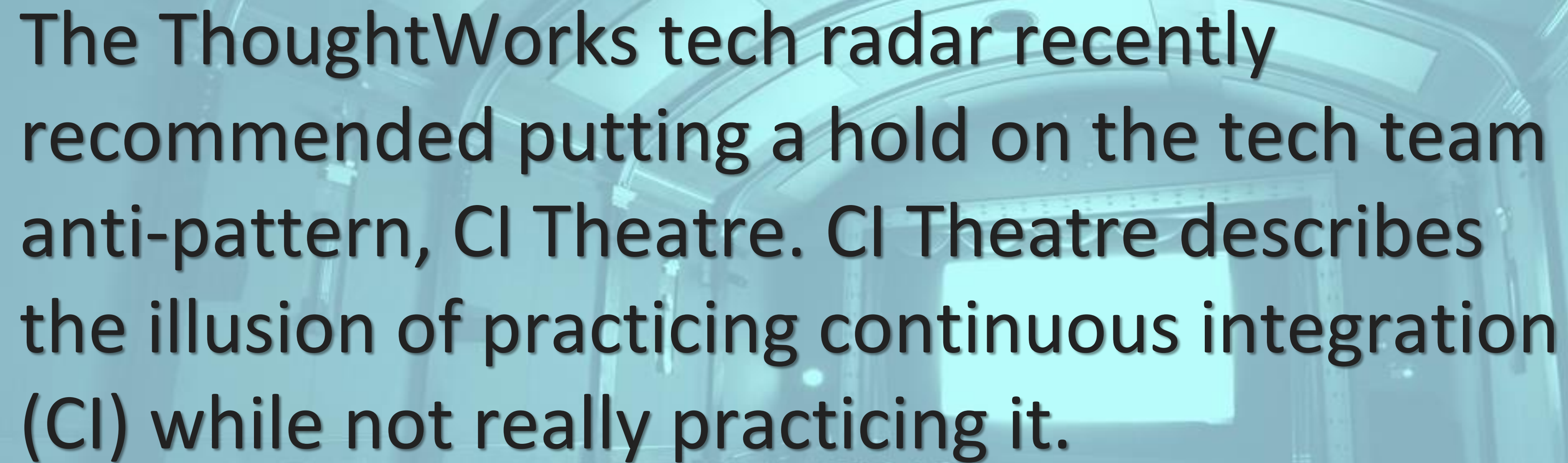
CONTINUOUS DELIVERY IS  
WHAT YOU “DO” AS PART OF  
A DEVOPS CULTURE

Me

A PREREQUISITE TO CD

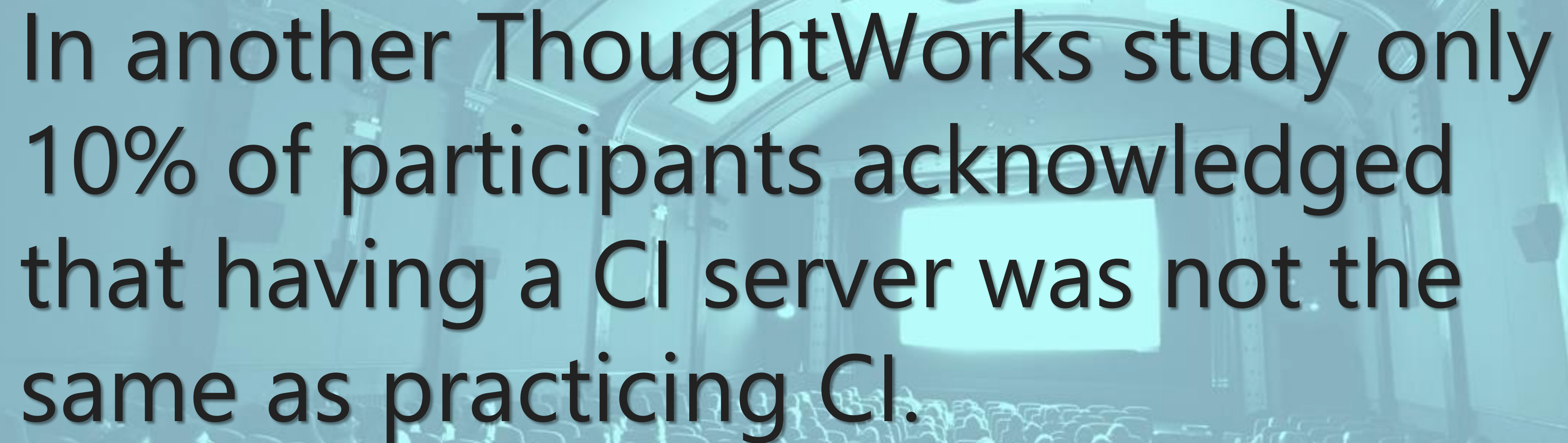
---

# CONTINUOUS INTEGRATION



The ThoughtWorks tech radar recently recommended putting a hold on the tech team anti-pattern, CI Theatre. CI Theatre describes the illusion of practicing continuous integration (CI) while not really practicing it.

