

# DevOps





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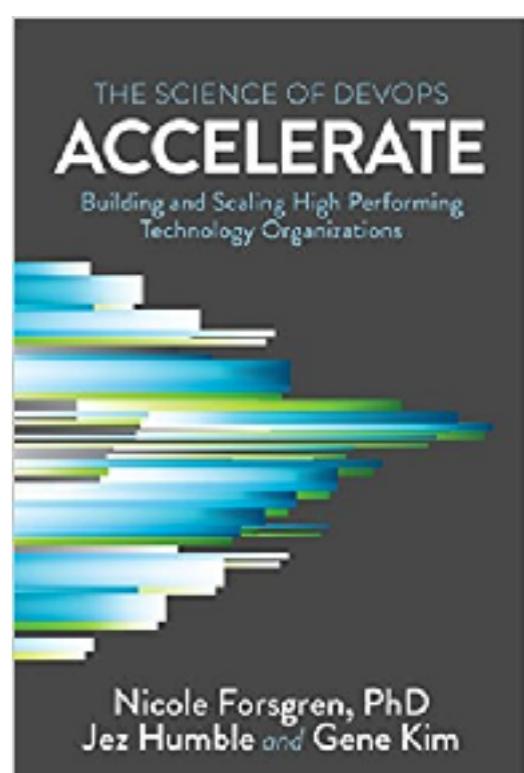
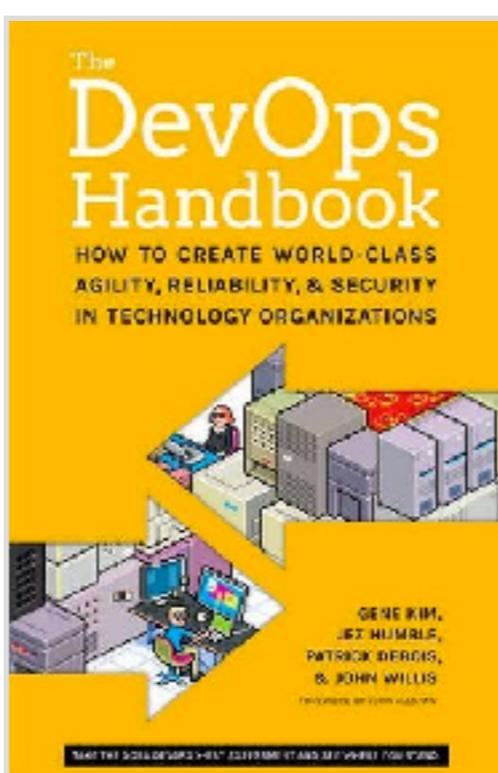
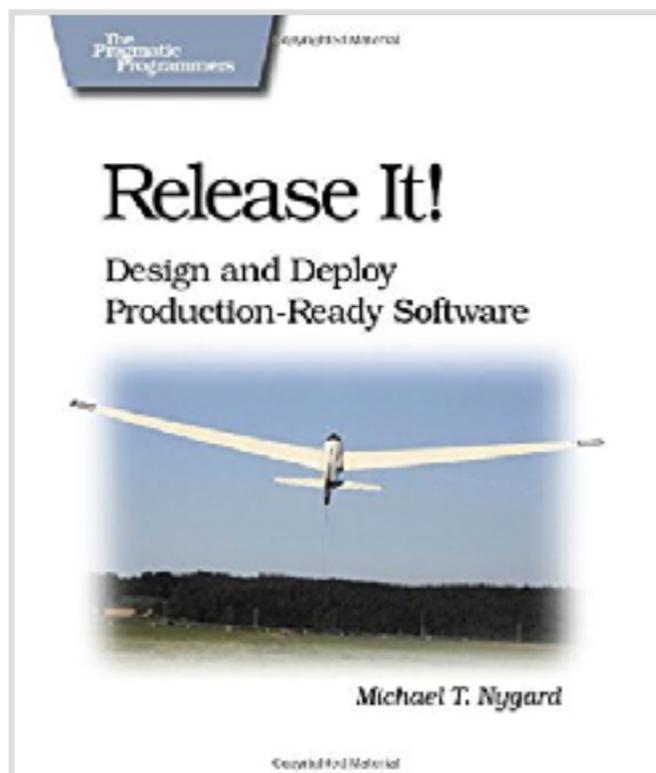
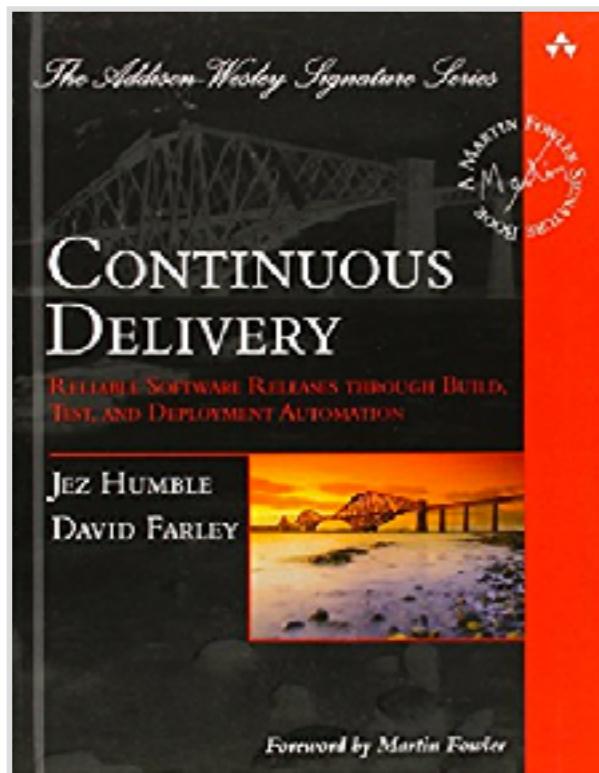
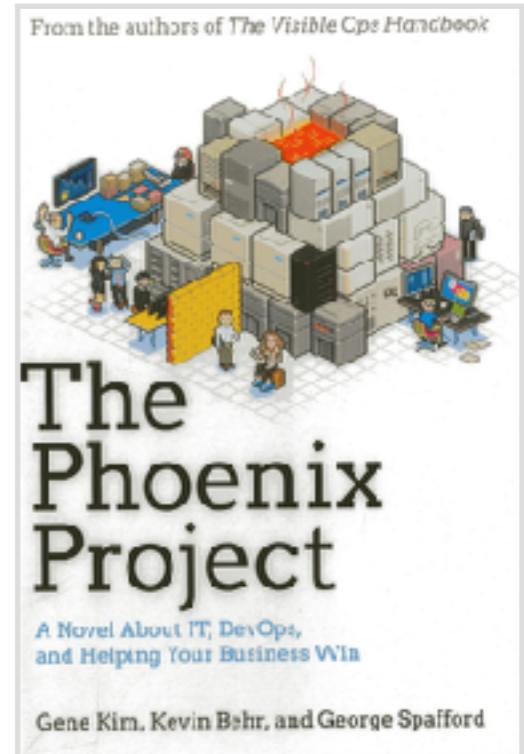
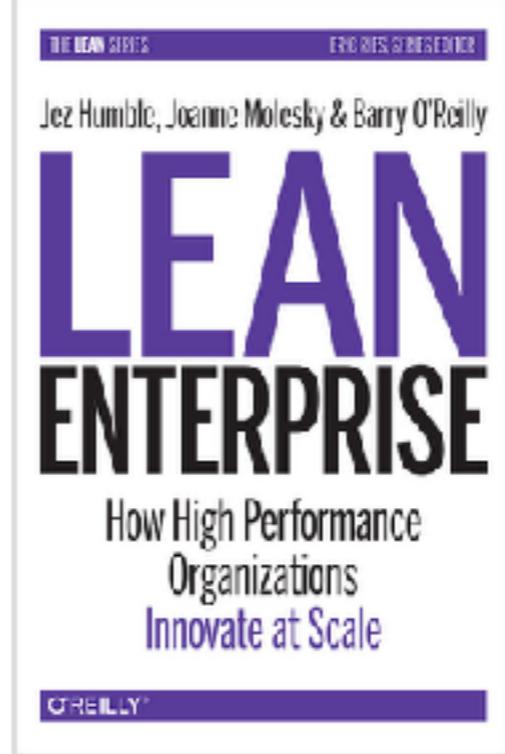
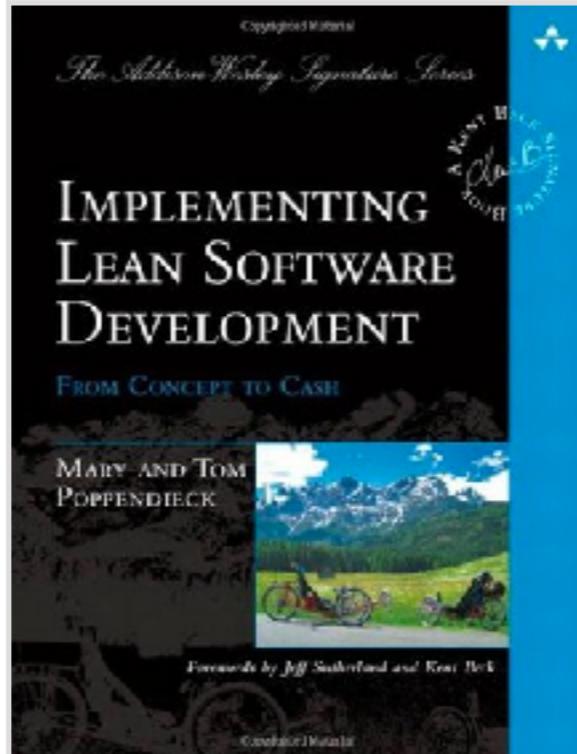
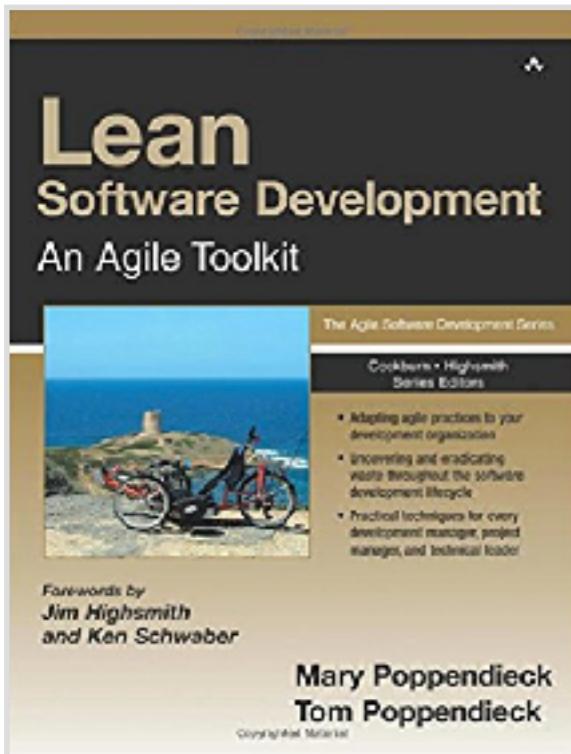
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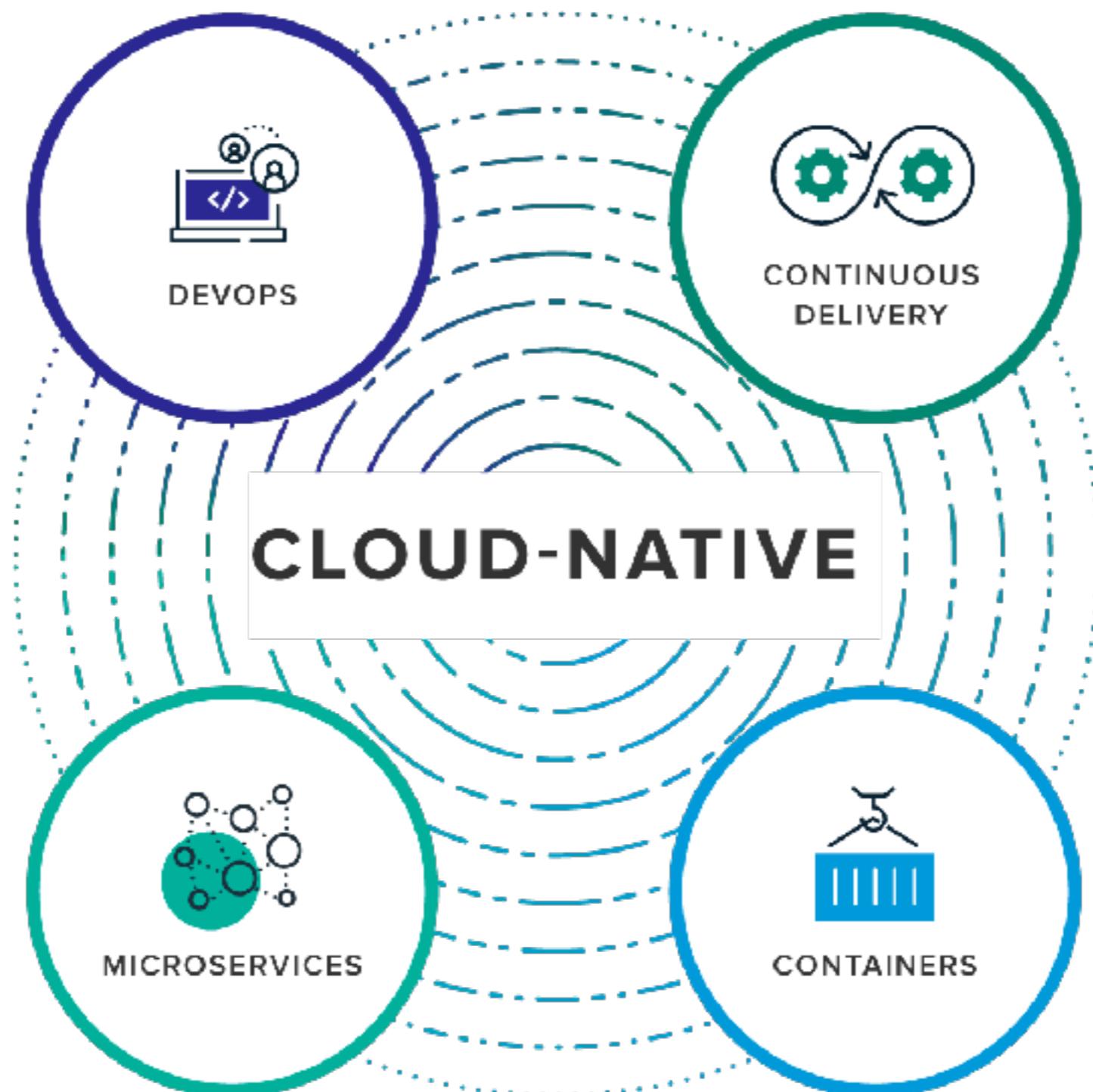


# Topics

- Why DevOps ?
- What is DevOps ?
- Principles and Practices
- Topologies and Tools
- DevOps in Wrong ways

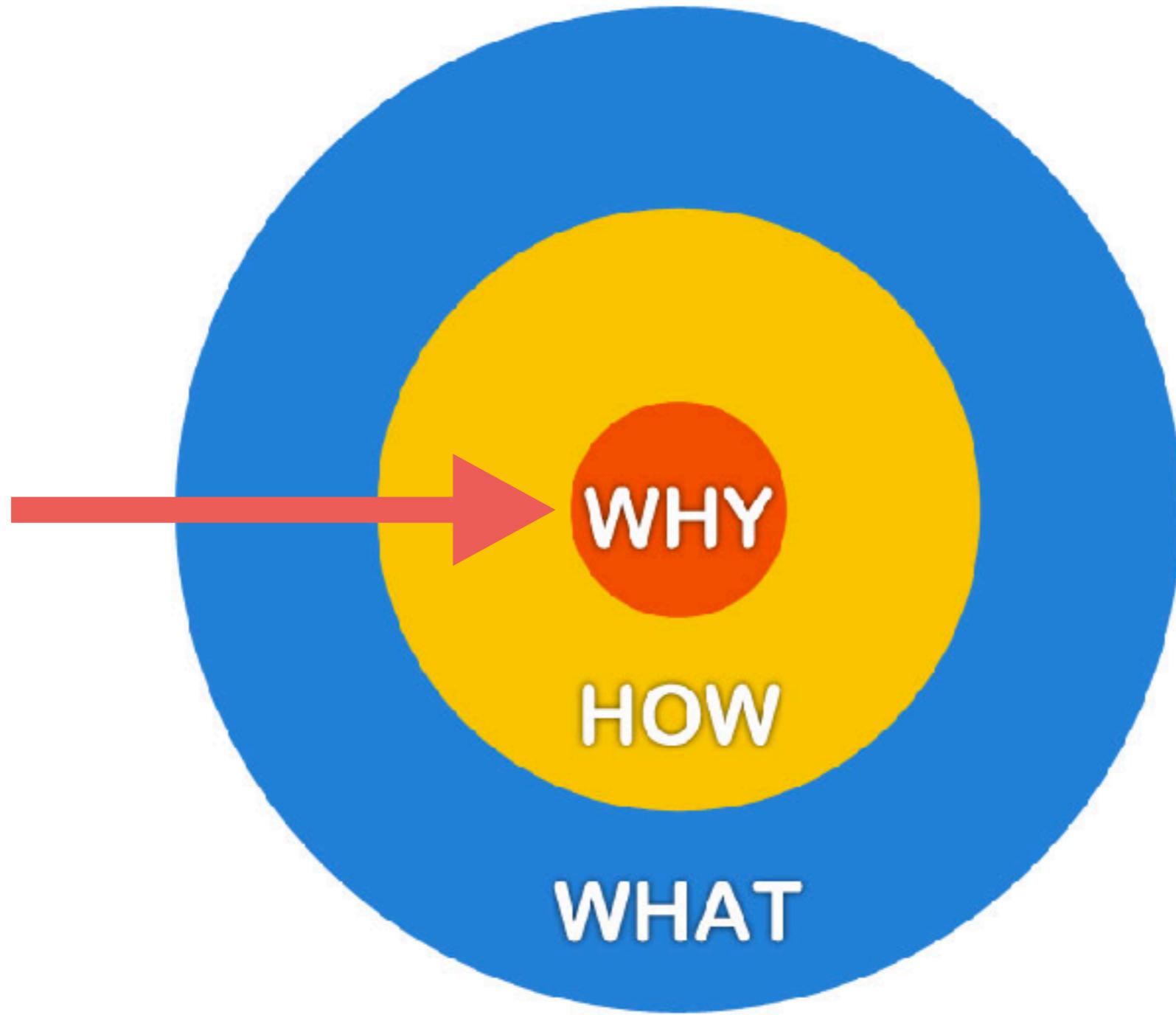






<https://pivotal.io/cloud-native>





# Why DevOps ?



Customers



“The Business”



