DevOps, A Developer's Point Of View

Jim Shingler
Jason Blackhurst

JIM SHINGLER

Office of Development Transformation

Searching for more Humane ways of Delivering Value

- Lean
- Agile
- DevOps

James.Shingler@CardinalHealth.com

@JShingler

Tweets 60 | Following 82 | Followers 52 | Likes 74 | Lists 0 | Moments 0

Jason Blackhurst

@alsoKnownAsSlim

A husband of one, father of two, fairly technical.

Columbus, OH

jasonblackhurst.com

Joined May 2016

Photos and videos

Q&A TIME

WHY DEVOPS?

TRADITIONAL SOFTWARE LIFECYCLE DEPLOYMENT:

DEV / APPLICATION OUTCOMES

- 28% improvement in developer productivity
- 30% reduction in overall development costs
- 48% increase in application quality

Source: 2017 State of DevOps Report

OPERATIONS OUTCOMES

- **Deploy 46X more frequently** -- meaning they deploy multiples times per day instead of once a week or less.
- **Deploy 440X faster** -- meaning they have lead times of less than an hour instead of more than a week.
- **Recover from downtime 96X faster** -- meaning they recover in less than an hour instead of days.
- **5X lower change failure rate** -- meaning changes to production fail 7.5% of the time instead of 38.5%.

Source: 2017 State of DevOps Report

2X MORE LIKELY TO ACHIEVE / EXCEED OUTCOMES

- Quantity of products or services.
- Operating efficiency.
- Customer satisfaction.
- Quality of products or services provided.
- Achieving organizational and mission goals.

Source: 2017 State of DevOps Report

WHAT IS DEVOPS?

DEFINE DEVOPS

- **Wikipedia:**
  DevOps (a clipped compound of "software DEVelopment" and "information technology OPerationS") is a term used to refer to a set of practices that emphasize the collaboration and communication of both software developers and information technology (IT) professionals while automating the process of software delivery and infrastructure changes.[1][2] It aims at establishing a culture and environment, where building, testing, and releasing software can happen rapidly, frequently, and more reliably.[3][4][5]

- **Amazon:**
  DevOps is the combination of cultural philosophies, practices, and tools that increases an organization’s ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. This speed enables organizations to better serve their customers and compete more effectively in the market.

TL;DR

YOUR TURN.

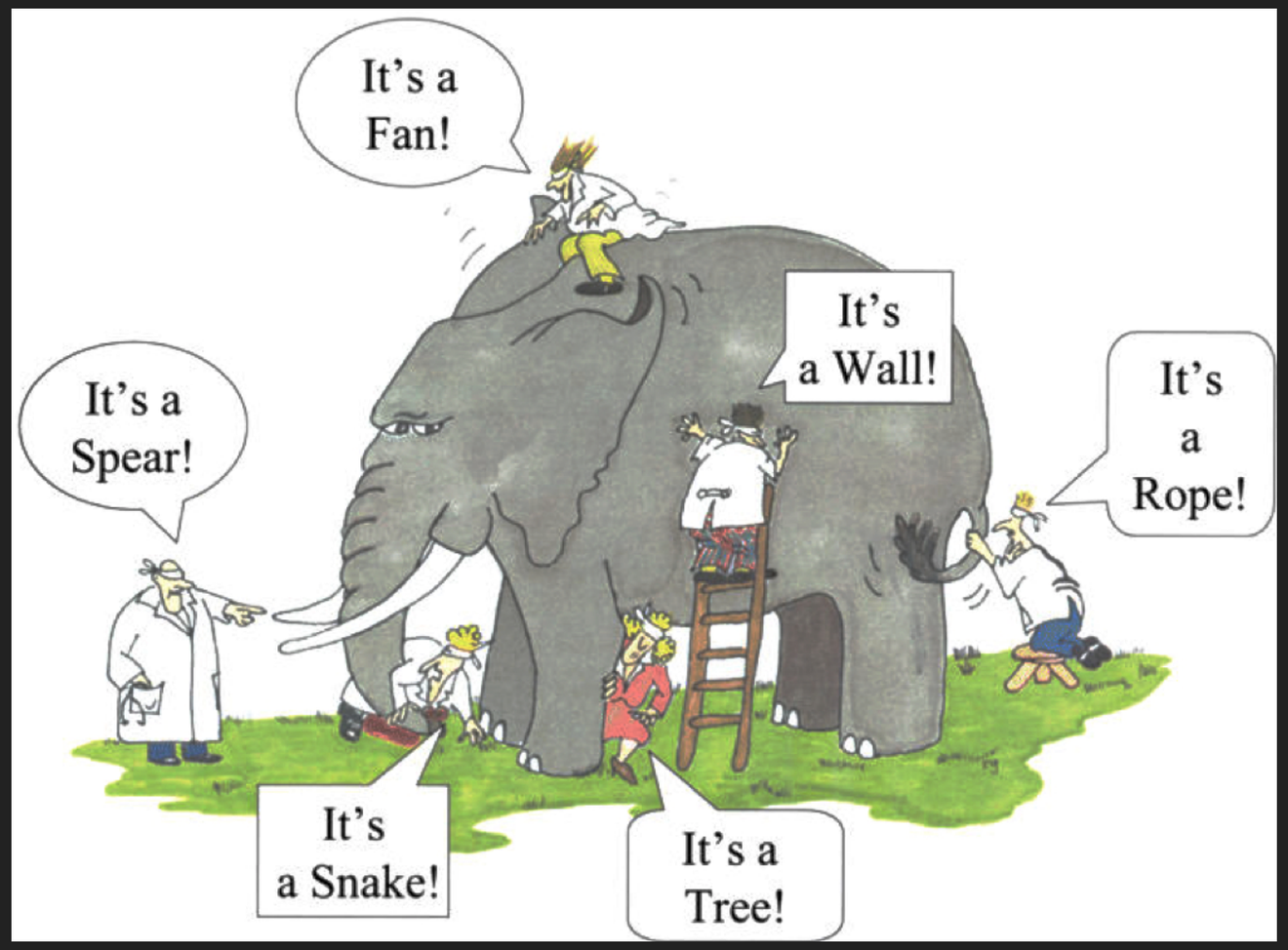
THE PROCESS REQUIRED TO CONVERT A BUSINESS HYPOTHESIS INTO A TECHNOLOGY ENABLED SERVICE THAT DELIVERS VALUE TO THE CUSTOMER

