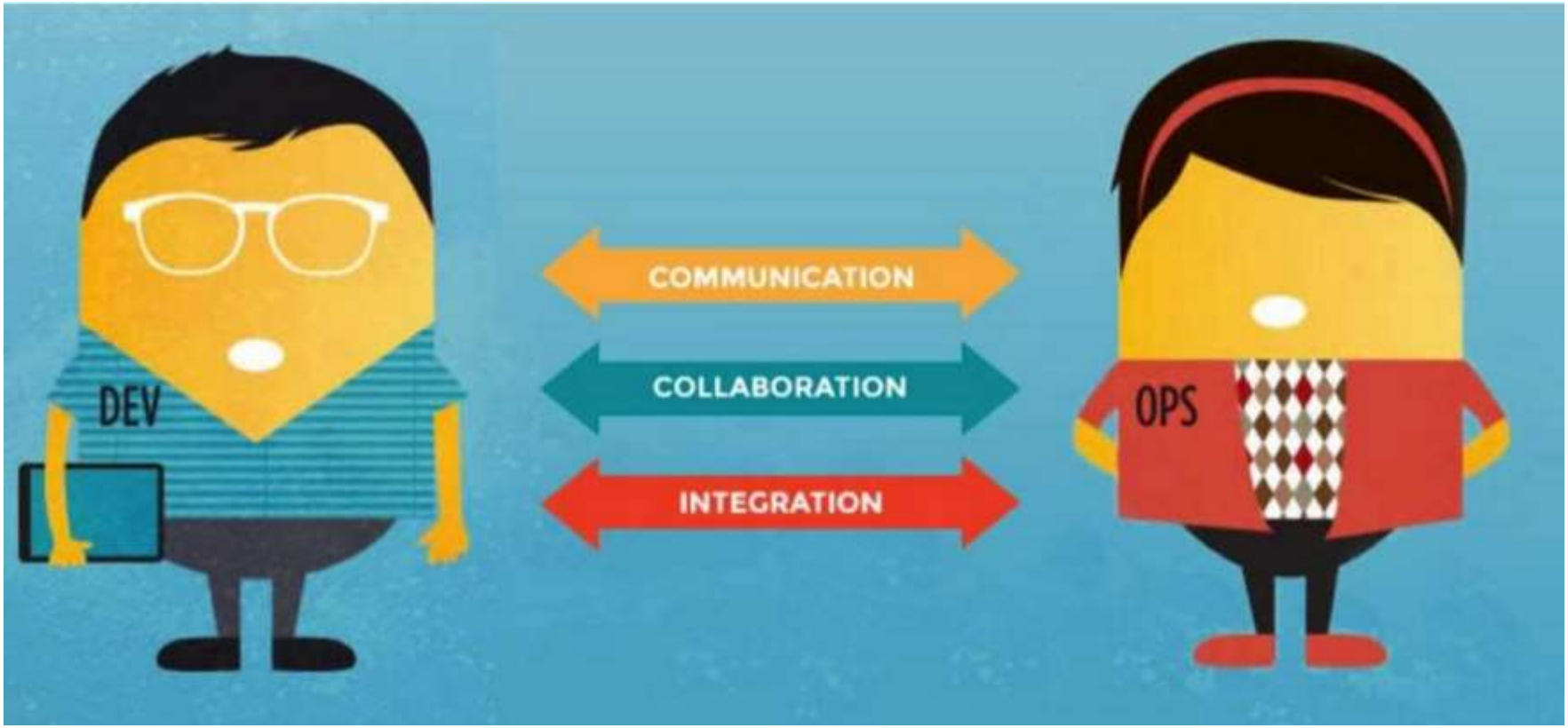

# Introduction to DevOps

# What is DevOps?

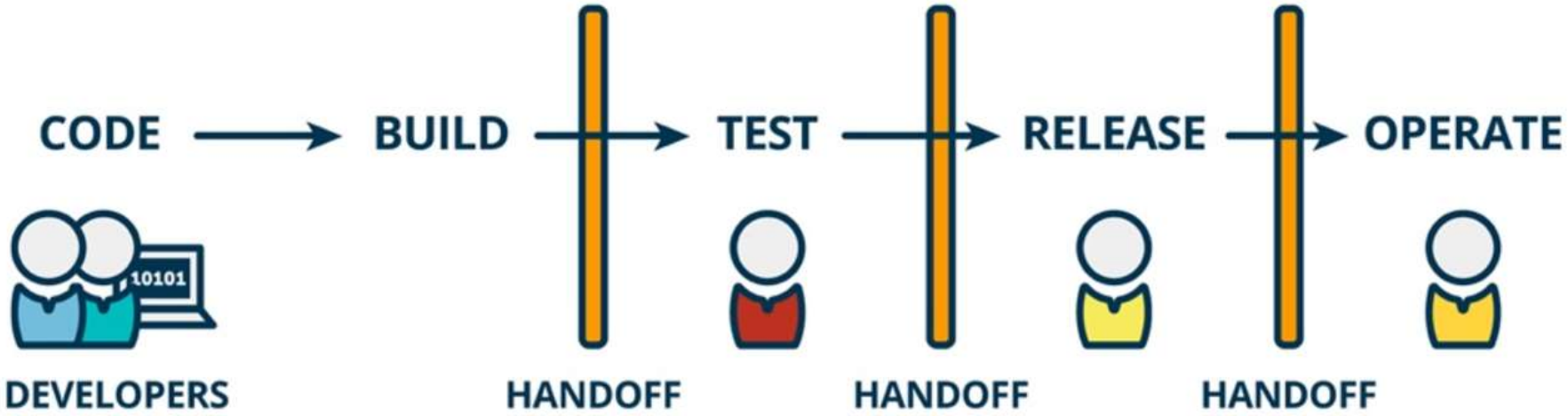
# What is DevOps?

*"It's a movement of people who think its time for change in the IT industry – time to stop wasting money, time to start delivering great software and building systems that scale and last"* **– Patrick Debois**

# DevOps Philosophy

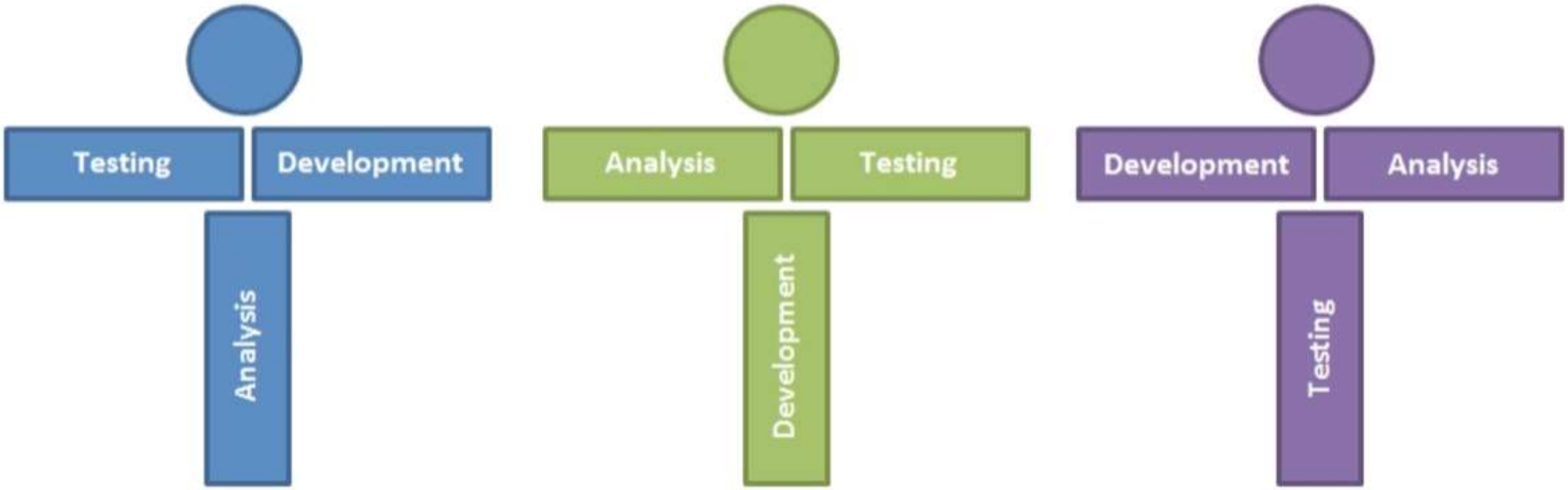


# Once Upon a Time



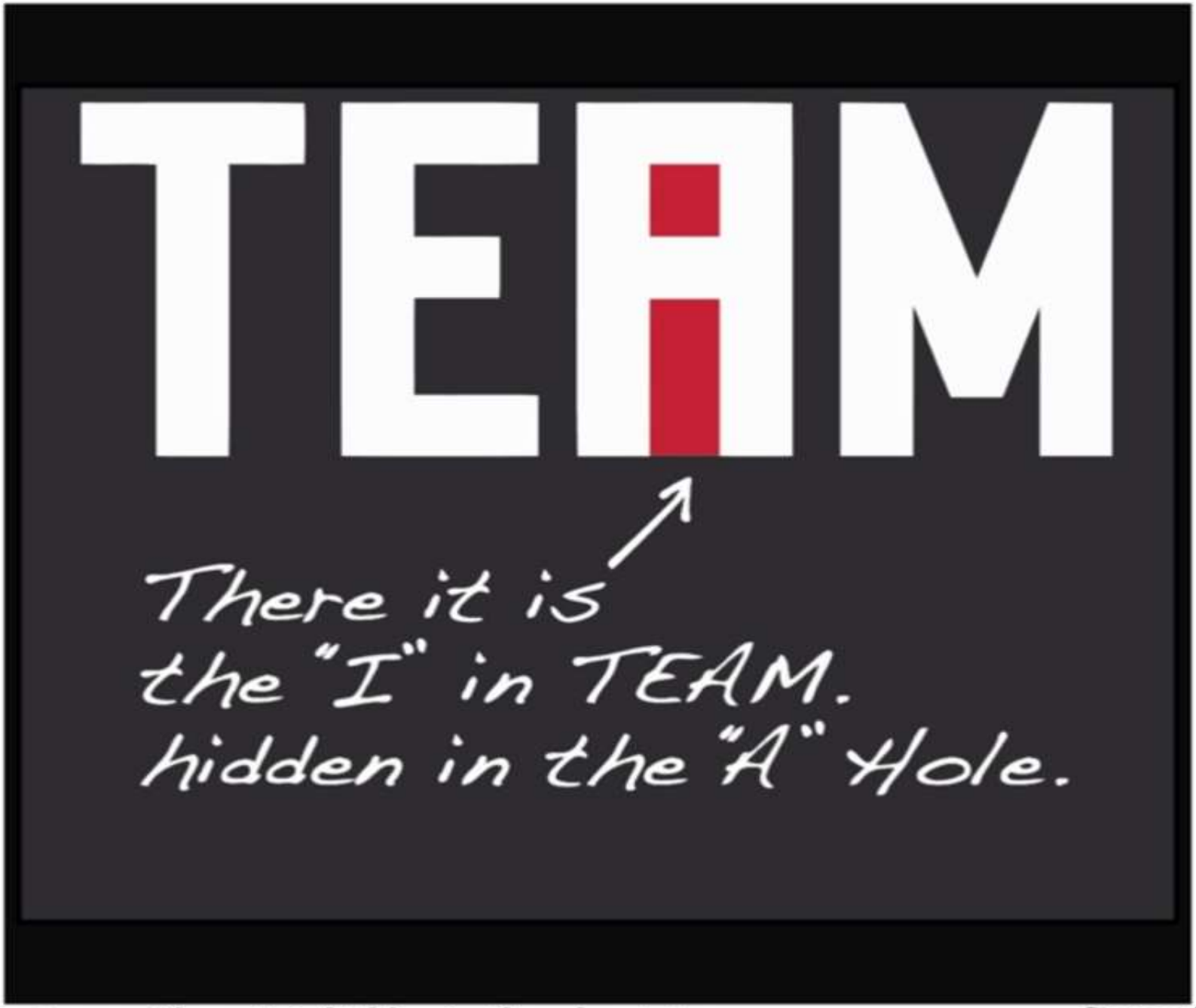

http://www.mindtheproduct.com/2016/02/what-the-hell-are-ci-cd-and-devops-a-cheatsheet-for-the-rest-of-us/


WORKED FINE IN DEV...
...OPS PROBLEM NOW
memegenerator.net




http://blog.scottlogic.com/2014/07/07/School-of-Testing.html


WORKS
ON MY
MACHINE




I in Team - There it is hidden in the... *by ginjavv*

Zazzle

# Once Upon a Time

"By 2015, DevOps will evolve from a niche strategy employed by large cloud providers into a mainstream strategy employed by 20% of Global 2000 organizations."