Product Teams

Platform Teams

Infrastructure Teams

Operations Teams

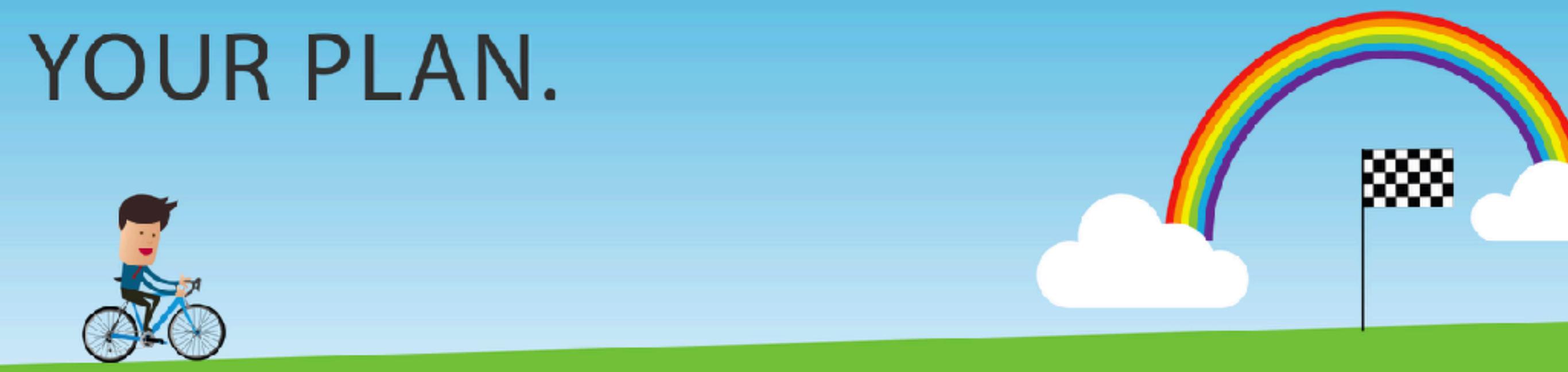


Google/Amazon

<https://bravenewgeek.com/>



# YOUR PLAN.



# REALITY.



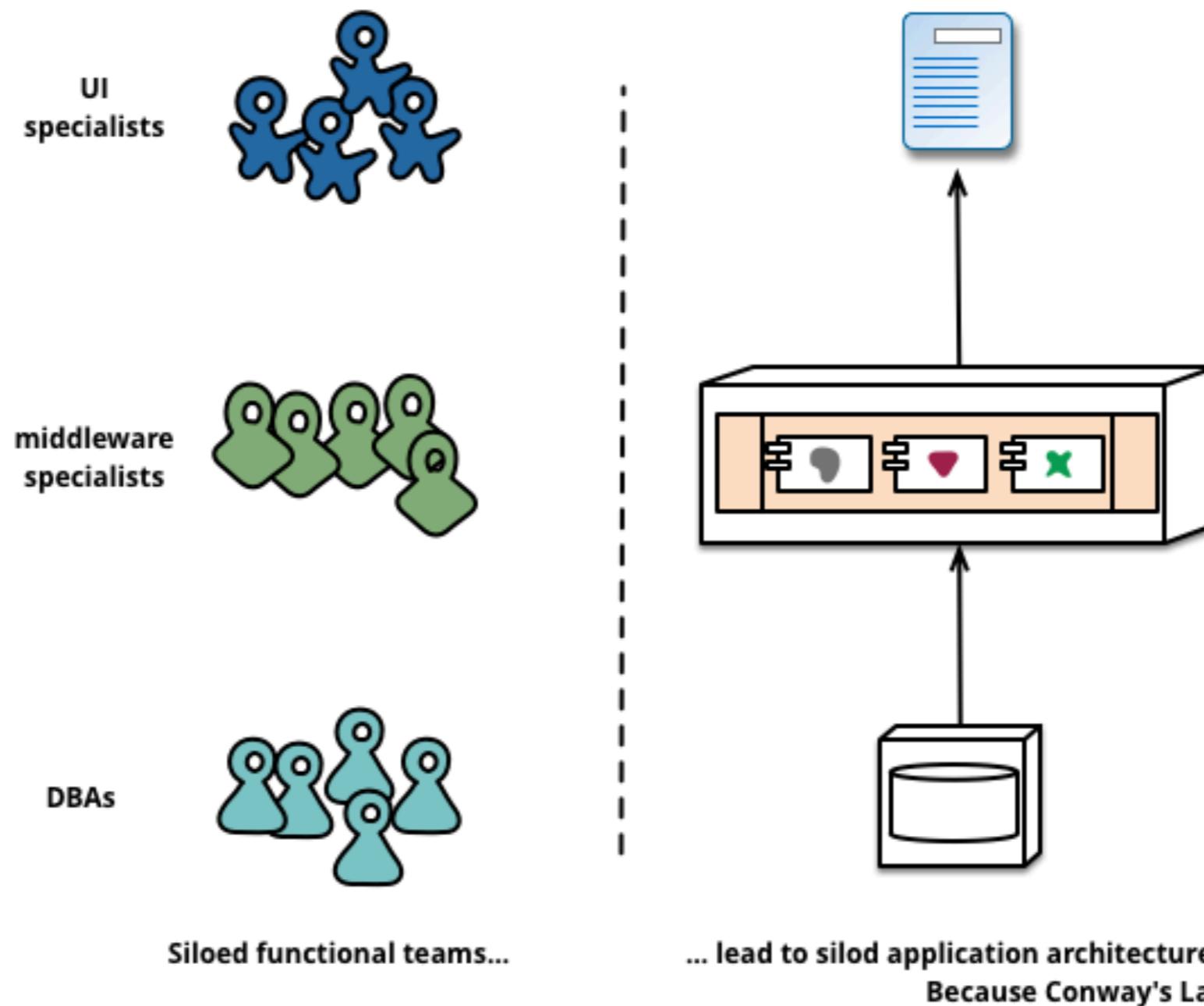
HUSTLE + GRIND

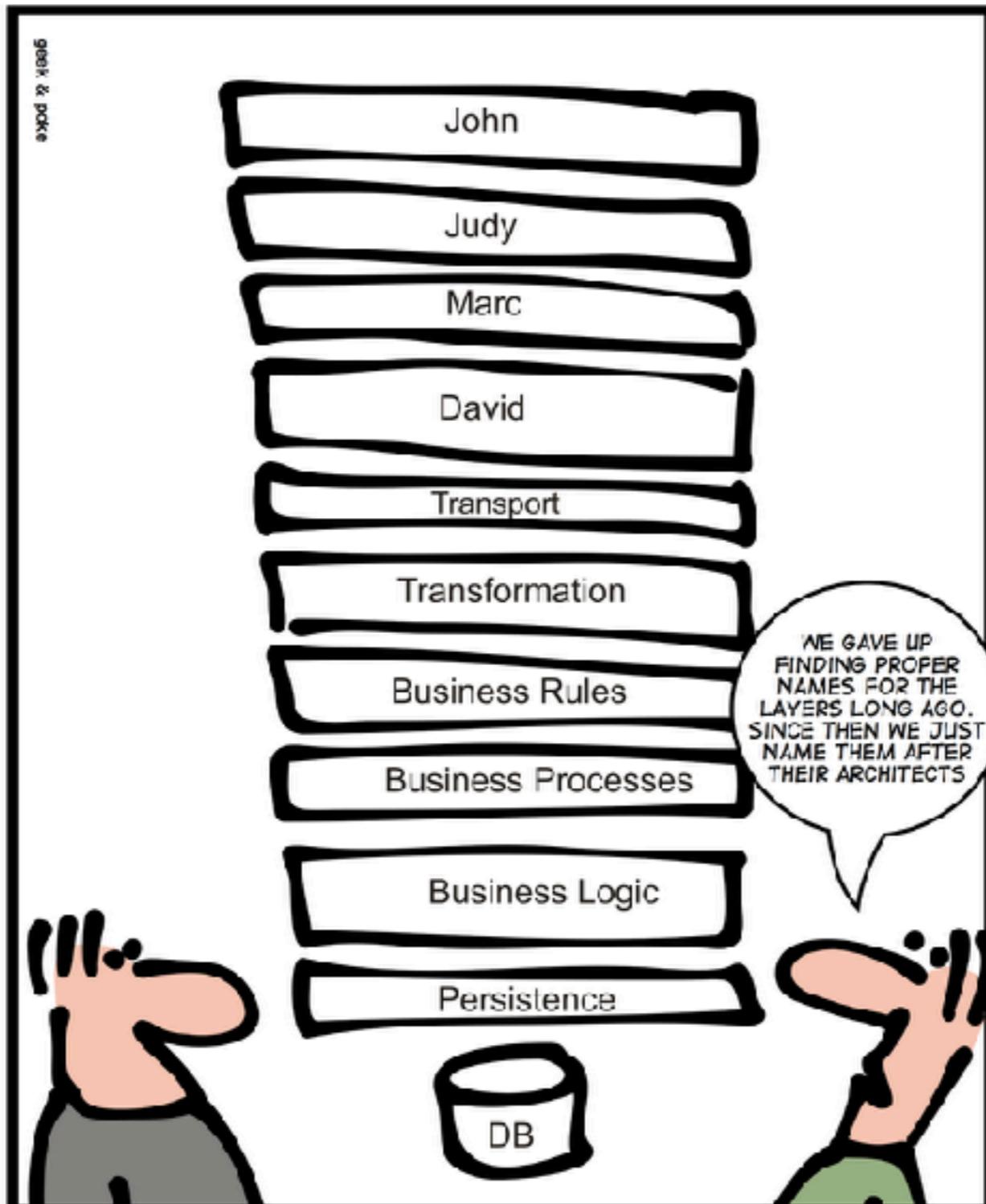


DevOps

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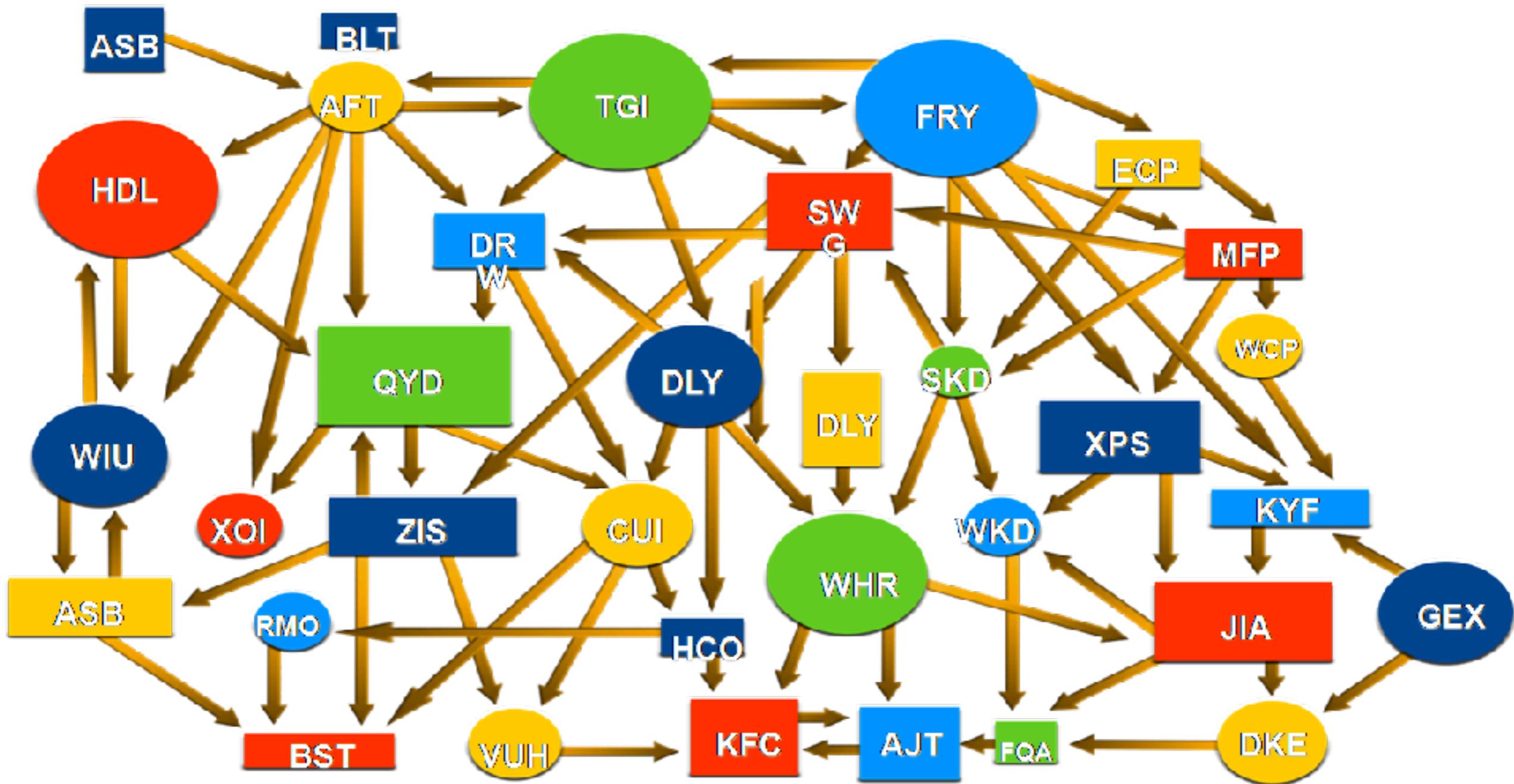
# Conway's Law



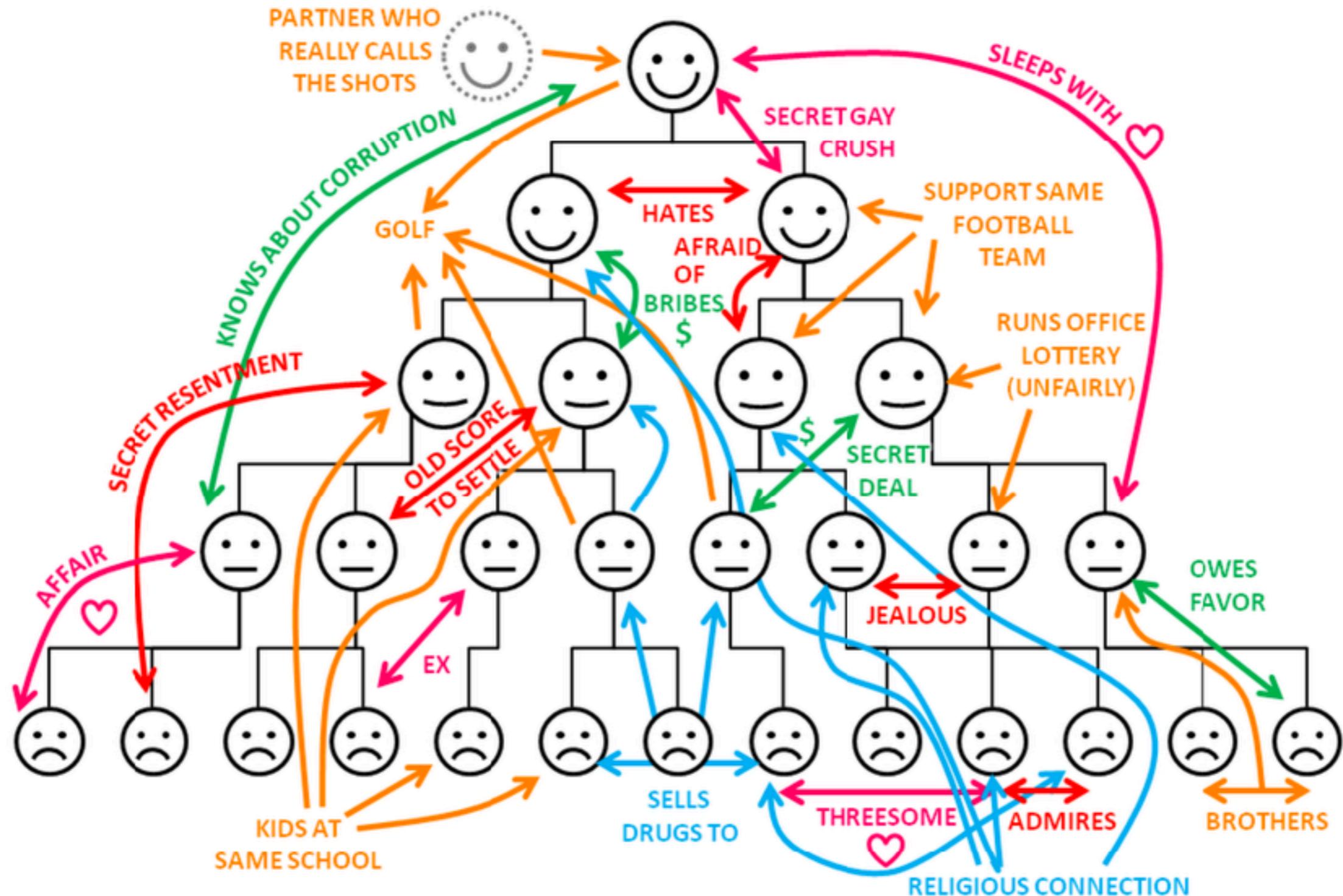


A GOOD ARCHITECT LEAVES A FOOTPRINT





# Real Organization Chart



## THE LIFE OF A SOFTWARE ENGINEER.

CLEAN SLATE. SOLID  
FOUNDATIONS. THIS TIME  
I WILL BUILD THINGS THE  
RIGHT WAY.



MUCH LATER...

OH MY. I'VE  
DONE IT AGAIN,  
HAVEN'T I ?



# Problem ?



## Grow Fat

Code base grows. All the things slow down.



## Age

Your code base will become a jurassic park introducing new tech becomes hard



## Ownership

Who is responsible for which part and more important: who has the pager



## Economies of Scale

The bigger the team the more they interrupt each other

<https://trello.com/>



# Problem ?



## Requires a ticket

A ticket for the deployment team



## Only one person

There is only one person in the team that owns it



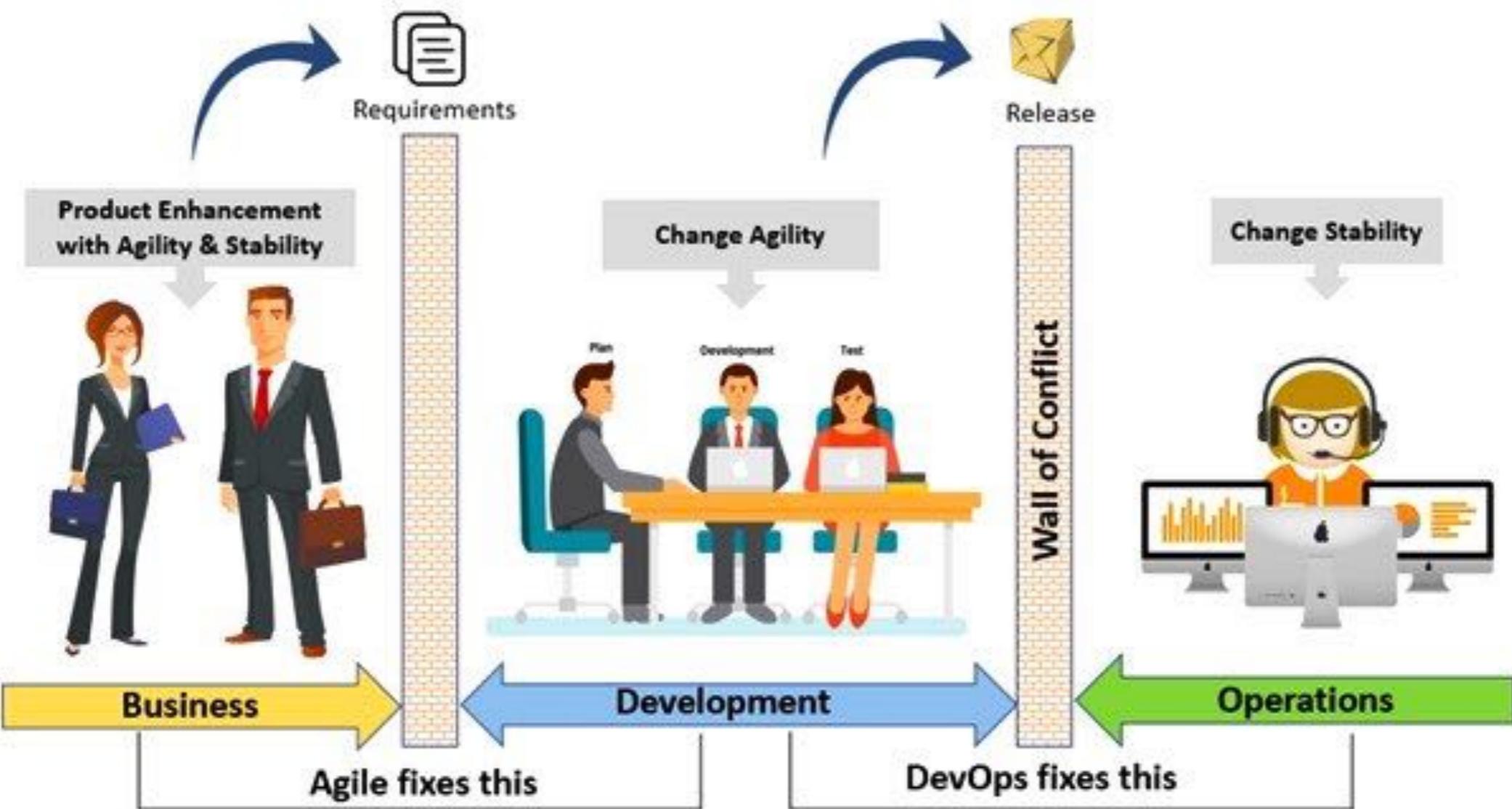
## Takes more than 15 mins

Setting it up should be quick and initial deployment should quick

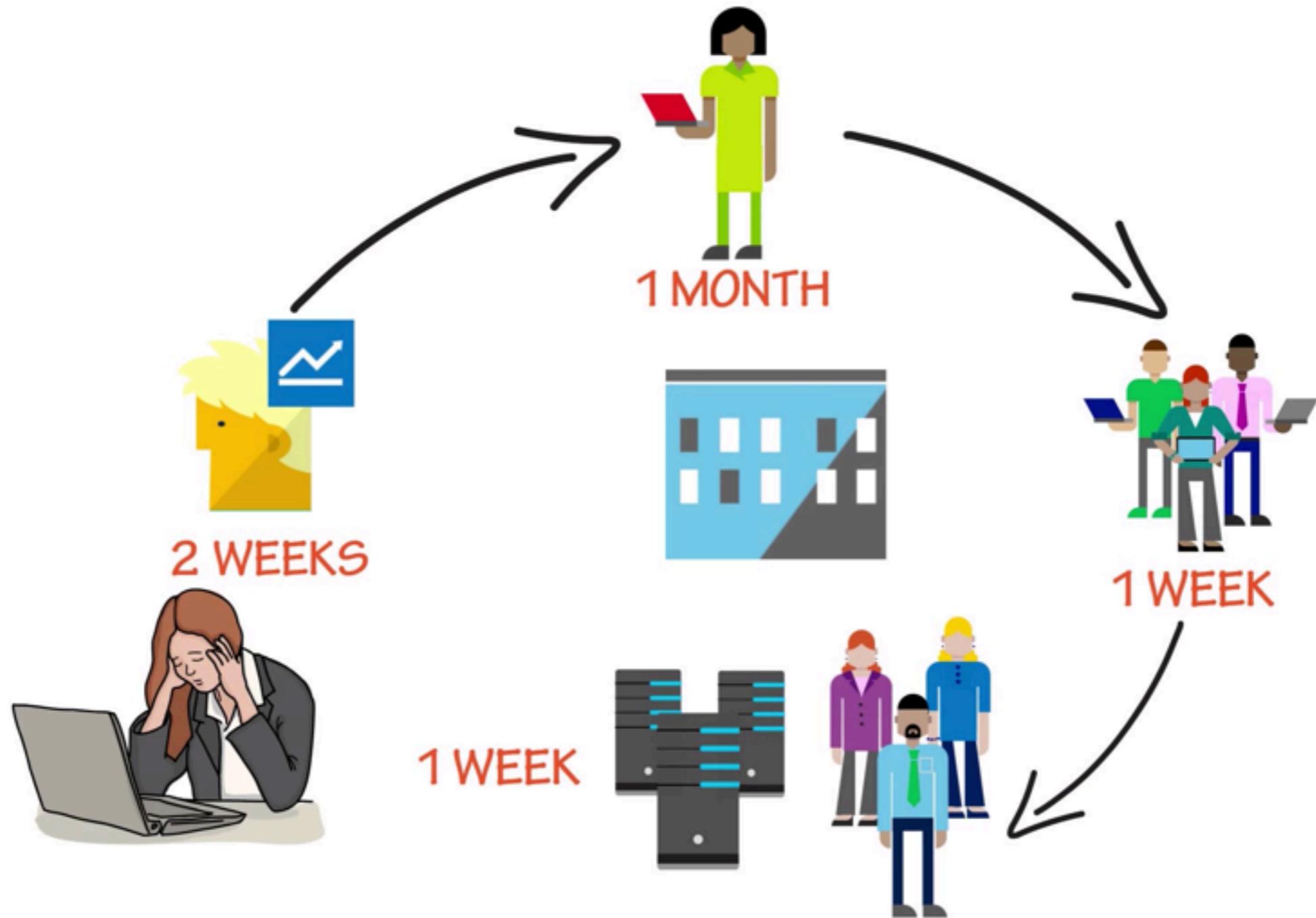
<https://trello.com/>



# Problem ?



# Problem ?



# Problem ?



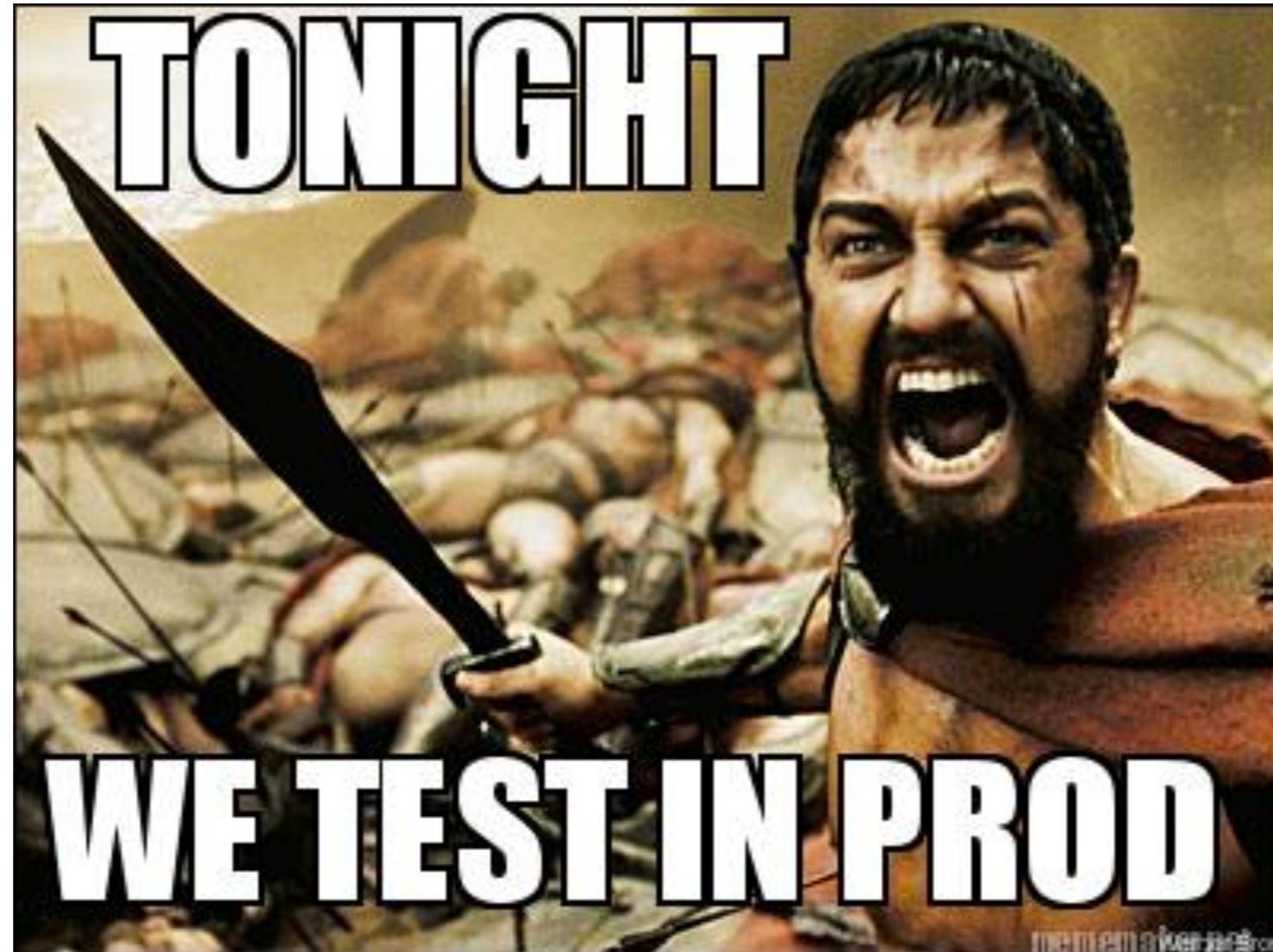
# Silo madness



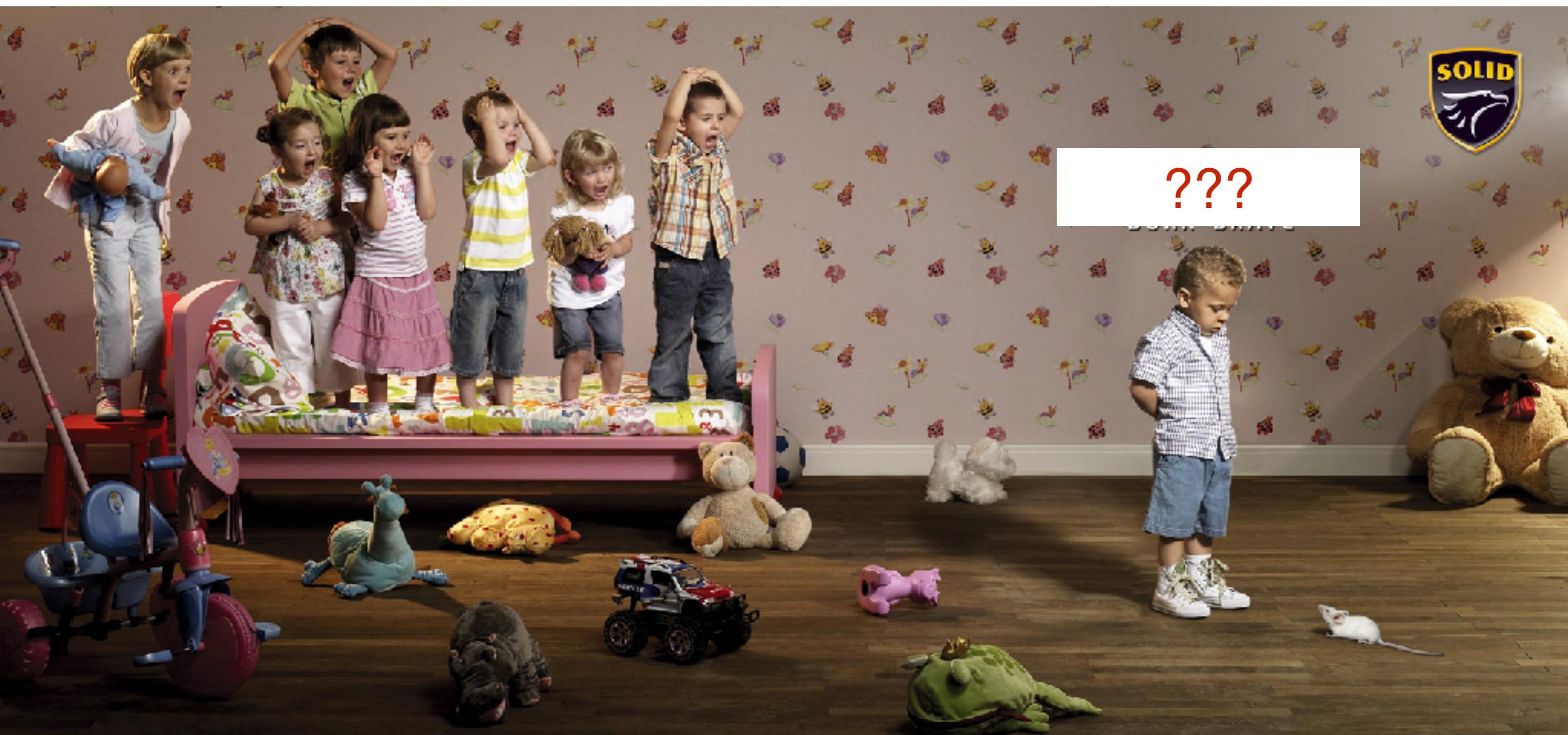
# Problem ?



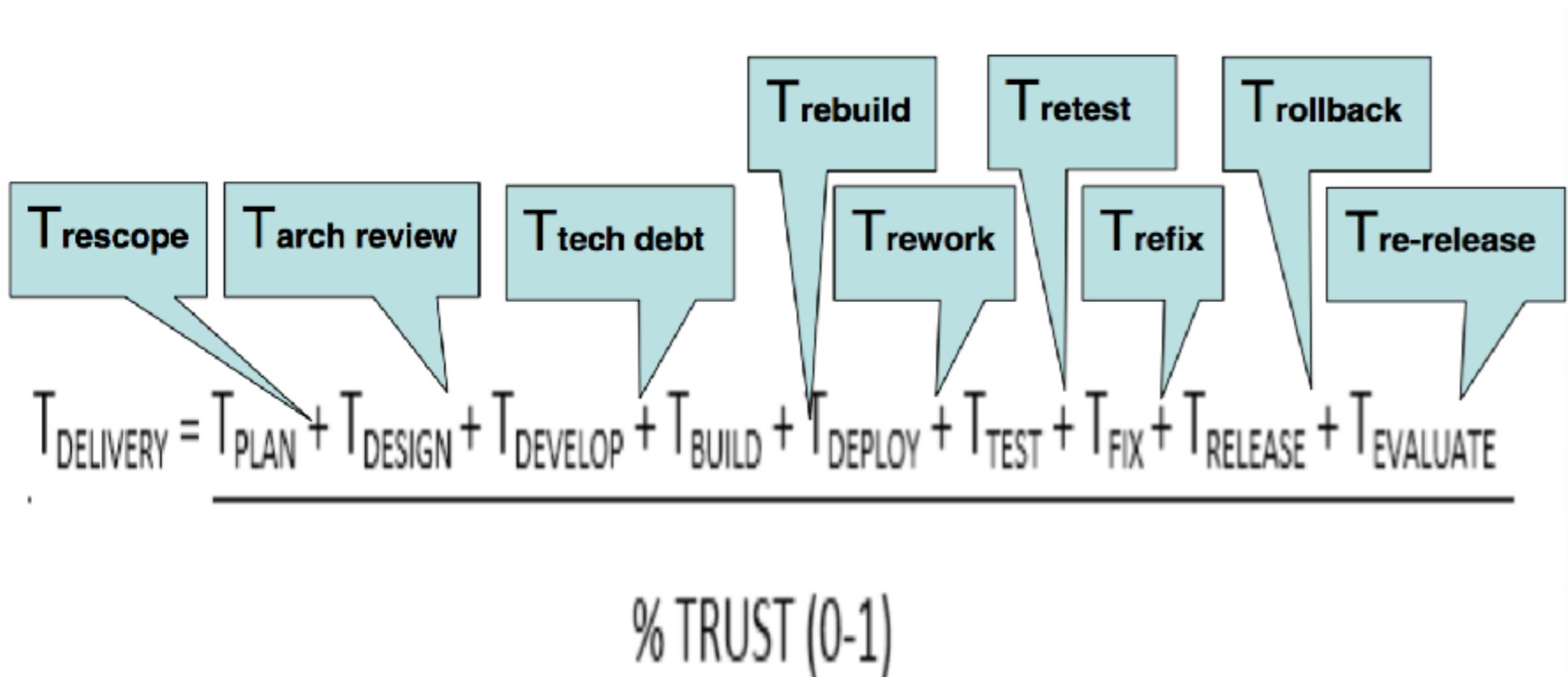
# Problem ?