Jim

DEVOPS IS DEVELOPMENT WHERE OPERATIONS IS THE PROBLEM DOMAIN.

Rob Kinyon

NO ONE UNIVERSAL ANSWER



ONE SIZE DOES NOT FIT ALL

THAT'S TOO MUCH

PIPELINES

HOW DO THEY WORK?

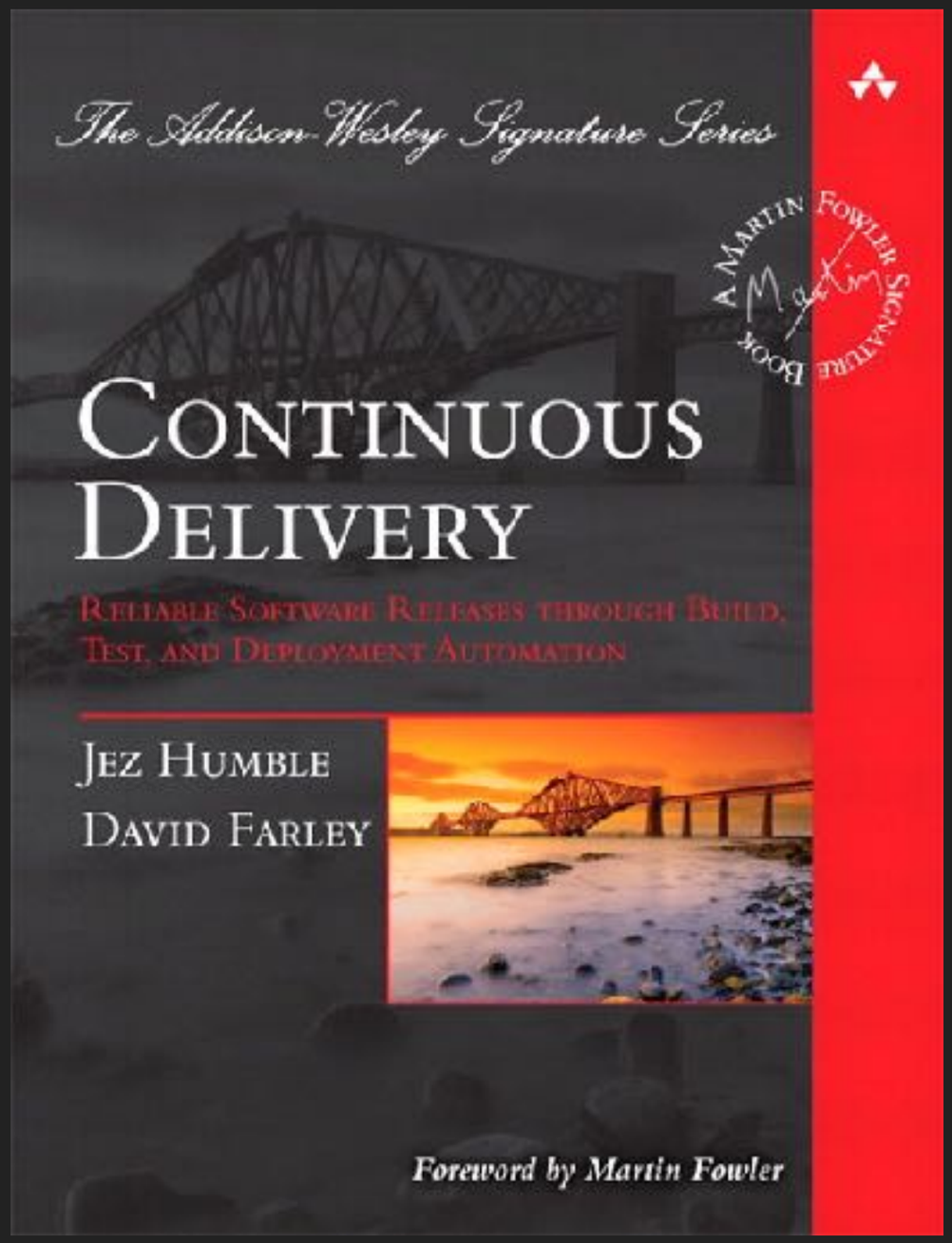
SOURCE CONTROL

ALL THE THINGS GO IN

SCM TO PROD

MAKES YOUR PIPE

CONTINUOUS DELIVERY FTW

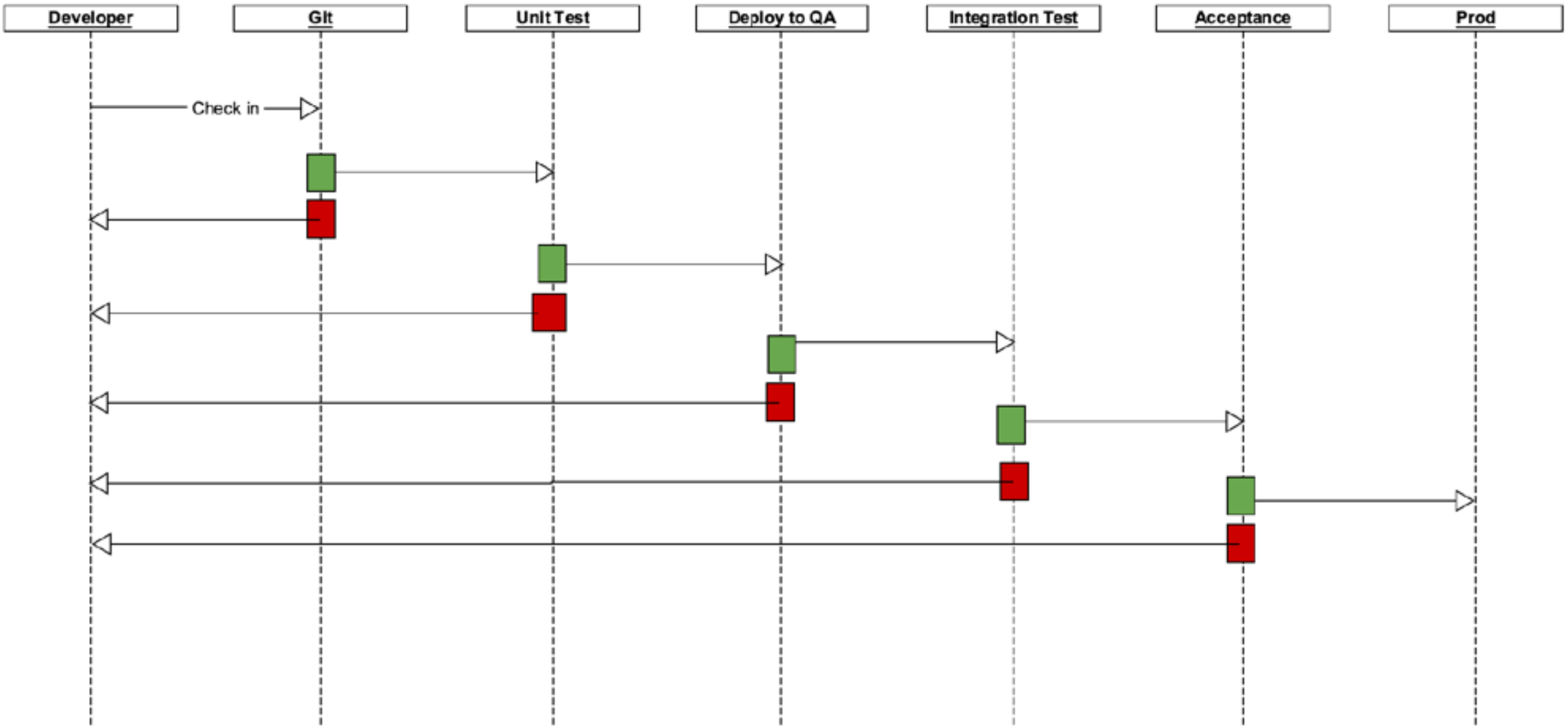


BREAK DOWN

YOUR PIPELINE

MAP IT

VALUE STREAM


Developer
Git
Unit Test
Deploy to QA
Integration Test
Acceptance
Prod
Check in

FIND THE WAIT FIND THE WORK

APPLY A FIX

OPTIONS FOR CULTURE AND PROCESS

- Wholesale Culture
- TDD
- < Continuous Integration
- Automate the Pipe
- Testability / Deployability
- False Failures
- Angry Operations
- Break the Monolith
- **Adhoc**

WHOLESALE CULTURE CHANGE

Traditional Culture

SYSTEMS THINKING

AMPLIFY FEEDBACK LOOPS
TESTING AND LEARNING

Devops Culture

THE FIX FOR WHOLESALE CULTURE

- Create the value and the Culture one little step at a time
  - Systems Thinking
  - Amplify Feedback Loops
  - Culture of Continual Experimentation and Learning

TDD / ATDD

User Story

TEST DRIVEN DEVELOPMENT

ACCEPTANCE TEST DRIVEN DEVELOPMENT

Tested Code

THE FIX

- Do TDD and ATDD

< CONTINUOUS INTEGRATION

Code Changes

FEATURE BRANCHES.

WAIT . . . MERGE.

CODE FREEZE !!

PROFIT!!!

THE FIX

- Ramp up the continuous!!

CONTINUOUS INTEGRATION ON $1 A DAY

CONTINUOUS INTEGRATION ON $1 A DAY

$1

CAVEAT!