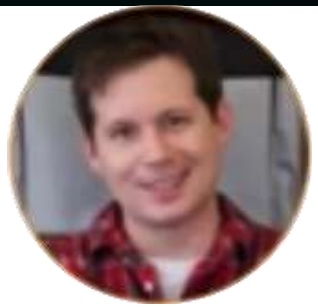
Patrick Debois

2009

Cameron Haight

2013

2008



John Allpaw

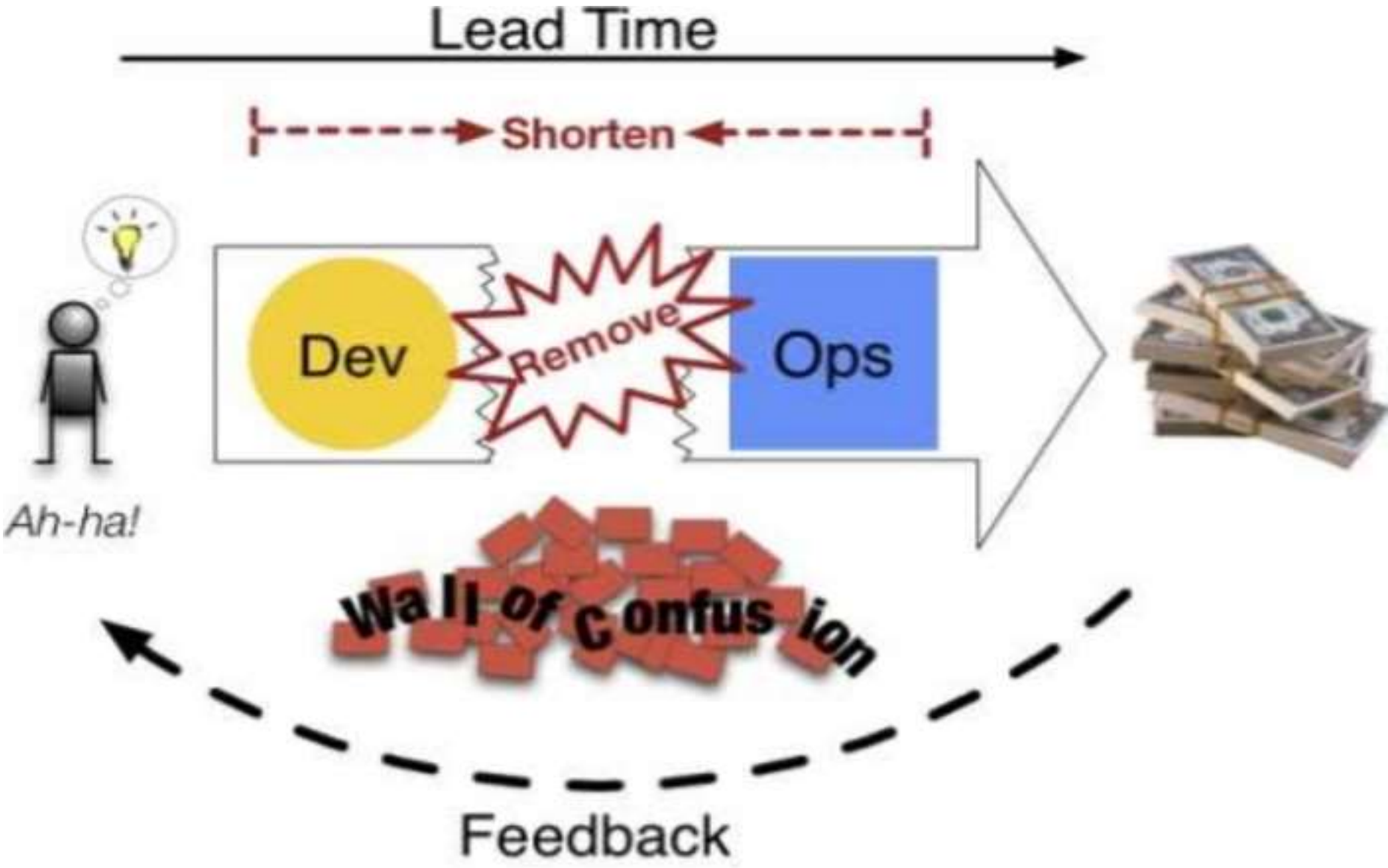
Paul Hammond

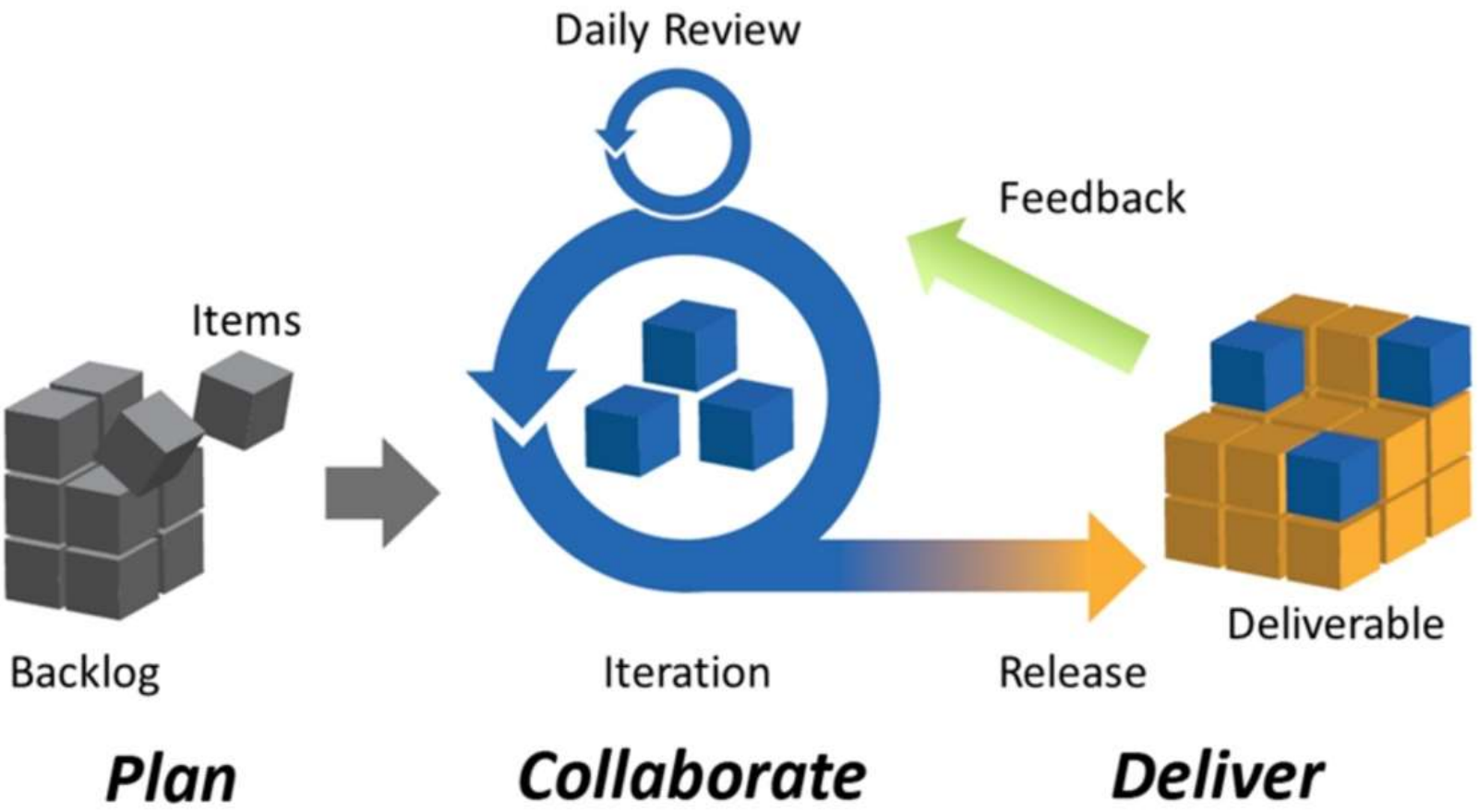
2011

Gene Kim

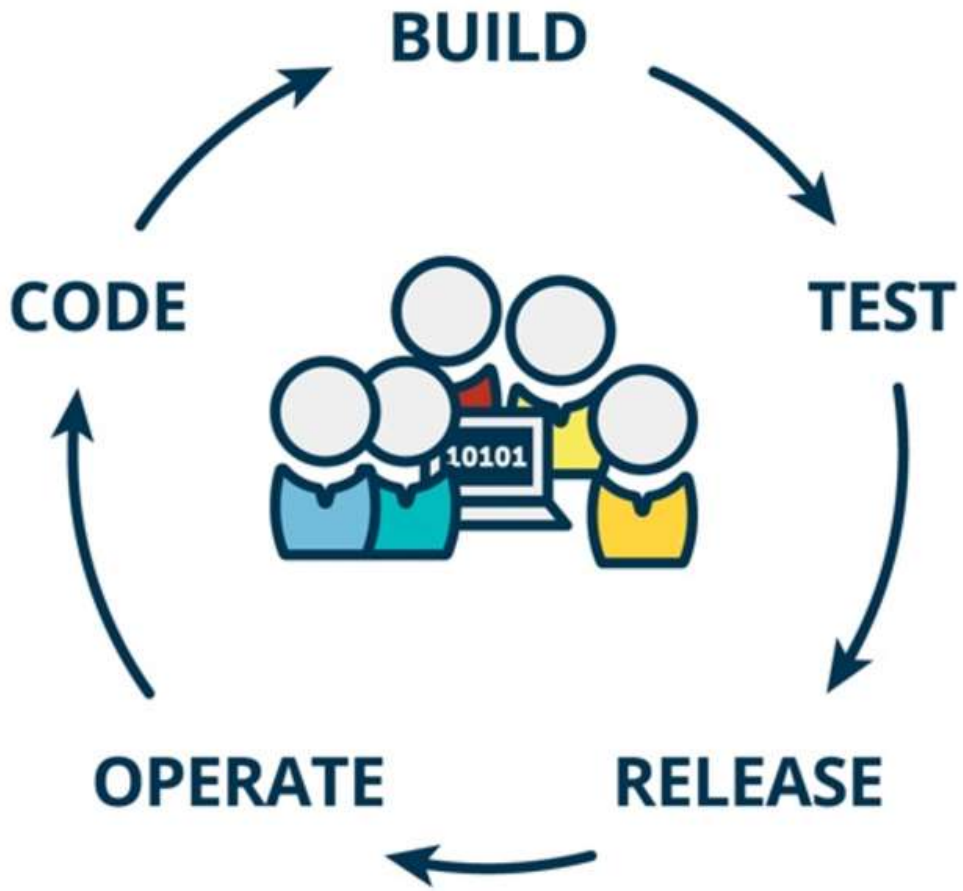
2015+

# Why DevOps?


Lead Time
Shorten
Dev
Remove
Ops
Ah-ha!
Wall of Confusion
Feedback




https://en.wikipedia.org/wiki/Iterative_and_incremental_development

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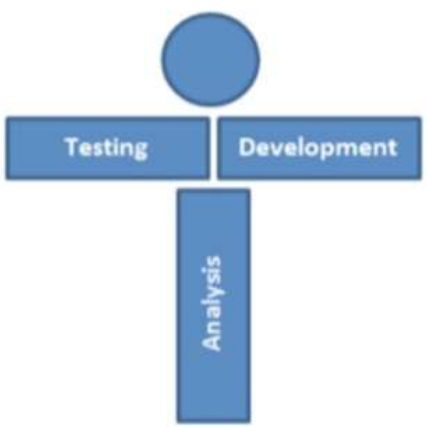
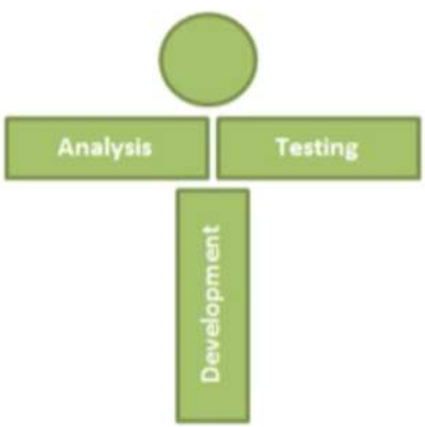
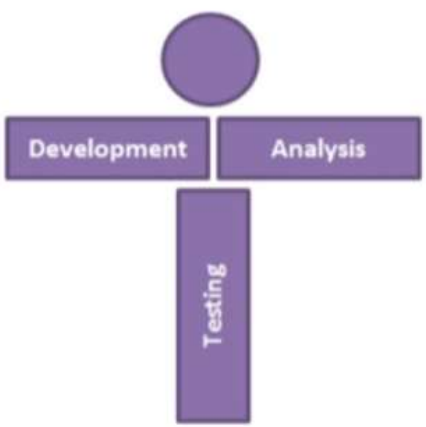



Business Analyst



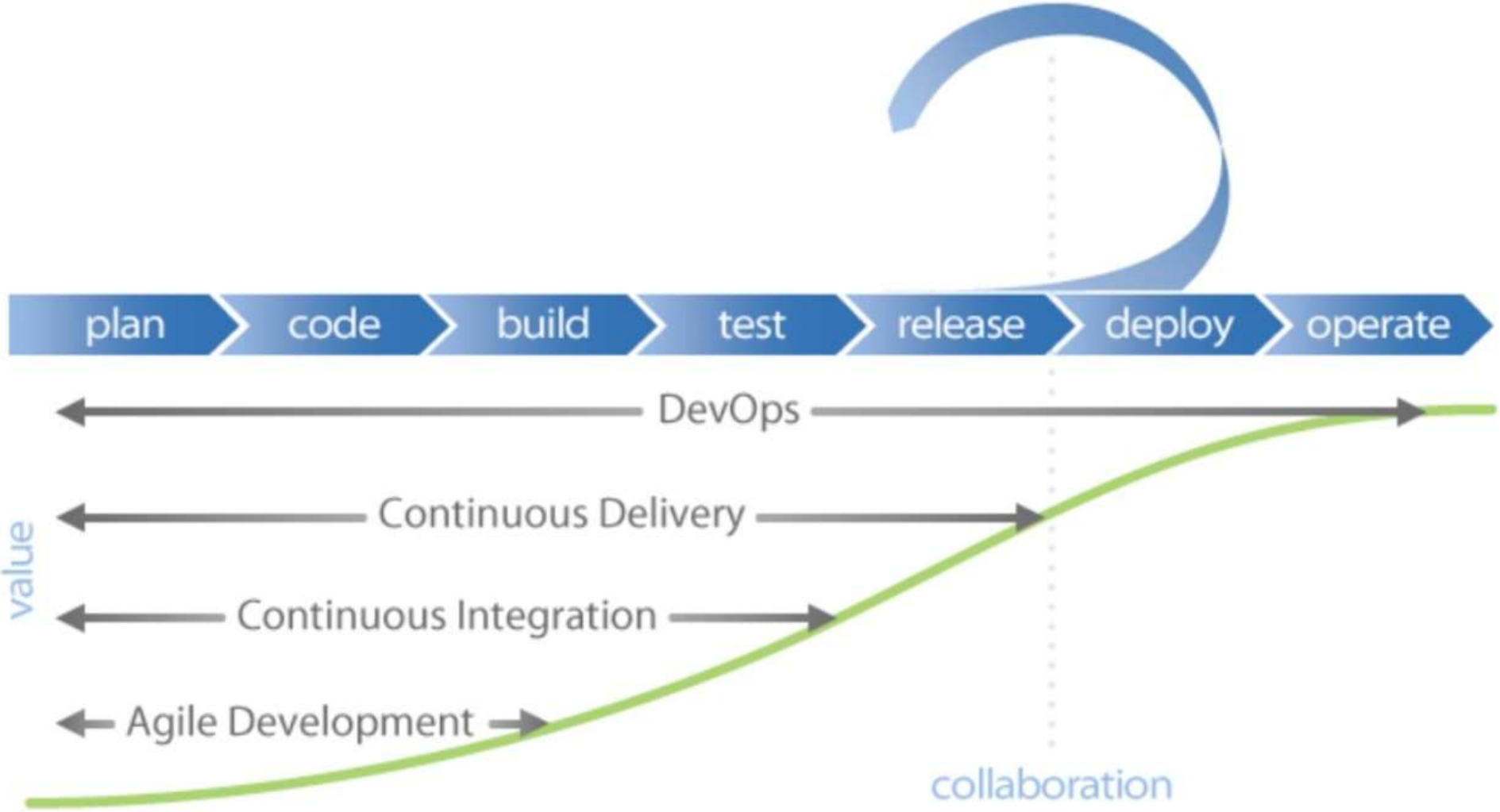

Developer




Tester

Operation

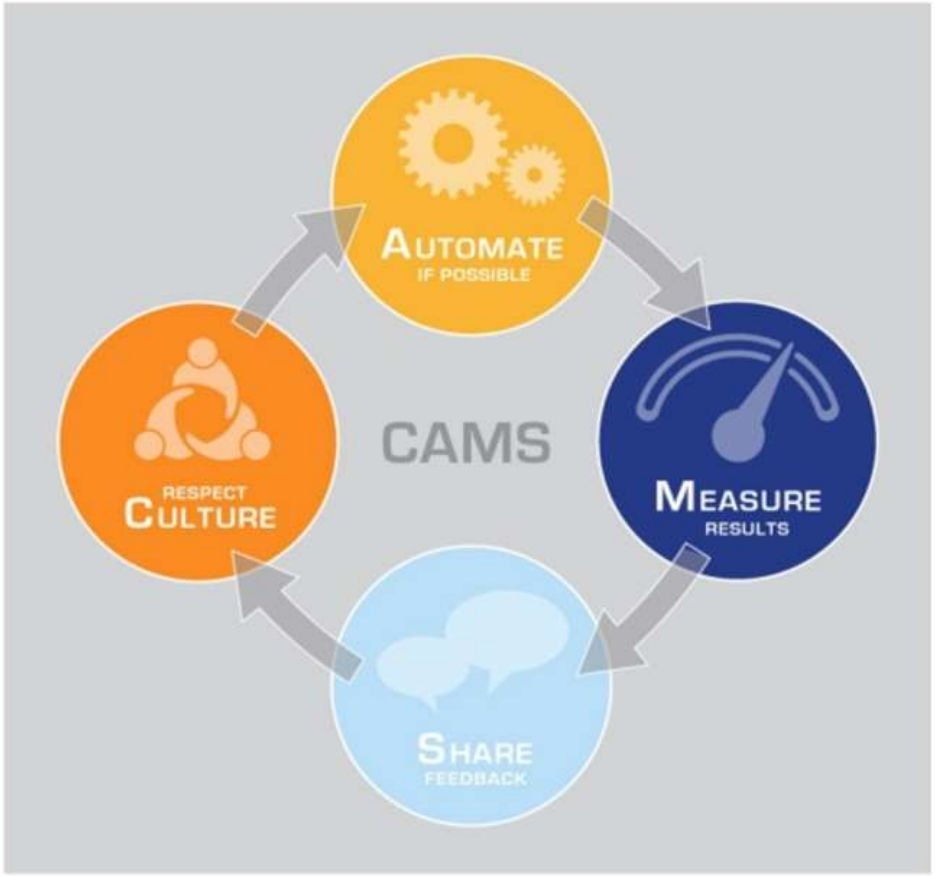
# Why does it Matter?