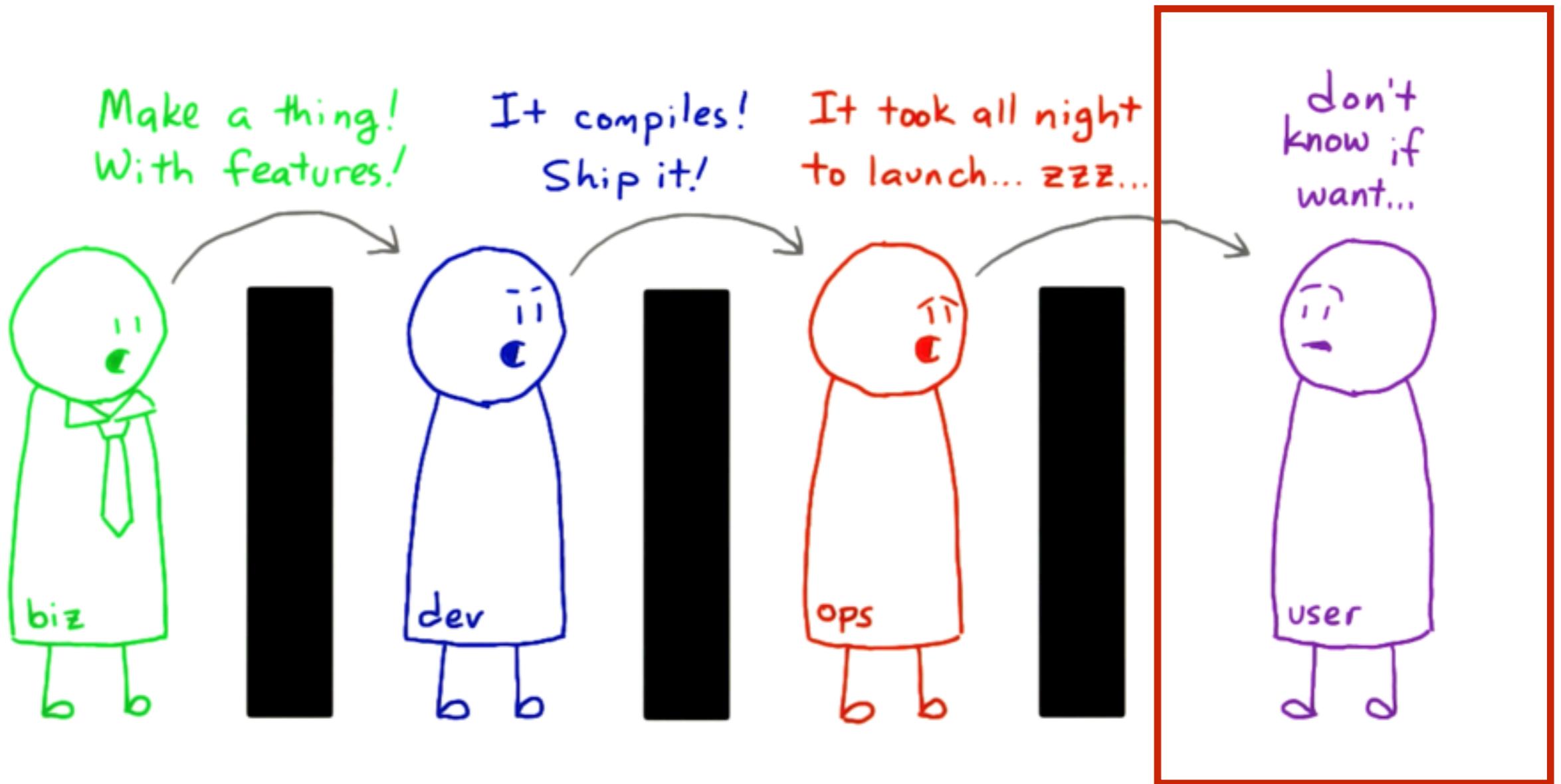
# Problem ?



# Low trust create extra steps



# Customer !!!



# Customer !!!



A photograph of a beach at sunset. The sky is a warm orange and yellow, transitioning to a darker blue. The ocean waves are breaking onto the shore. In the foreground, two people are sitting on the sandy beach. The text "Trust = Consistency / Time" is overlaid on the top right of the image.

Trust = Consistency  
Time





# We need Change

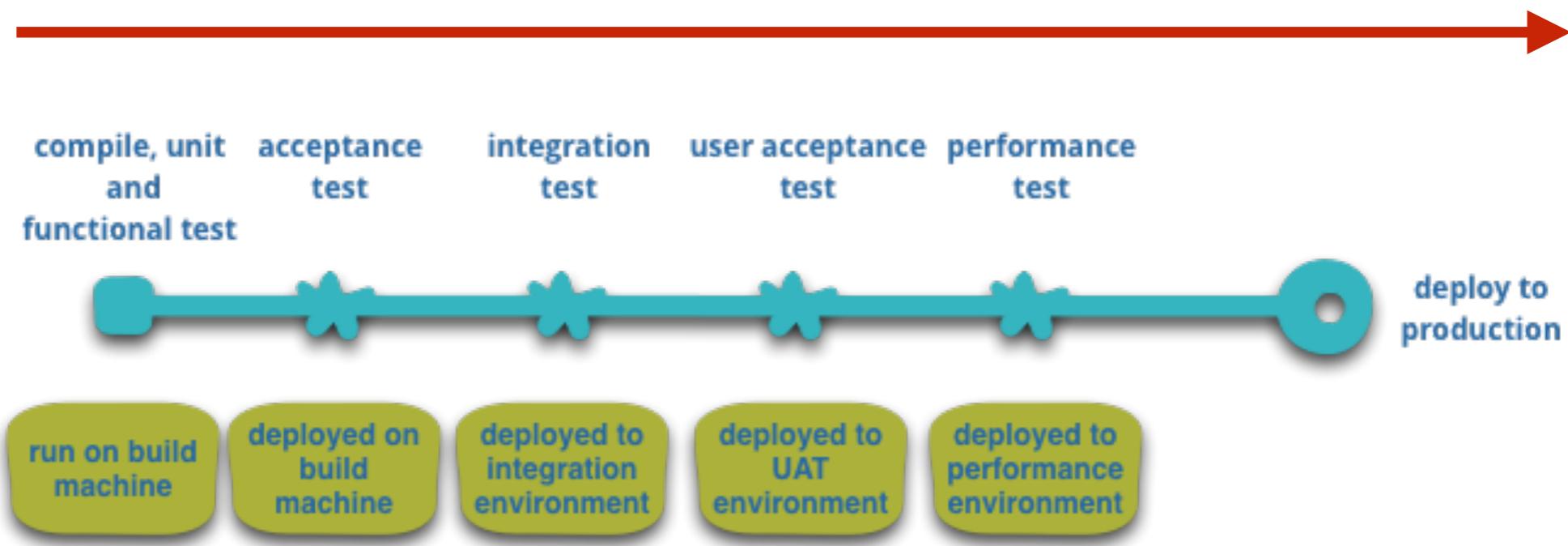


# Current situation ?

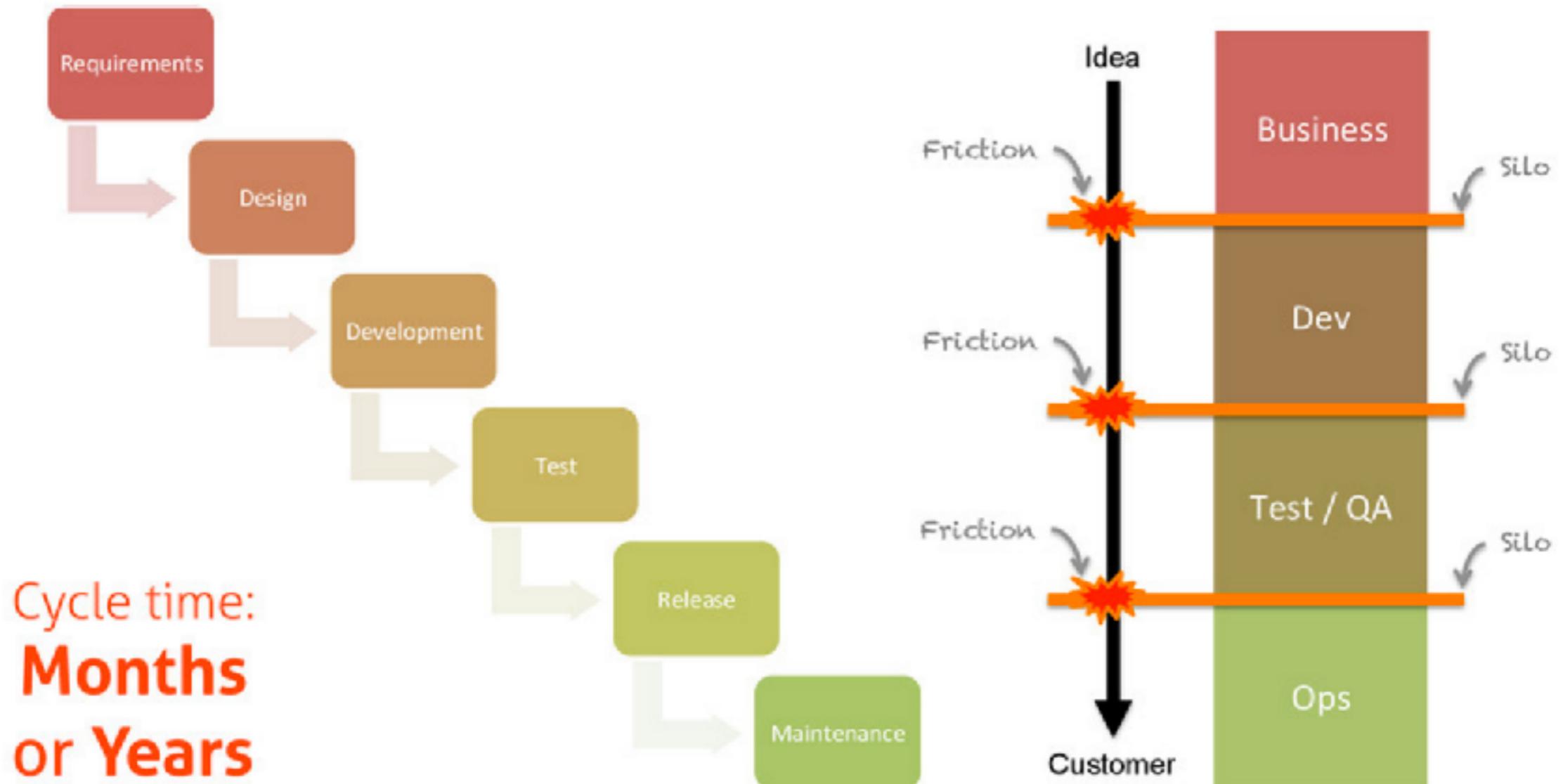


# Current situation ?

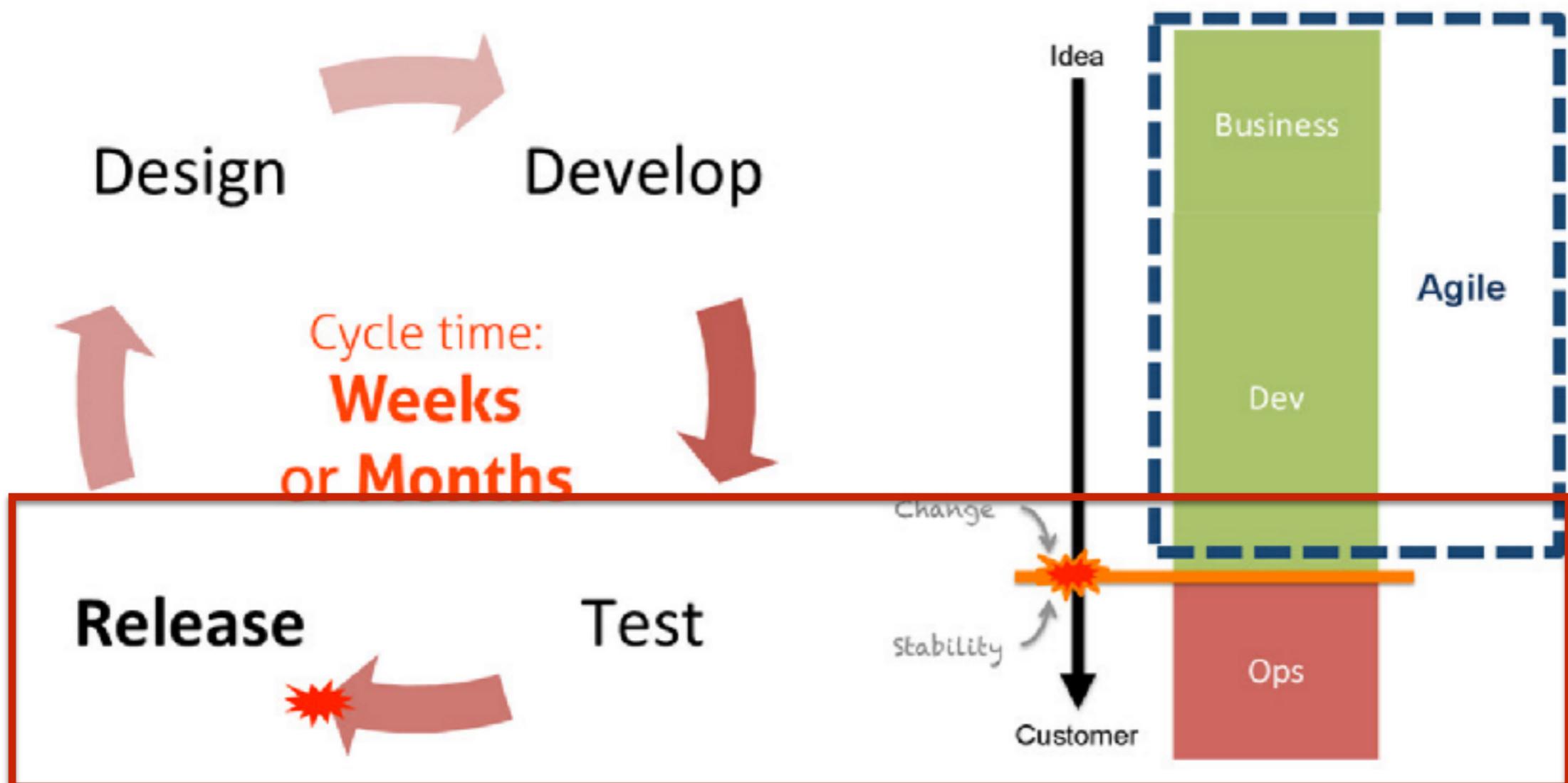
## Lead time ?



# Traditional development



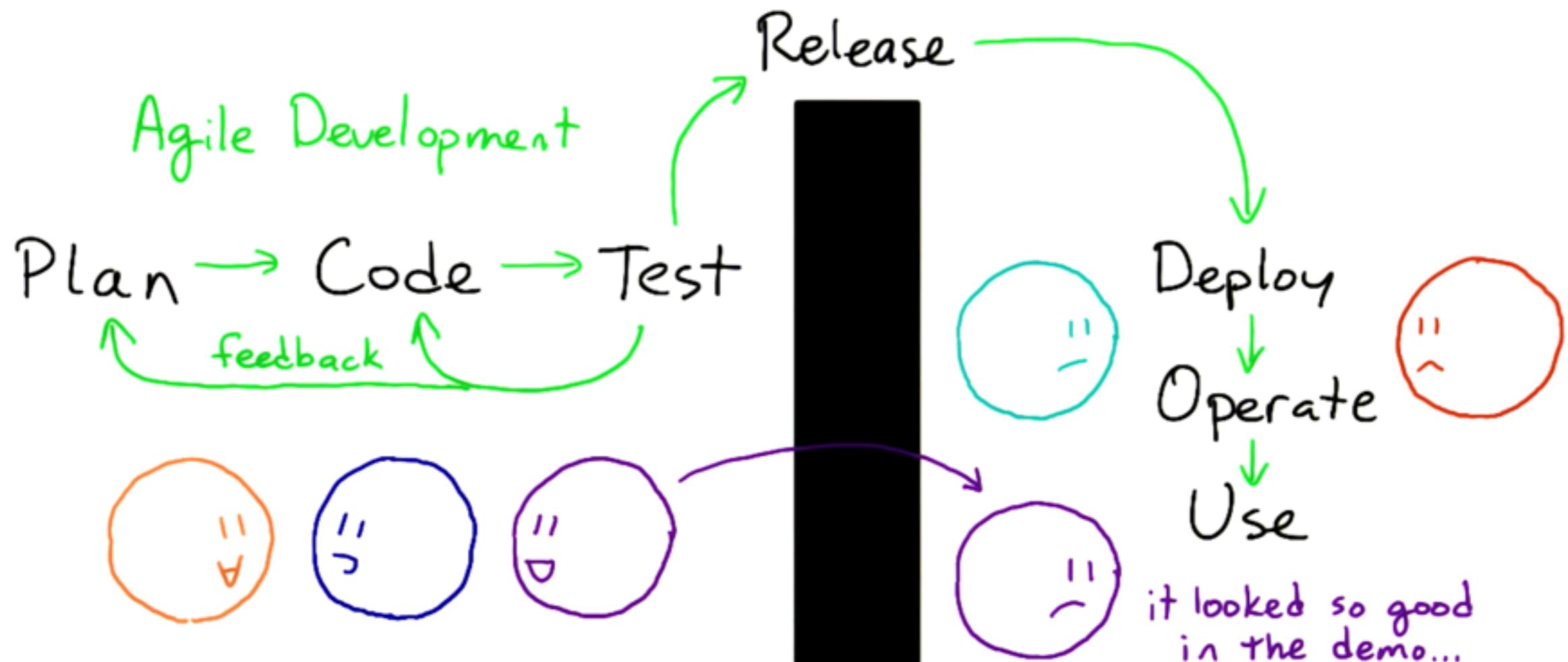
# Iterative/Agile development



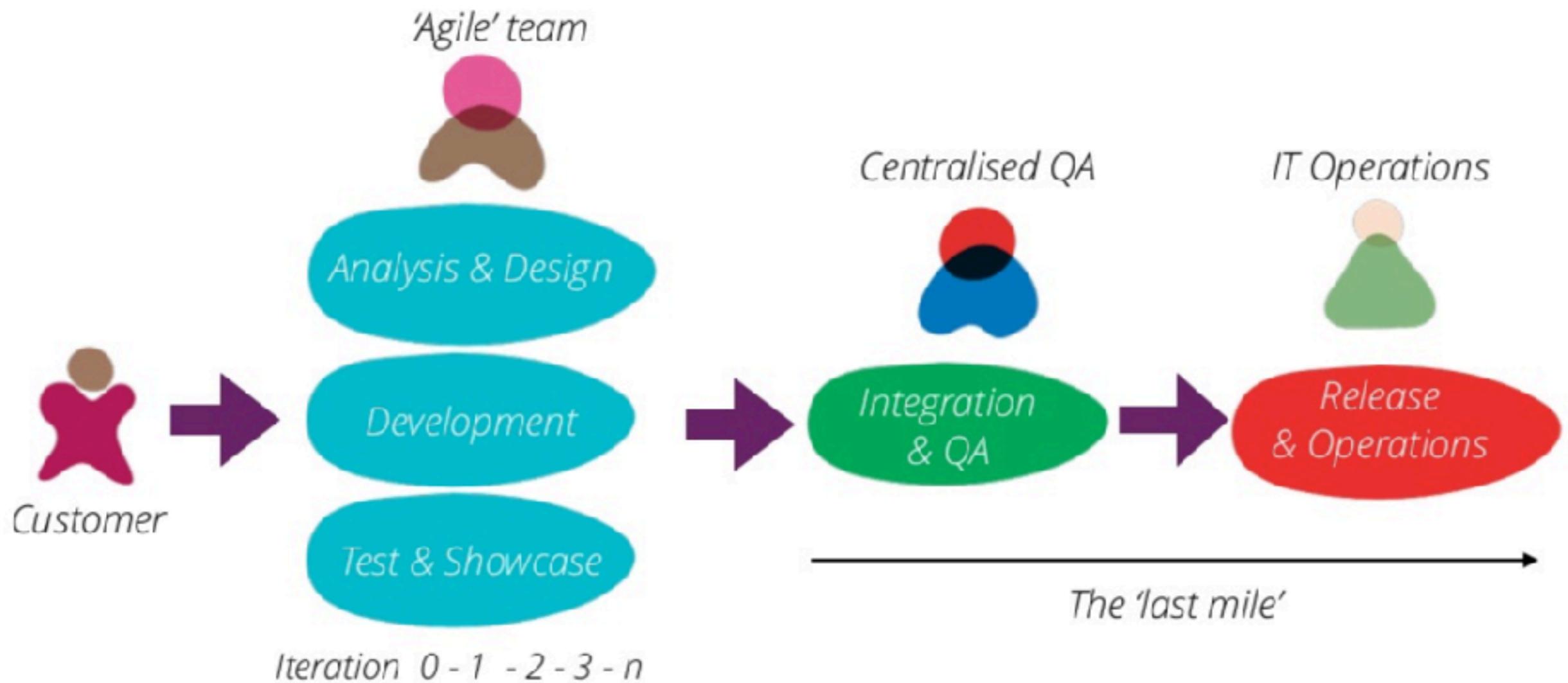
# Iterative/Agile development



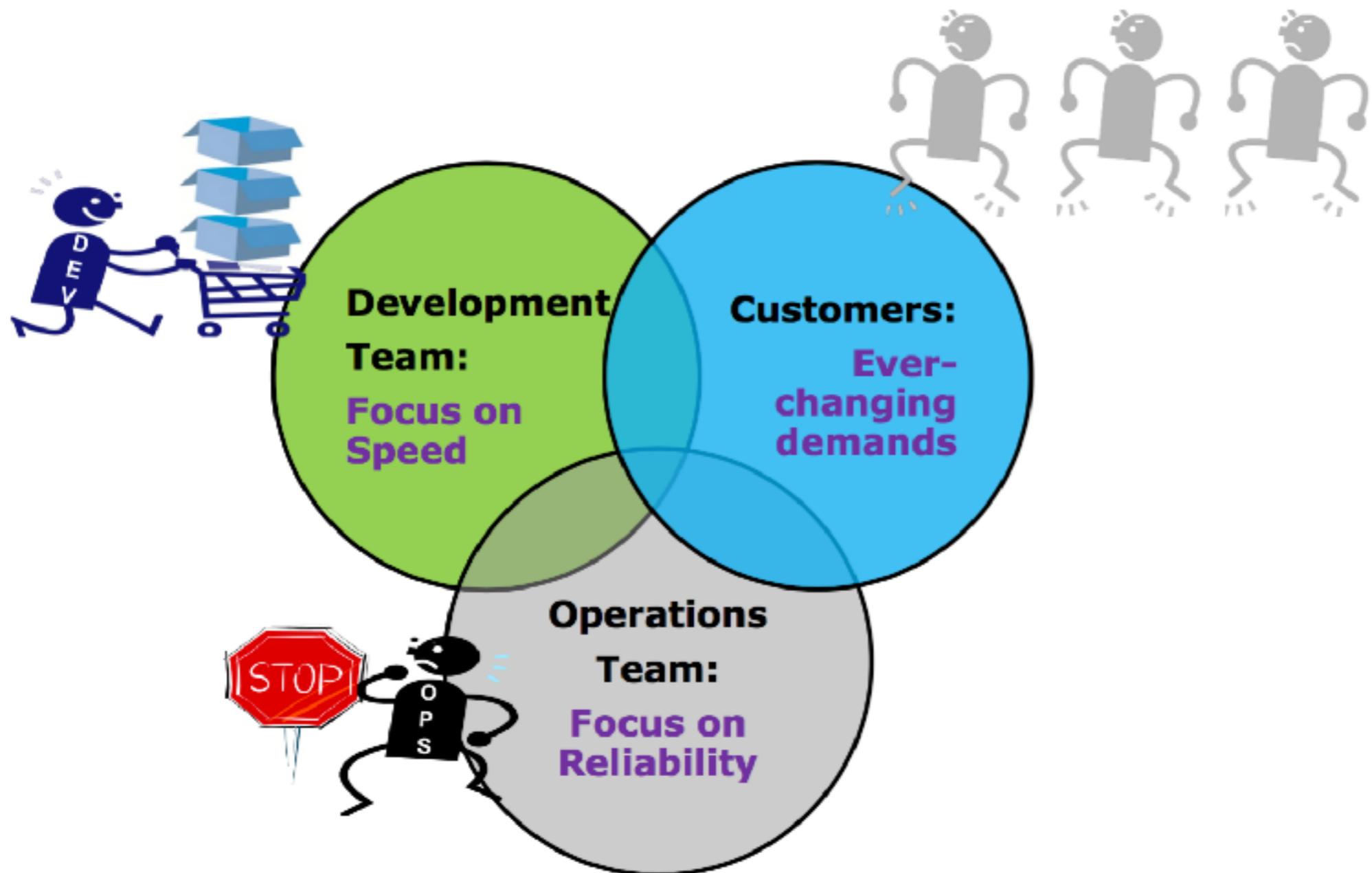
# Iterative/Agile development



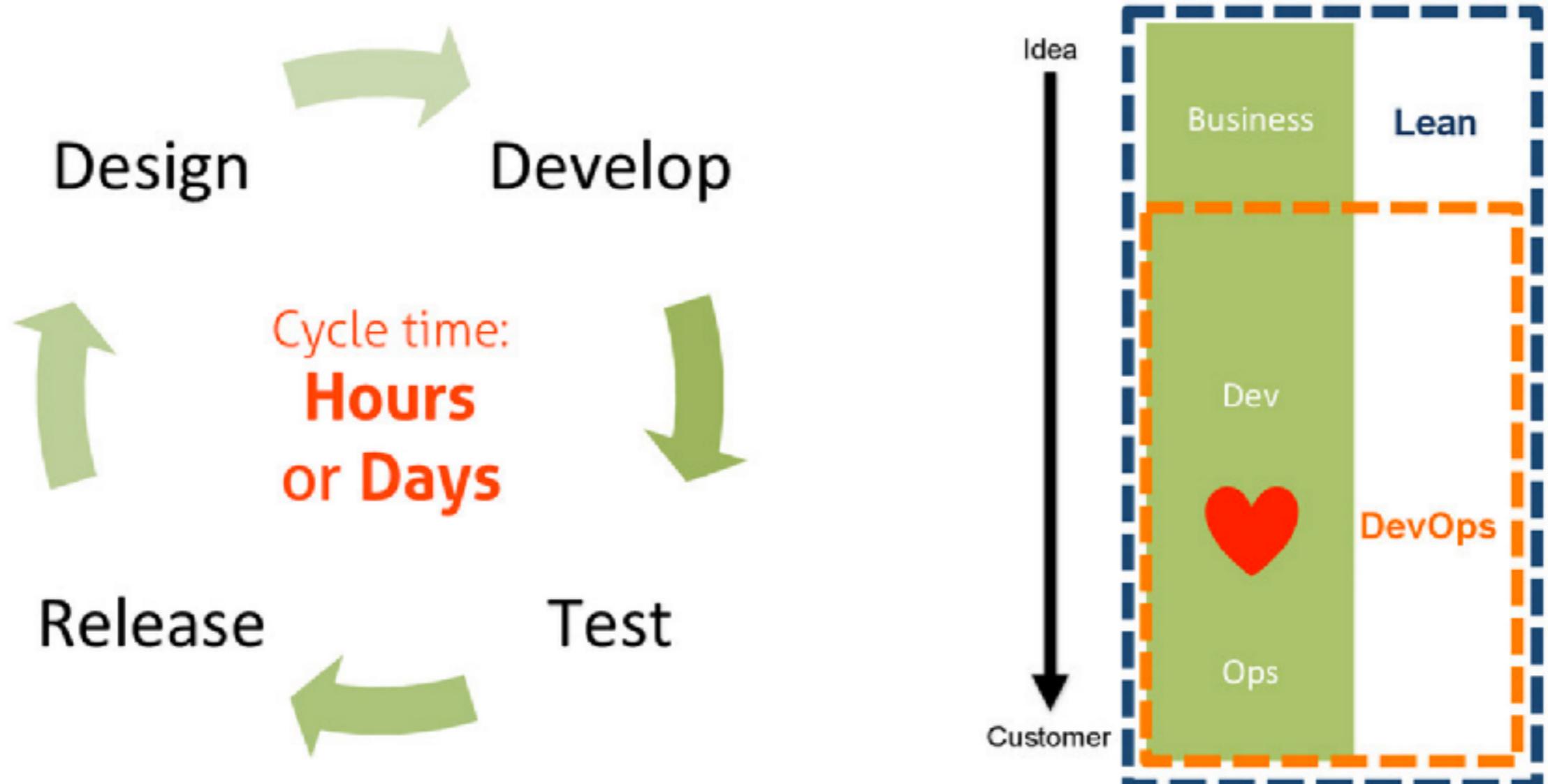
# The last mile !!