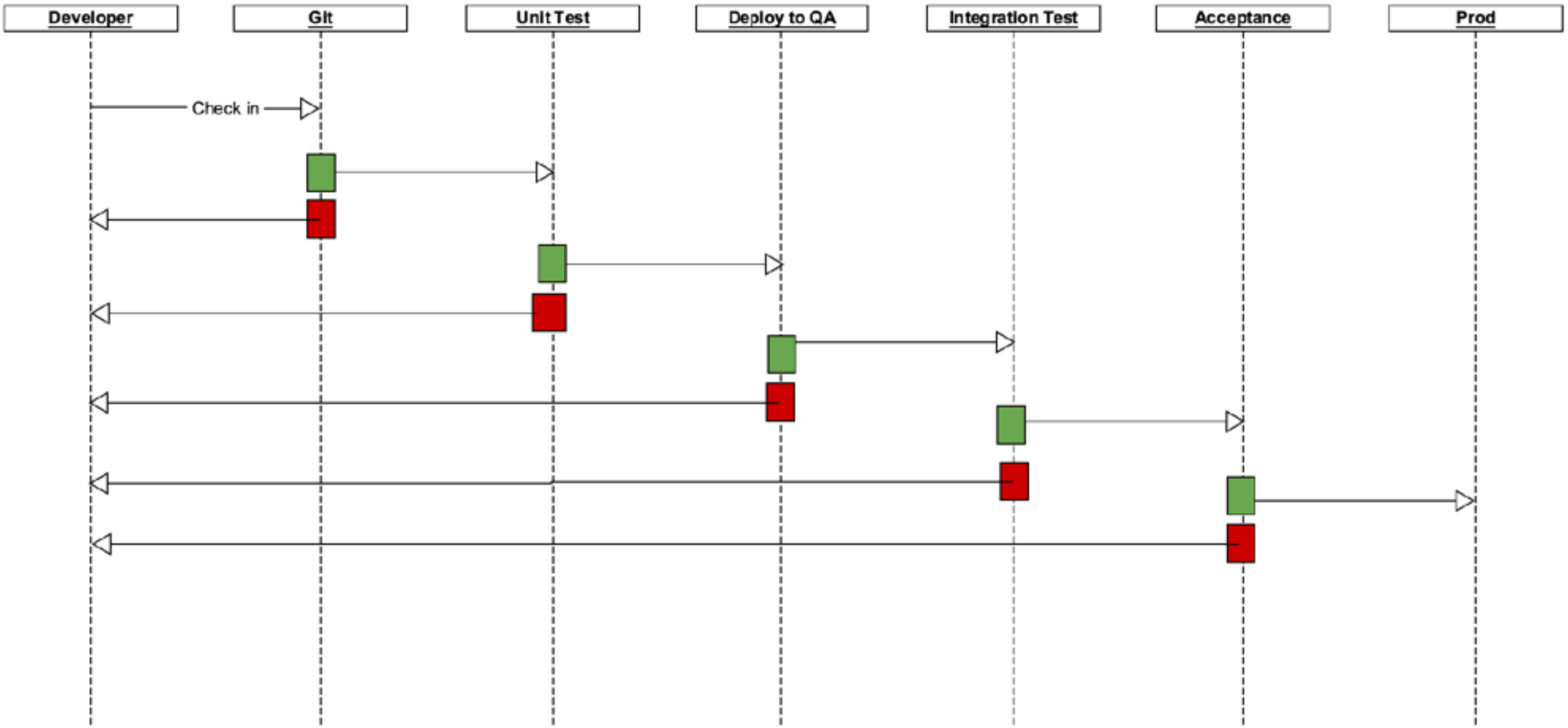
BUY IN!

THE PIPELINE

Integrated Code Changes

CODE DEPLOYMENT
TEST EXECUTION
AUTOMATE THE THINGS

Usable Software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THE FIX

- Make it faster with the magic of automation!