OMG!
DevOps

# How to start DevOps?

# DevOps Principles

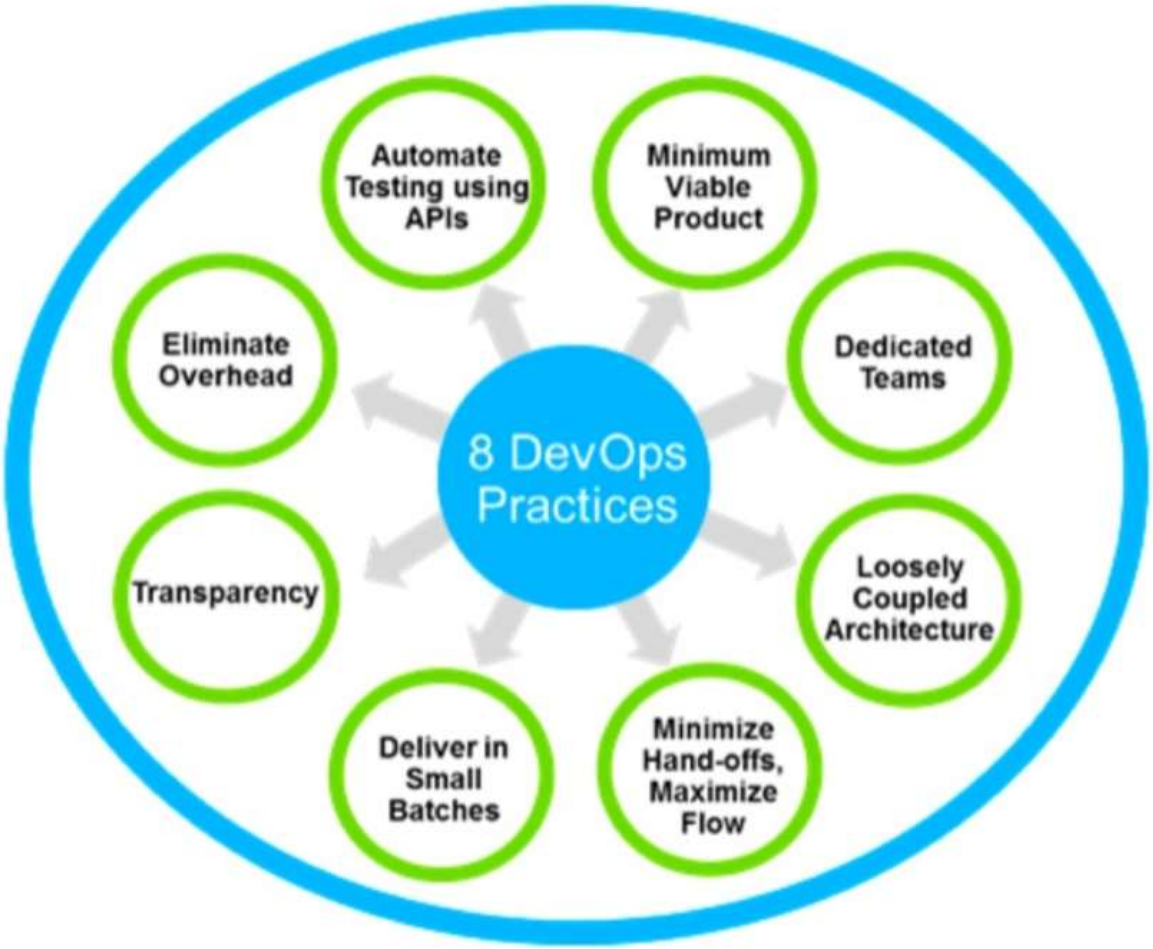


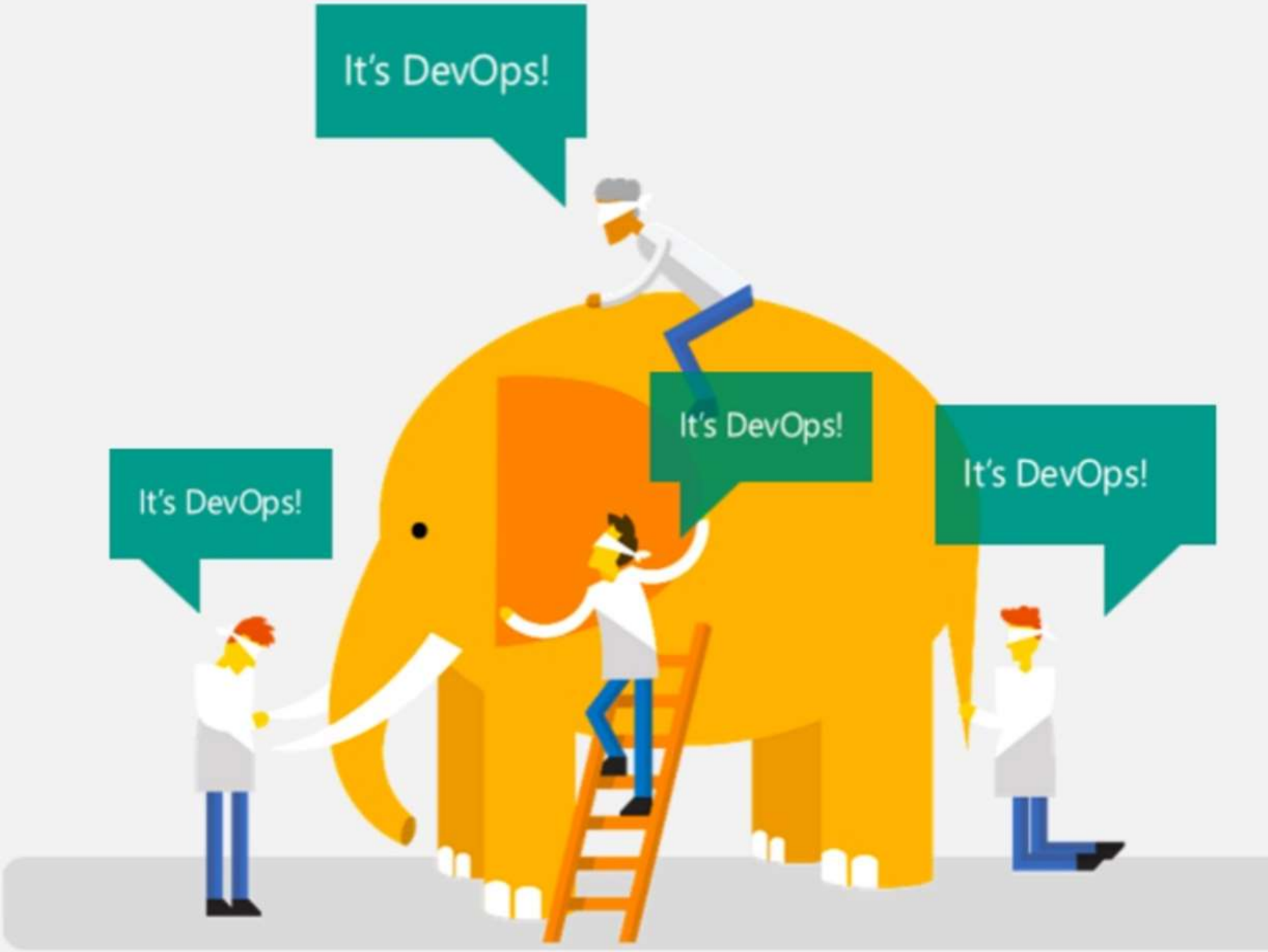

http://www.telehouse.com/2016/03/devops-how-a-culture-of-empathy-creates-massive-productivity/

# DevOps Principles

**C**ulture => People, Process, Tools
**A**utomation => Infrastructure as Code
**M**easurement => Measure everything
**S**haring => Collaboration/Feedback

# DevOps Practices






https://channel9.msdn.com/Series/DevOps-Fundamentals/Introduction-to-DevOps

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

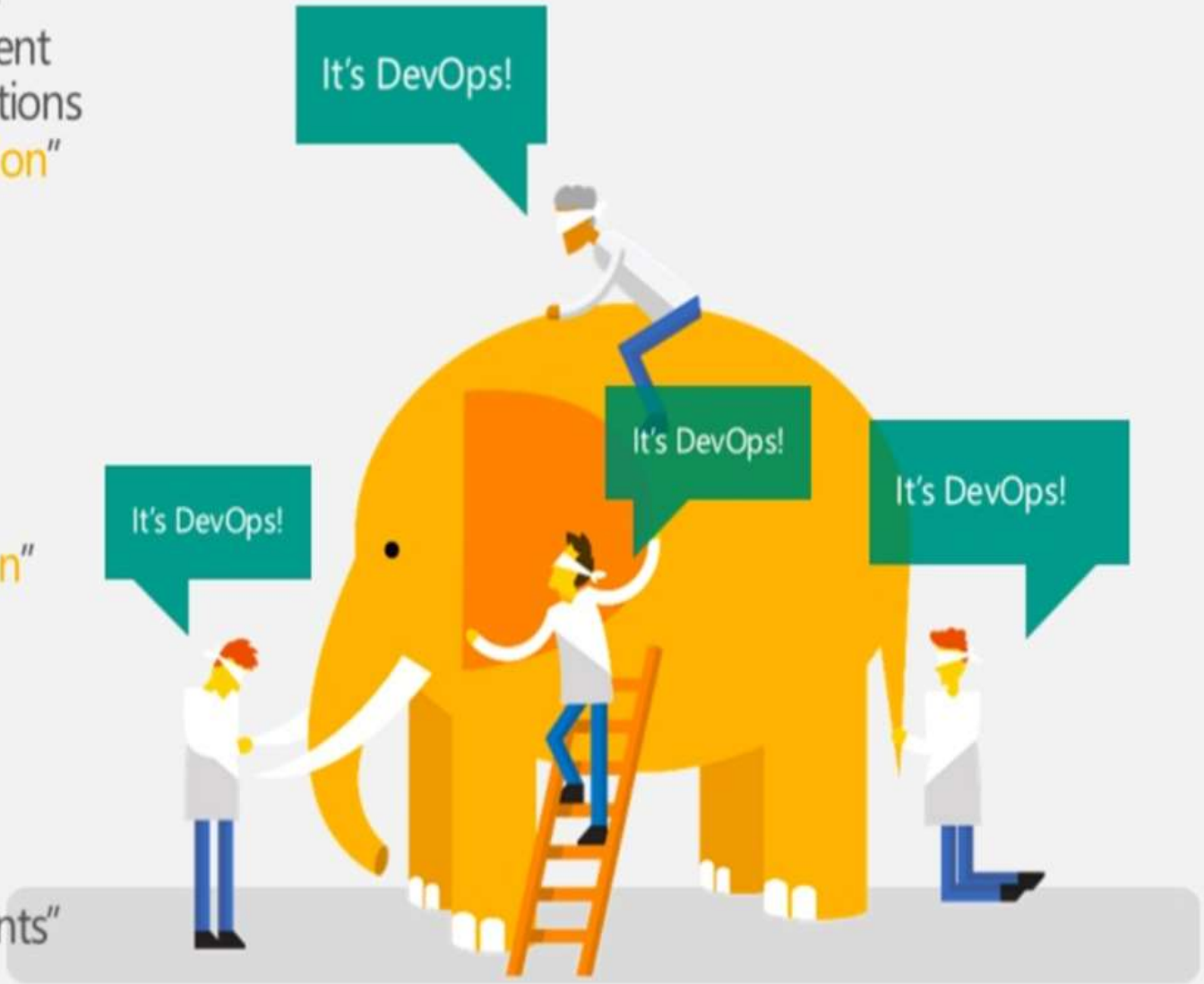
"**DevOps** is treating your infrastructure as code"

"**DevOps** is using automation"

"**DevOps** is feature switches"

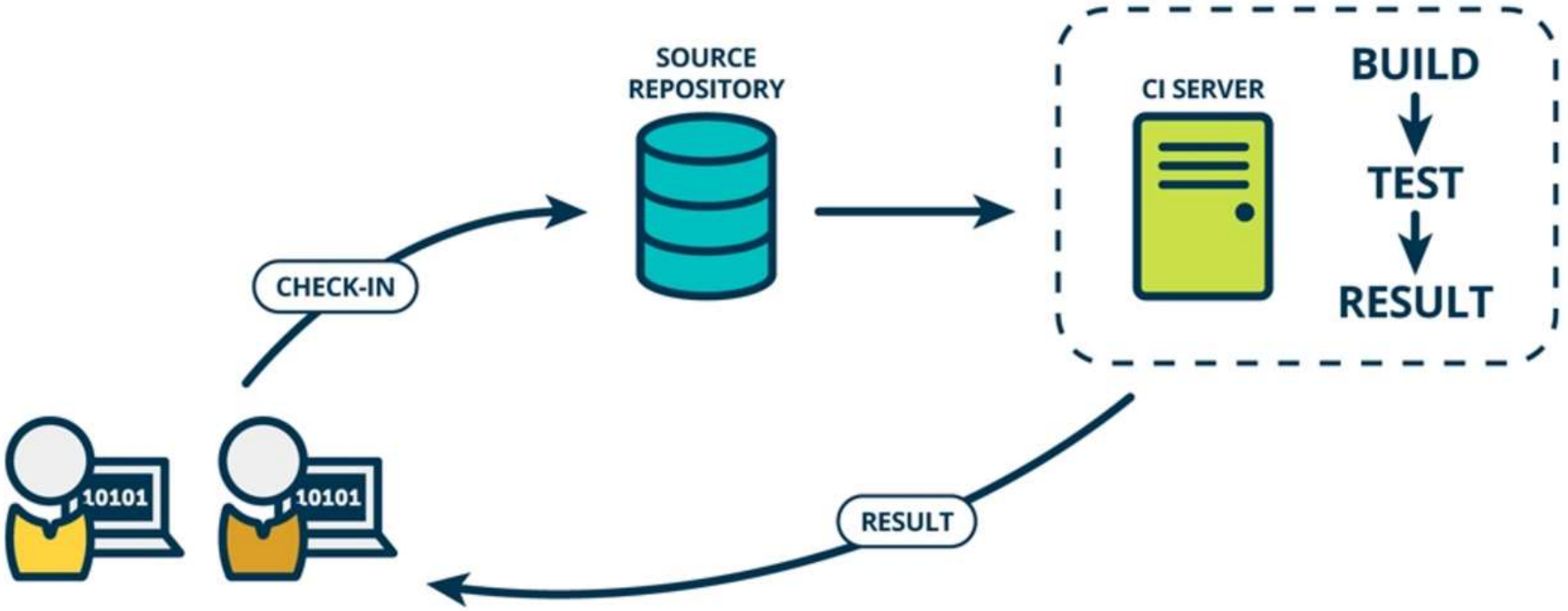
"**DevOps** is small deployments"

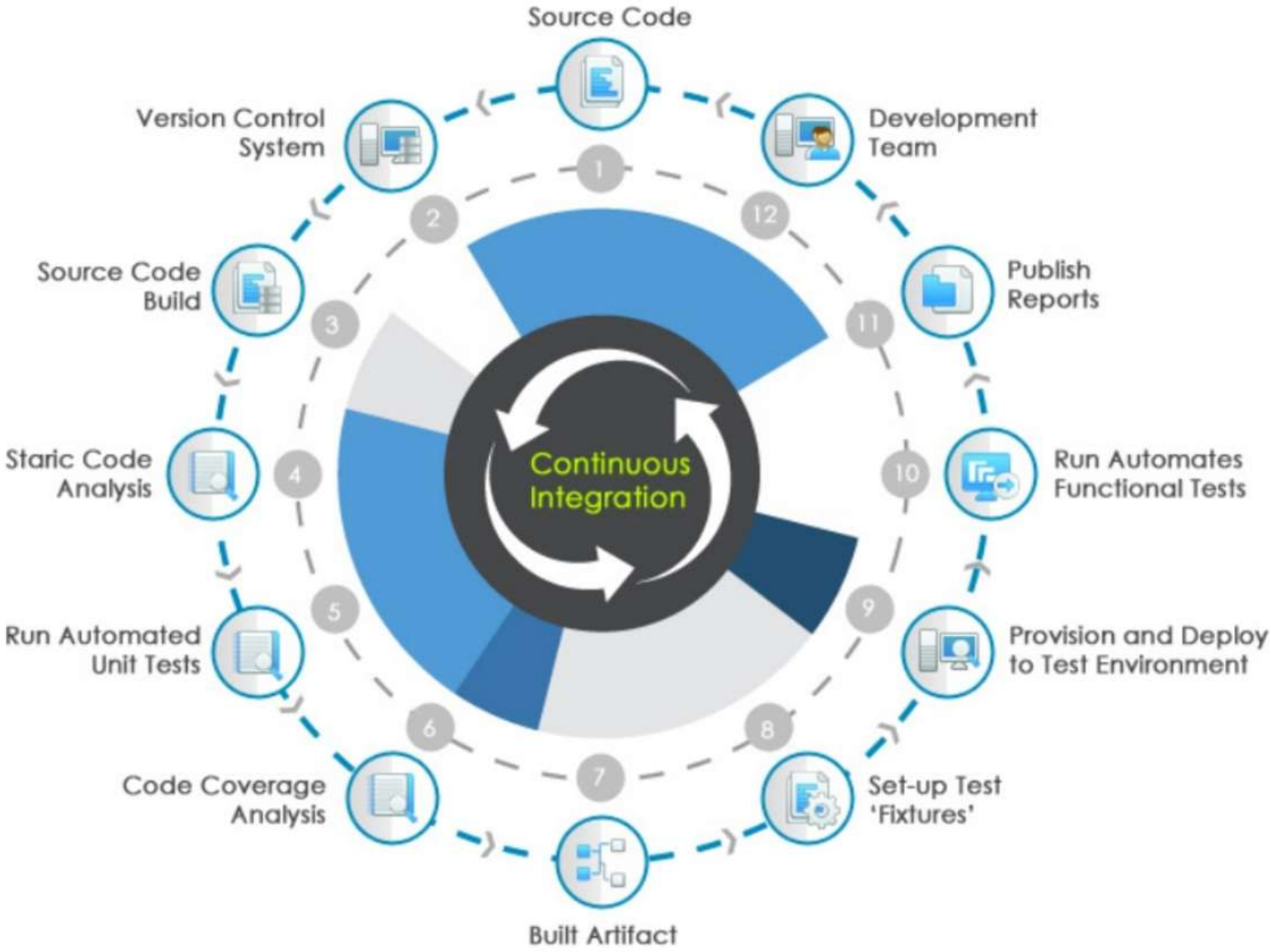
"Kanban for Ops?"




https://channel9.msdn.com/Series/DevOps-Fundamentals/Introduction-to-DevOps

# Continuous Integration




Source Code
Development Team
Publish Reports
Run Automates Functional Tests
Provision and Deploy to Test Environment
Set-up Test 'Fixtures'
Built Artifact
Code Coverage Analysis
Run Automated Unit Tests
Staric Code Analysis
Source Code Build
Version Control System
Continuous Integration
1
2
3
4
5
6
7
8
9
10
11
12