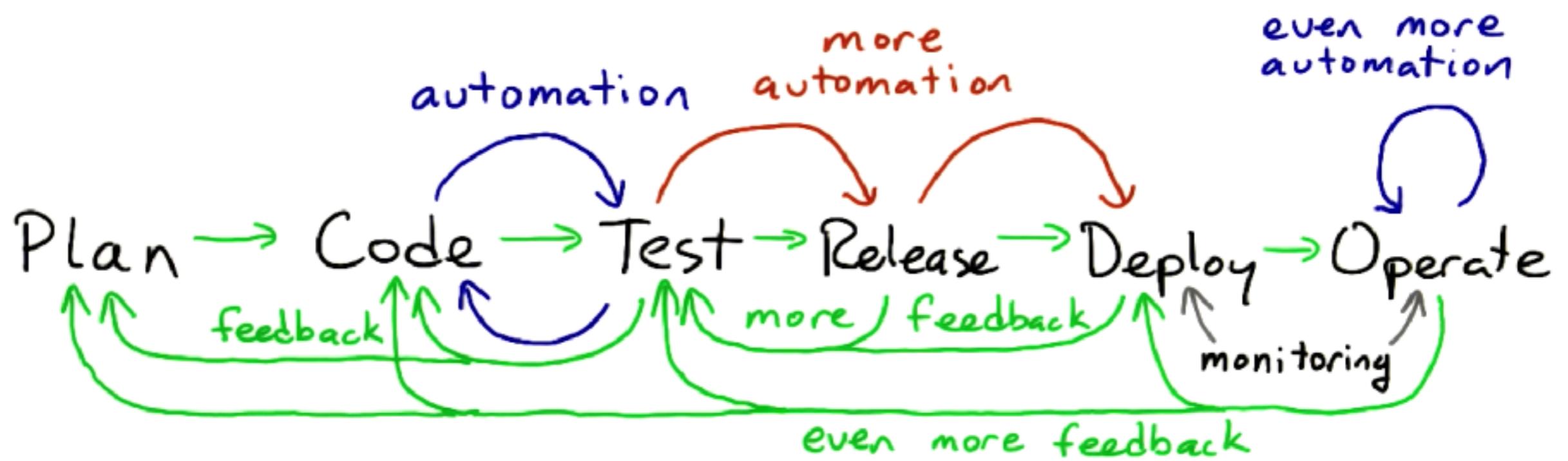
# Conflict of Interest



# Rise of DevOps

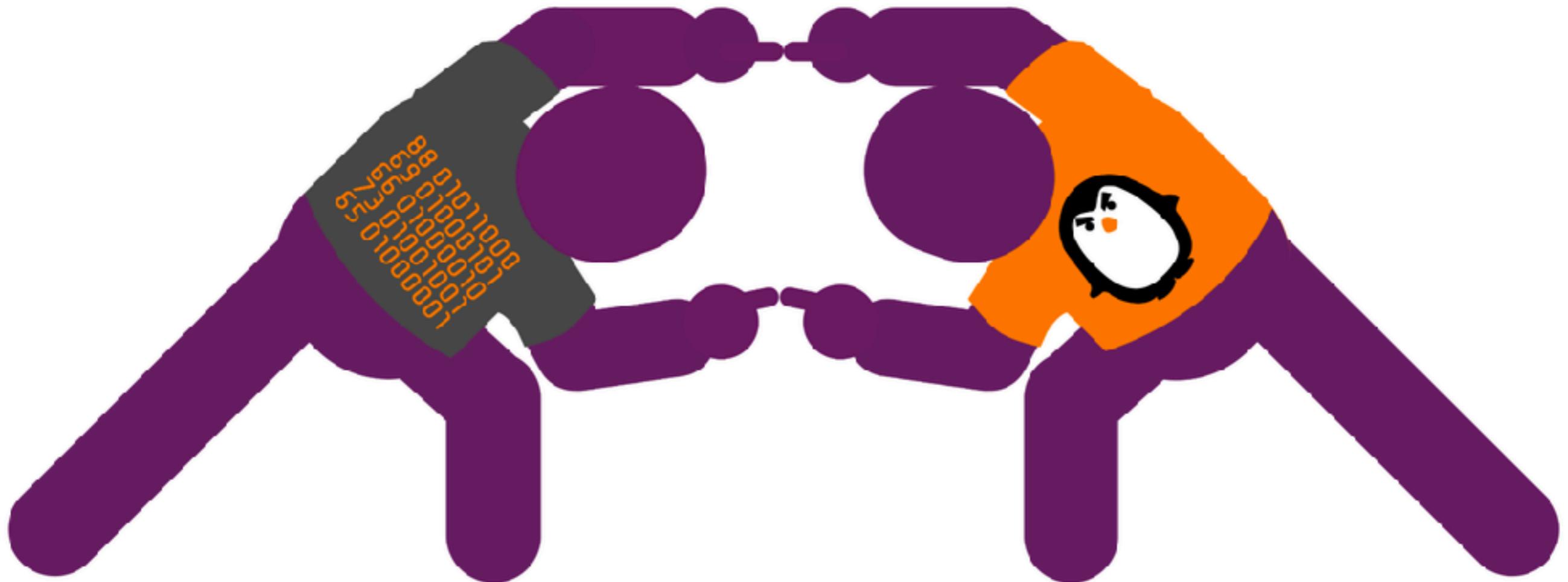


# Rise of DevOps

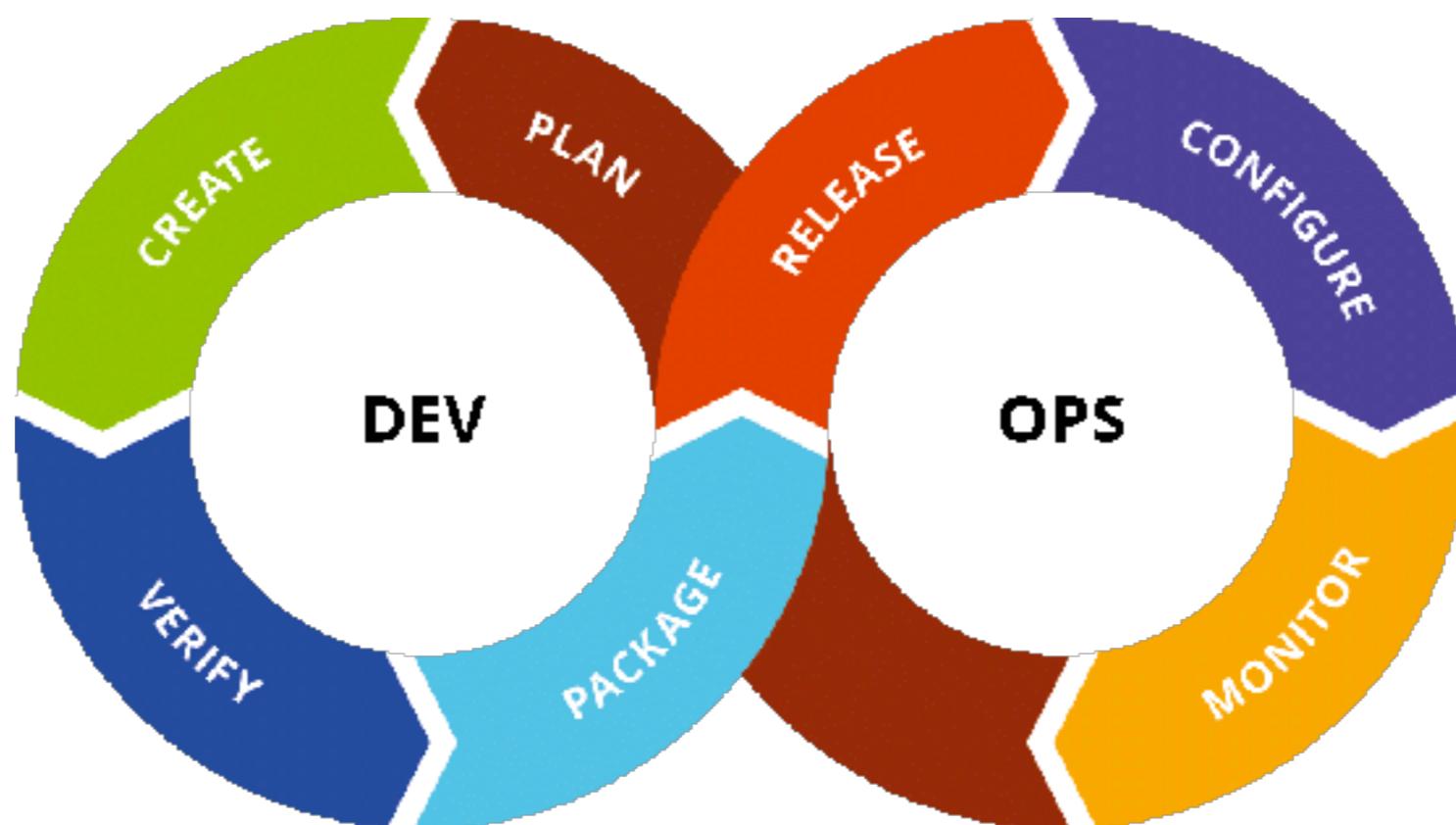


Agile Development → Continuous Integration + Delivery → DevOps?

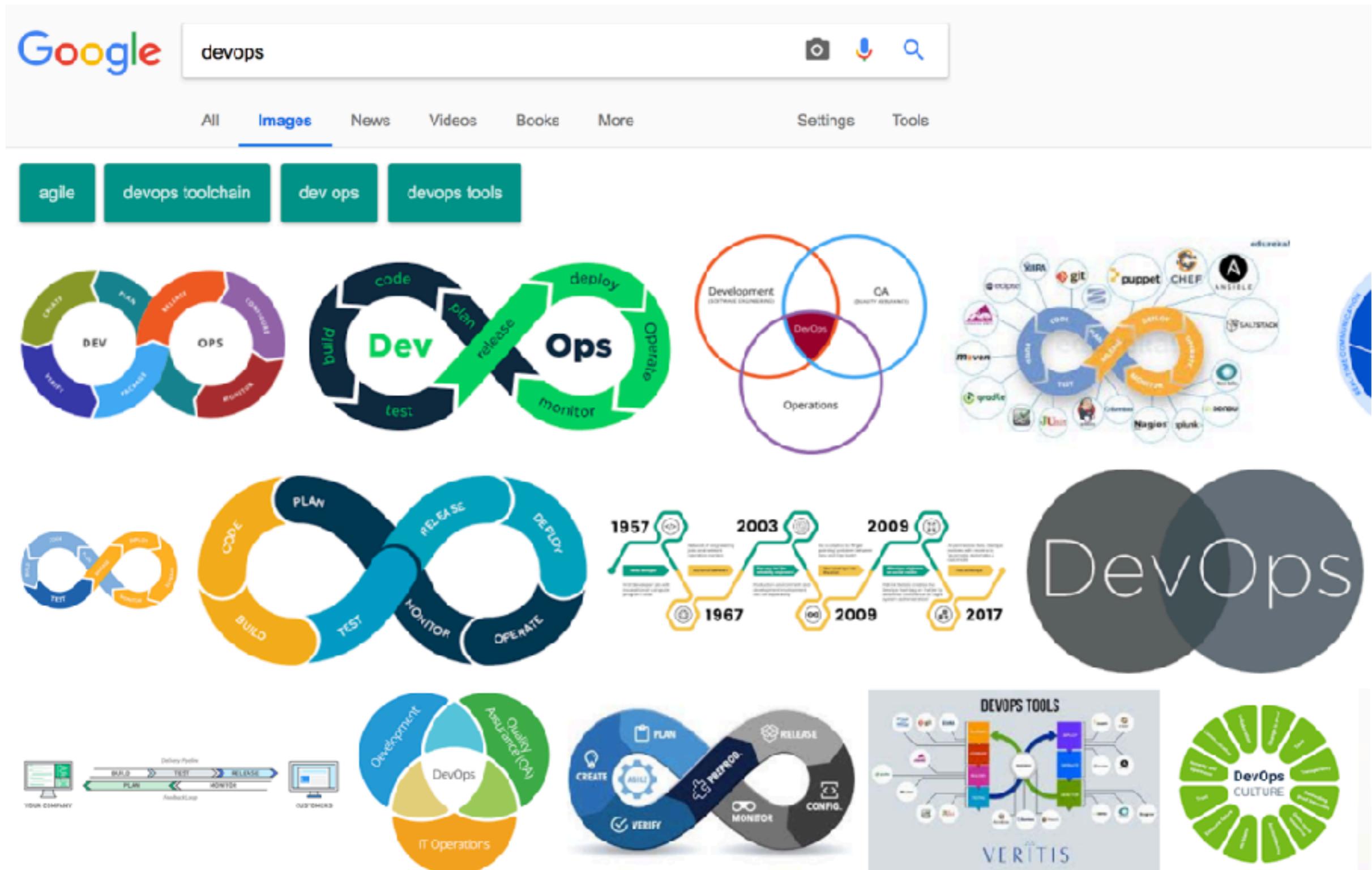




# What is DevOps ?



# What is DevOps ?



# What is DevOps ?

**"DevOps is**  
development  
and operations  
**collaboration**"

**"DevOps**  
is using  
**automation**"

**"DevOps**  
is **small**  
deployments"

It's DevOps!

It's DevOps!

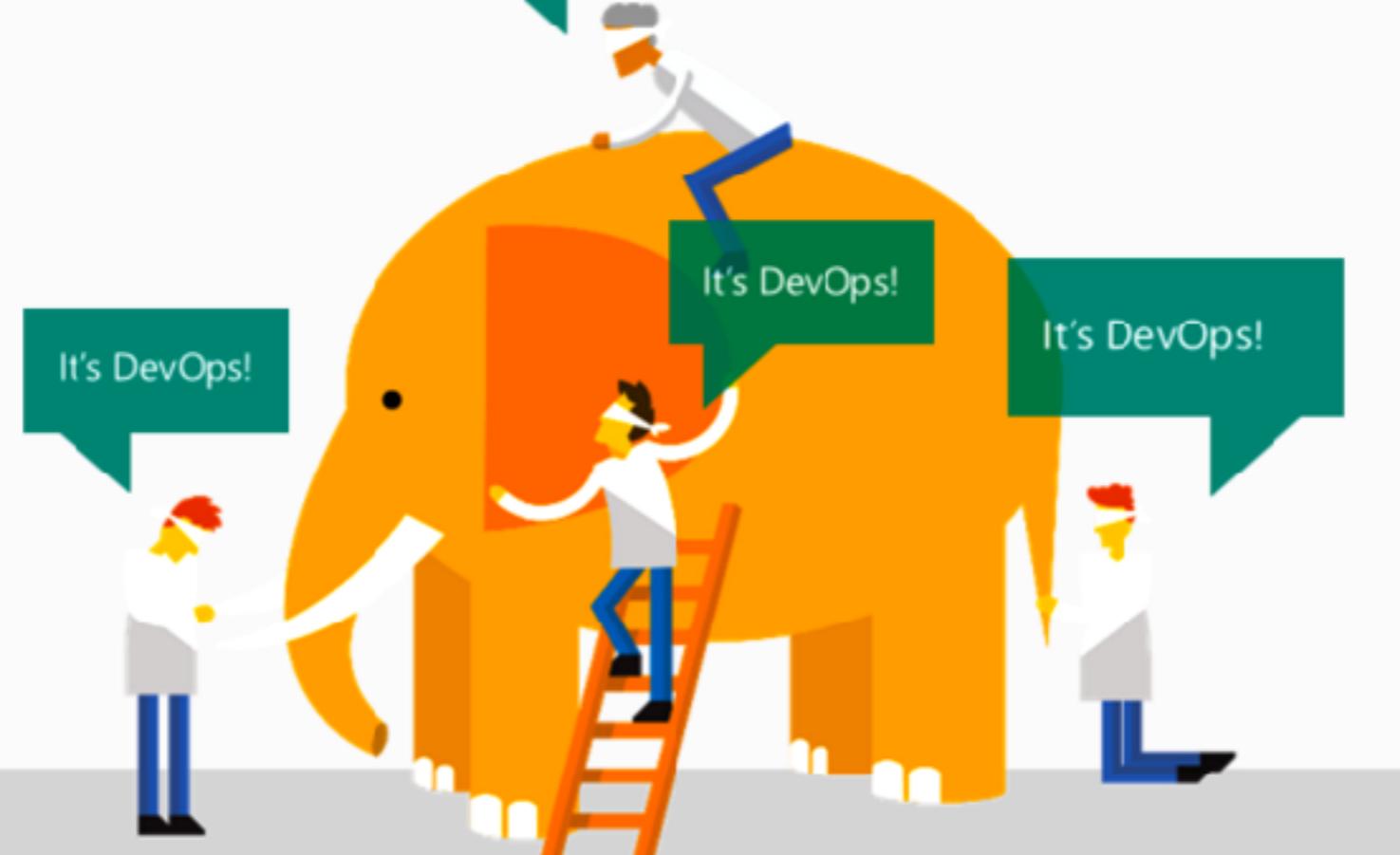
It's DevOps!

It's DevOps!

**"DevOps is**  
treating your  
**infrastructure**  
as code"

**"DevOps**  
is feature  
**switches**"

**"Kanban**  
for Ops?"



# What is **not** DevOps ?

A certification

A role

A set of tools

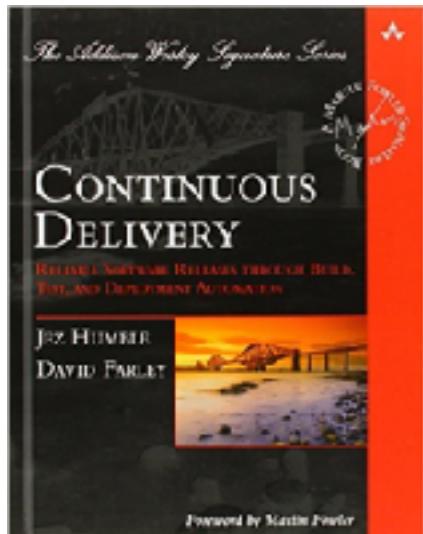
A prescriptive process



# DevOps ?

“A movement of people who care about developing and operating reliable, secure, high performance systems at scale.”

- Jez Humble -



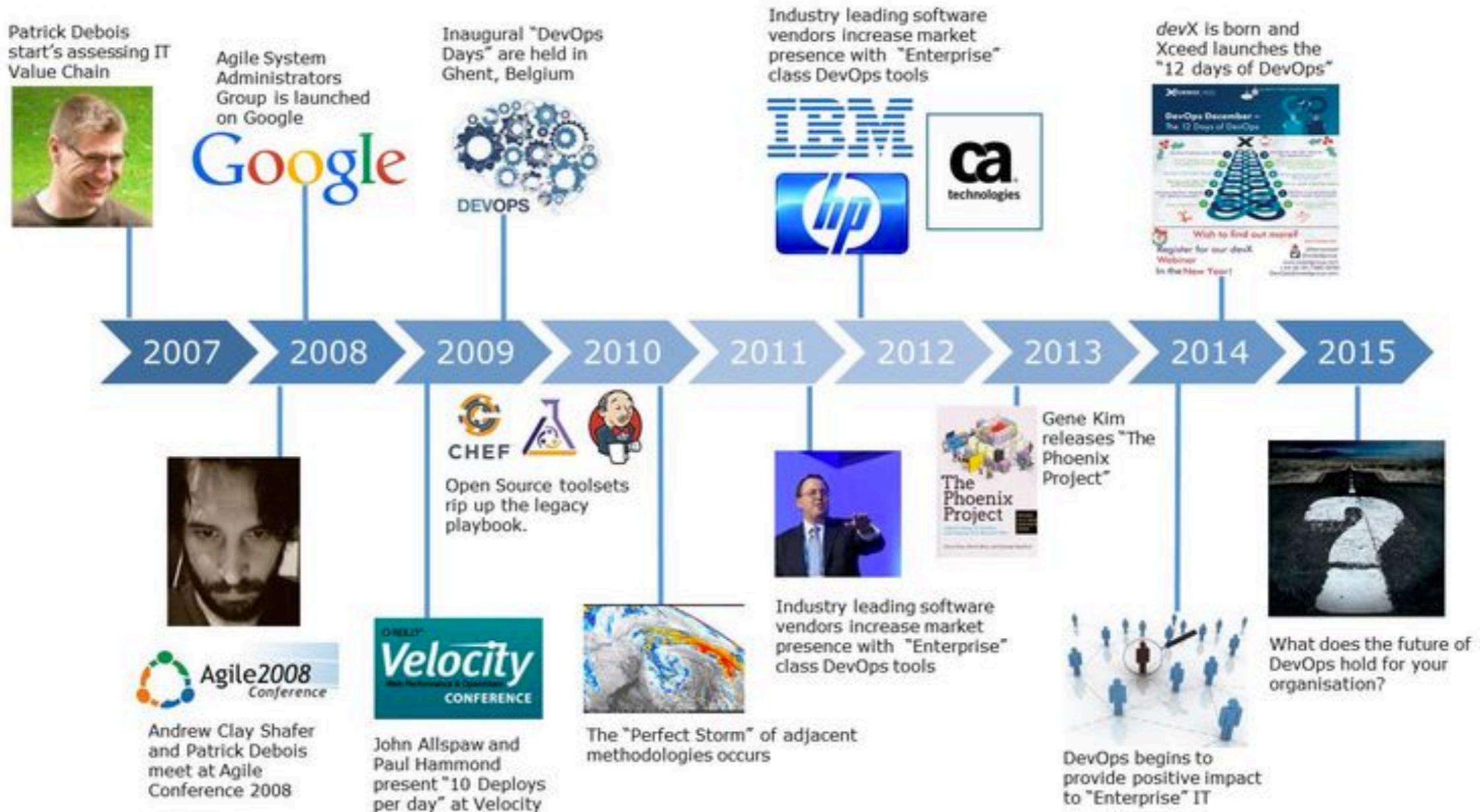
# DevOps ?

“DevOps is a set of practices intended to reduce the time between committing a change to a system and the change being placed into normal production, while ensuring high quality.”