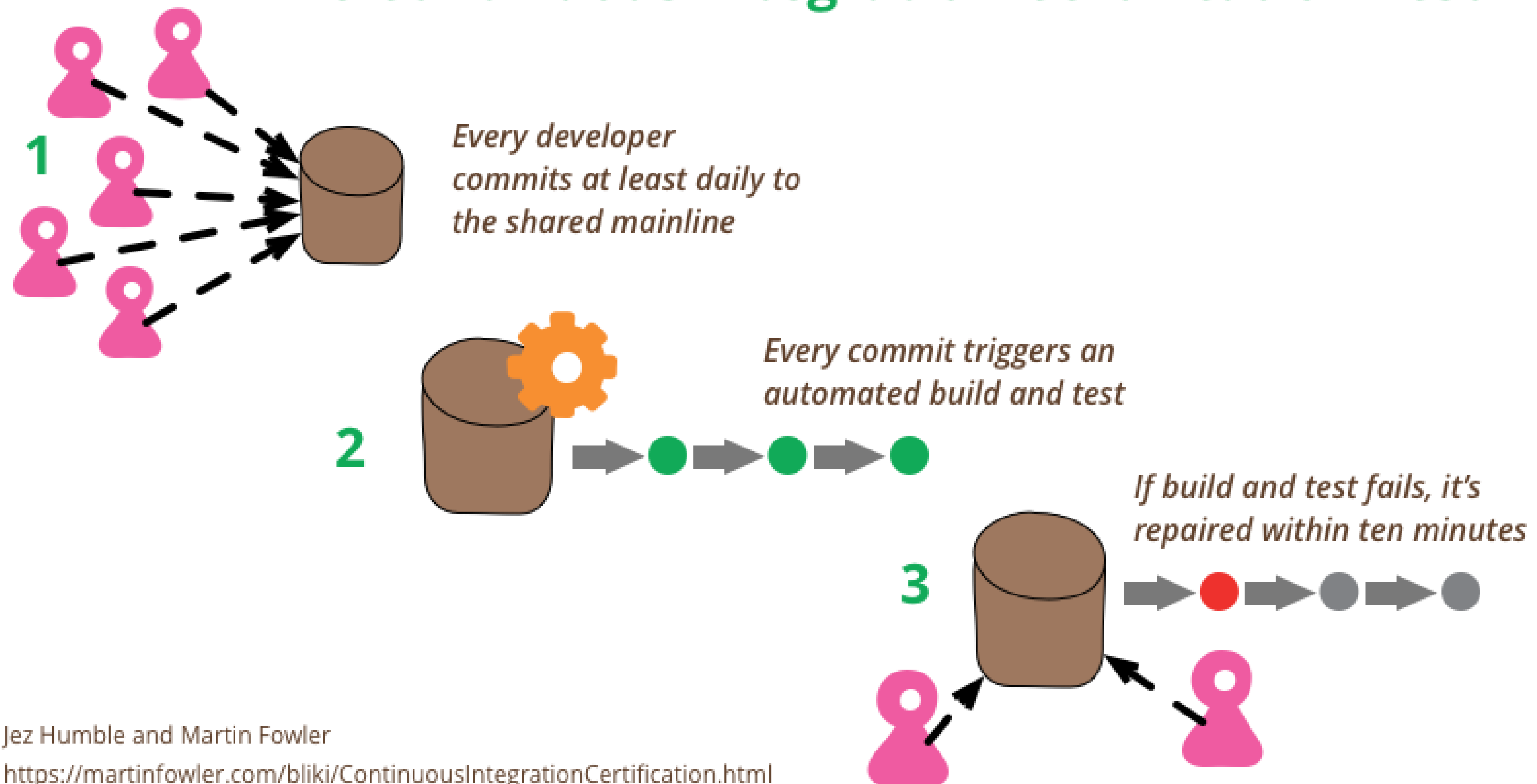


A background image of a large, ornate theatre interior with rows of seats and a stage. The image is overlaid with a semi-transparent blue filter.