Jenkins

Bamboo

TeamCity

go™

Visual Studio
Team Foundation Server

Hudson

Travis

wercker

circleci

Jenkins

Bamboo

TeamCity

Visual Studio
Team Foundation Server

Hudson

Travis

wercker

circleci

CI is about what people do

not about what tools they use

# CI is a practice

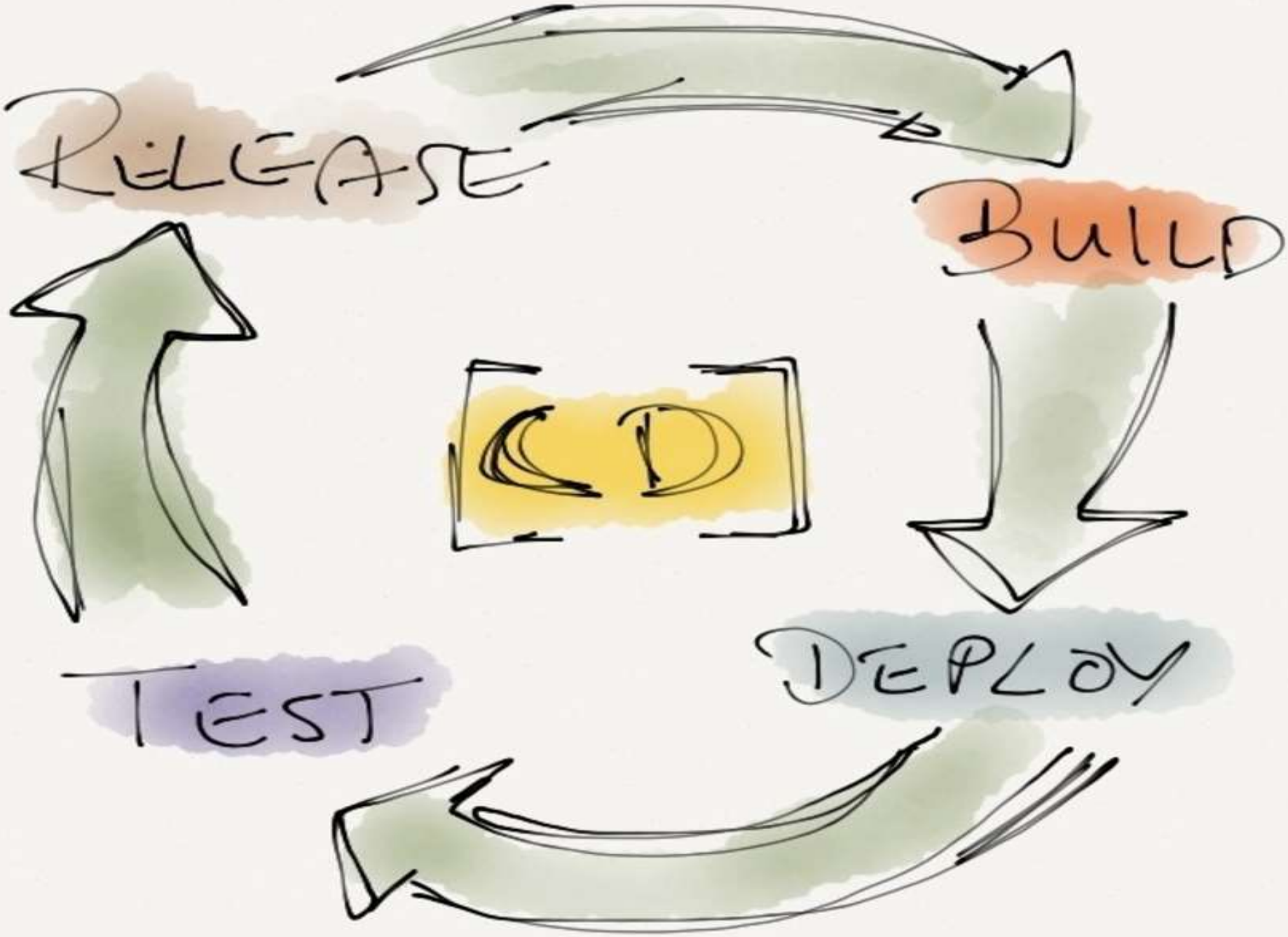
Discipline to **integrate frequently**

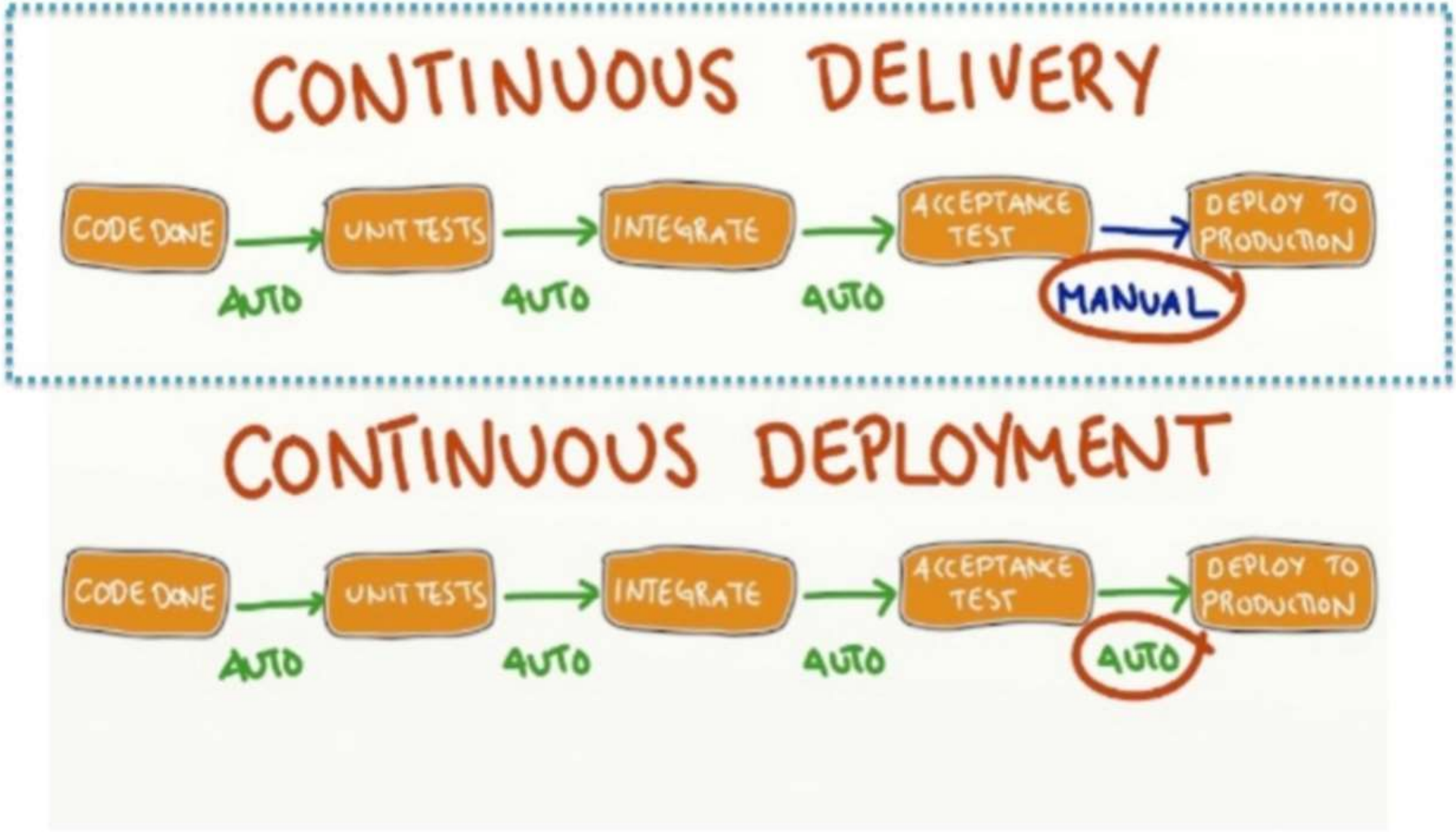
# CI is a practice

Strive to make **small change**

# CI is a practice

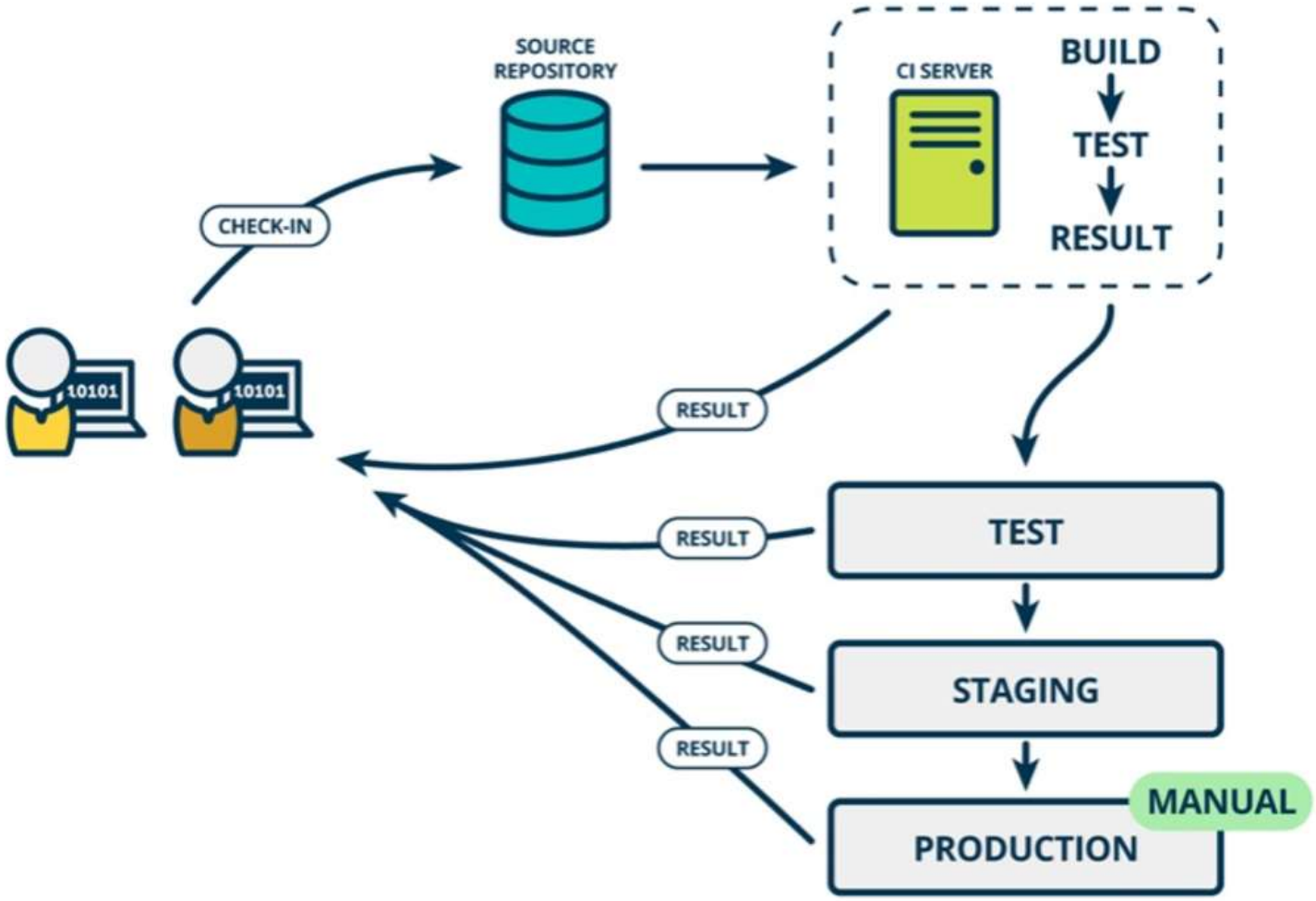
Strive for **fast feedback**


RELEASE
BUILD
CD
TEST
DEPLOY

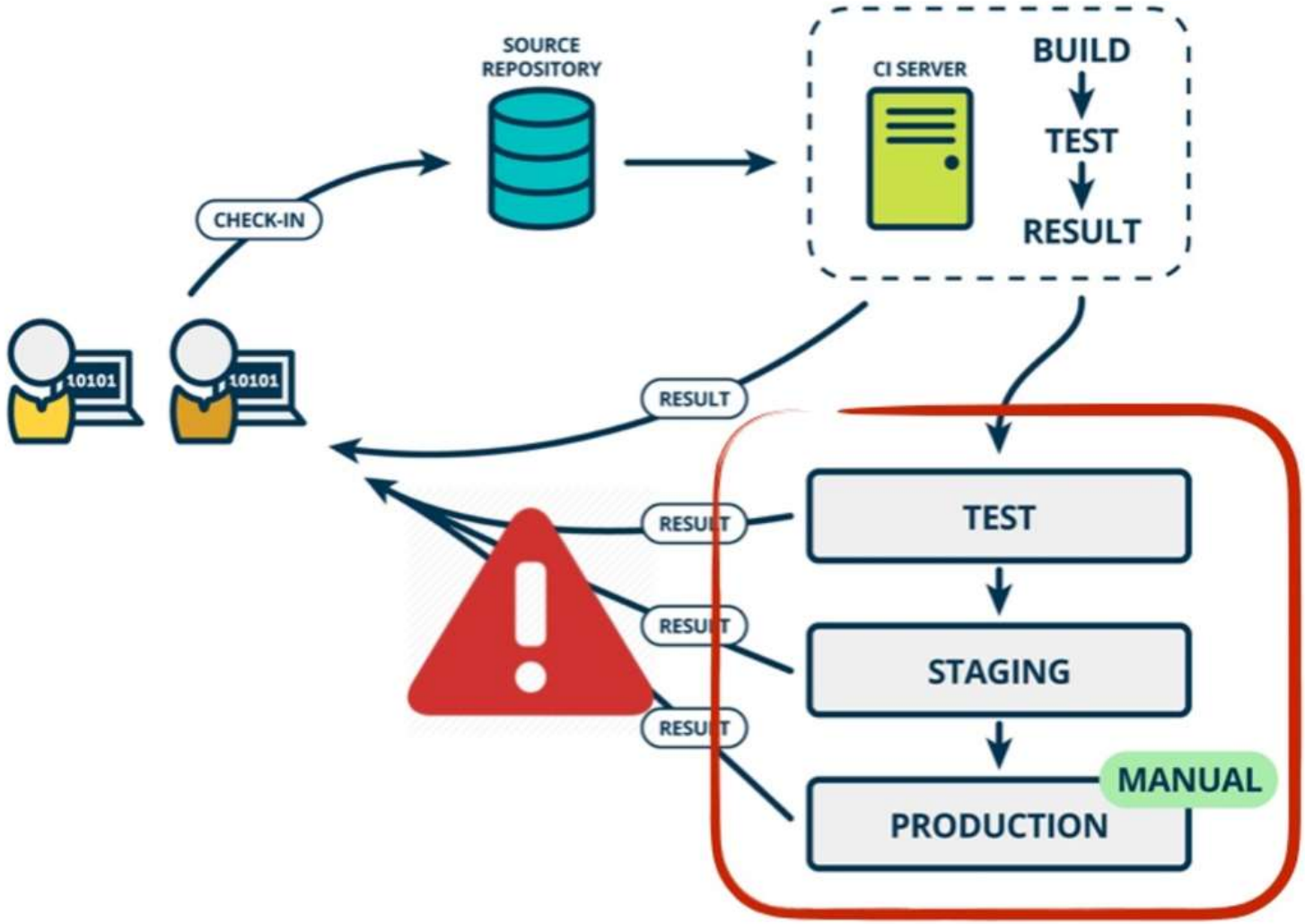



http://blog.crisp.se/2013/02/05/yassalsundman/continuous-delivery-vs-continuous-deployment