[https://en.wikipedia.org/wiki/DevOps#Definitions\\_and\\_history](https://en.wikipedia.org/wiki/DevOps#Definitions_and_history)



# DevOps Timeline



<https://www.pinterest.com/pin/263390278185605258/?lp=true>



# State of DevOps report

**High-performing teams deploy more frequently and have much faster lead times.**



**200x**

**200x more frequent deployments**



**2,555x**

**2,555x shorter lead times**

**They make changes with fewer failures, and recover faster from failures.**



**3x**

**3x lower change failure rate**



**24x**

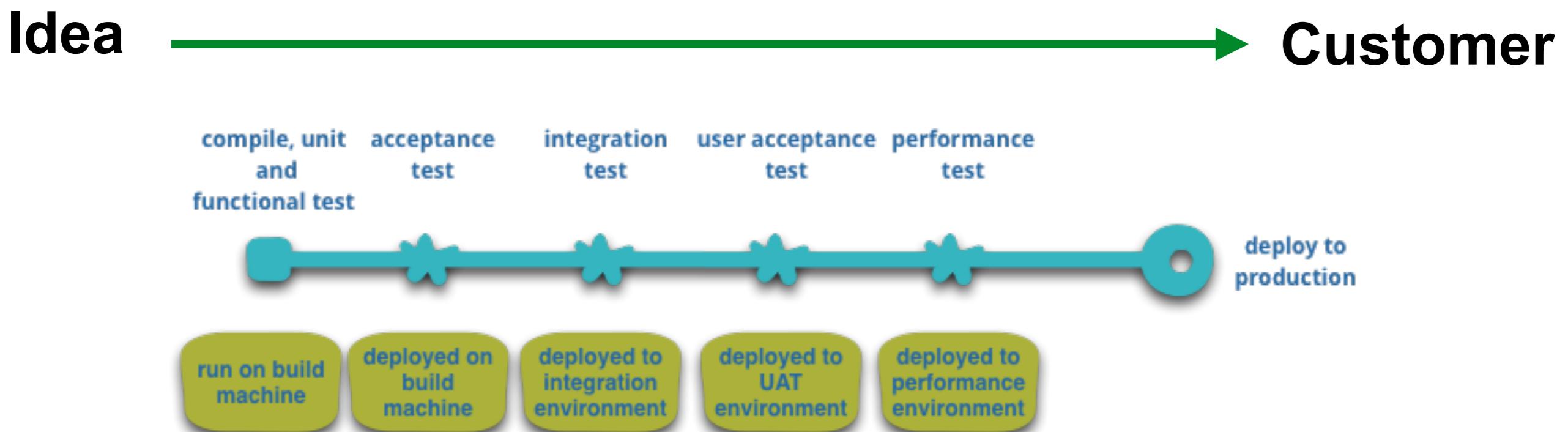
**24x faster recovery from failures**

<https://puppet.com/resources/whitepaper/state-of-devops-report>



# Goals of DevOps

“Improve the delivery of value for Customer and Business”



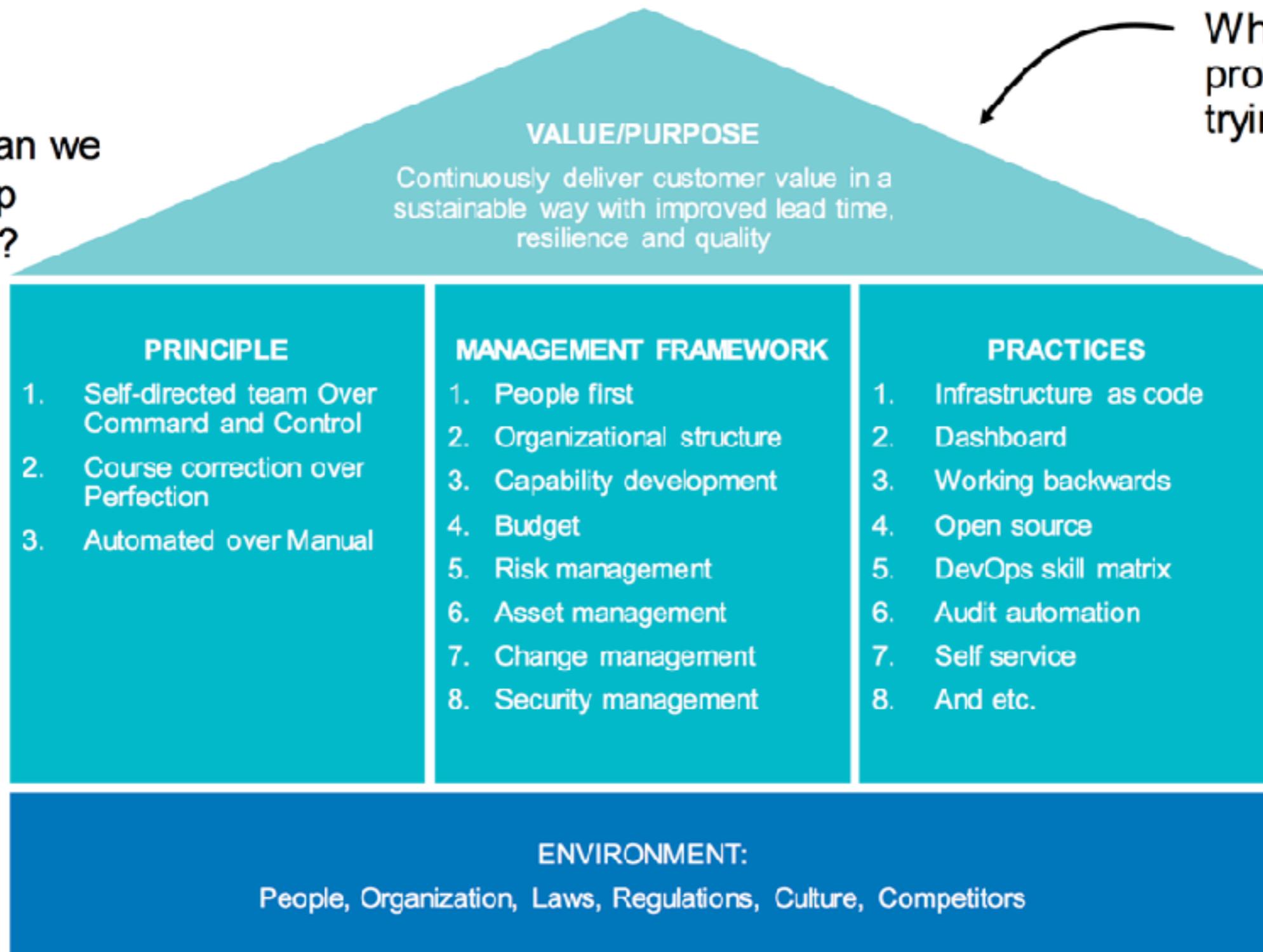
# Goals of DevOps

“Enable the **continuous delivery** of value to customer”



# DevOps adoption model

How can we develop people?



What kind of problem are we trying to solve?

How can we improve the work



# DevOps Core Values

**Culture => People, Process, Tools**

**Automation => Infrastructure as Code**

**Measurement => Measure everything**

**Sharing => Collaboration/Feedback**

**Lean => Change pushing to pulling**



# Culture

Breaking down barriers between team  
Reduce waiting time (waste !!)  
Focus on bottlenecks and flow  
Avoid blame culture  
Openness and trust  
Safe environment  
Eliminate unplug work and rework



# Automation

Reduce repeat tasks (lazy people)

Prevent defects

Create consistency process

Enable self-service



# Measurement

Measure all the things

Decision based on data

Data should be

Transparent

Accessible

Meaningful

Visualize



# Sharing

Key the success of DevOps  
Sharing knowledges  
Sharing lesson learn  
Sharing tools



# **DevOps**

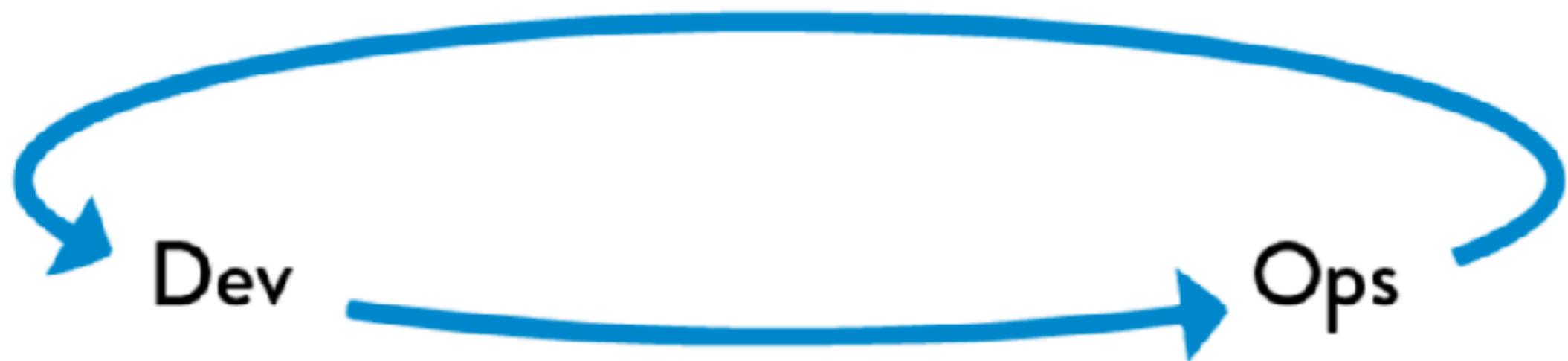
# **3 ways principle**



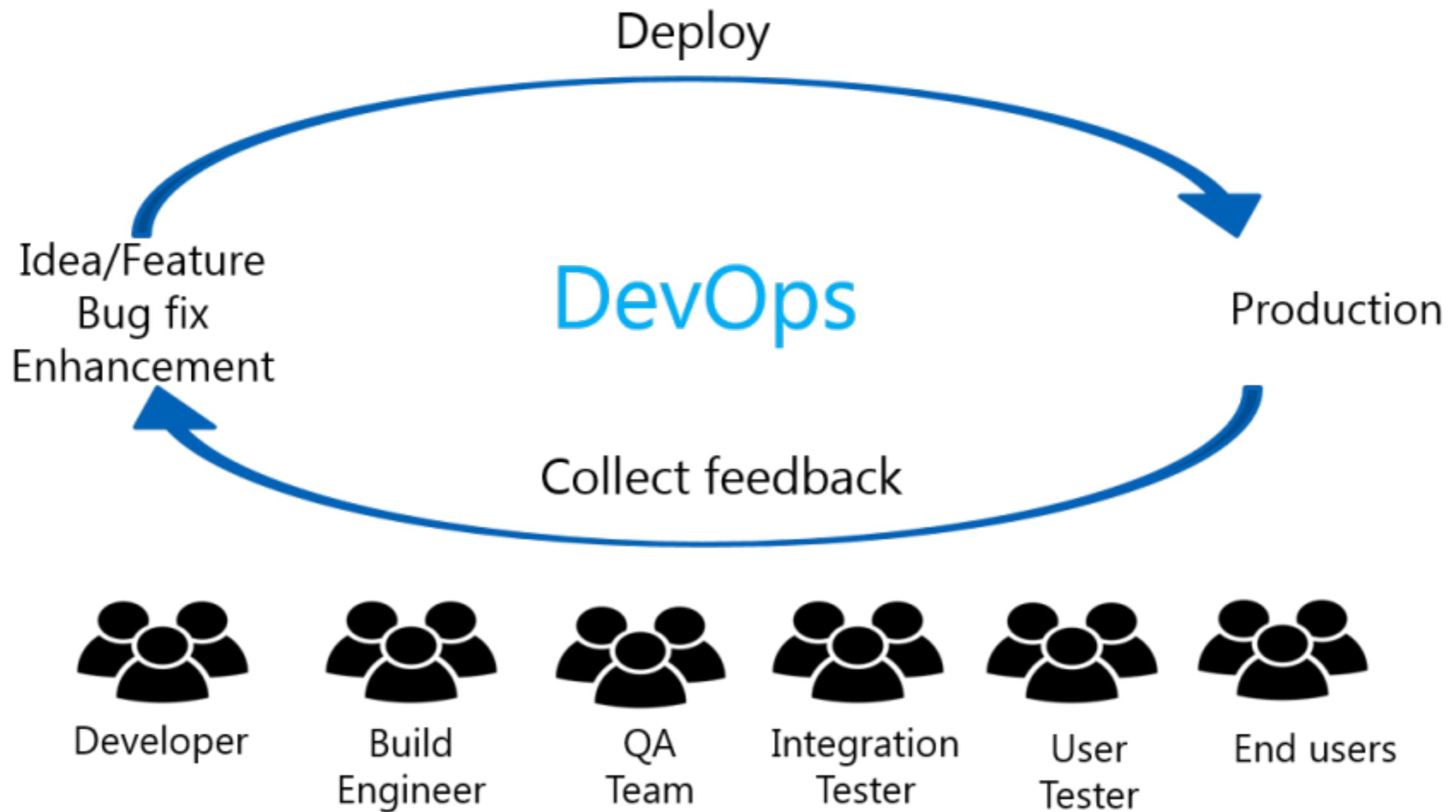
# 1. Flow principle



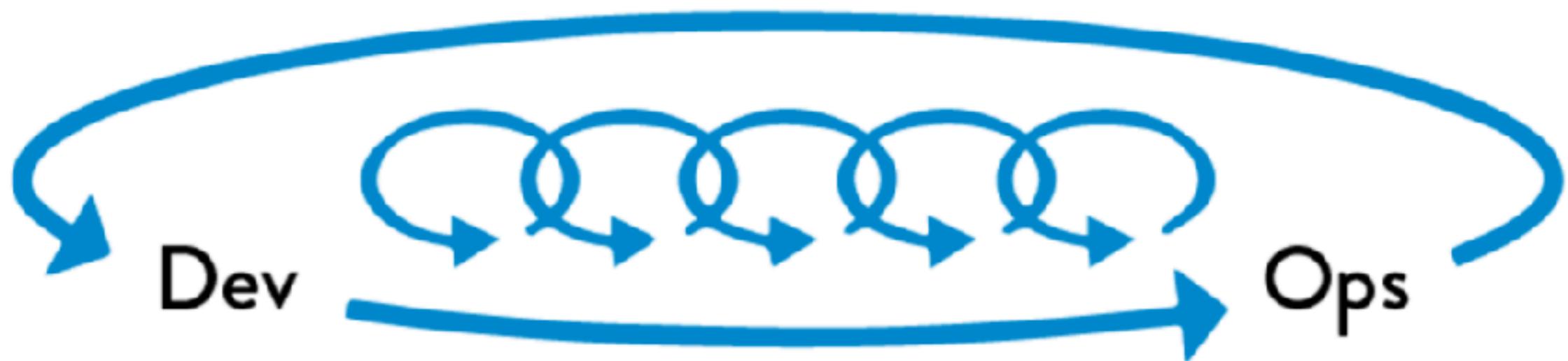
## 2. Feedback principle (1)



## 2. Feedback principle (2)



# 3. Continuous learning principle



**DevOps is not a goal, but a  
never-ending process**

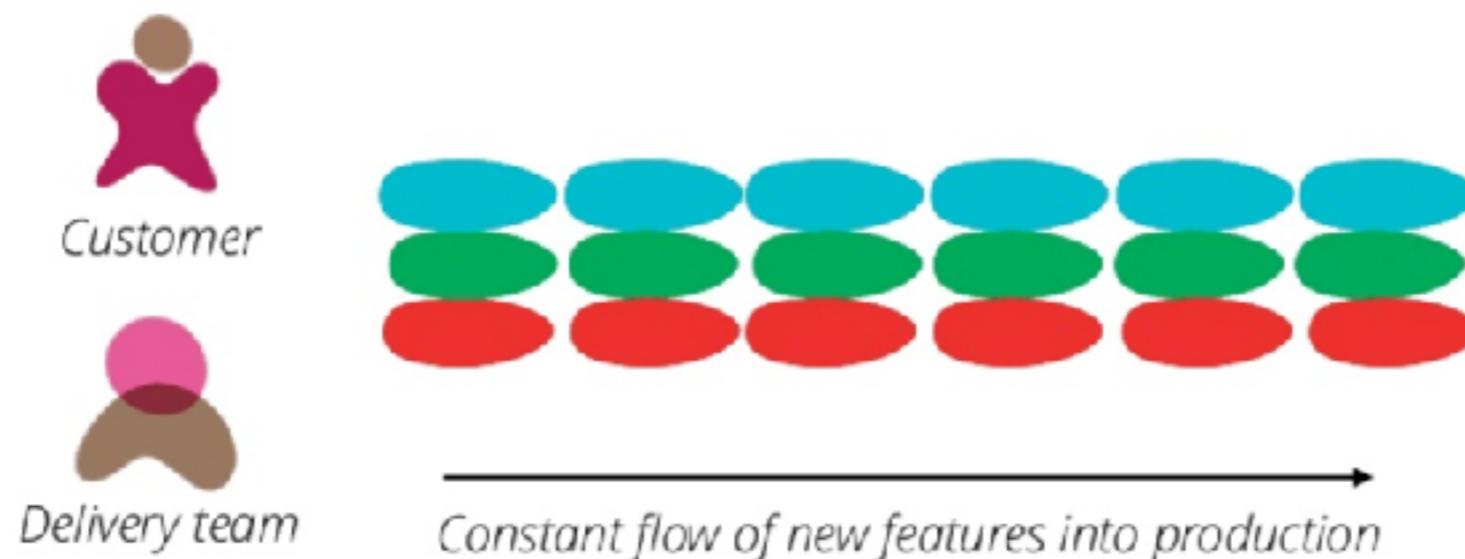


# **Continuous Improvement (Kaizen)**

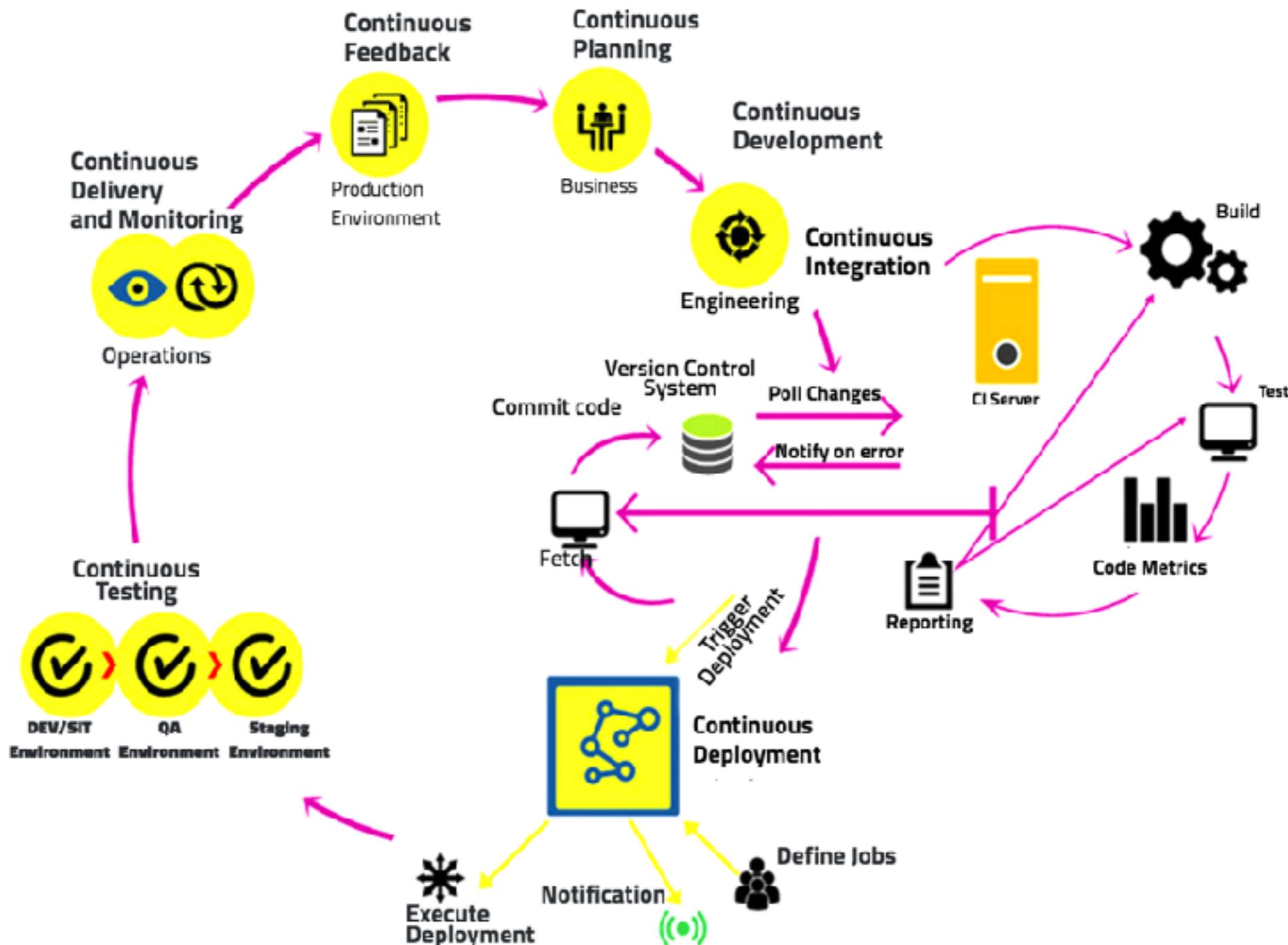


# DevOps Practices

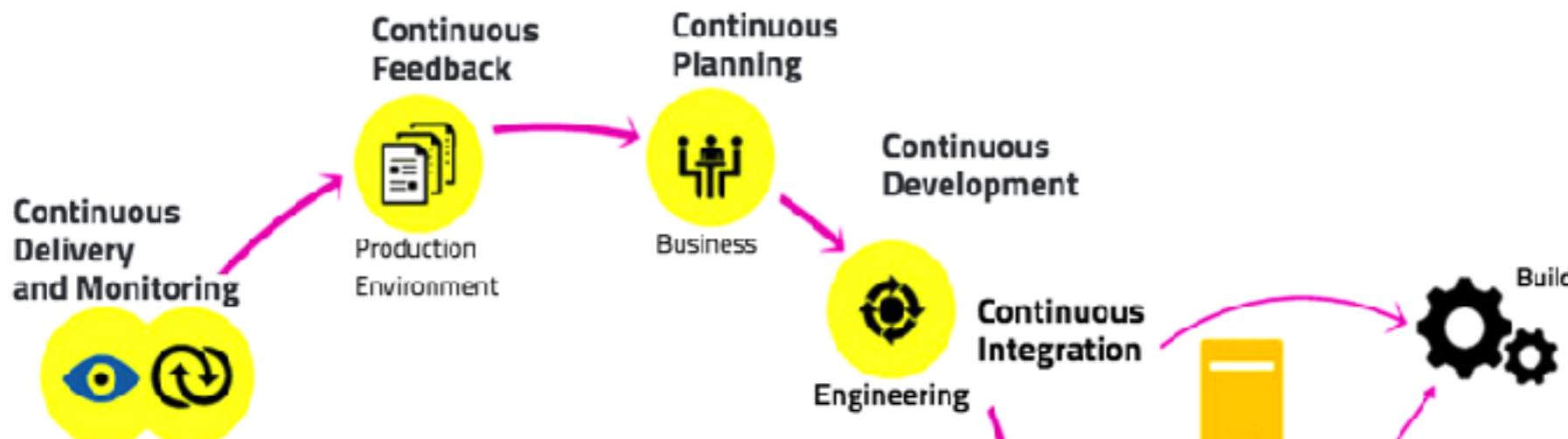
Infrastructure Automation  
Continuous Delivery  
Reliability Engineering