In another ThoughtWorks study only 10% of participants acknowledged that having a CI server was not the same as practicing CI.

# ARE YOU PRACTICING CI?

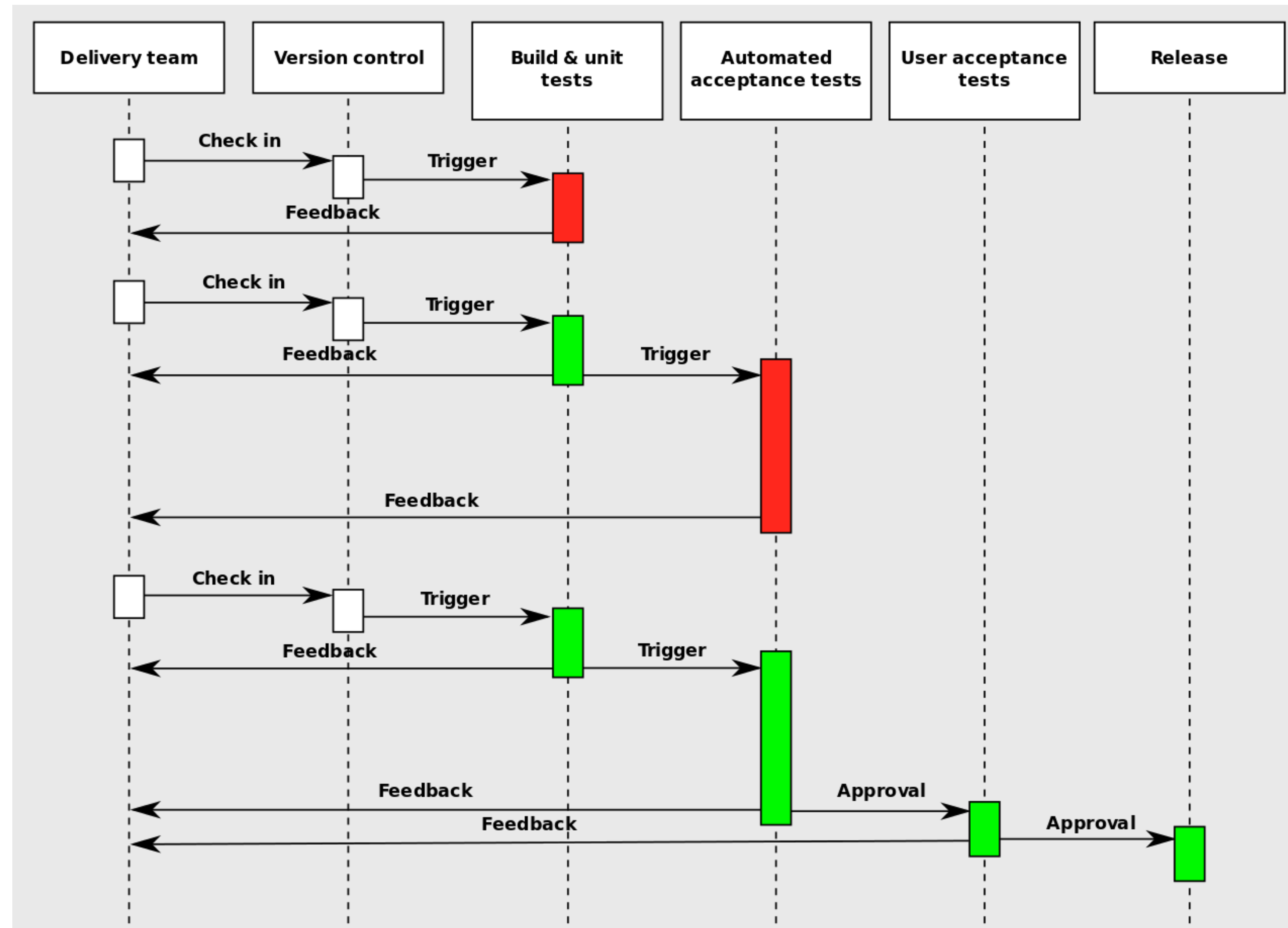
## The Continuous Integration Certification Test