# Continuous Delivery

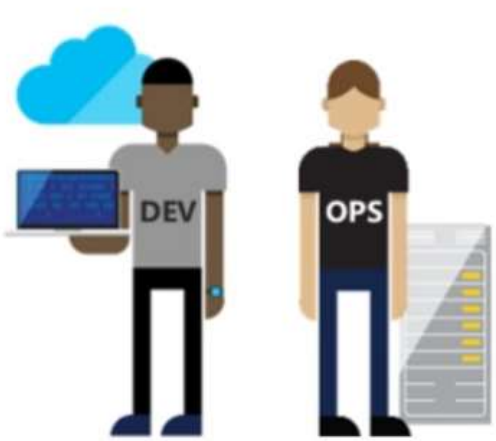


# Continuous Delivery




WORKED FINE IN DEV...
...OPS PROBLEM NOW
memegenerator.net

# DevOps culture

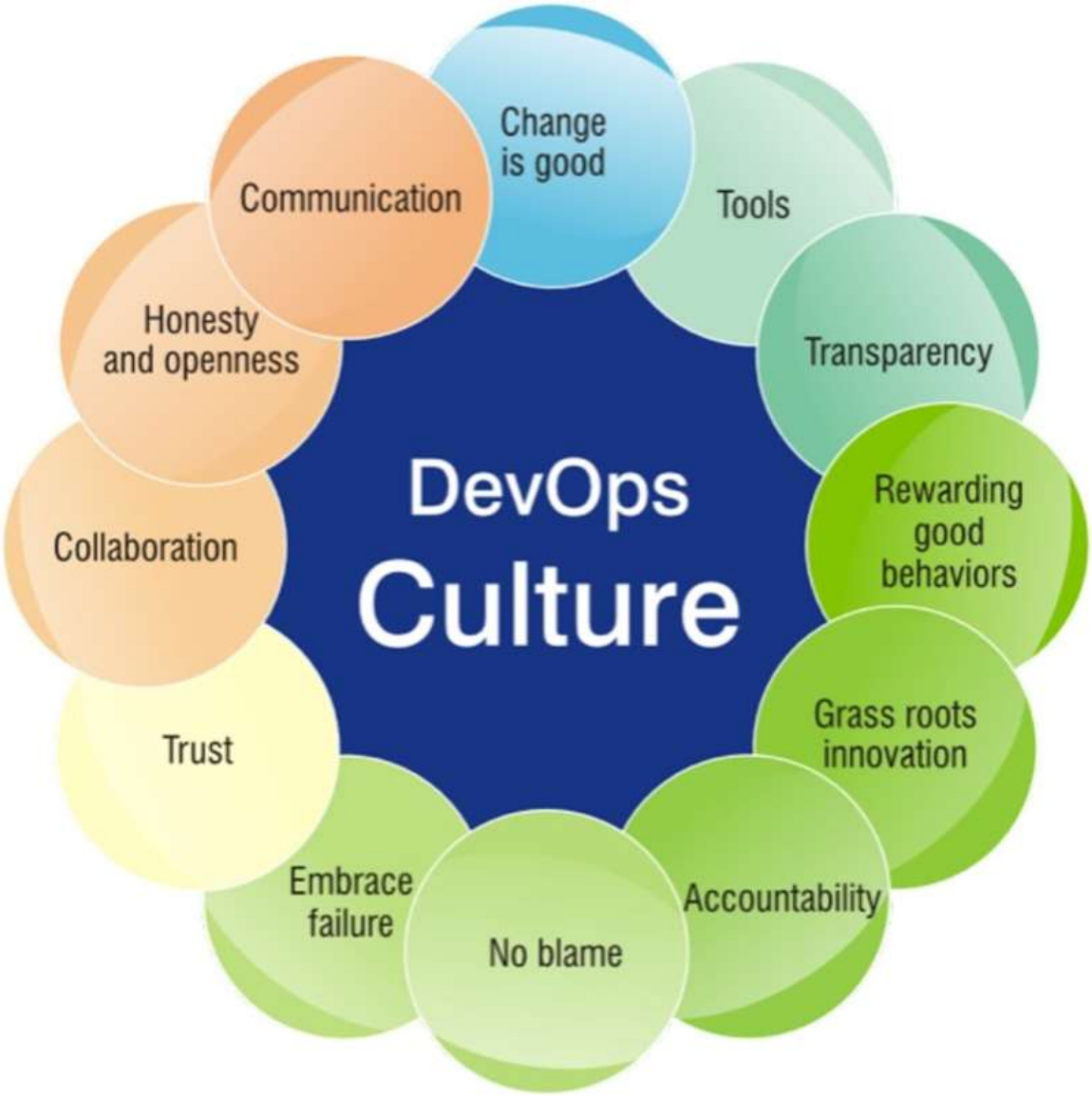



1 People

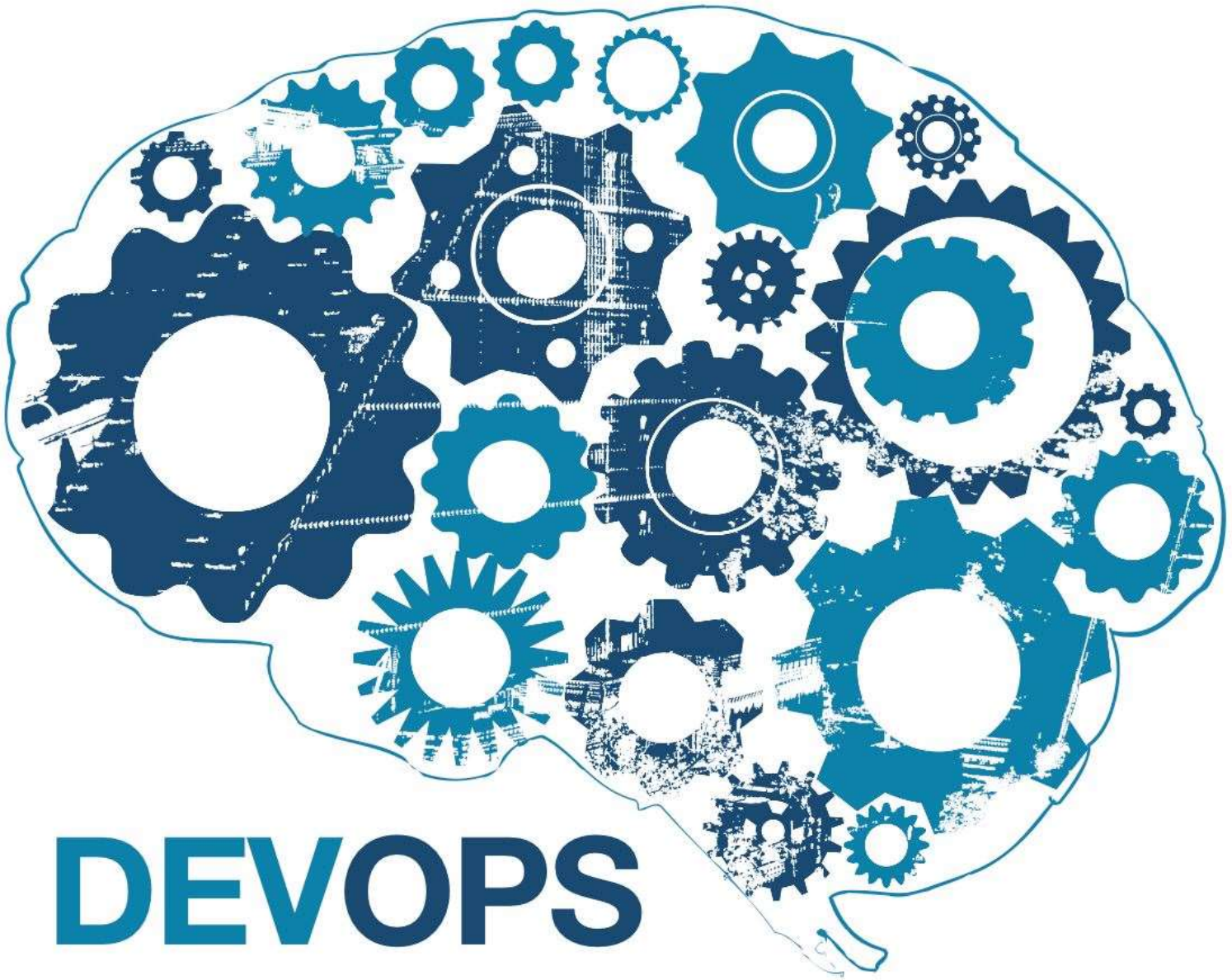
2 Process

3 Products

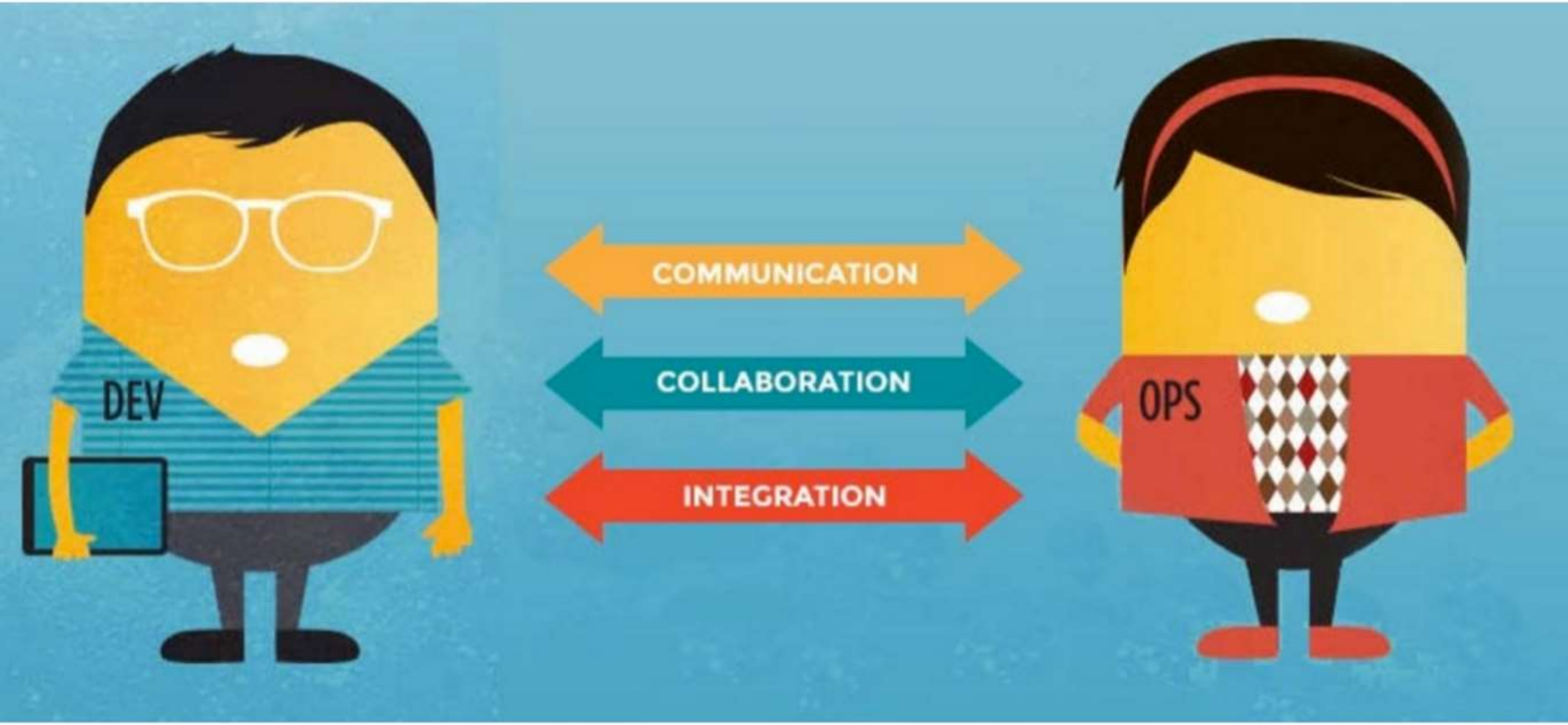
https://channel9.msdn.com/Series/DevOps-Fundamentals/Introduction-to-DevOps



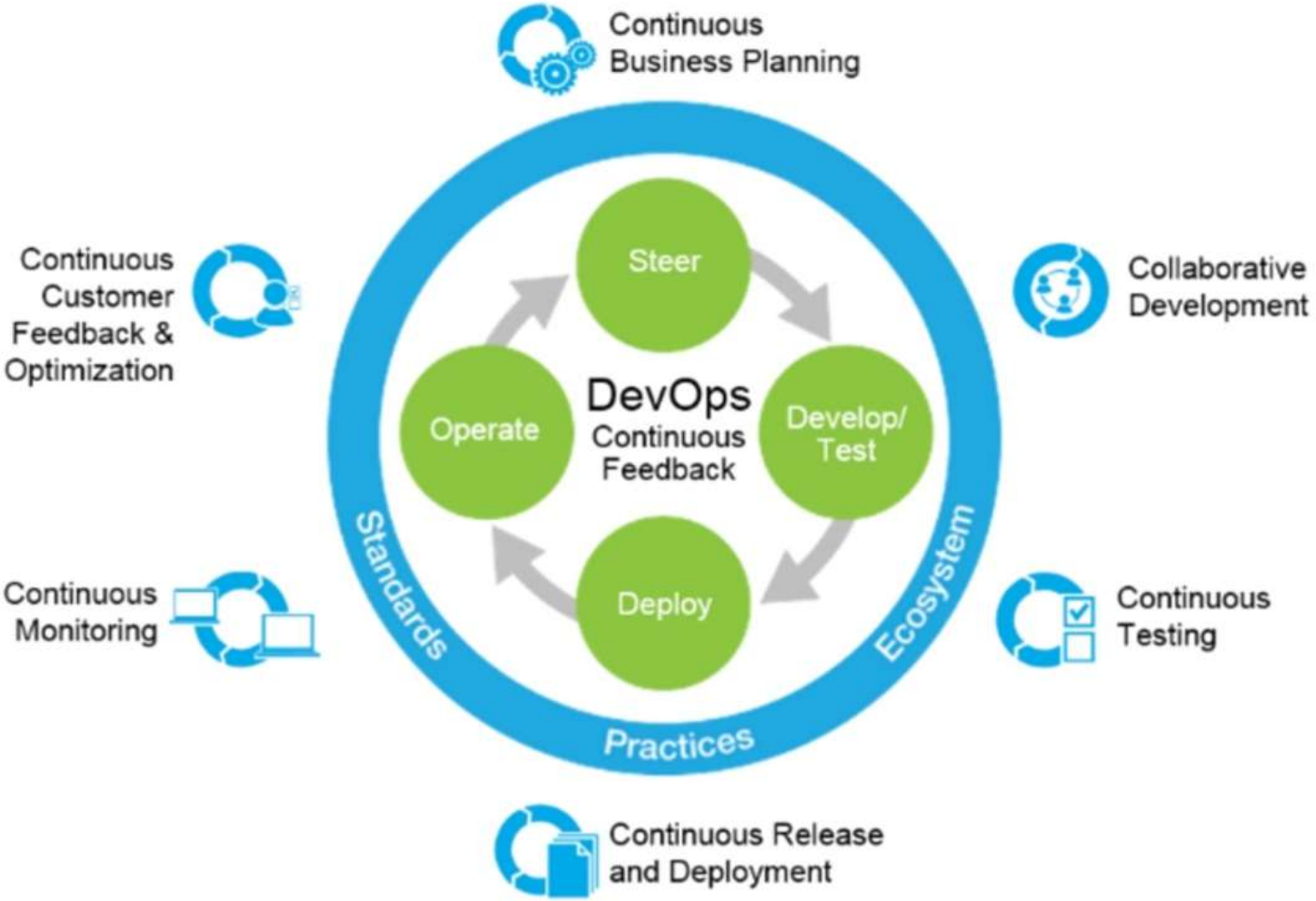

https://www.linkedin.com/pulse/9-critical-steps-devops-transformation-enterprises-sakthi-vadivelu


DEVOPS

# DevOps



# Goals




https://www.linkedin.com/pulse/9-critical-steps-devops-transformation-enterprises-sakthi-vadivelu

# Add Ops into Dev

- Enhance Service Design with Operation al Knowledge
  - Reliability
  - Performance
  - Security
  - Test Them
- Build Feedback Loops from Production
  - Monitoring and KPI Dashboards
  - Postmortems
- Foster Culture of Responsibility
  - Whether your code passes test, gets deployed and stays up for users us your responsibility
- Make Development Better with Ops
  - Productionlike enviromnents
  - Power tooling

# Accelerate Flow to Production

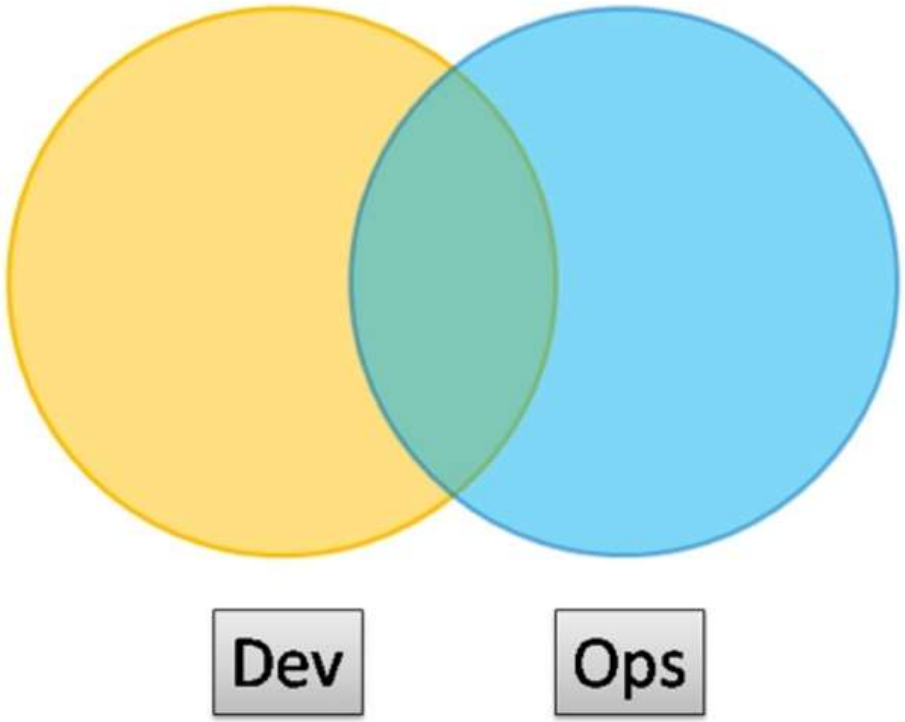
- Reduce batch size
- Automated environments means identical dev/test/prod
- Create safety through automation
  - Continuous Integration/Testing
  - Automated Regression Testing
  - Continuous Delivery
  - Continuous Deployment
  - Feature Flags (A/B Testing)
  - Security Testing

# Add Dev into Ops

- Don’t do tasks for people
  - Build tools so they can do their own work
- Monitoring/logging/metrics feeds back into dev (and the business)
- Blameless incident postmortems
- Developers Do production support/empower ops acceptance

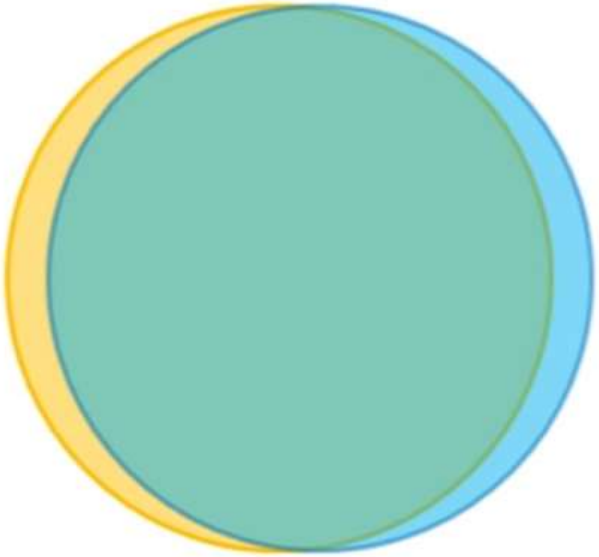
# DevOps Team Topologies

# Type 1 – Smooth Collaboration




https://blog.matthewskelton.net/2013/10/22/what-team-structure-is-right-for-devops-to-flourish/

# Type 2 – Fully Embedded

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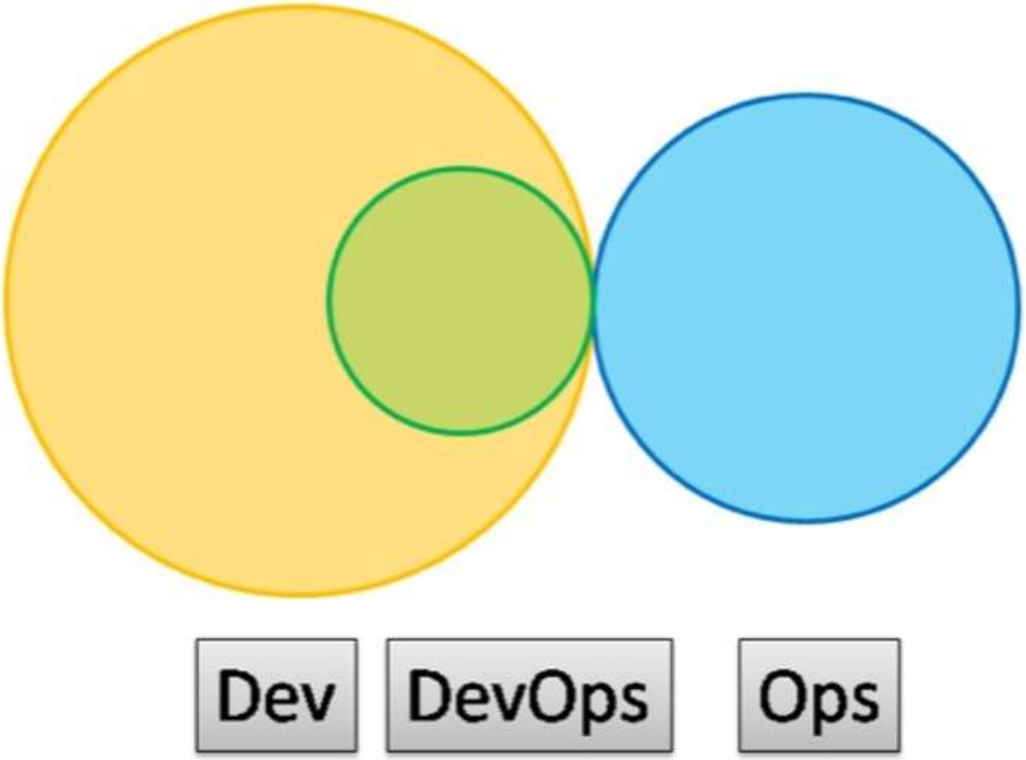
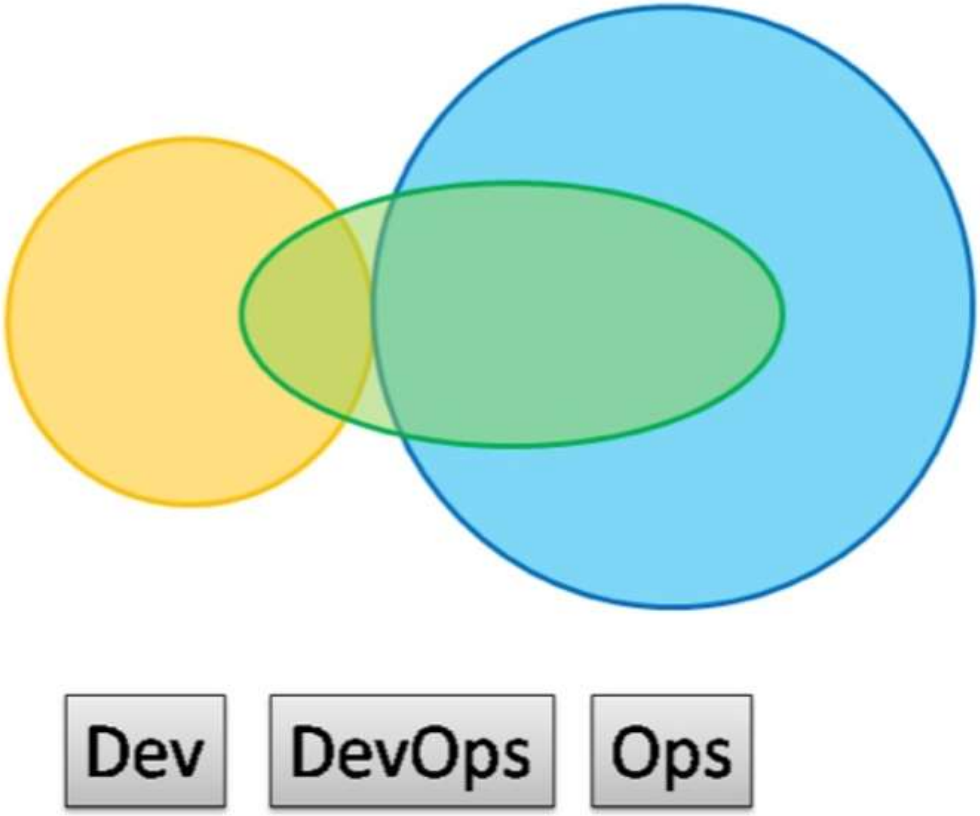
# Type 3 – Infrastructure-as-a-Service