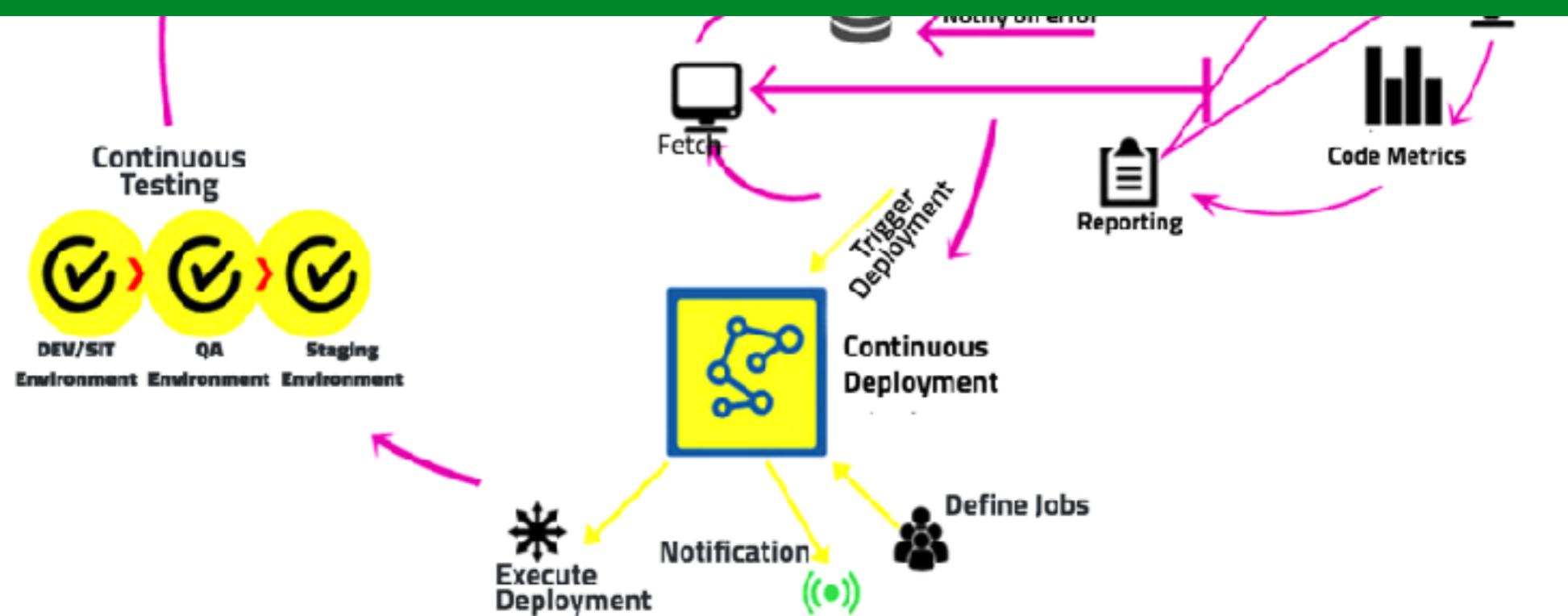
# DevOps Practices



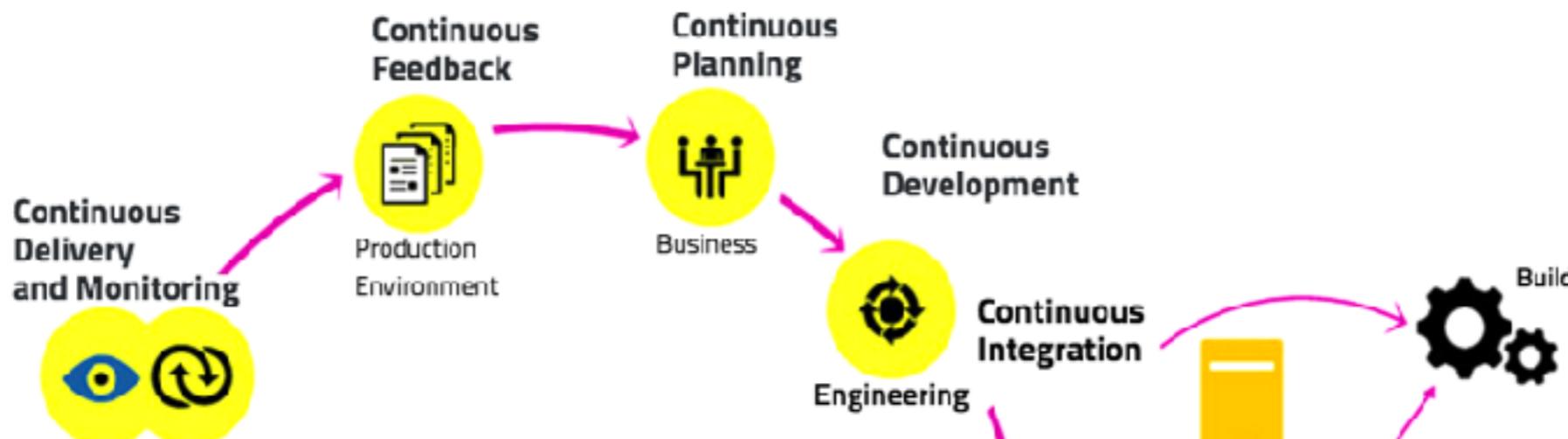
# DevOps Practices



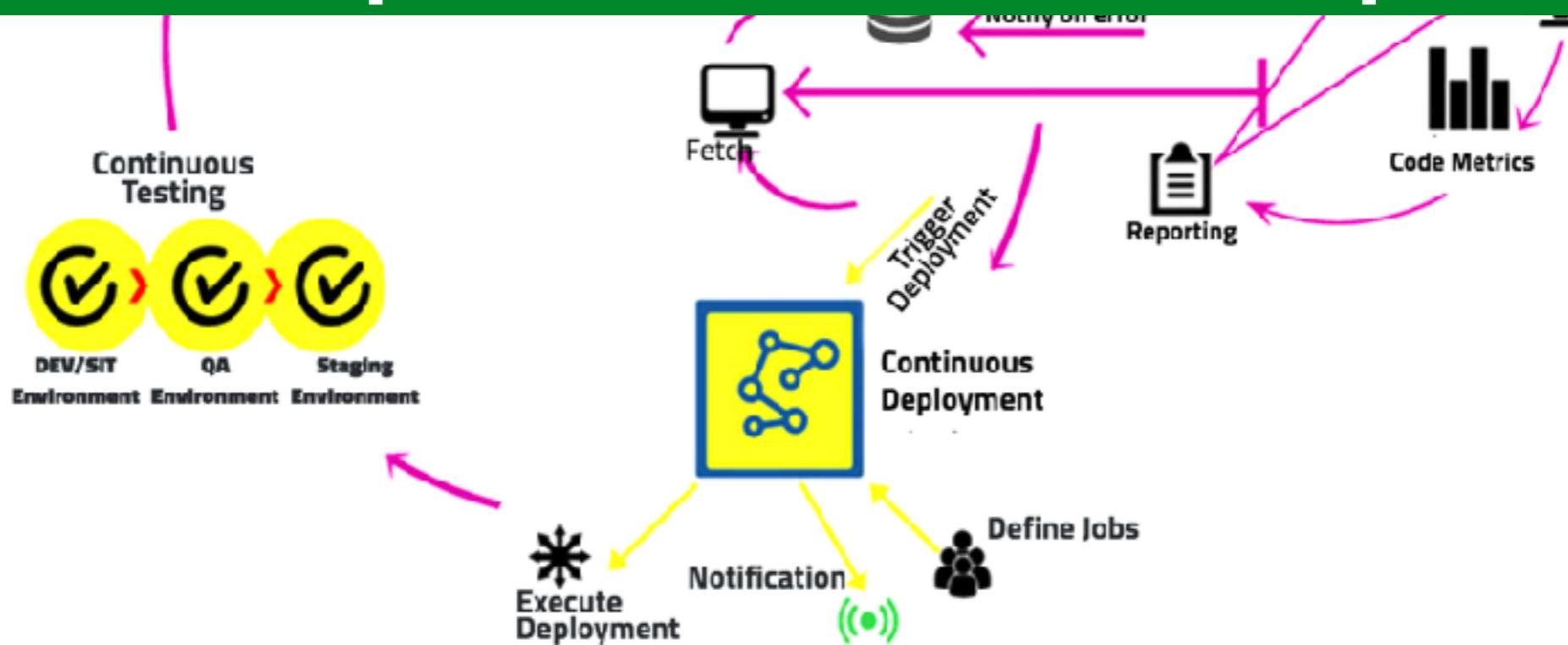
## Communication and Collaboration



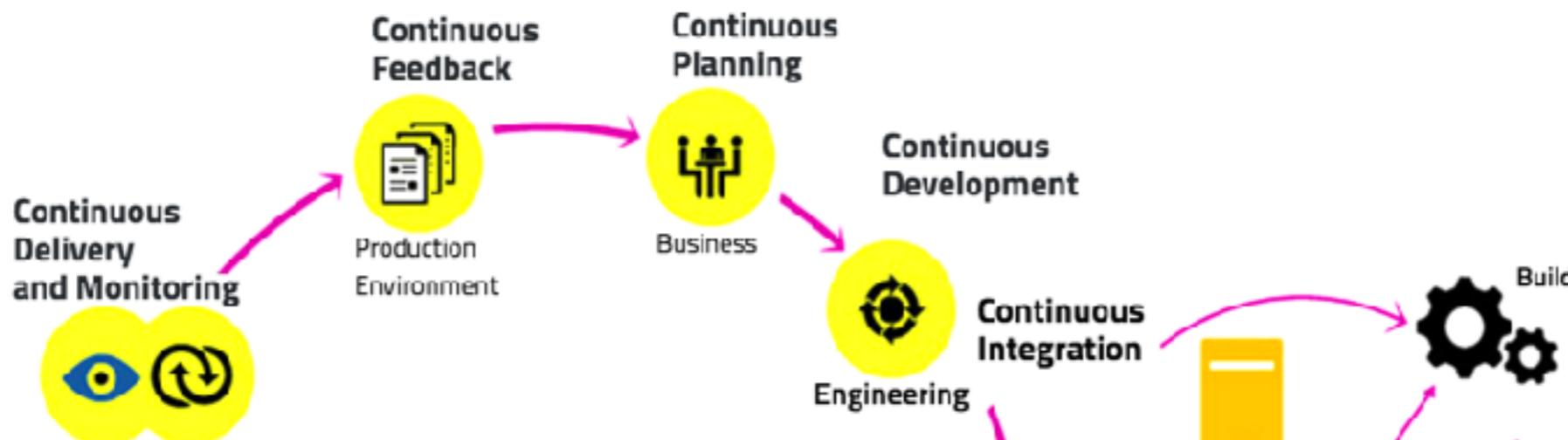
# DevOps Practices



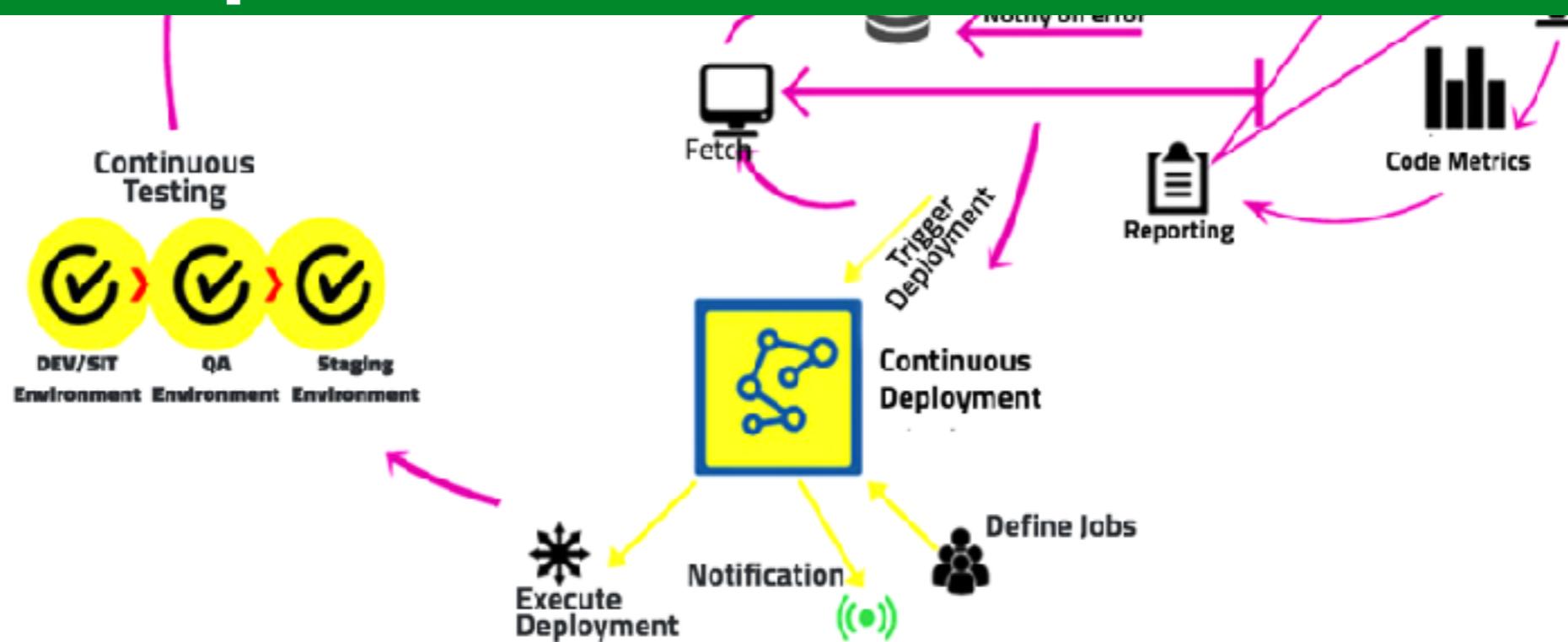
## Improve feedback loop



# DevOps Practices



## People over Process over Tools

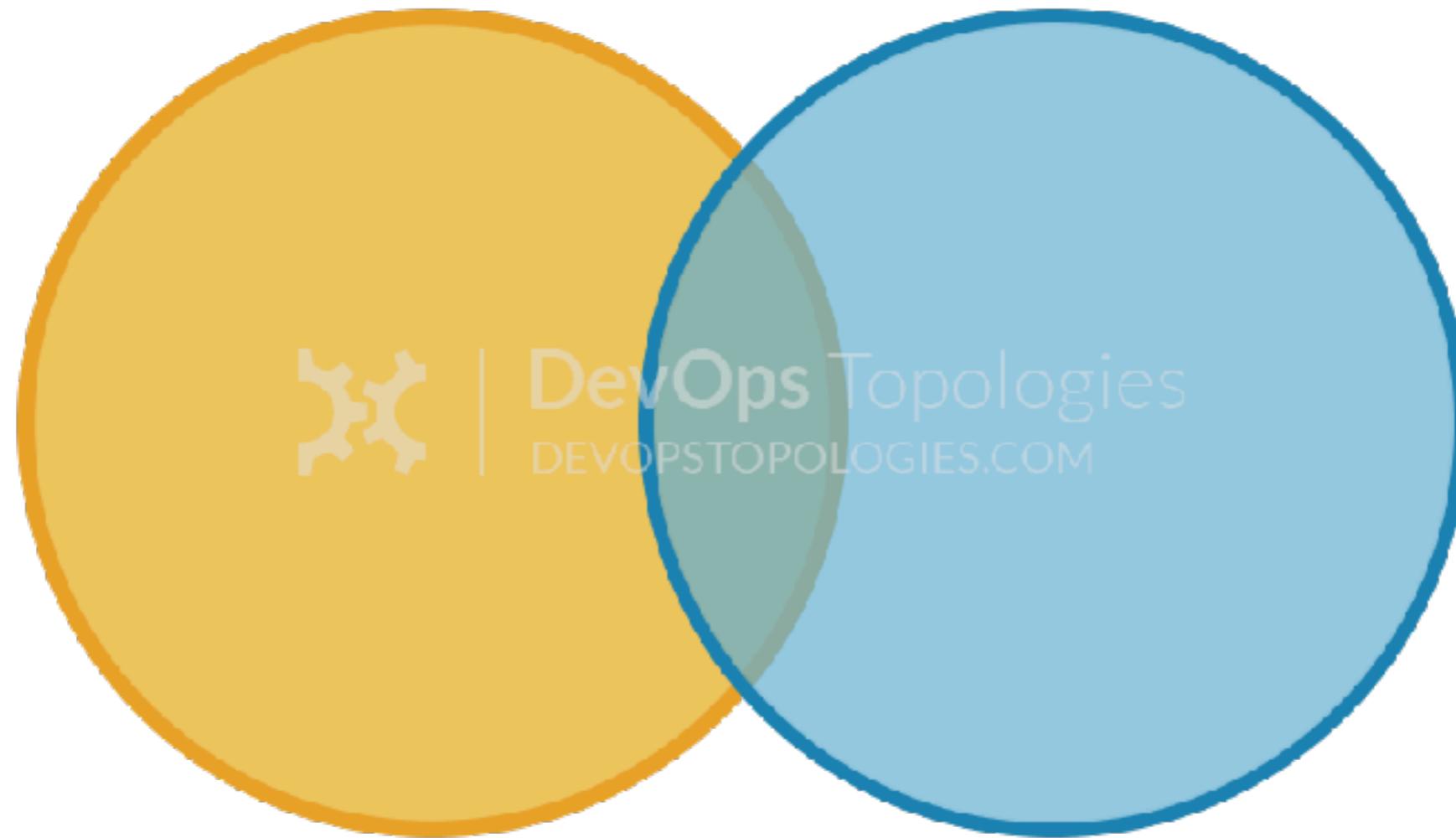


# DevOps Team Topologies

<https://web.devopstopologies.com/>



# Type 1 : Dev and Ops collaboration



● Dev

● Ops



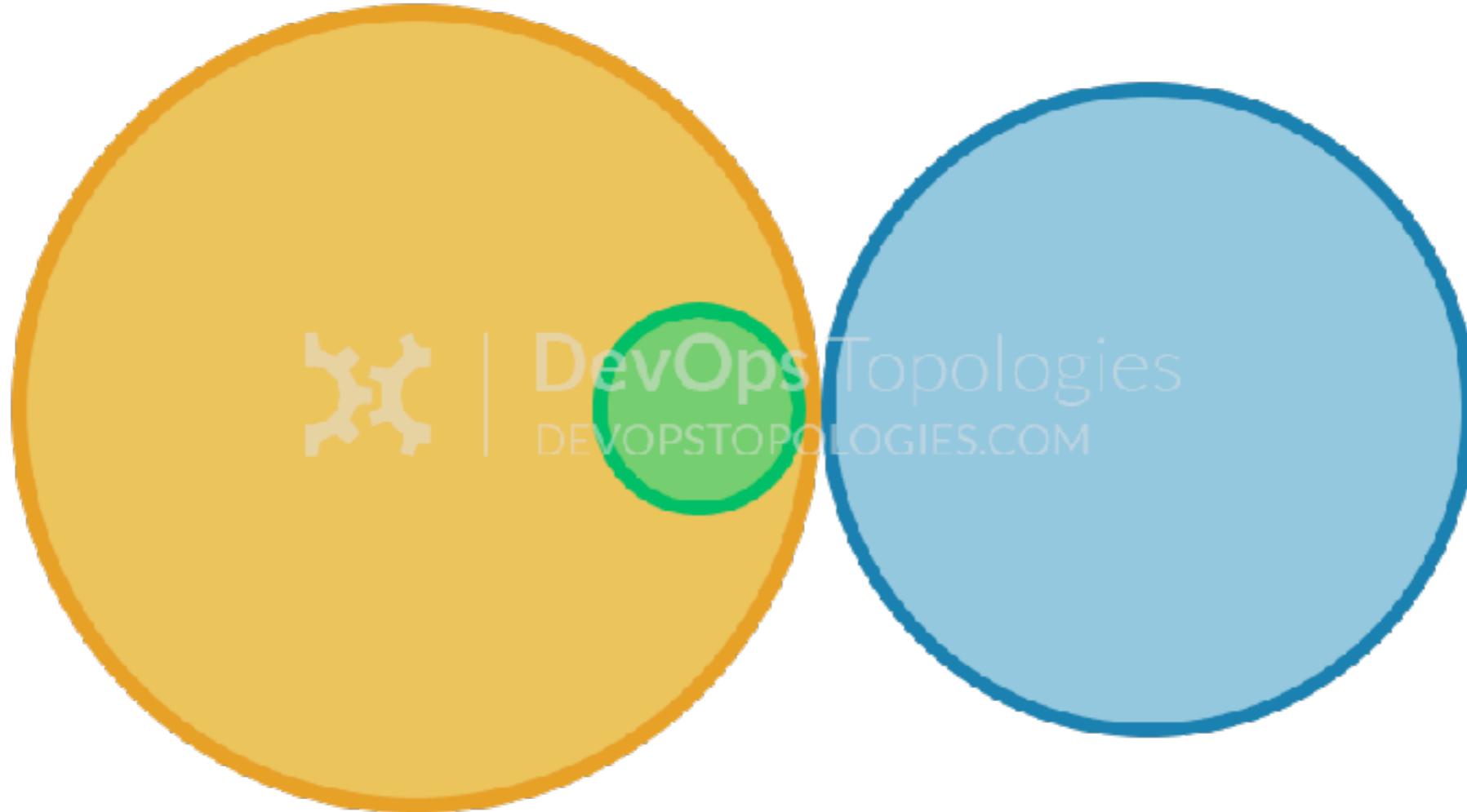
# Type 2 : Fully share ops responsibility