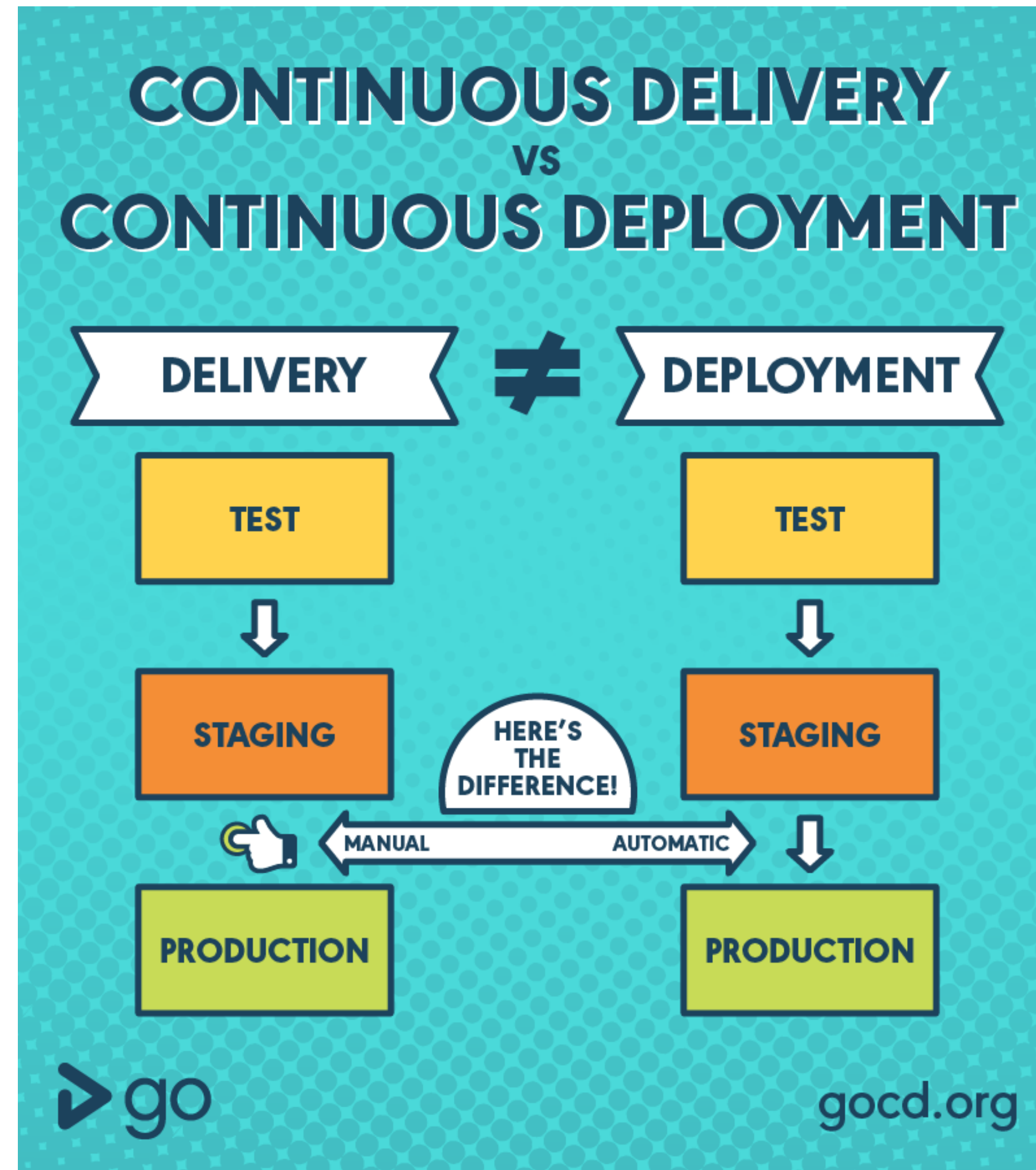
Jez Humble and Martin Fowler

<https://martinfowler.com/bliki/ContinuousIntegrationCertification.html>

# CONTINUOUS DELIVERY PIPELINE

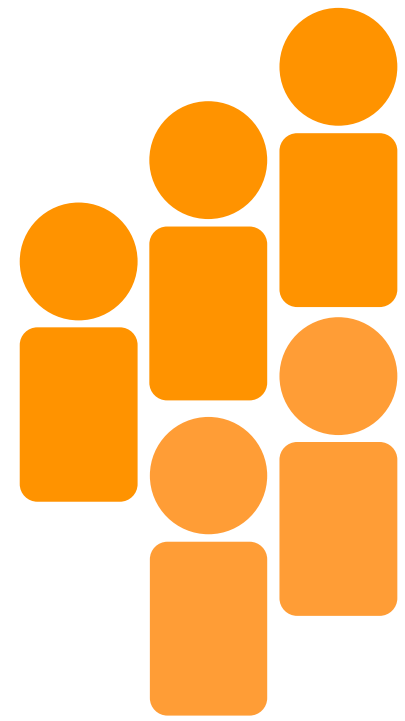