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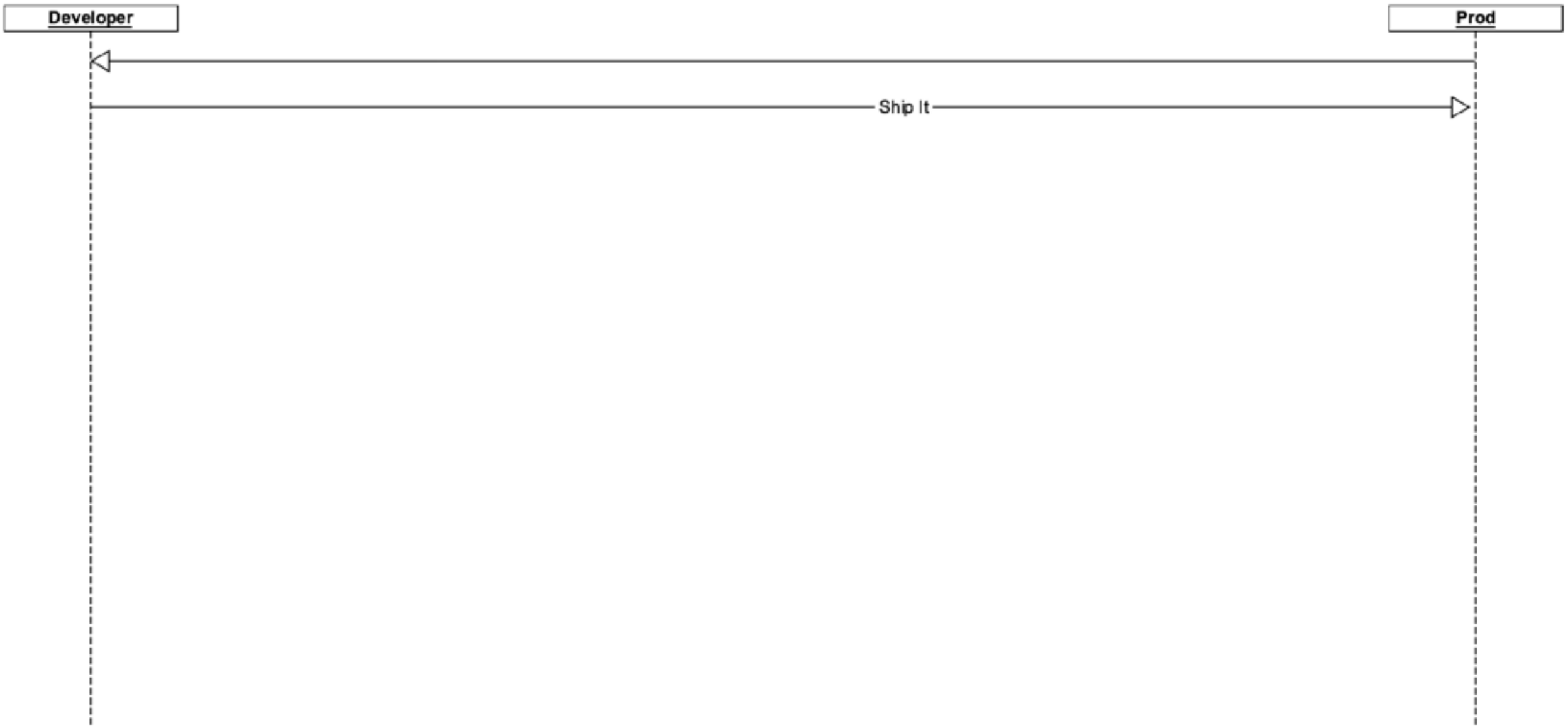