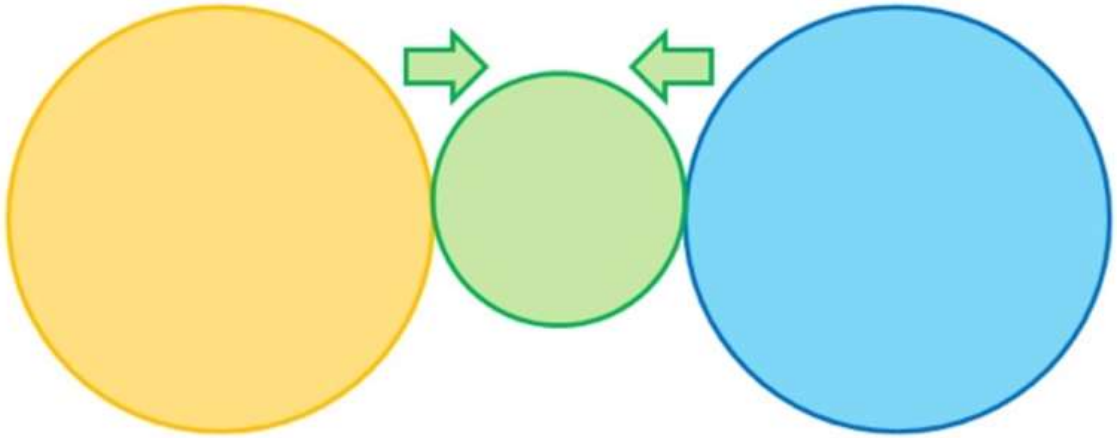

https://blog.matthewskelton.net/2013/10/22/what-team-structure-is-right-for-devops-to-flourish/

# Type 4 – DevOps-as-a-Service




https://blog.matthewskelton.net/2013/10/22/what-team-structure-is-right-for-devops-to-flourish/

# Type 5 – Temporary DevOps Team

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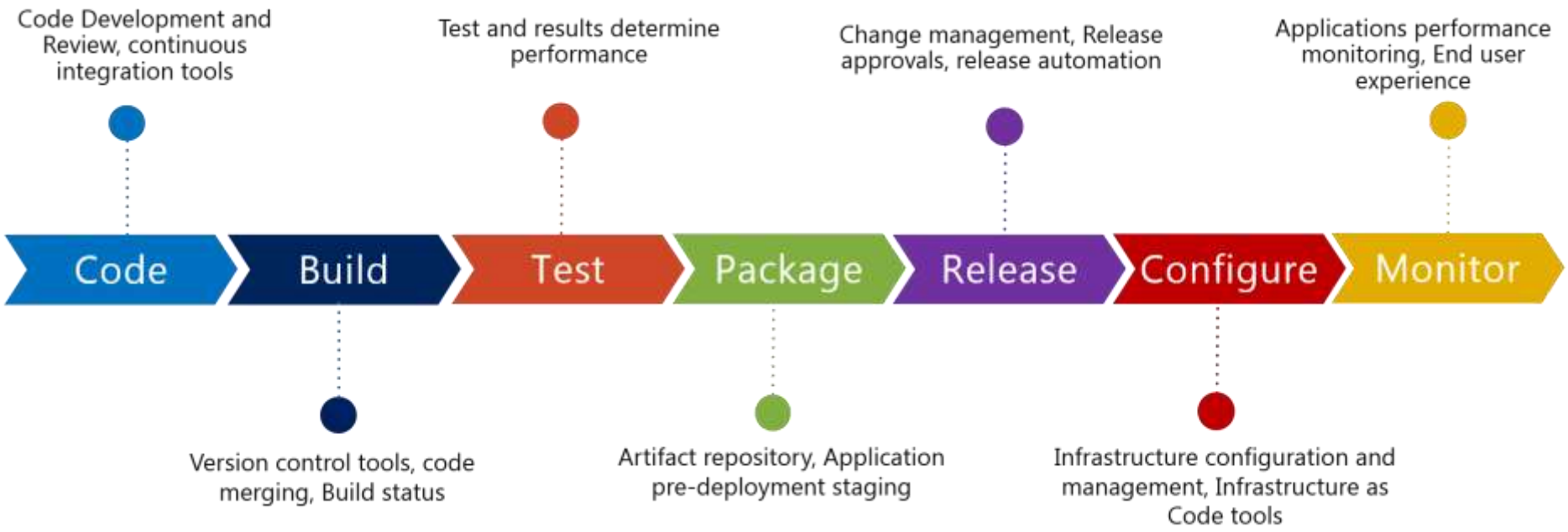
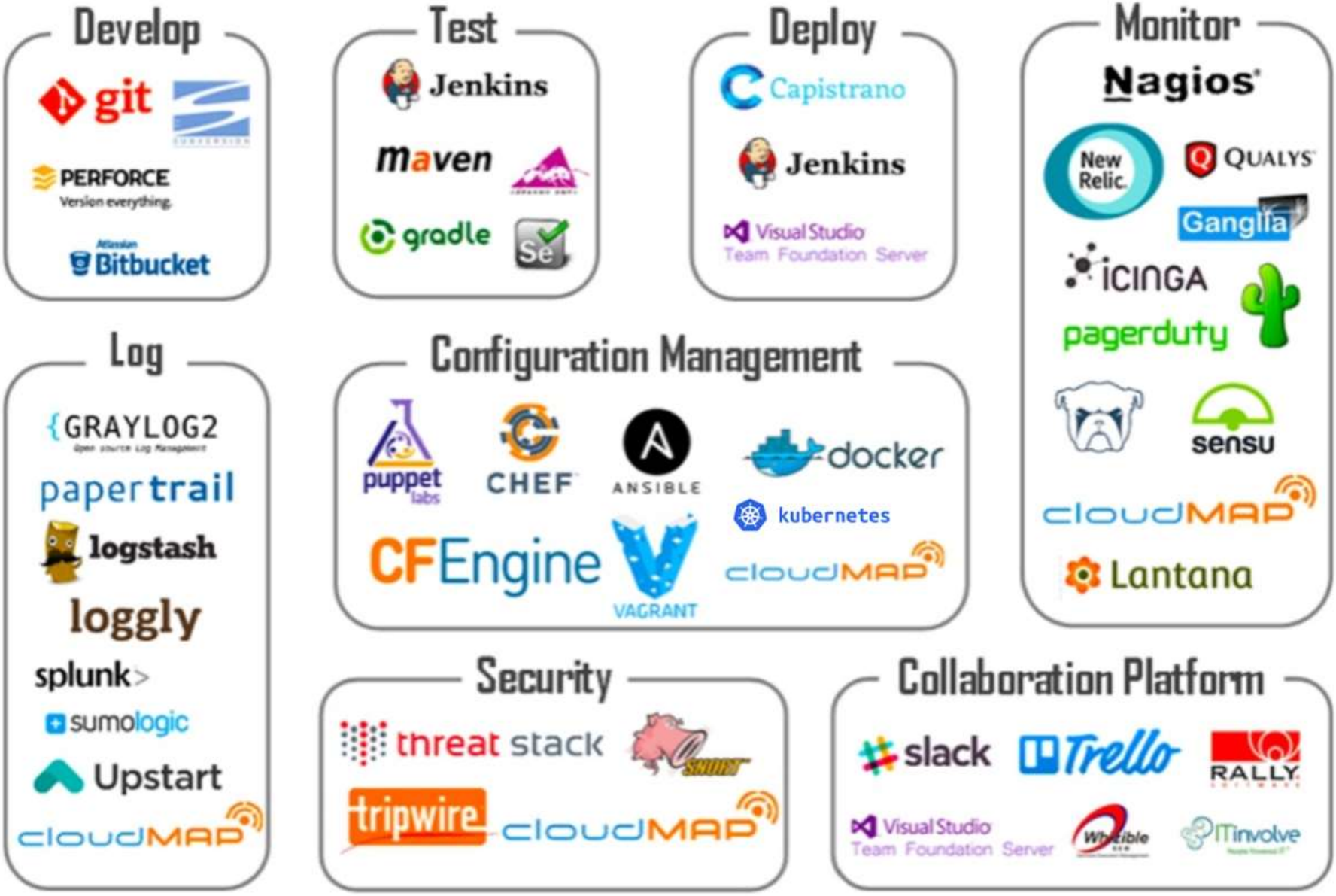
# No DevOps Team

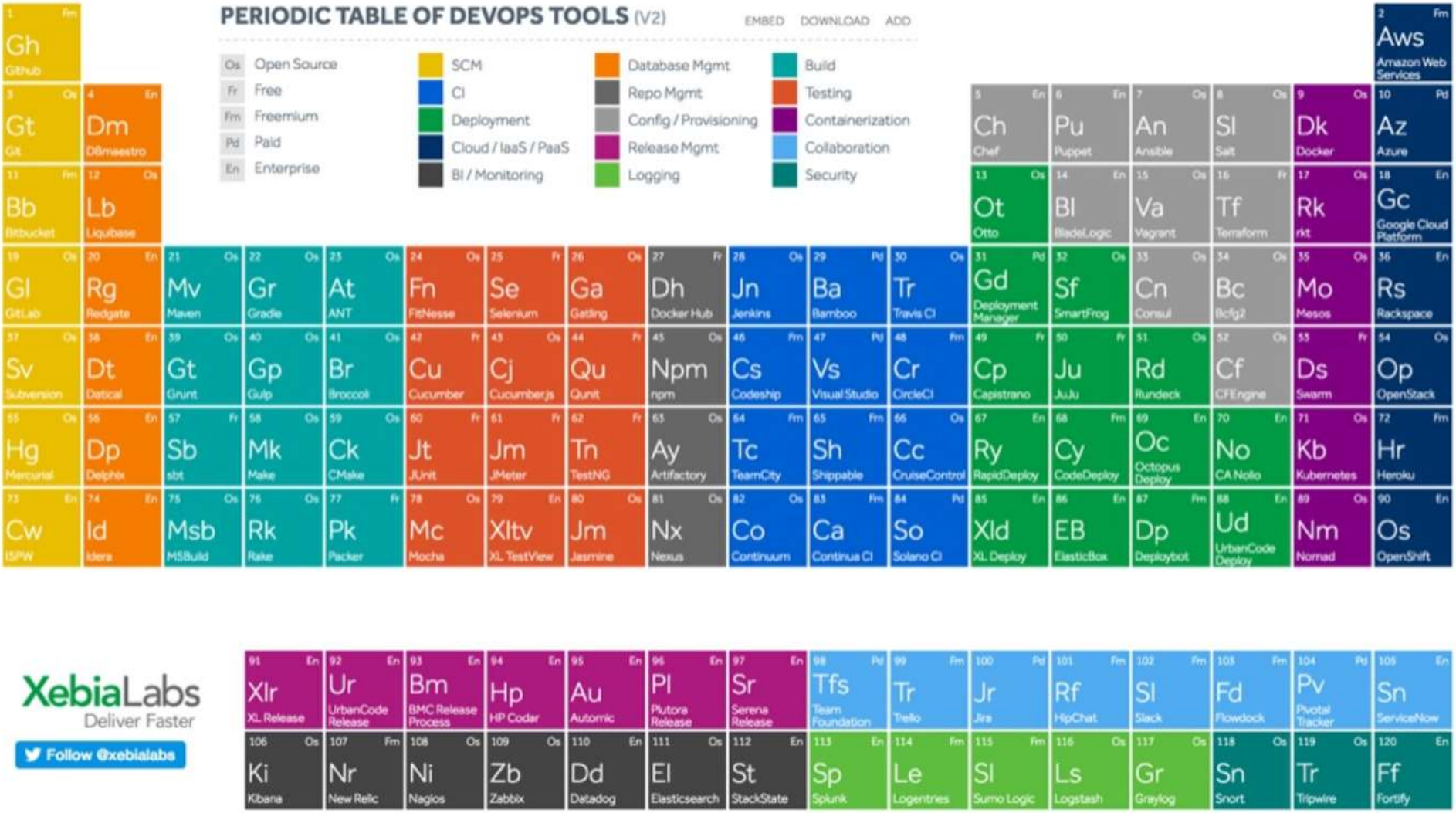
== problem department ==

# DevOps Tools ?

# DevOps Toolchain




Develop
git
PERFORCE
Version everything.
Atlassian
Bitbucket
Test
Jenkins
maven
gradle
Se
Deploy
Capistrano
Jenkins
Visual Studio
Team Foundation Server
Monitor
Nagios
New Relic.
QUALYS
Ganglia
ICINGA
pagerduty
sensu
cloudMAP
Lantana
Log
{GRAYLOG2
papertrail
logstash
loggly
splunk>
sumologic
Upstart
cloudMAP
Configuration Management
puppet labs
CHEF
ANSIBLE
docker
kubernetes
CFEngine
VAGRANT
cloudMAP
Security
threat stack
SHODAN
tripwire
cloudMAP
Collaboration Platform
slack
Trello
RALLY
Visual Studio
Team Foundation Server
Whatible
ITinvolve




XebiaLabs
Deliver Faster
Follow @xebialabs

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

# DevOps Trends

Google Trends | Explore

## Interest over time


## Interest by region

Region

| | | |
|---|---|---|
| 1 | India | 100 |
| 2 | Israel | 96 |
| 3 | Singapore | 73 |
| 4 | Finland | 60 |
| 5 | Netherlands | 51 |
| 6 | Ukraine | 50 |
| 7 | Australia | 48 |
| 8 | United States | 44 |
| 9 | Sweden | 43 |
| 10 | United Kingdom | 42 |

## Related queries

| | |
|---|---|
| 1 | devops what is |
| 2 | devops engineer |
| 3 | devops tools |
| 4 | agile |
| 5 | agile devops |

# DevOps Report 2015

## Strong IT Performance is a competitive advantage

Firms with high-performing IT organizations were 2x as likely to exceed their profitability, market share, and productivity goals