● Dev ● Ops



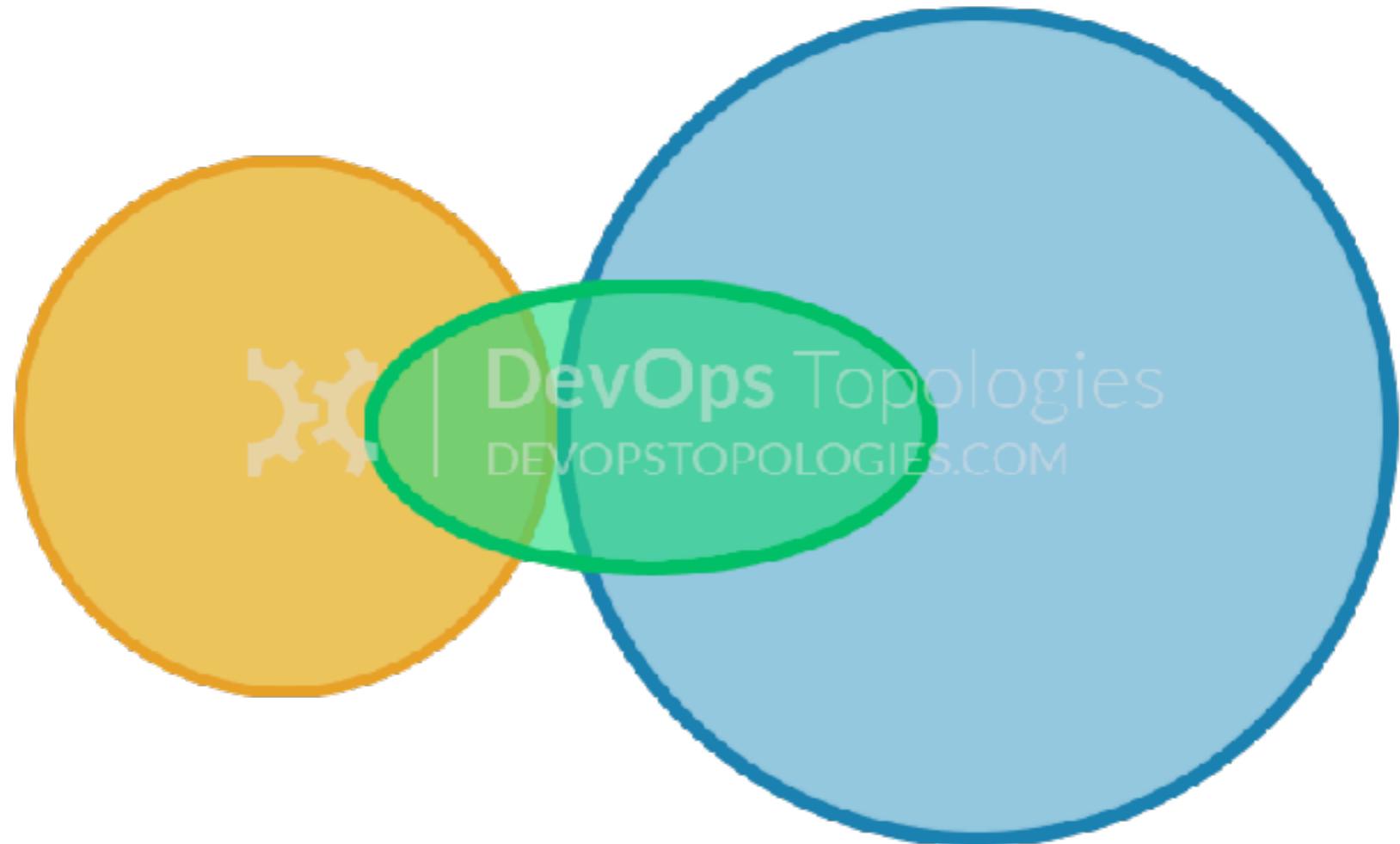
# Type 3 :Ops as infra as a service



- Dev
- DevOps
- Ops



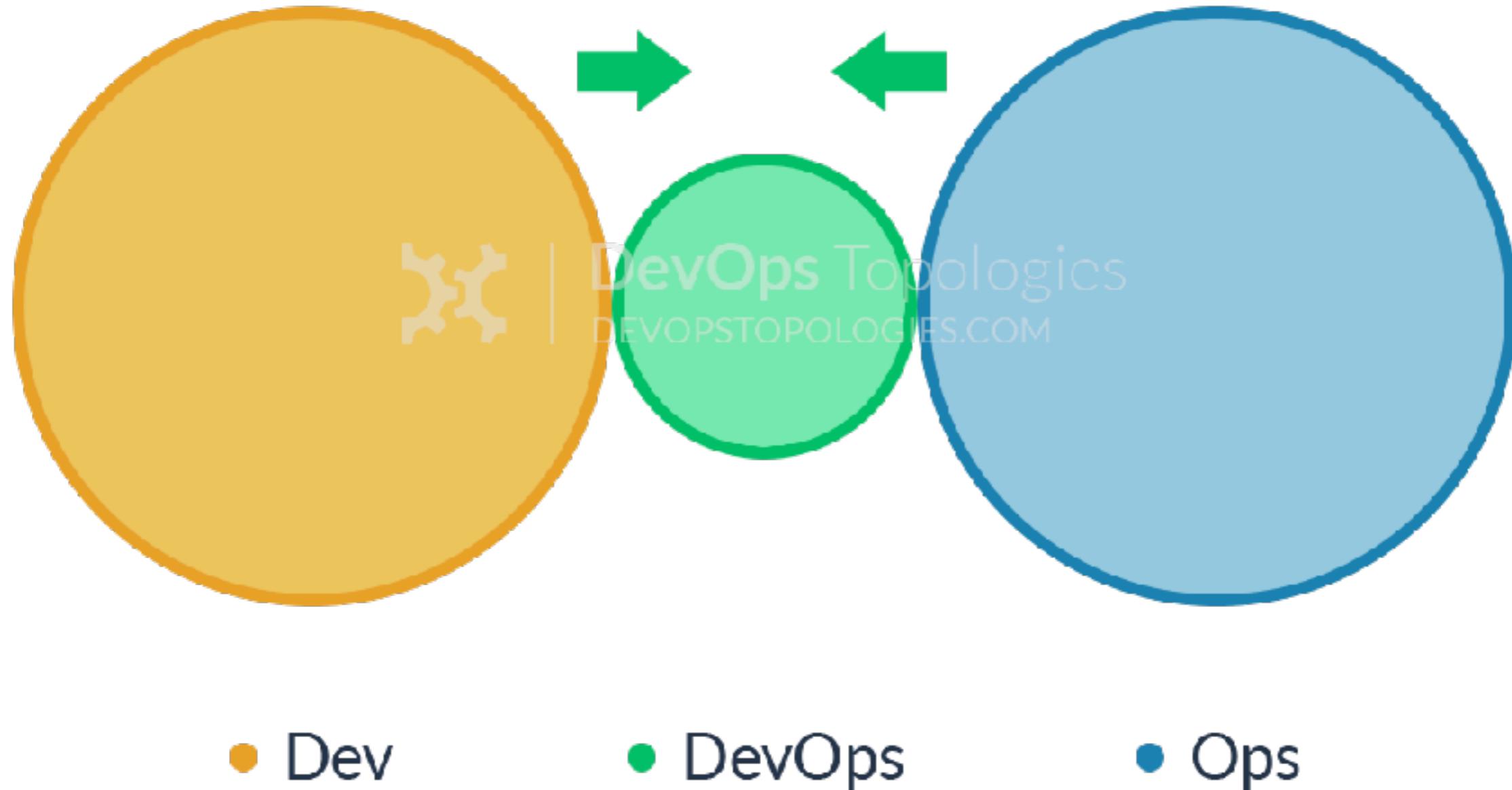
# Type 4 : DevOps as external service



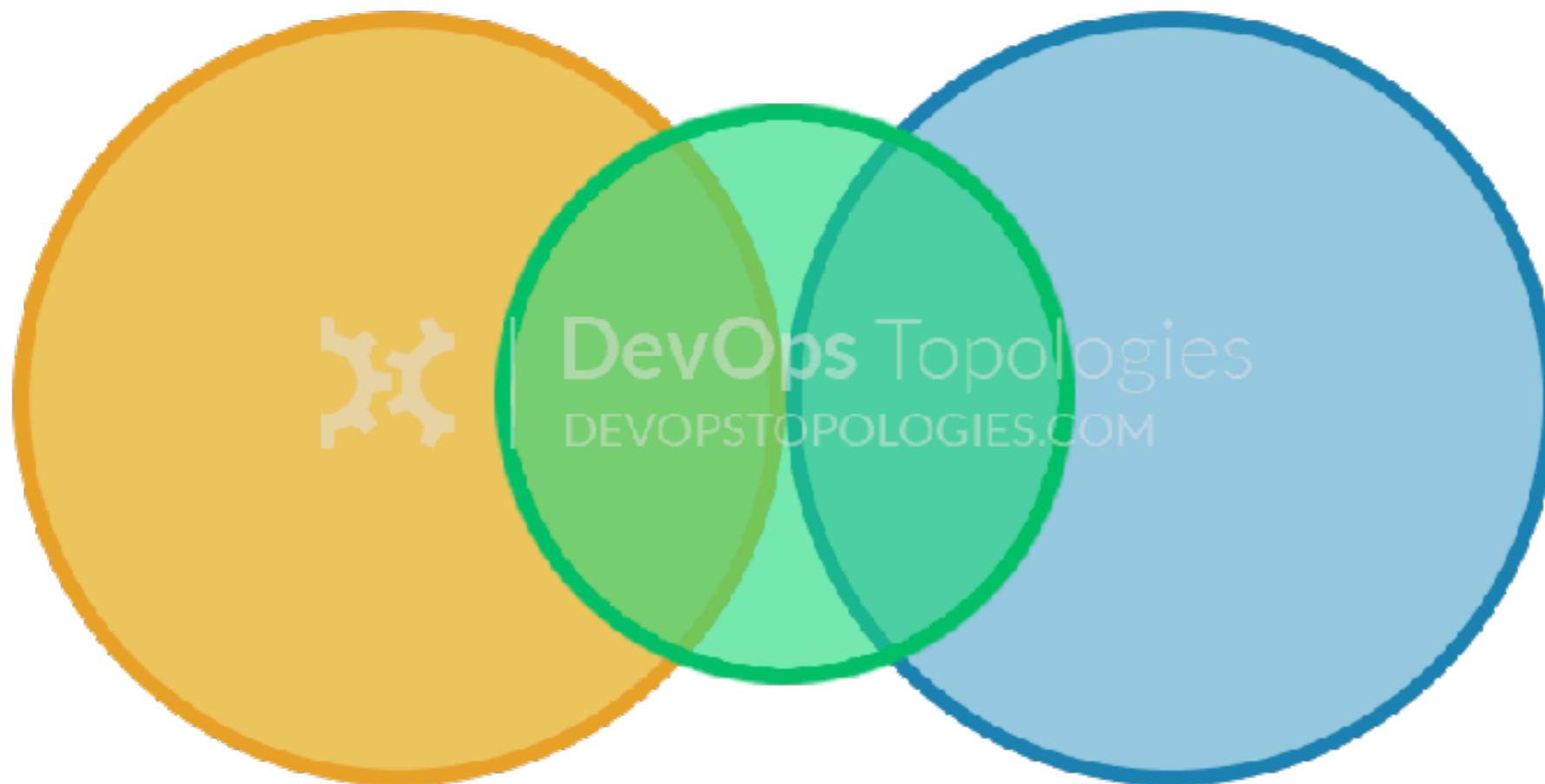
- Dev
- DevOps
- Ops



# Type 5 : DevOps team with expire date



# Type 6 : DevOps evangelist team



● Dev

● DevOps

● Ops



# No DevOps Team

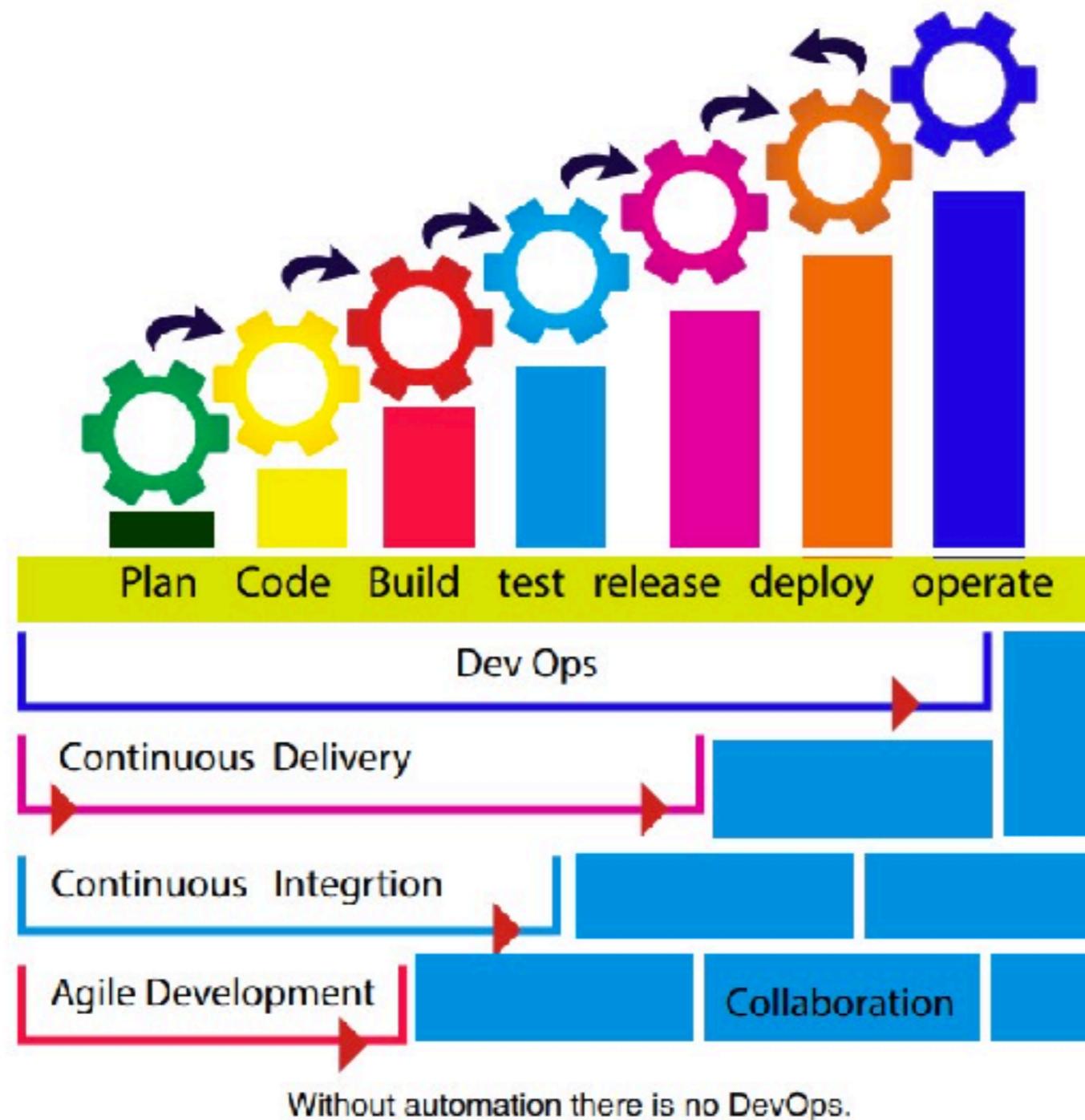
Problem department !!



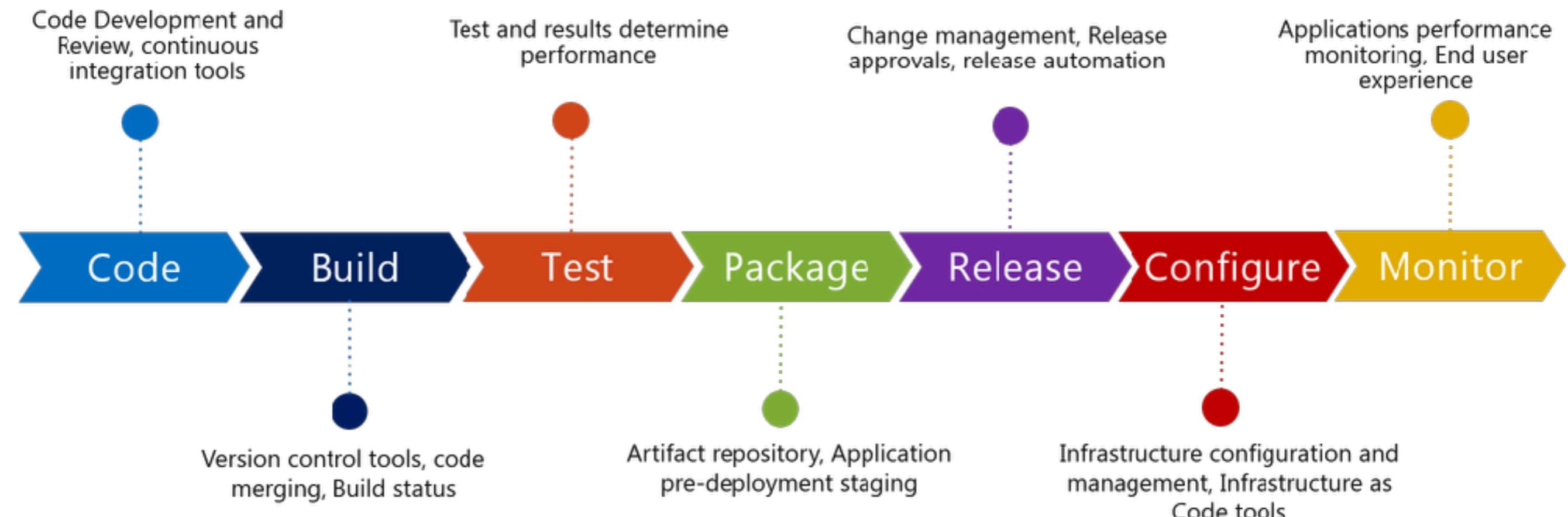
# DevOps Tools



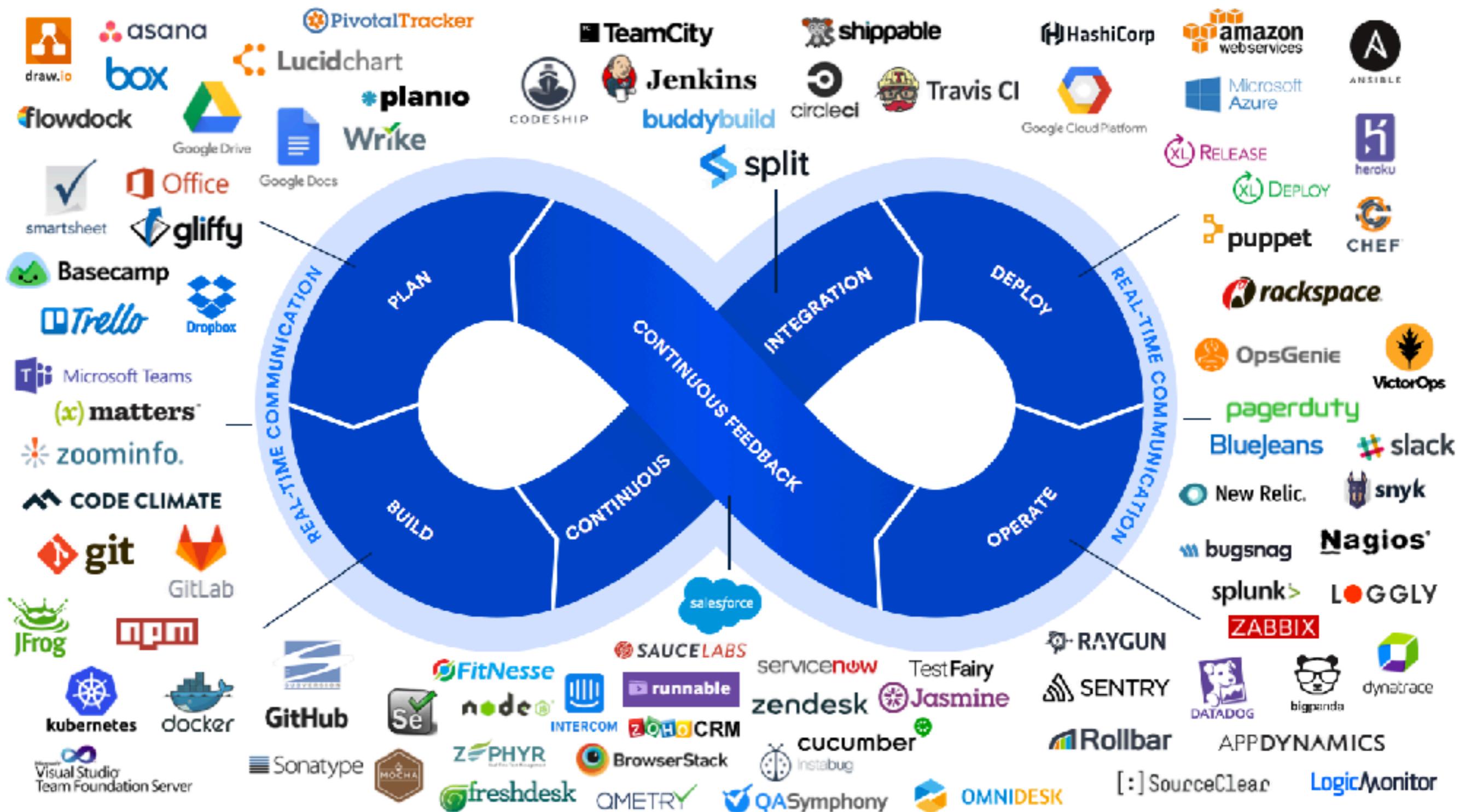
# DevOps Process & Tools



# DevOps Process & Tools



# DevOps Tools



# DevOps Tools

**PERIODIC TABLE OF DEVOPS TOOLS (V2)**

EMBED DOWNLOAD ADD

The Periodic Table of DevOps Tools is a grid-based visualization where each element represents a different tool or technology used in the DevOps ecosystem. The table is organized into rows and columns, with each cell containing the name of the tool, its primary function, and its licensing model.

**Legend:**

- Open Source:** Os (Grey)
- Commercial:** Fr (Grey), Fm (Grey), Pd (Grey), En (Grey)
- SCM:** Gh (Yellow), Gt (Yellow), Bb (Yellow), Gl (Yellow), Sv (Yellow), Hg (Yellow), Cw (Yellow)
- Database Mgmt:** Dm (Orange)
- CI:** Rg (Orange)
- Deployment:** Mv (Teal)
- Cloud / IaaS / PaaS:** Gr (Teal)
- Config / Provisioning:** At (Teal)
- Release Mgmt:** Fn (Red)
- BI / Monitoring:** Se (Red)
- Gatling (Logging):** Ga (Red)
- Docker Hub:** Dh (Blue)
- Jenkins:** Jn (Blue)
- Bamboo:** Ba (Blue)
- Travis CI:** Tr (Blue)
- Deployment Manager:** Gd (Blue)
- Smartfrog:** Sf (Blue)
- Consul:** Cn (Blue)
- Batch2:** Bc (Blue)
- Mesos:** Mo (Blue)
- Rackspace:** Rs (Blue)
- Grunt:** Gp (Cyan)
- Broccoli:** Br (Cyan)
- Cucumber:** Cu (Cyan)
- Cucumber.js:** Cj (Cyan)
- Qunit:** Qu (Cyan)
- Npm:** Npm (Cyan)
- Node.js:** Cs (Cyan)
- Visual Studio:** Vs (Cyan)
- CircleCI:** Cr (Cyan)
- Capistrano:** Cp (Cyan)
- Julia:** Ju (Cyan)
- Rundeck:** Rd (Cyan)
- CFEngine:** Cf (Cyan)
- Swarm:** Ds (Cyan)
- OpenStack:** Op (Cyan)
- Ant:** 40 (Cyan)
- ANT:** 41 (Cyan)
- FitNesse:** 42 (Cyan)
- Selenium:** 43 (Cyan)
- Gatling:** 44 (Cyan)
- Docker Hub:** 45 (Cyan)
- Jenkins:** 46 (Cyan)
- Travis CI:** 47 (Cyan)
- Deployment Manager:** 48 (Cyan)
- Smartfrog:** 49 (Cyan)
- CircleCI:** 50 (Cyan)
- Julia:** 51 (Cyan)
- Rundeck:** 52 (Cyan)
- CFEngine:** 53 (Cyan)
- OpenShift:** 54 (Cyan)
- Apache Maven:** 55 (Cyan)
- Maven:** 56 (Cyan)
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- RapidDeploy:** 85 (Cyan)
- CodeDeploy:** 86 (Cyan)
- Octopus Deploy:** 87 (Cyan)
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- Kubernetes:** 89 (Cyan)
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- Ant:** 94 (Cyan)
- Apache Gump:** 95 (Cyan)
- Gump:** 96 (Cyan)
- HP Codar:** 97 (Cyan)
- HP Codar:** 98 (Cyan)
- Atomic:** 99 (Cyan)
- Atomic:** 100 (Cyan)
- Plutora Release:** 101 (Cyan)
- Plutora Release:** 102 (Cyan)
- Team Foundation:** 103 (Cyan)
- Team Foundation:** 104 (Cyan)
- ServiceNow:** 105 (Cyan)
- XL Release:** 106 (Cyan)
- UrbanCode Release:** 107 (Cyan)
- UrbanCode Release:** 108 (Cyan)
- HP Codar:** 109 (Cyan)
- HP Codar:** 110 (Cyan)
- Atomic:** 111 (Cyan)
- Atomic:** 112 (Cyan)
- Plutora Release:** 113 (Cyan)
- Plutora Release:** 114 (Cyan)
- Team Foundation:** 115 (Cyan)
- Team Foundation:** 116 (Cyan)
- Slack:** 117 (Cyan)
- Flowdock:** 118 (Cyan)
- Pivotal Tracker:** 119 (Cyan)
- ServiceNow:** 120 (Cyan)
- Kitana:** 121 (Cyan)
- New Relic:** 122 (Cyan)
- Nagios:** 123 (Cyan)
- Zabbix:** 124 (Cyan)
- Datadog:** 125 (Cyan)
- Elasticsearch:** 126 (Cyan)
- StackStorm:** 127 (Cyan)
- Splunk:** 128 (Cyan)
- Logentries:** 129 (Cyan)
- Sumsologic:** 130 (Cyan)
- Logstash:** 131 (Cyan)
- Graylog:** 132 (Cyan)
- Snort:** 133 (Cyan)
- Tripwire:** 134 (Cyan)
- Fortify:** 135 (Cyan)

**XebiaLabs**  
Deliver Faster

Follow @xebialabs

The XebiaLabs Periodic Table of DevOps Tools is a subset of the main table, focusing on tools from the 91st to 135th positions. It includes a variety of tools such as XL Release, UrbanCode Release, BMC Release Process, HP Codar, Atomic, Plutora Release, Team Foundation, Slack, Flowdock, Pivotal Tracker, ServiceNow, Kitana, New Relic, Nagios, Zabbix, Datadog, Elasticsearch, StackStorm, Splunk, Logentries, Sumsologic, Logstash, Graylog, Snort, and Tripwire.

<https://xebialabs.com/periodic-table-of-devops-tools/>



DevOps

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**DevOps != Tools**  
**Tools enable DevOps**



# DevOps success ?



# How do i know something is wrong ?

Missed deadline

Site is always down

## **Unhappy customers**

Long waits for small changes or fixes

Changes cost too much



# What made customer happy ?

Quality of service

Speed to response

Speed to recovery

Problem resolution on first call

Self-service options



# How we measured success ?

**Productivity**  
customers helped overtime

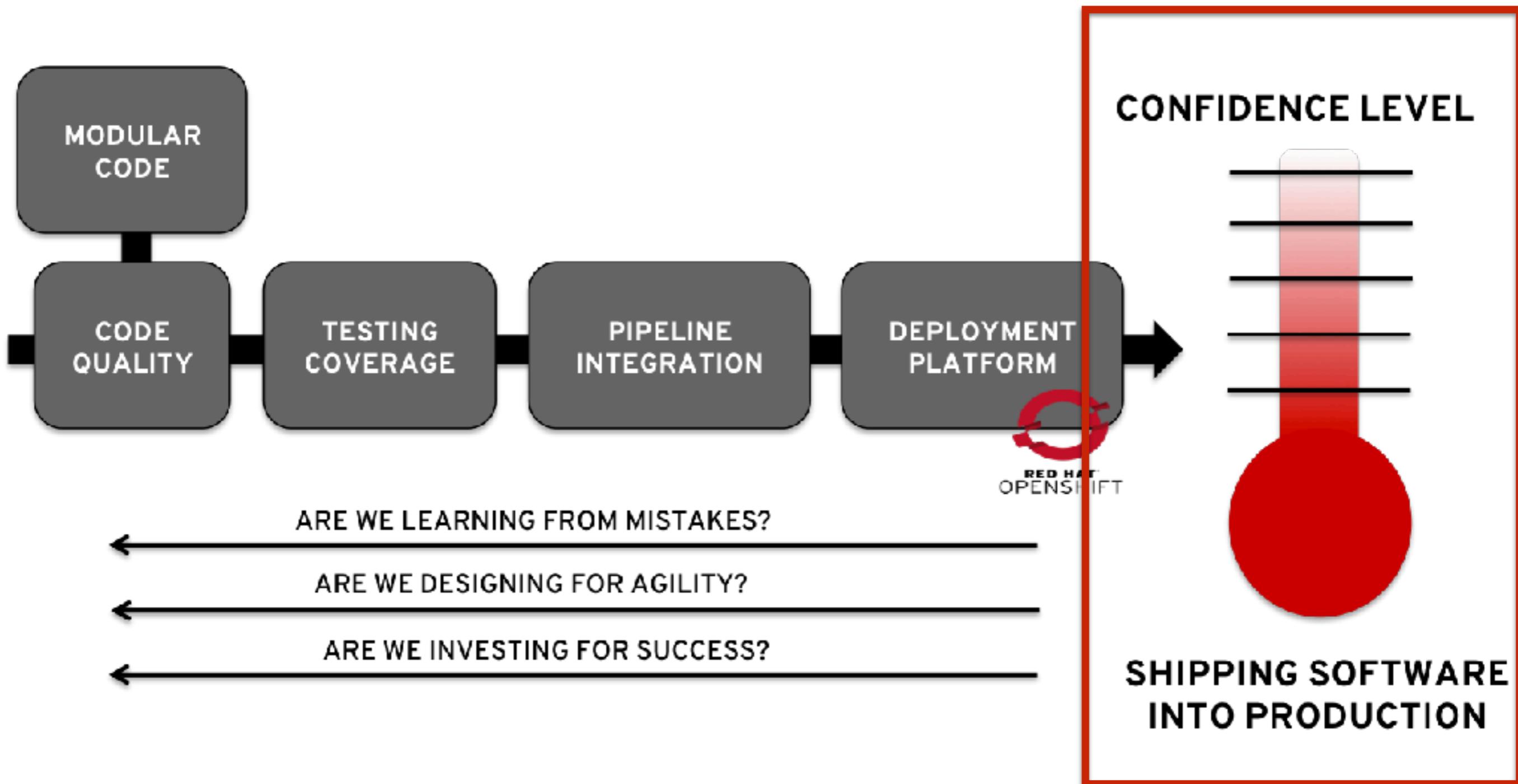
**Quality**  
customers satisfaction

**Efficiency**  
cost for support per customer

**Employee satisfaction**



# All about Trust



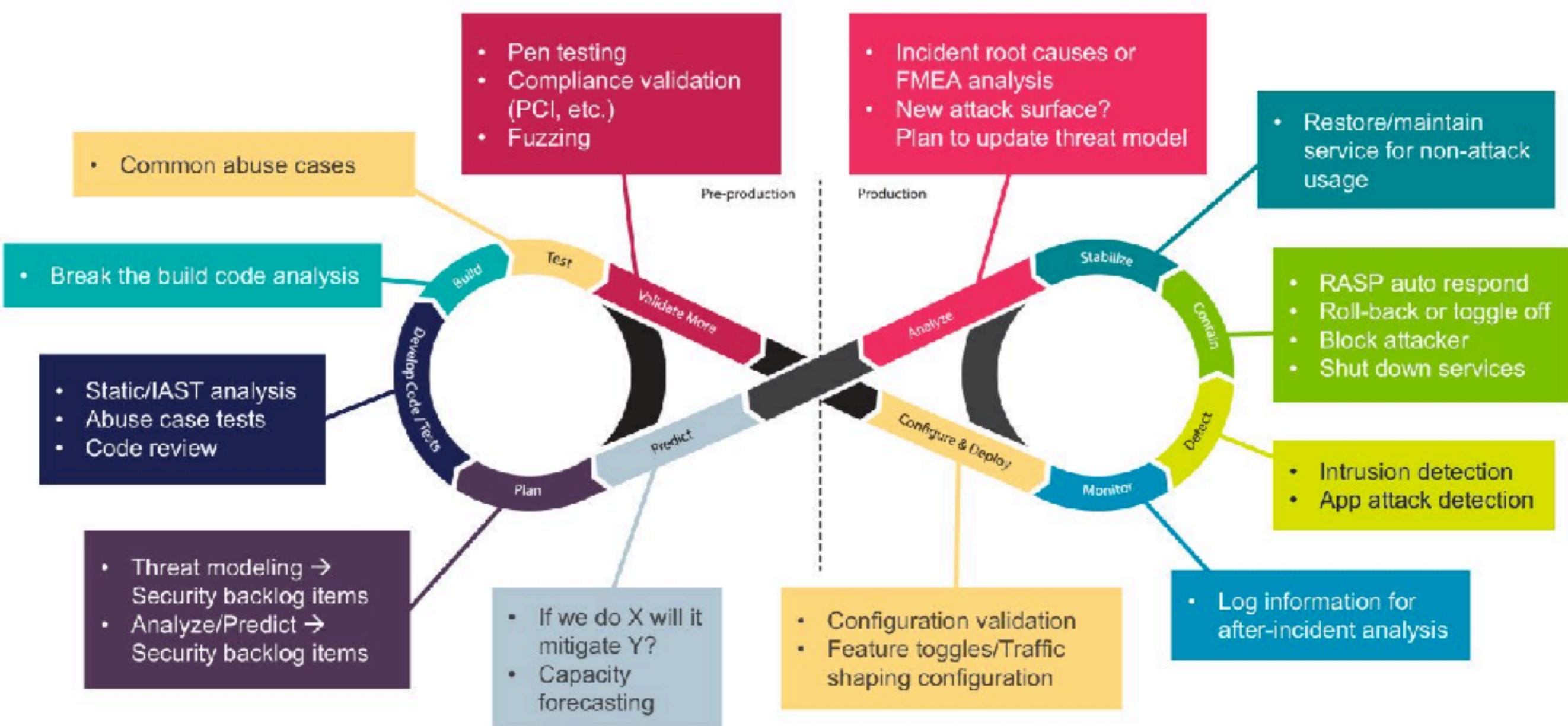
# Measure Happiness



# more ...



# DevSecOps Cycle



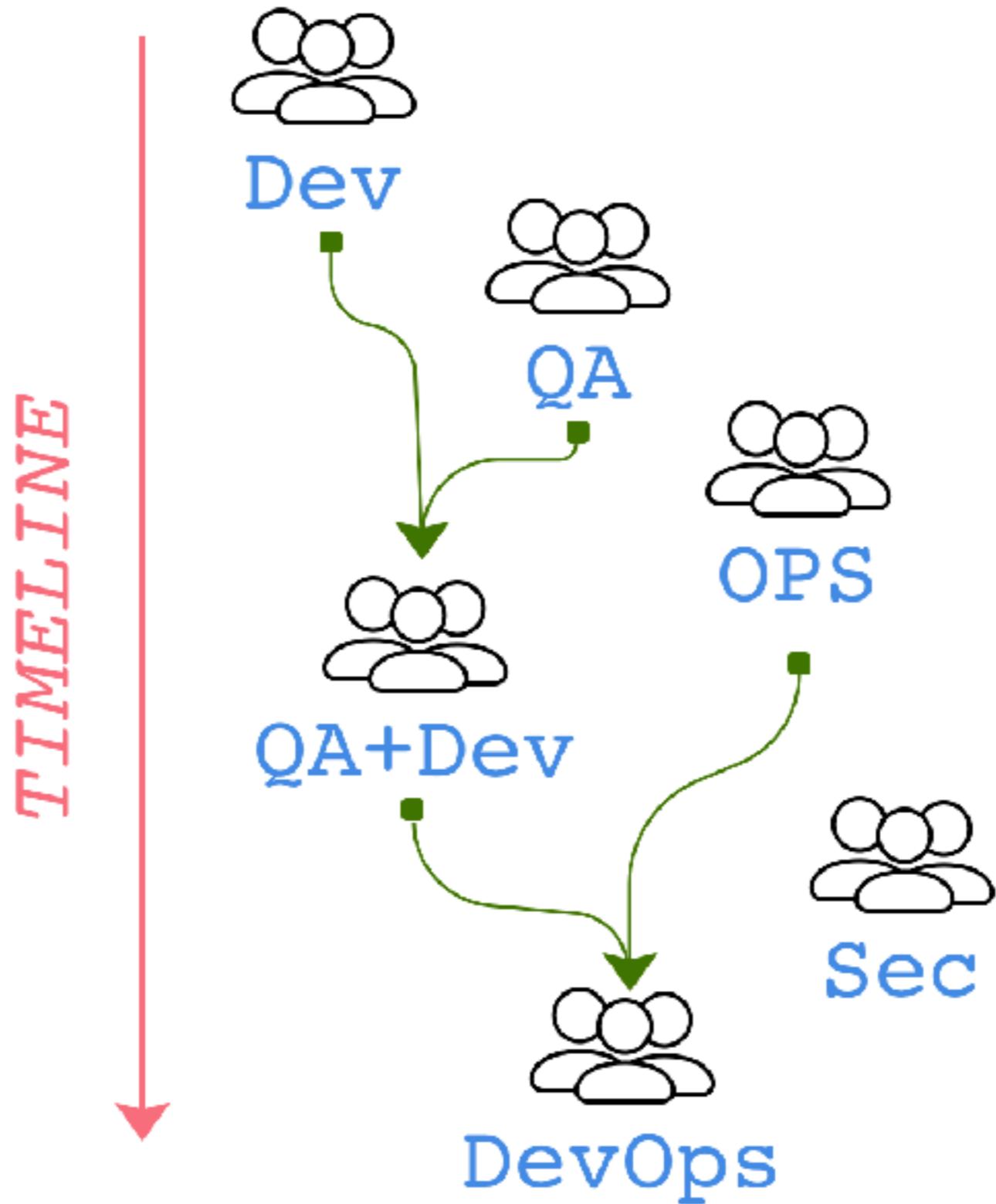
[LinkedIn.com/in/LarryMaccherone](https://www.linkedin.com/in/LarryMaccherone)