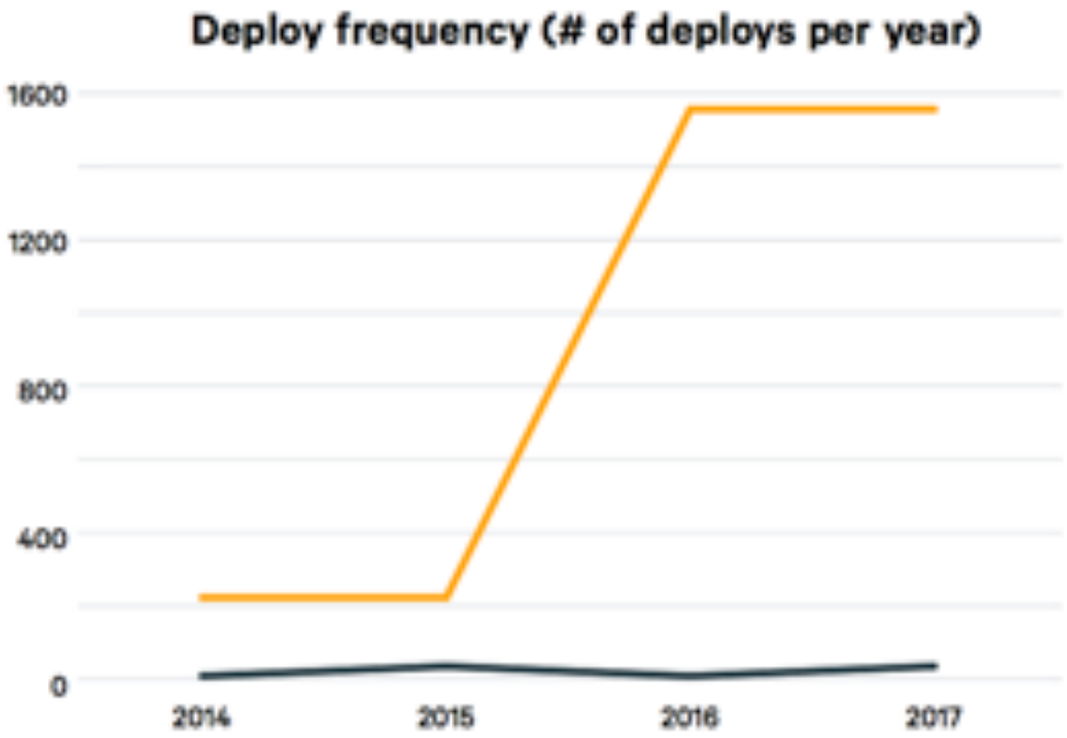
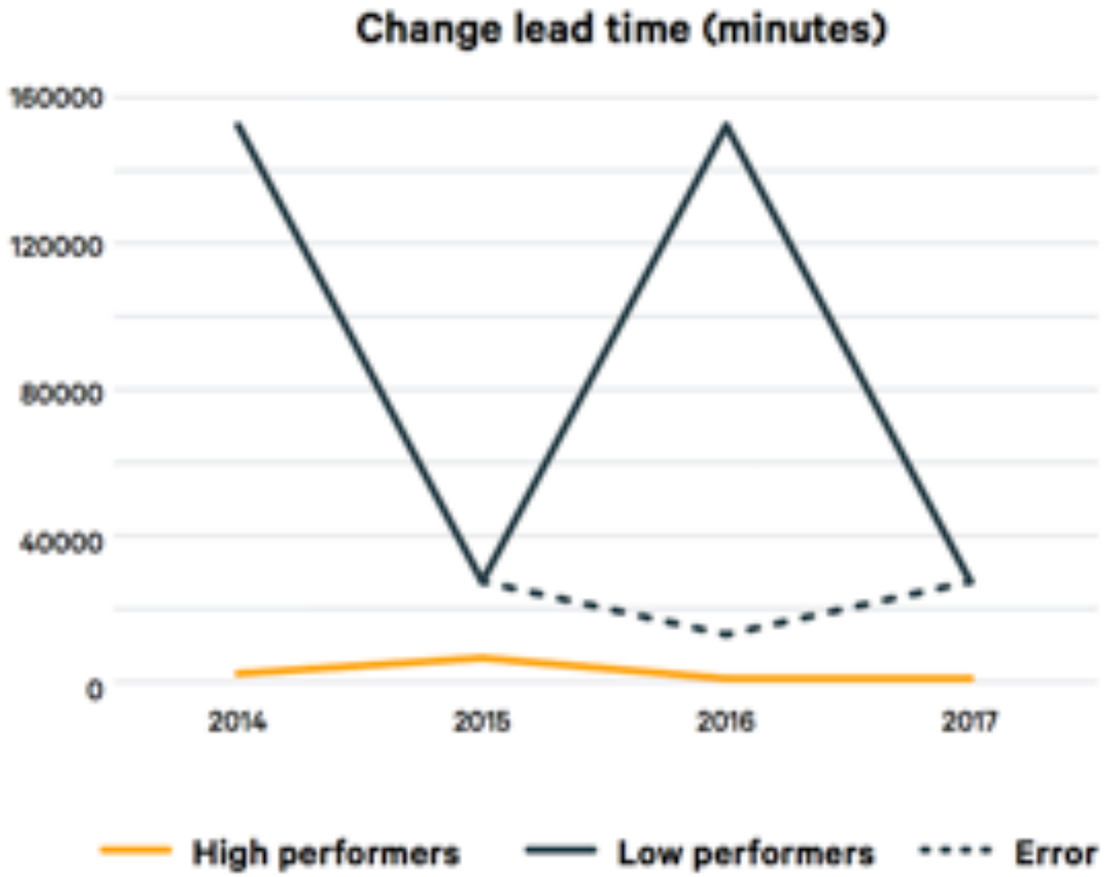