## Deploy code 30x faster

and with 200x shorter lead time as compared to their lower-performing peers

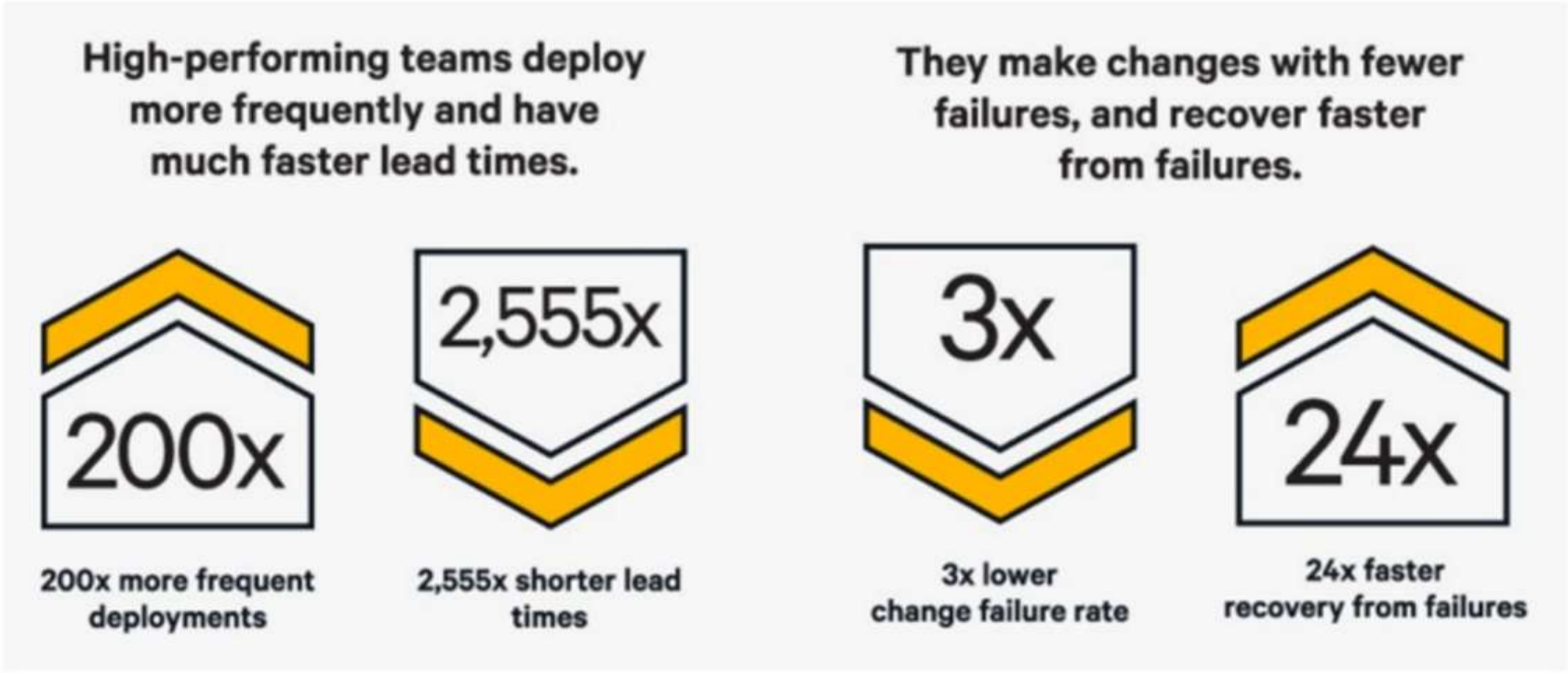
## Have 60x fewer failures

and recover from failure 168x faster as compared to their lower-performing peers

## DevOps Practices improve IT performance

https://puppet.com/resources/white-paper/2016-state-of-devops-report

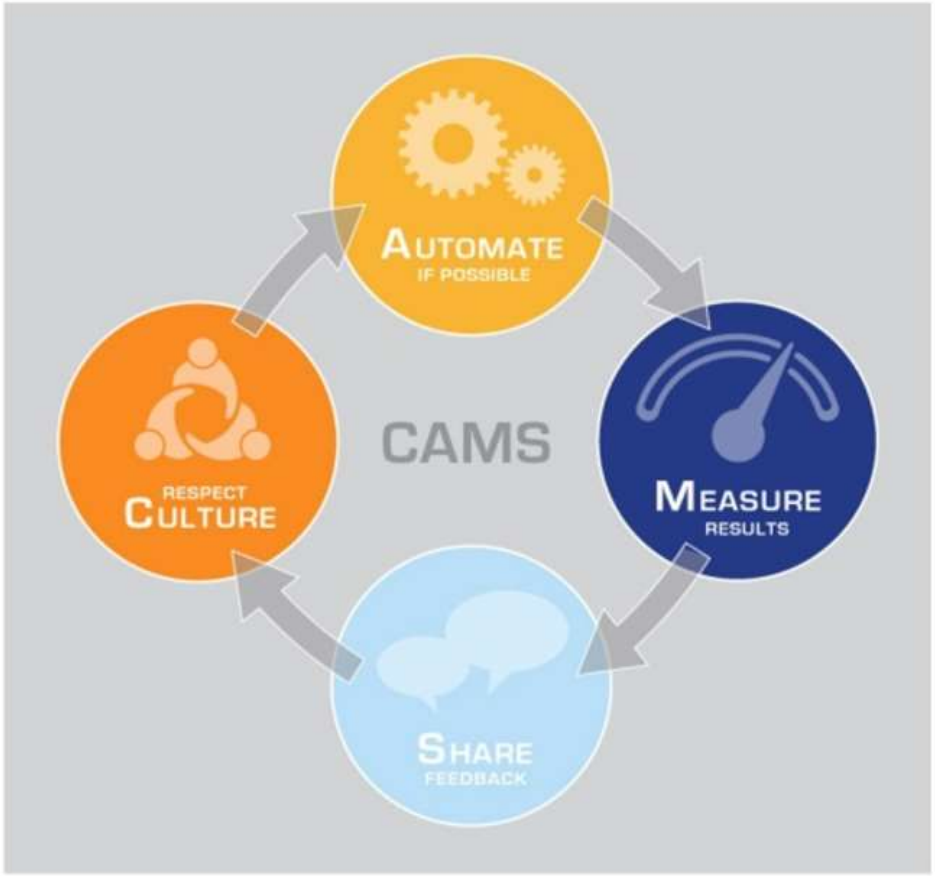
# DevOps Report 2016




https://puppet.com/resources/white-paper/2016-state-of-devops-report

# Summary

# DevOps Principles

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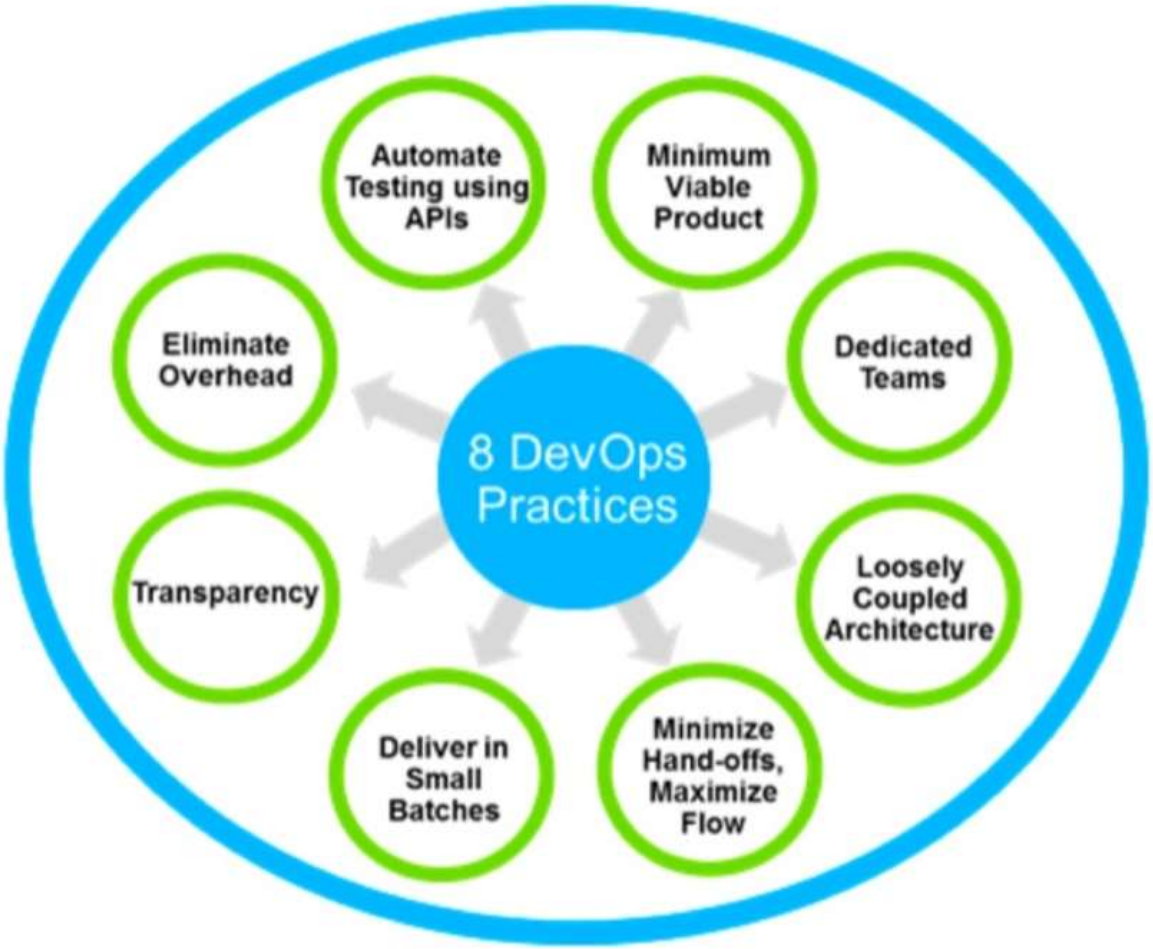
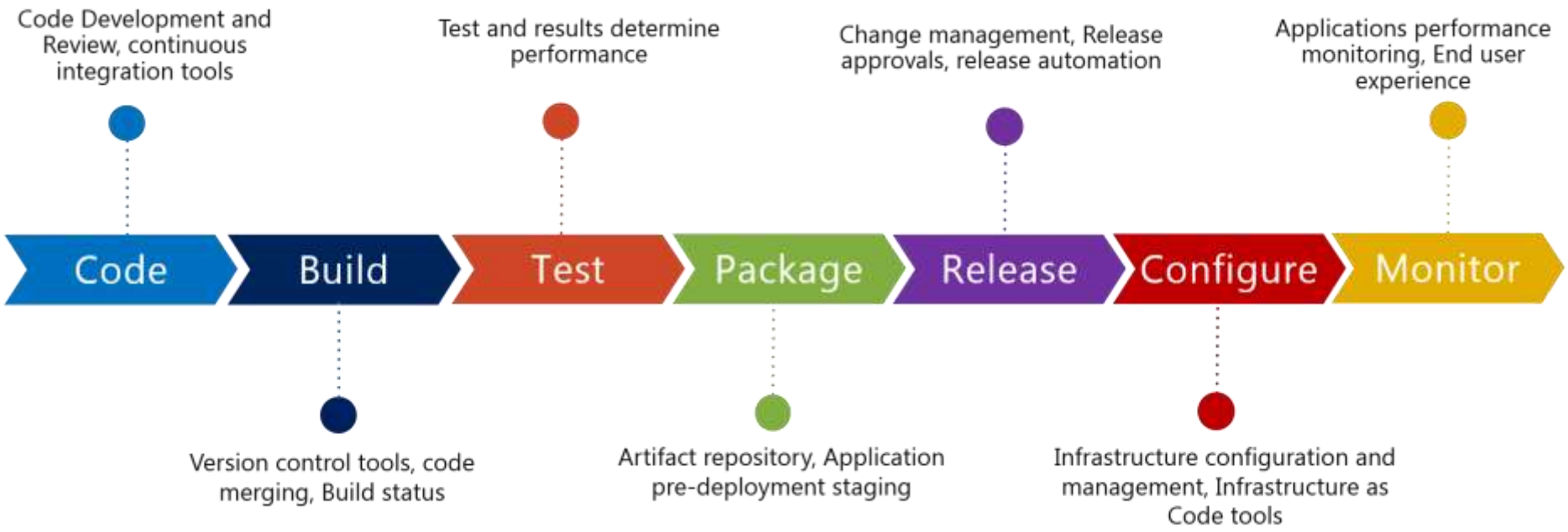
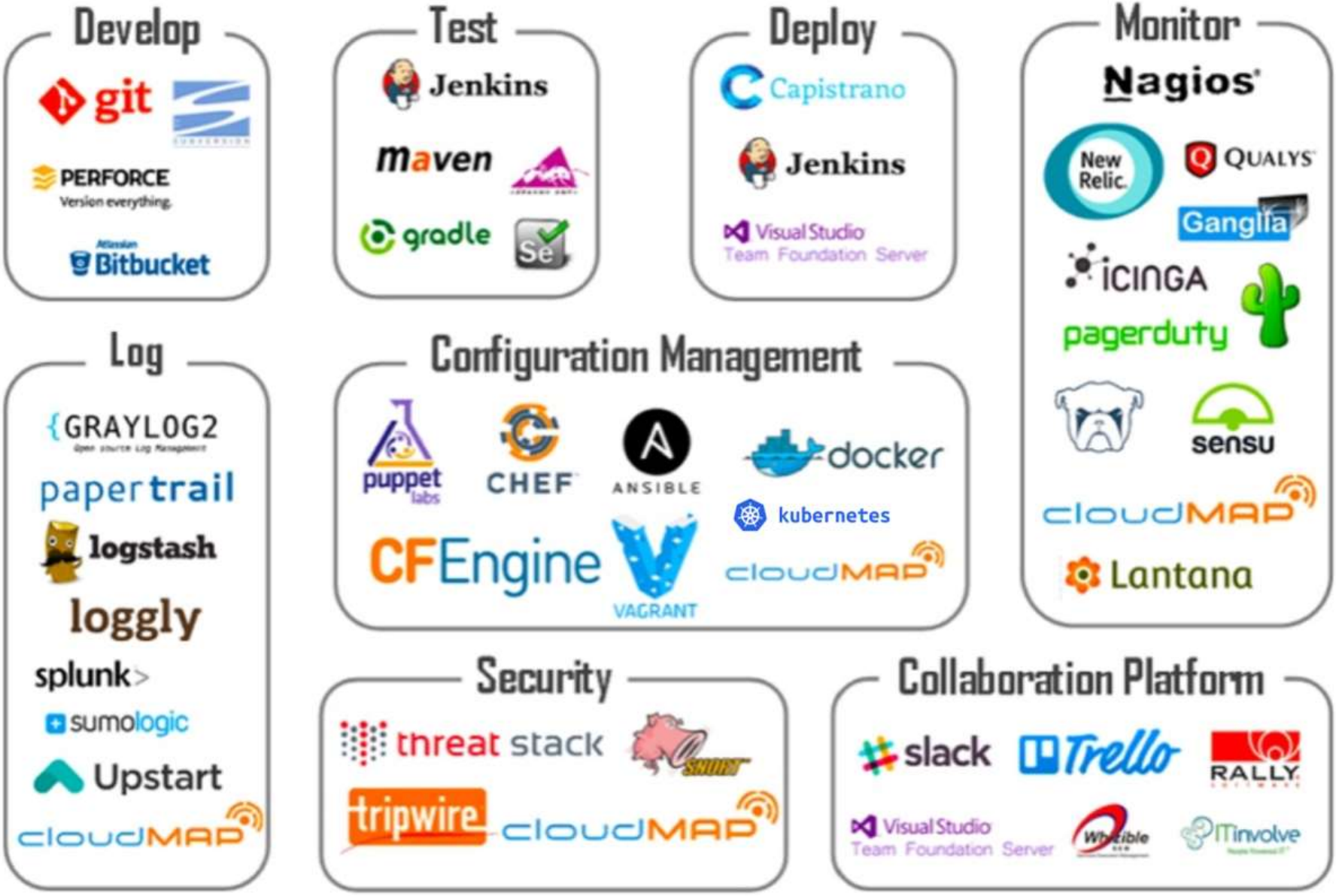
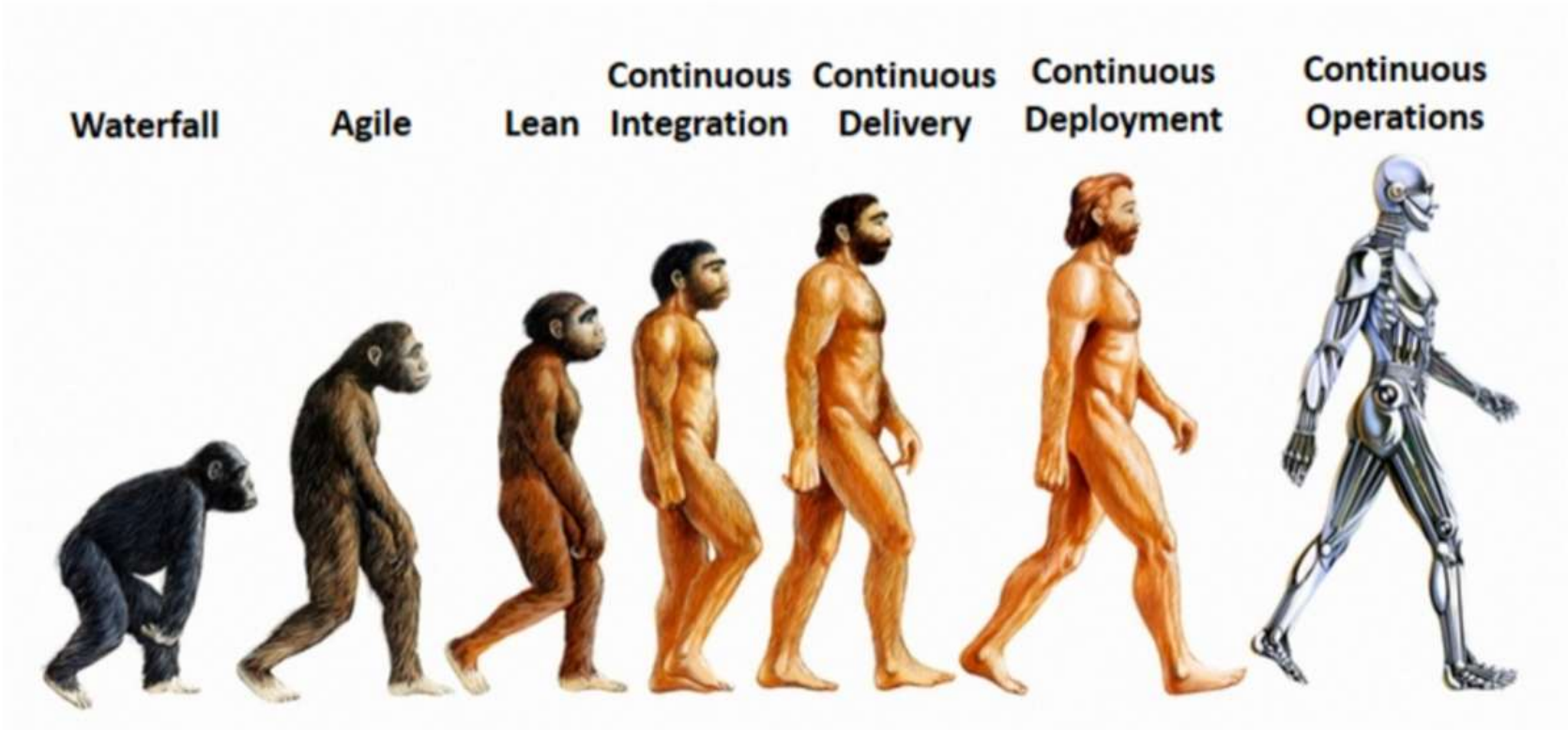
# DevOps Practices