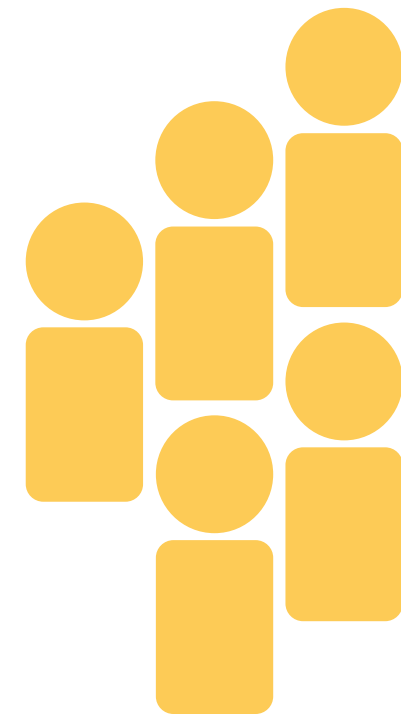


# OUR TEAMS

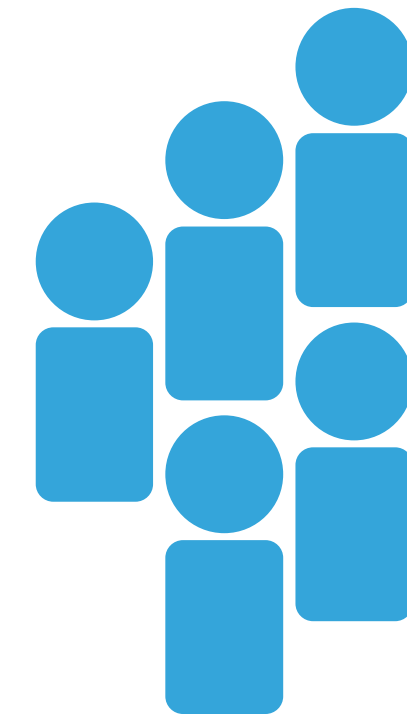
---



Product Team



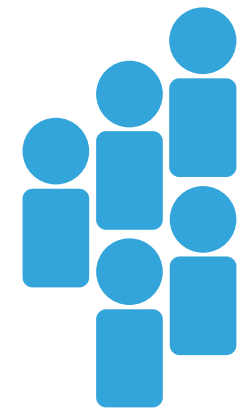
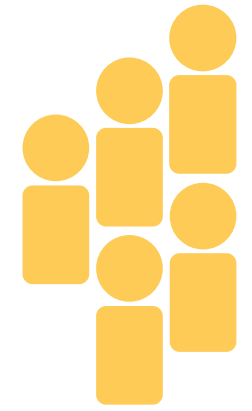
Security Team