# **DevPerfOps !!**





<https://medium.com/odds-team/%E0%B8%AA%E0%B8%A3%E0%B8%B8%E0%B8%9B-devops-is-dev%EA%9D%8B%EA%9E%A9-by-chai-feng-bb61b0460af0>





KEEP  
CALM  
THIS  
IS NOT  
THE END



# DevOps in Wrong ways !!



**You need to *buy* "the DevOps"  
both peoples and tools**



# **Everything is urgent**



# You spend time merging



You release code to production  
every **few months (or years)**

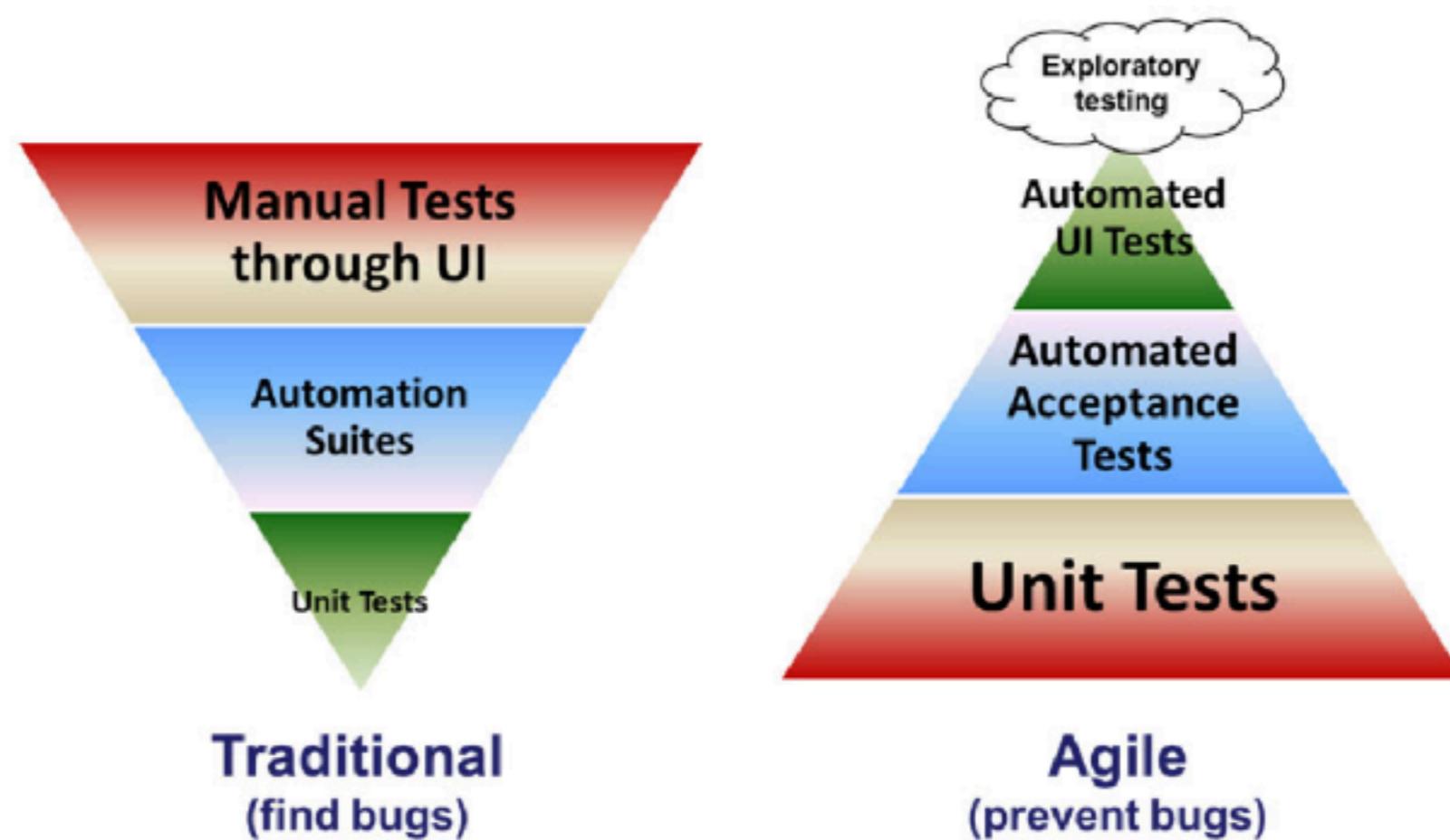




Deploys **SCARE** you



# You don't have any automation tests



# The developers and operations groups look like two **silos**



# You **blame** others for system problems



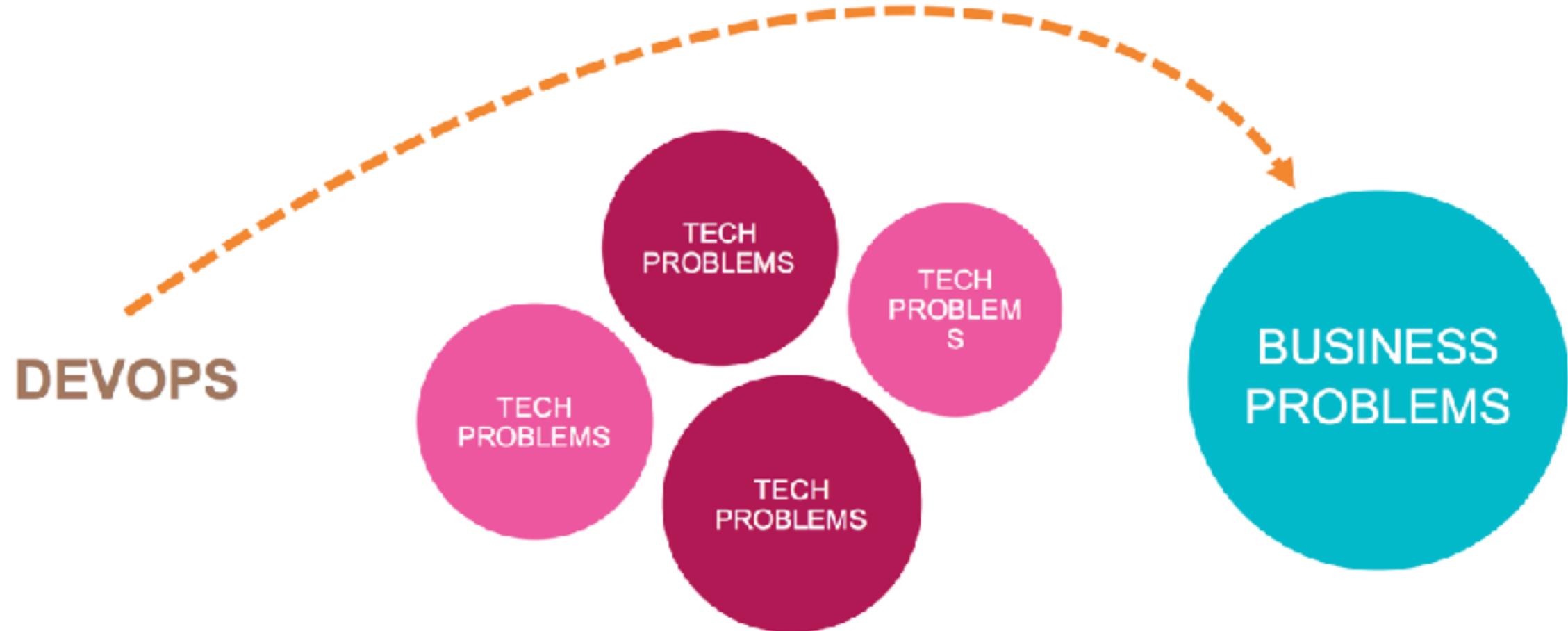
**TALK  
IS  
CHEAP  
JUST DO IT.**



# People first



# Explore business value

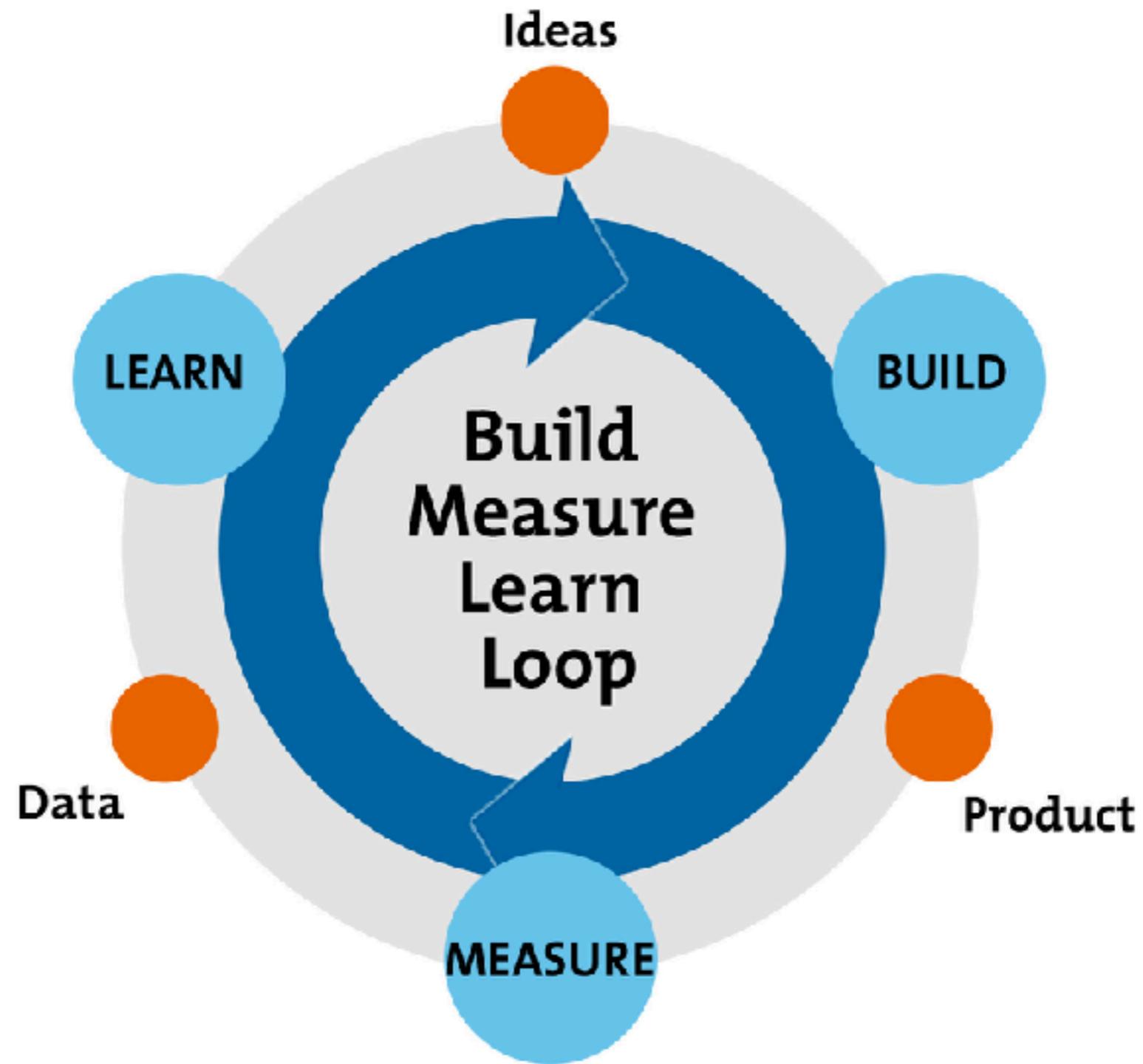


DevOps solves **business problem**, not  
**technical problem**



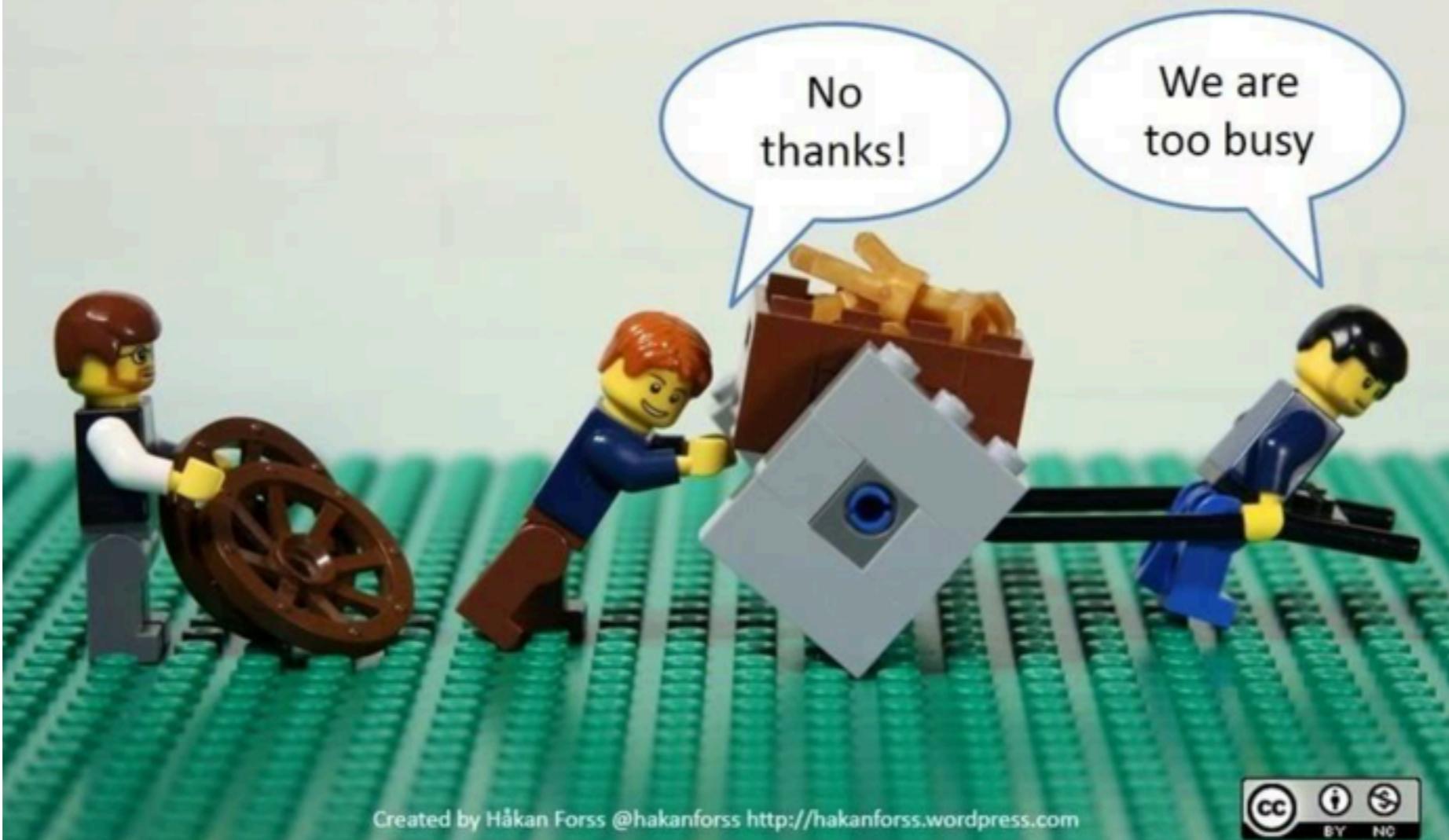
“DevOps is not a goal,  
But it’s a process of  
**Continuous Improvement**”







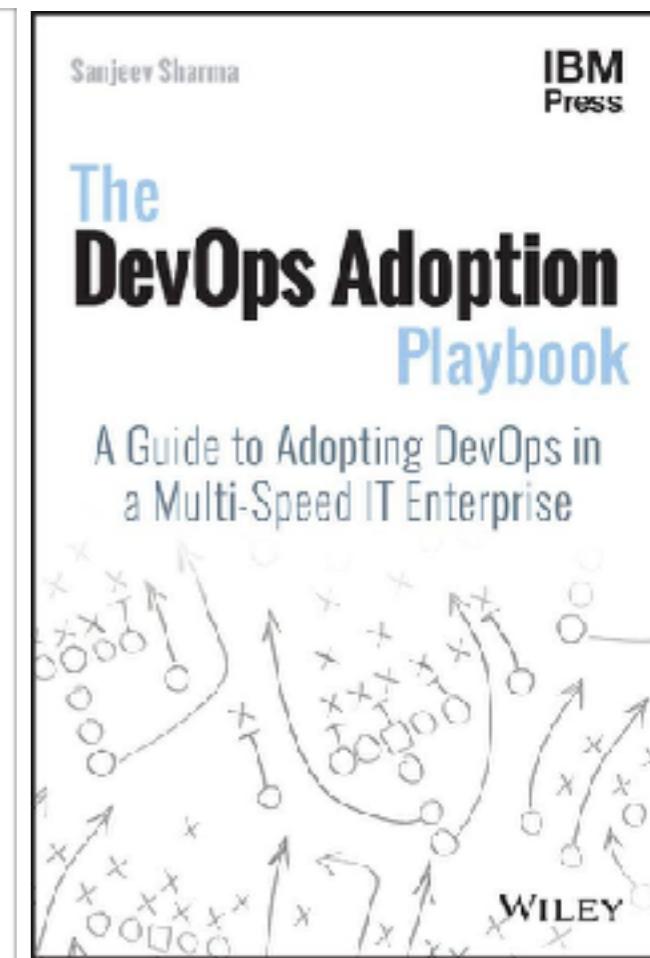
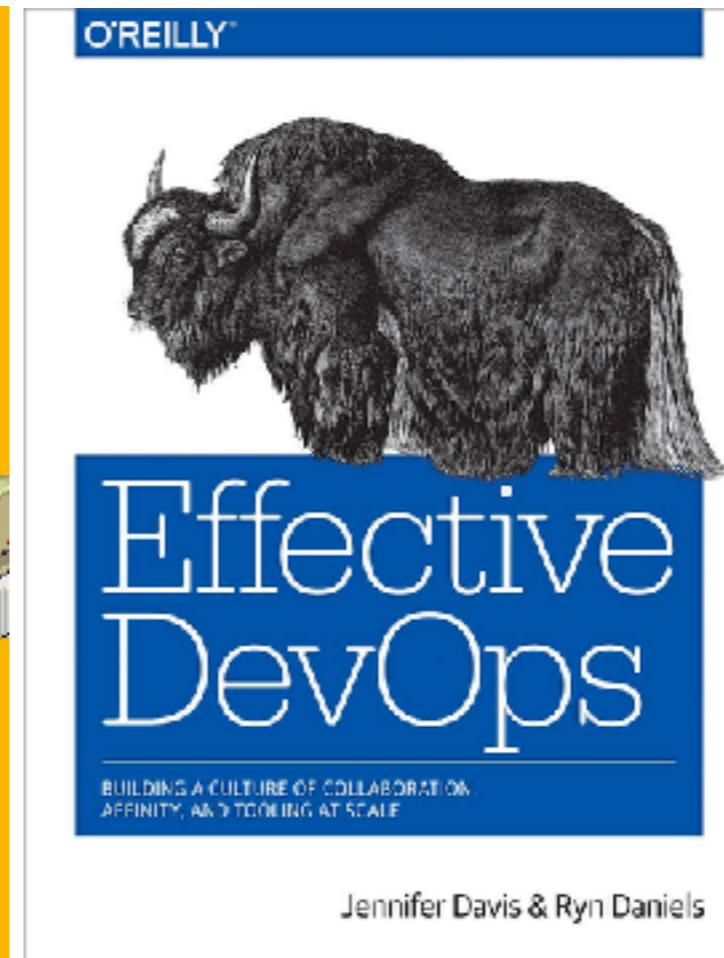
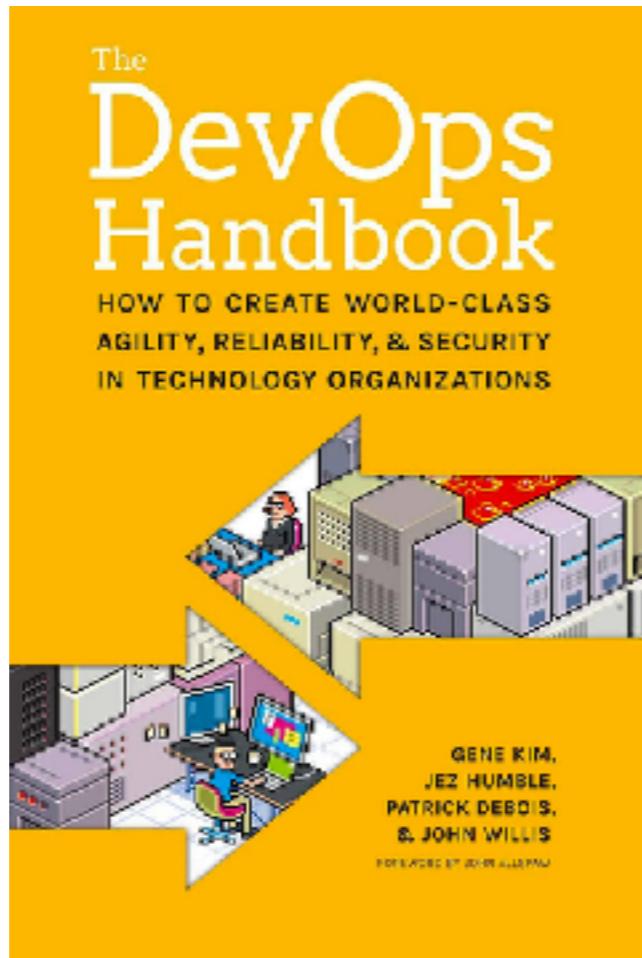
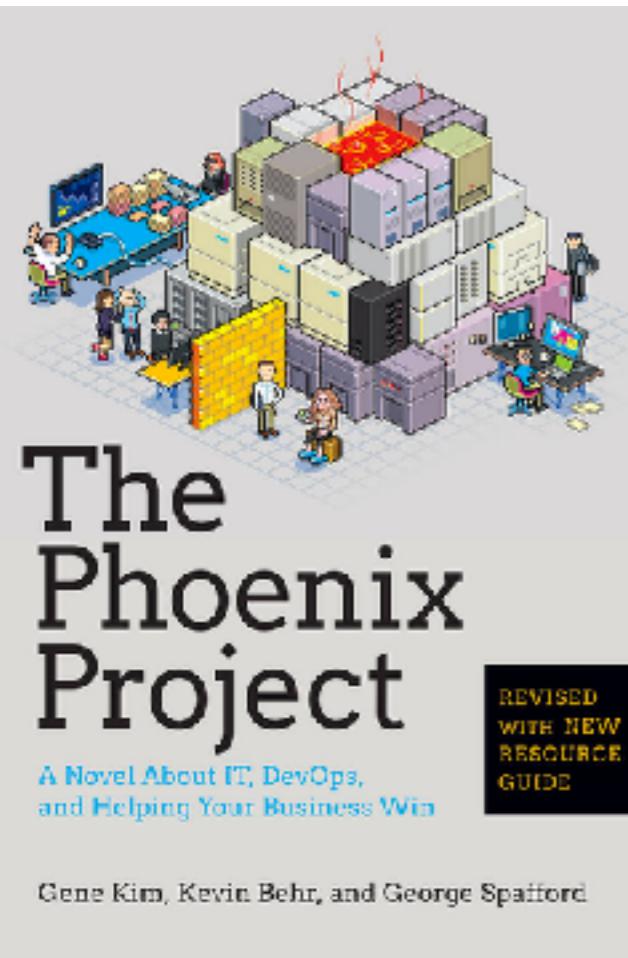
# Are you too busy to improve?



# Thank you



# Resources (1)



# Resources (2)