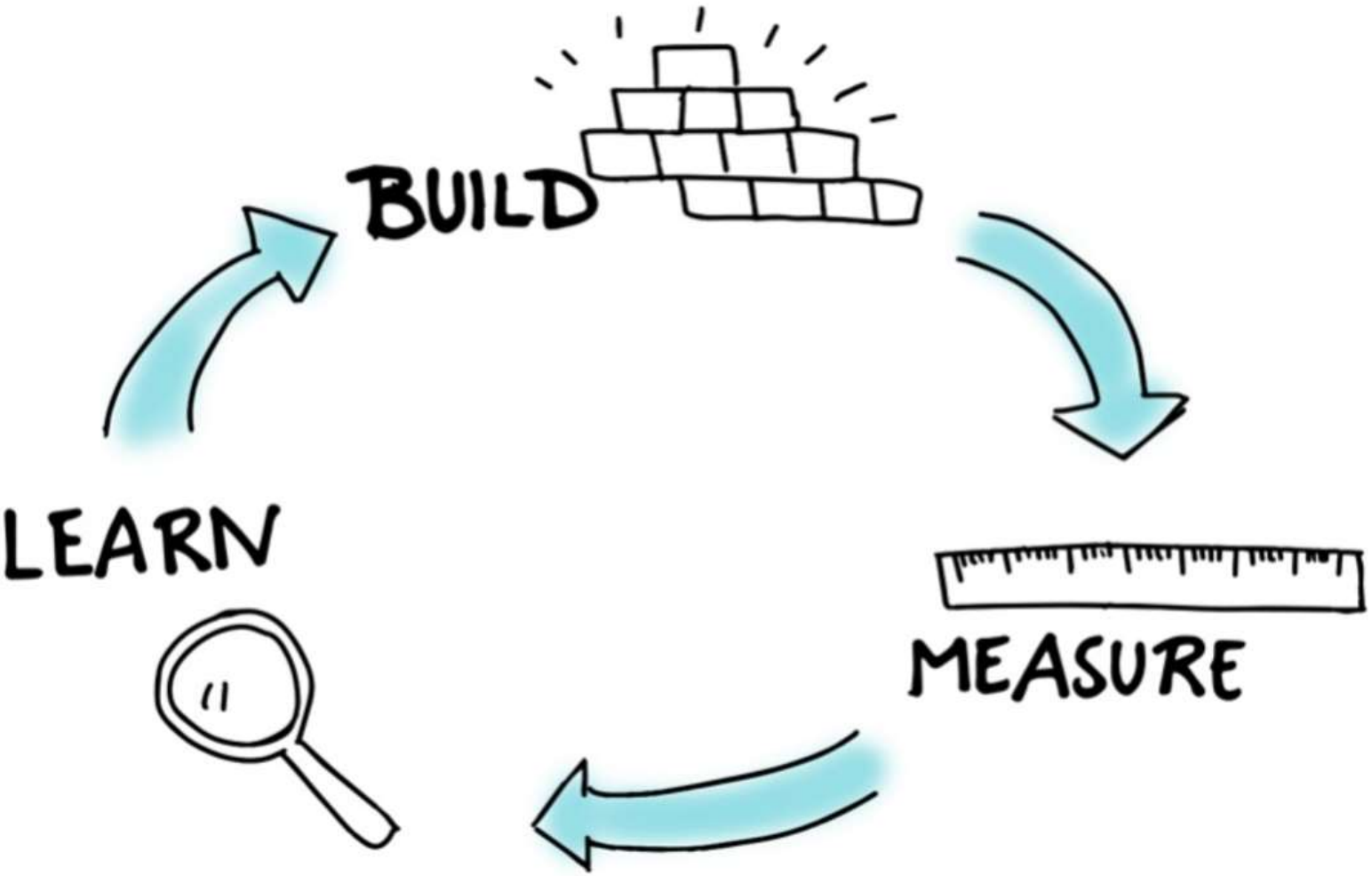


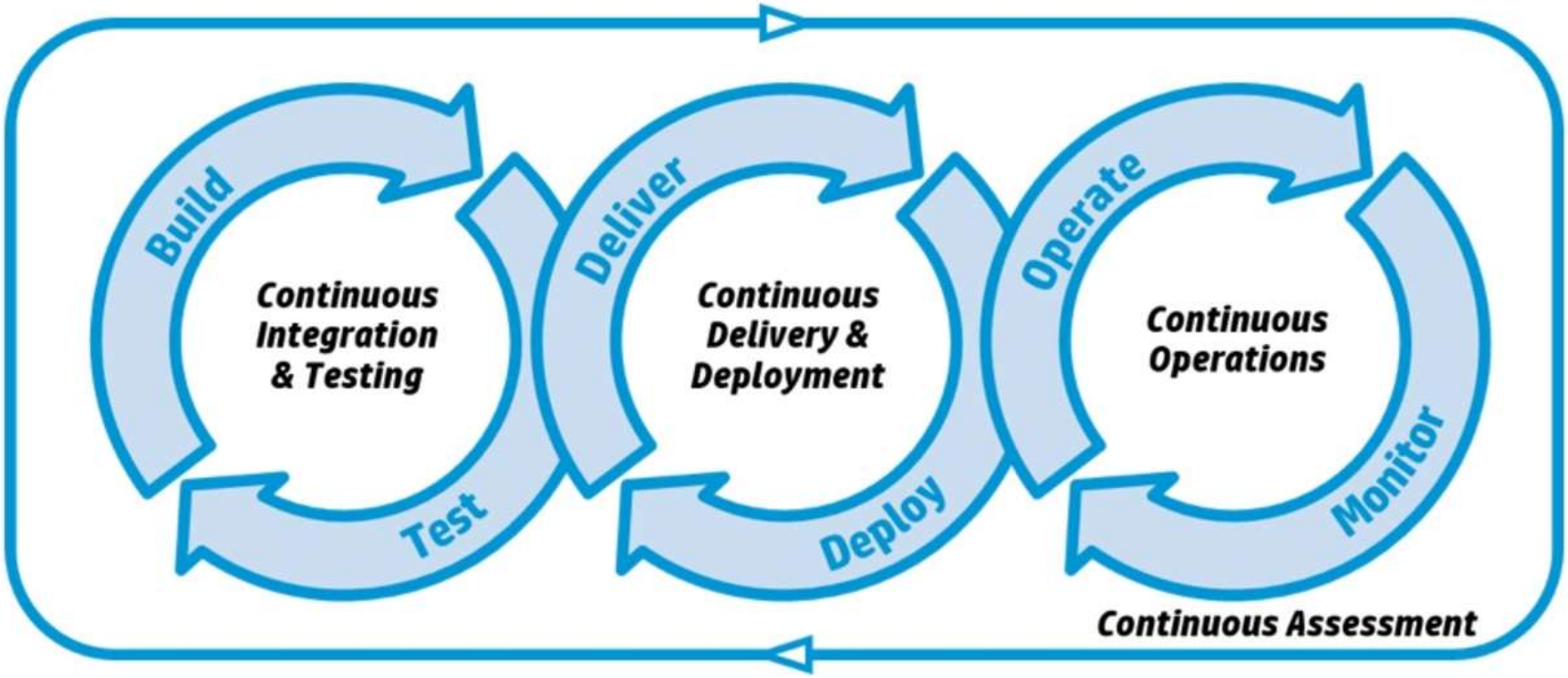
# DevOps Toolchain

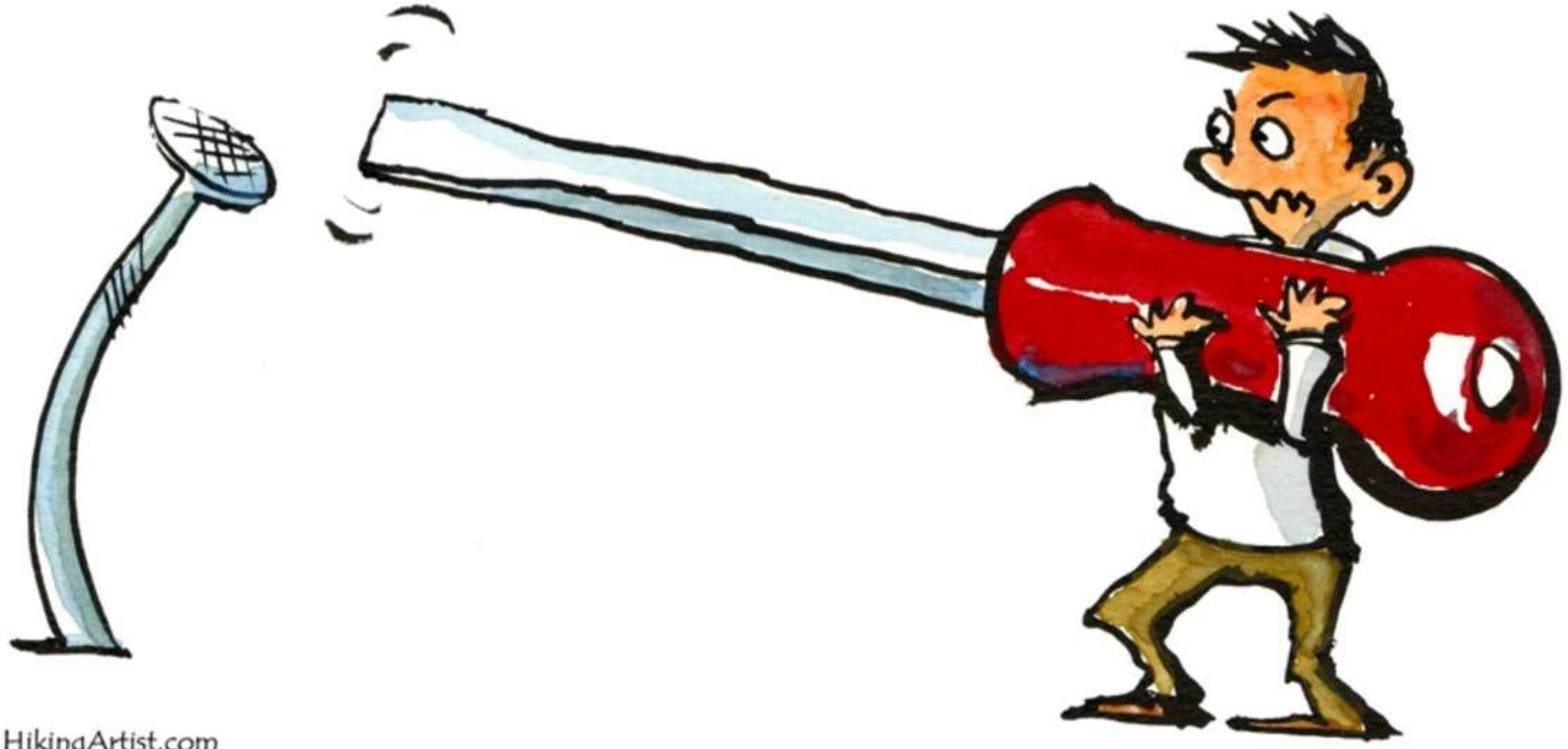



Develop
git
PERFORCE
Version everything.
Atlassian
Bitbucket
Test
Jenkins
maven
gradle
Se
Deploy
Capistrano
Jenkins
Visual Studio
Team Foundation Server
Monitor
Nagios
New Relic.
QUALYS
Ganglia
ICINGA
pagerduty
sensu
cloudMAP
Lantana
Log
{GRAYLOG2
papertrail
logstash
loggly
splunk>
sumologic
Upstart
cloudMAP
Configuration Management
puppet labs
CHEF
ANSIBLE
docker
kubernetes
CFEngine
VAGRANT
cloudMAP
Security
threat stack
SHODAN
tripwire
cloudMAP
Collaboration Platform
slack
Trello
RALLY
Visual Studio
Team Foundation Server
Whatible
ITinvolve

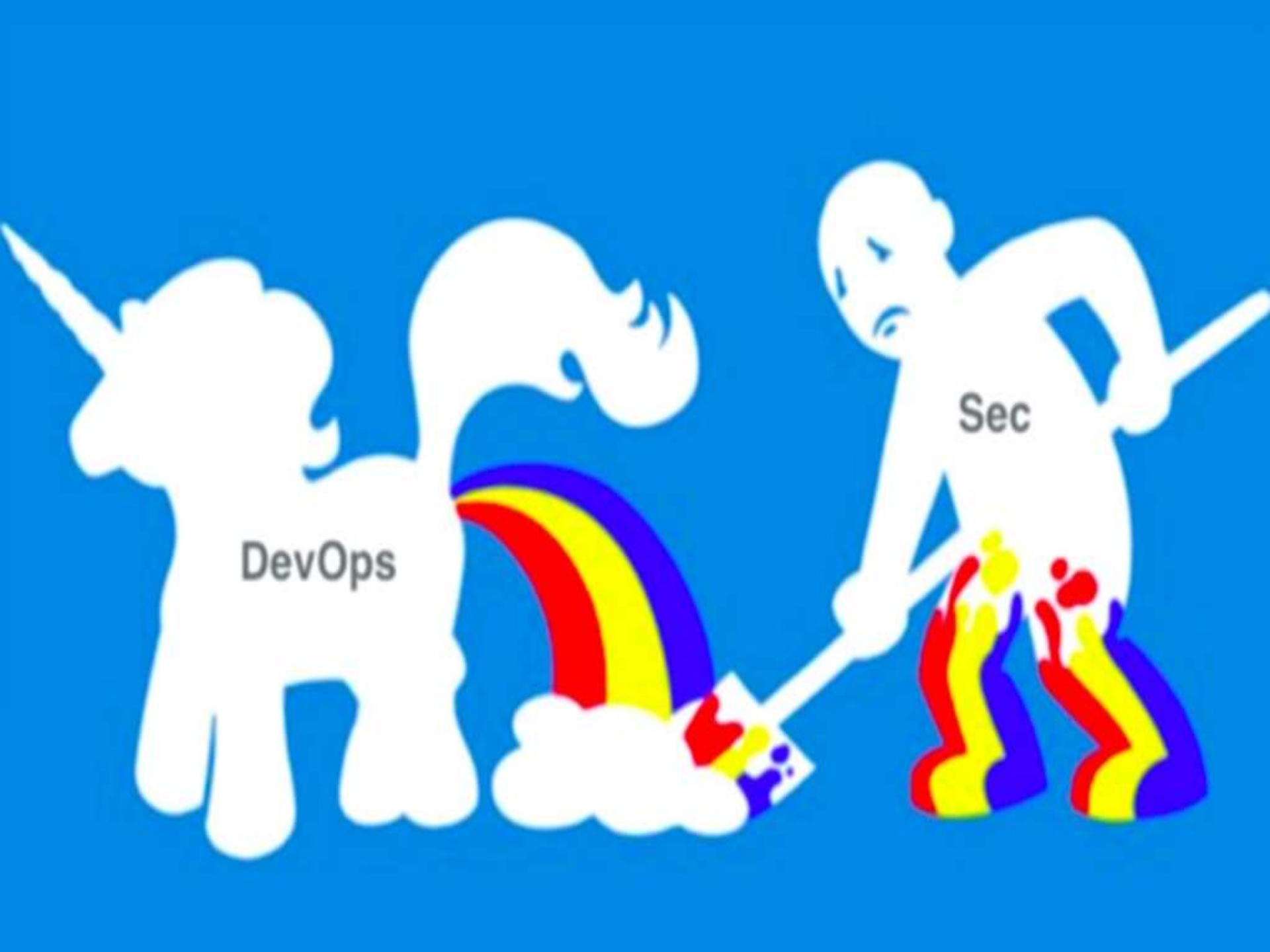

Waterfall
Agile
Lean
Continuous Integration
Continuous Delivery
Continuous Deployment
Continuous Operations


BUILD
MEASURE
LEARN


Build
Test
Continuous Integration & Testing
Deliver
Deploy
Continuous Delivery & Deployment
Operate
Monitor
Continuous Operations
Continuous Assessment

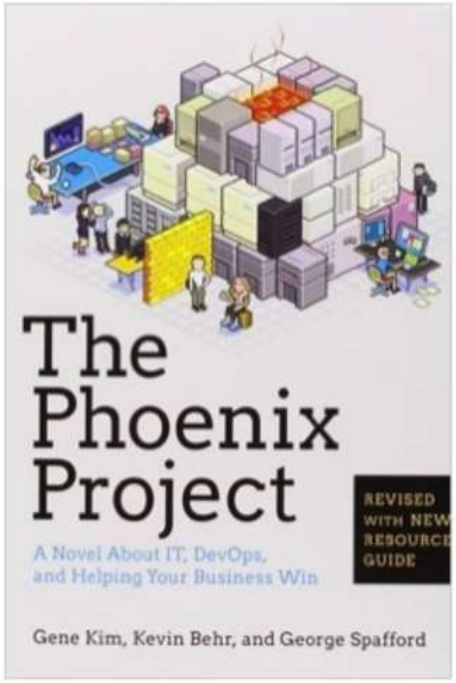


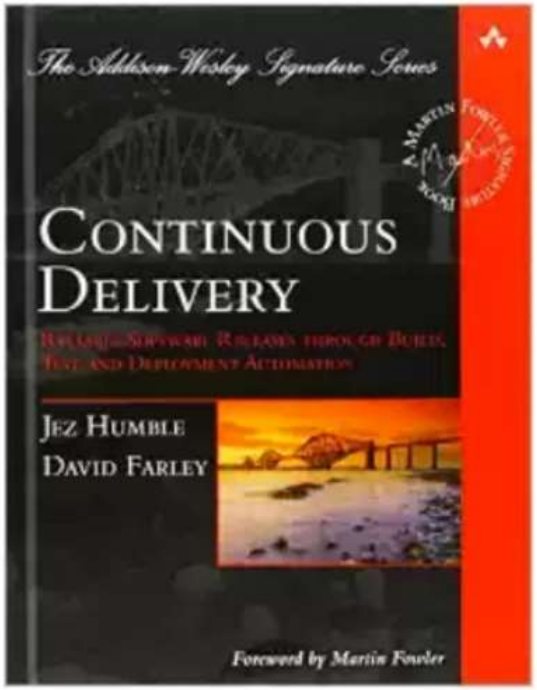
HikingArtist.com

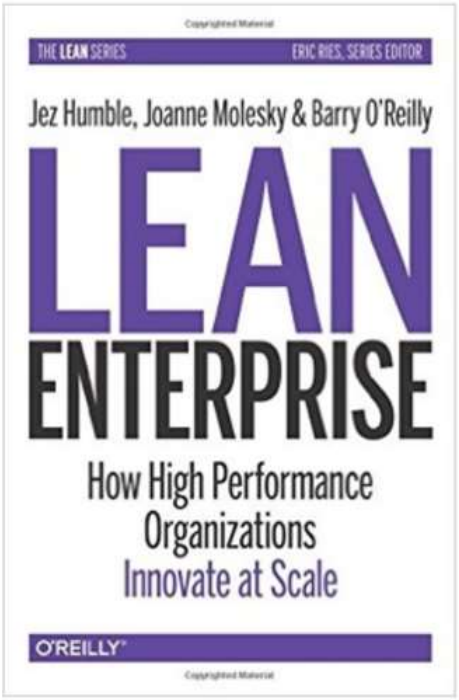

DevOps
Sec

# Questions?


It's not my problem, the hole is in their side of the boat!
SPLOOSH!
DOOMED COMPANY
@rahuldighe


The Phoenix Project
REVISED WITH NEW RESOURCE GUIDE
A Novel About IT, DevOps, and Helping Your Business Win
Gene Kim, Kevin Behr, and George Spafford


The Addison-Wesley Signature Series
CONTINUOUS DELIVERY
JEZ HUMBLE
DAVID FARLEY
Foreword by Martin Fowler


THE LEAN SERIES
ERIC RIES, SERIES EDITOR
Jez Humble, Joanne Molesky & Barry O'Reilly
LEAN ENTERPRISE
How High Performance Organizations Innovate at Scale
O'REILLY

# References


- Gene Kim's Visible Ops
- Tom Limoncelli's The Practice Of Cloud System Administration
- Gene Kim's The Phoenix Project (modeled on Goldratt's The Goal)
- Jez Humble's Continuous Delivery
- Michael Nygard's Release It!
- Gene Kim's The DevOps Cookbook (coming soon-ish)
- Various Mary and Tom Poppendieck Lean Software Development Books
- Velocity Conference (velocityconf.com)
- DevOpsDays Unconferences – There's one near you! (devopsdays.org)
- DevOps Weekly newsletter (devopsweekly.com)
- DevOps Café Podcast (devopscafe.com)
- The Twelve Factor App (12factor.net)
- The Agile Admin (theagileadmin.com)
- Somkiat Pulsungnoen DevOps 101