Compliance Team



# OUR CONTINUOUS DELIVERY PIPELINE



UNIT  
TESTS



FUNCTIONAL  
TESTS



DEPLOY  
STAGING



DEPLOY  
PRODUCTION

# EXAMPLES OF THINGS WHICH ARE BAD

---



- ▶ Deploying insecure software
- ▶ Deploying non-performant software
- ▶ Deploying non-complying software
- ▶ Deploying ineffective software

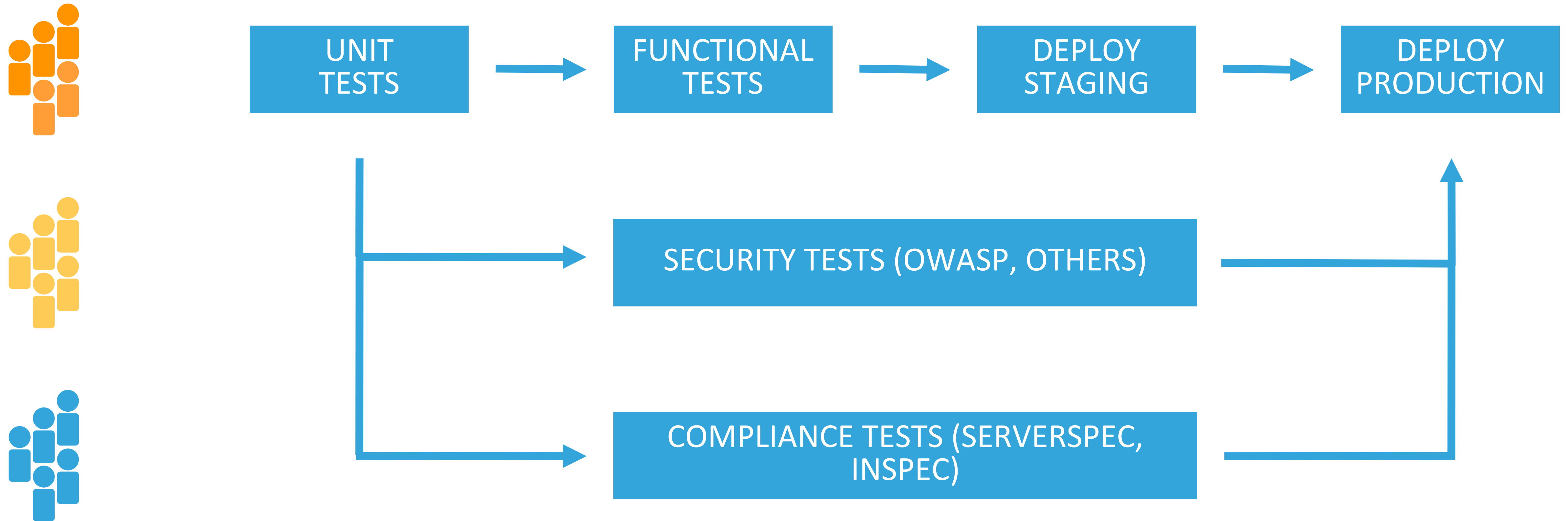
...OF THE 106 COMPONENTS PER APPLICATION, THE REPORT'S ANALYSIS REVEALED AN AVERAGE OF 24 (I.E., 23%) HAVE KNOWN CRITICAL OR SEVERE SECURITY VULNERABILITIES...