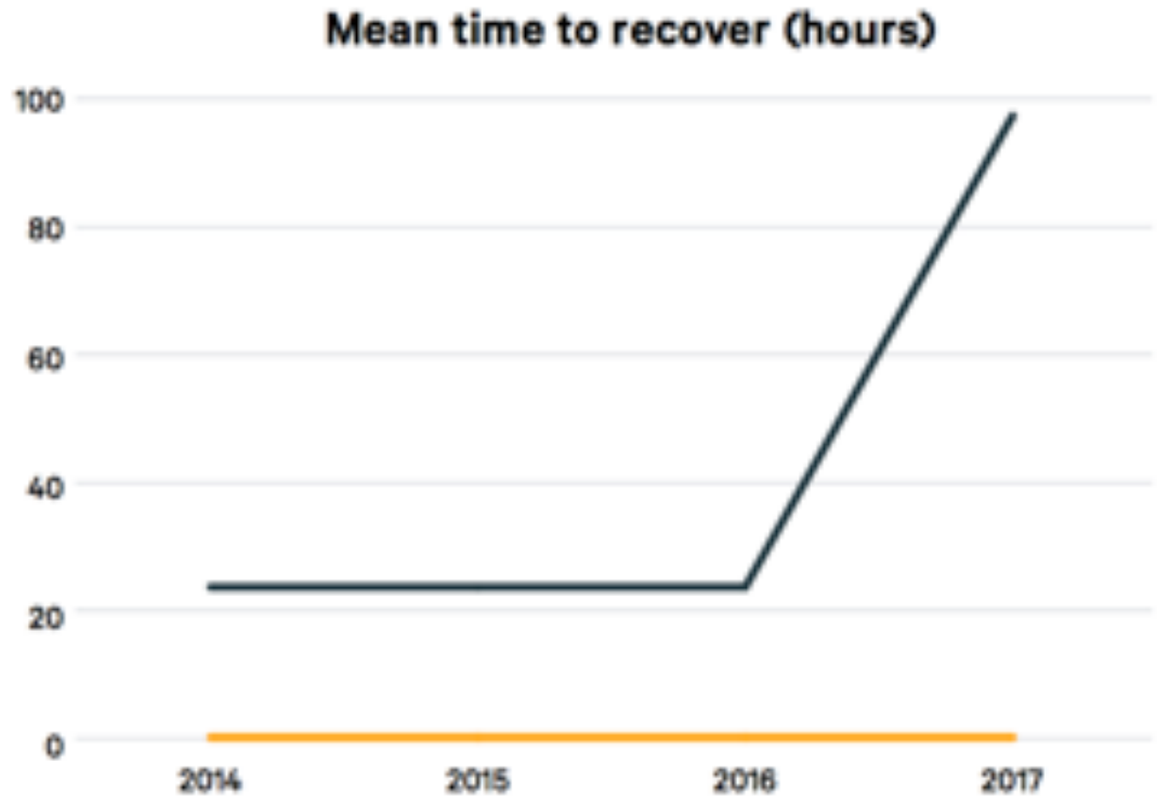
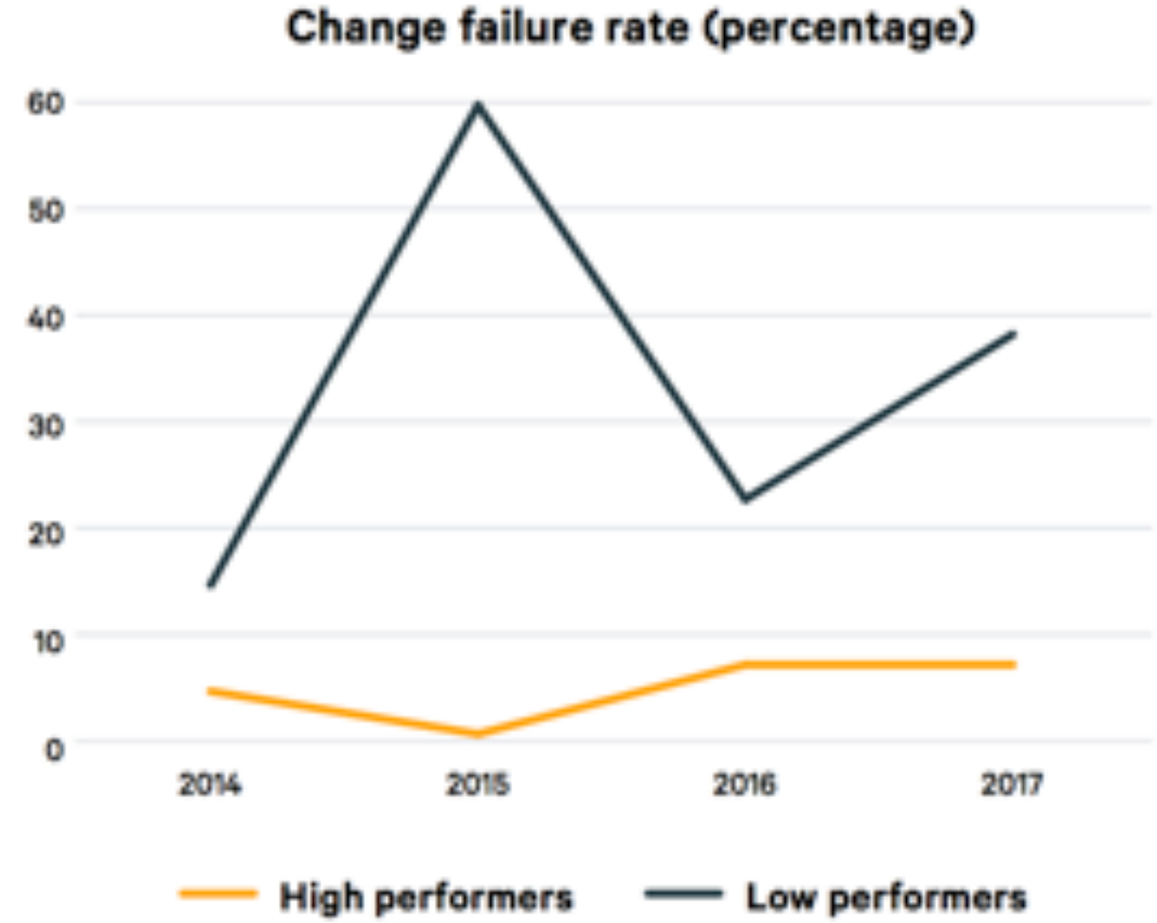