Derek Weeks

THE PURPOSE OF A CONTINUOUS  
DELIVERY PIPELINE IS TO KILL A  
RELEASE CANDIDATE

Me, and a lot of other people

# OUR CONTINUOUS DELIVERY PIPELINE

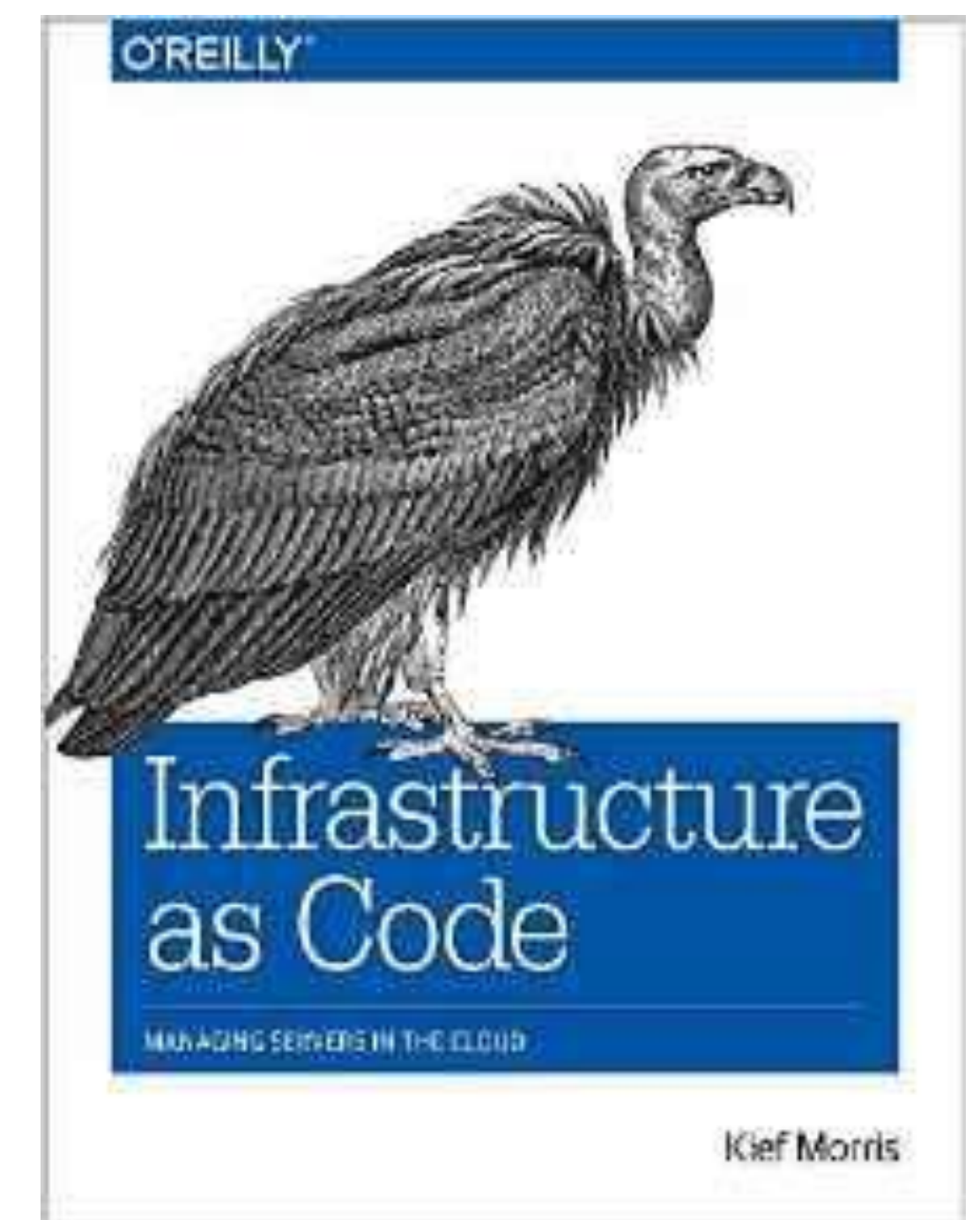
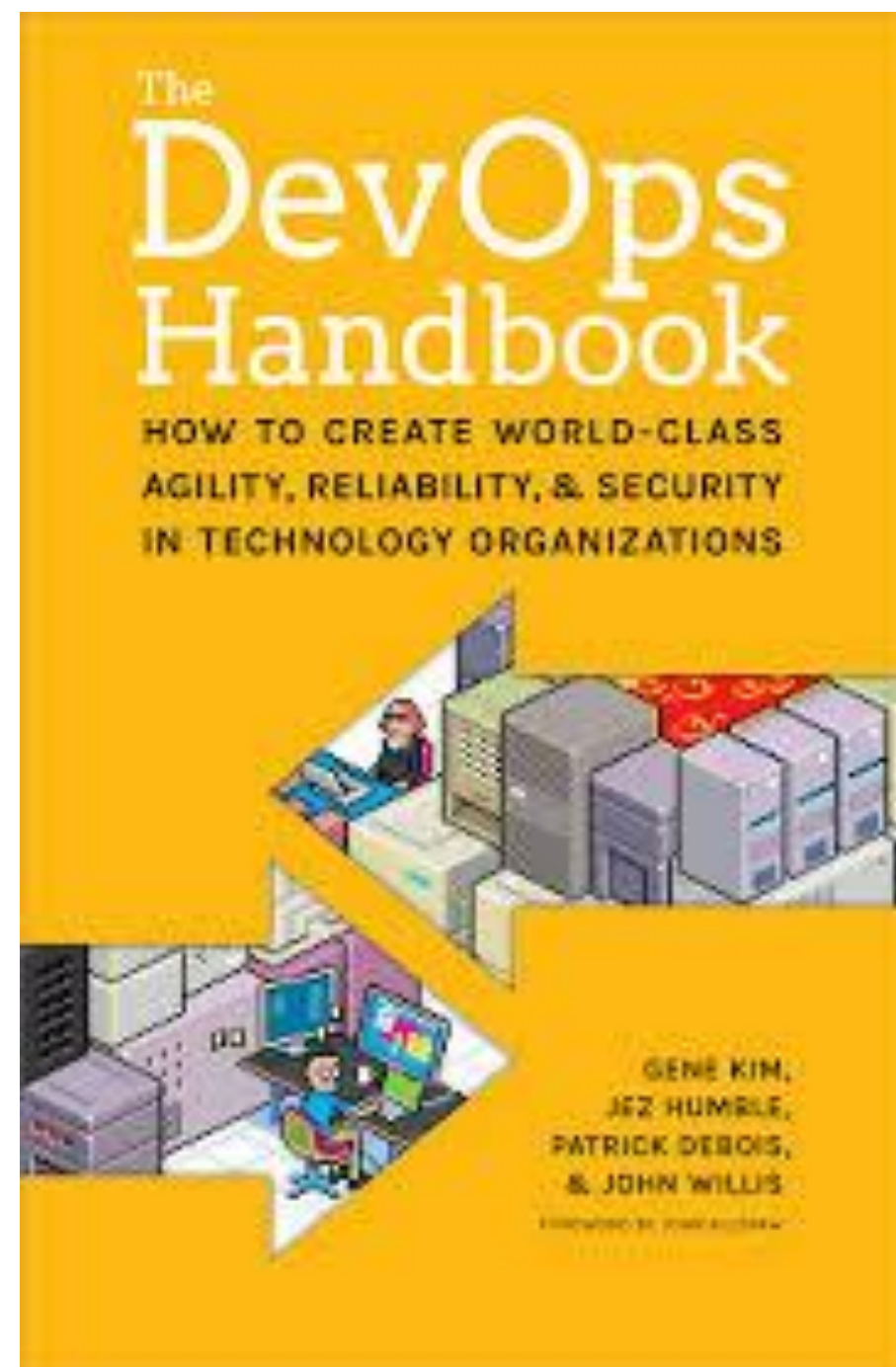




SORRY, THERE'S NO  
SILVER BULLET

SORRY, THERE'S NO SILVER BULLET

BUT THESE ARE SOLVED PROBLEMS  
AND THERE IS A LOT OF HELP



- ▶ Redefine words for your organization
- ▶ Change your organization to enable DevOps
- ▶ Use modern architectures and technologies
- ▶ Use Continuous Delivery to safely deploy more often

# THANK YOU!

For more information about our products

<https://www.thoughtworks.com/products/>

<https://www.gocd.org/>