* *Note: Last year, our graph incorrectly reported the lead time for low performers, as shown by the dotted line.*





THE SHADOW PIPELINE

Integrated Code Changes

PRIVATE CODE DEPLOYMENT

PRIVATE TEST EXECUTION

SHHHHHHH

Usable Software

TESTABILITY / DEPLOYABILITY

User Stories

A FOCUS ON HOW TO TEST IT AND A FOCUS ON HOW TO DEPLOY IT

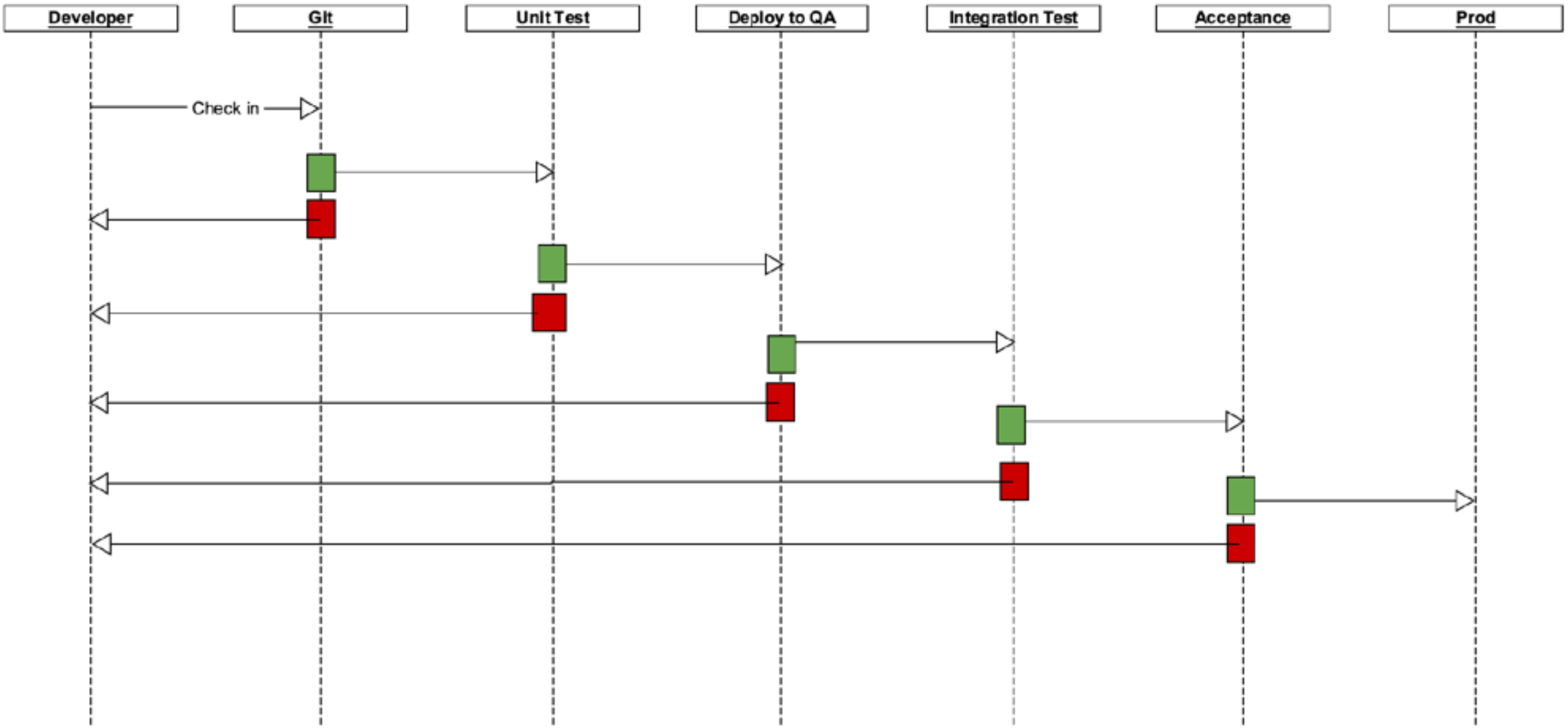
Testable and Deployable Software

LATE AUTOMATED FEEDBACK

Code into the pipeline

DAYS OR WEEKS OF DEPLOYMENTS AND TESTS

Errors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Back

CAVEAT!

FIX SOMETHING!

ANGRY OPERATIONS

Questions and JIRA Tickets

COMMAND LINE WIZARDRY.
CAFFEINE CONSUMPTION.
RAPIDLY MOVING ELECTRONS.

Growls, stares, and Functional Servers

THE FIX

- Donuts and Coffee
- Product Teams

DECOMPOSE THE MONOLITH

Monolith

CHISEL, JACKHAMMER, STRANGLER VINE

Monolish

ADHOC UNIT

Input

WORK

Output

THE FIX

- Break it down

DevOps Resources

Lean – Theory of Constraints

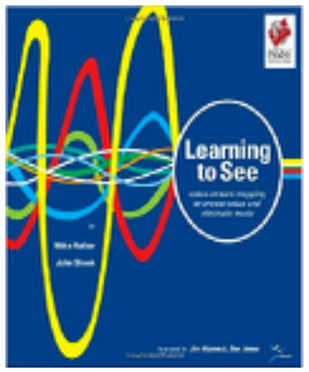
The Goal (Great on Audio)

https://www.audible.com/pd/Business/The-Goal-Audiobook/B00IFG88SM/ref=a_search_c4_1_1_srTtl?qid=1502114205&sr=1-1

The Phoenix Project

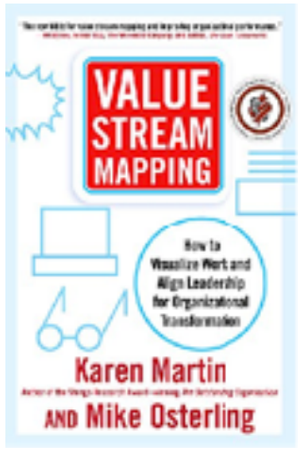
https://www.amazon.com/Phoenix-Project-DevOps-Helping-Business/dp/B00VA
ref=sr_1_1?s=books&ie=UTF8&qid=1502114281&sr=1-1&keywords=the+phoenix+

Value Stream Mapping



Learning to See

https://www.amazon.com/Learning-See-Stream-Mapping-Eliminate/dp/09
ref=sr_1_fkmr1_2?ie=UTF8&qid=1501873464&sr=8-2-
fkmr1&keywords=%22learning+to+see+waste%22



Value Stream Mapping

https://www.amazon.com/Value-Stream-Mapping-Organizational-Transformati
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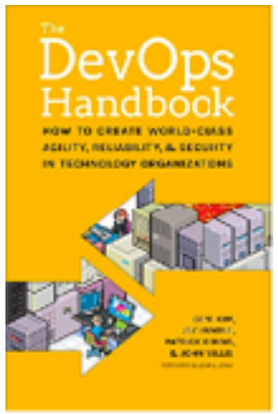
DevOps



The DevOps Handbook

https://www.amazon.com/DevOps-Handbook-World-Class-Reliability-Organ
dp/B01M9ASFQ3/ref=sr_1_1?
s=books&ie=UTF8&qid=1502114339&sr=1-1&keywords=DevOps+Handbook

Continuous Delivery

https://www.amazon.com/Continuous-Delivery-Deployment-Automation-A
ebook/dp/B003YMNVC0/ref=pd_sim_351_2?
_encoding=UTF8&psc=1&refRID=G2V0TW1QHA26QRJKZX9F

DevOps

Starting and Scaling DevOps in the Enterprise

https://www.amazon.com/Start-Scaling-Devops-Enterprise-Gruver-ebook/dp/
ref=sr_1_1?s=digital-text&ie=UTF8&qid=1502114449&sr=1-1&keywords=scaling-