

# Extreme Continuous Delivery

at Unruly

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<http://unruly.co/>

Marketing Technology

12-120 in under 2 years

3-30 tech team

# Talk Structure

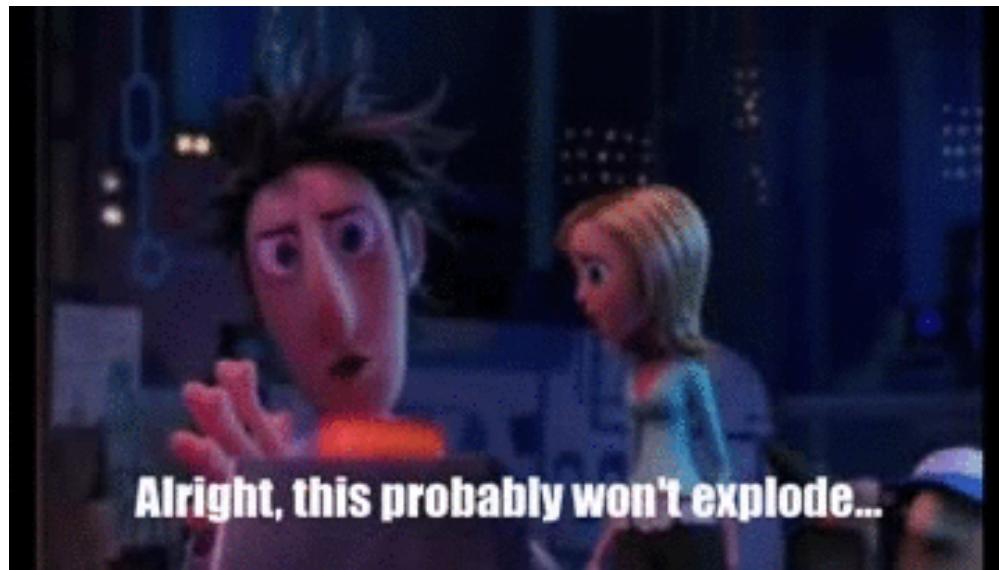
How we work

Why it works

Scaling Infrastructure

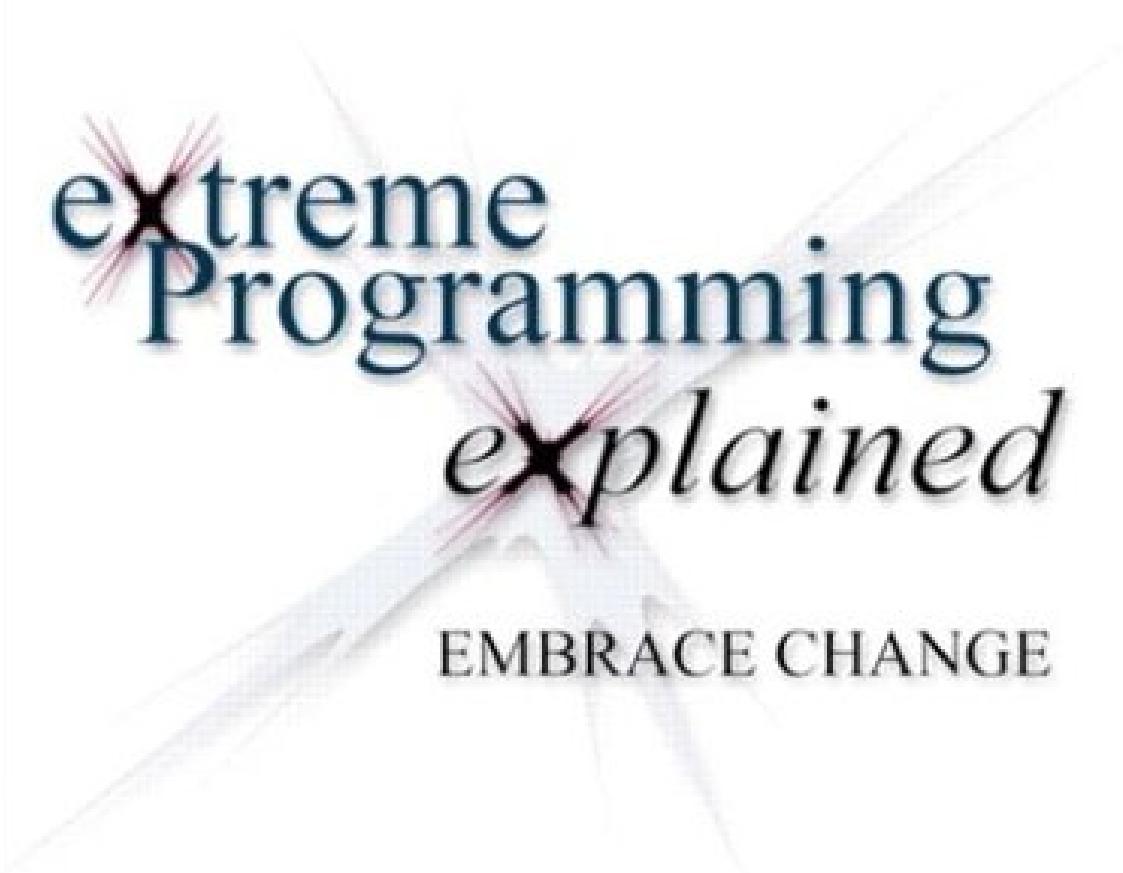
Scaling Development

## Careful & Considered Approach



**Alright, this probably won't explode...**

# How we work...



# extreme Programming *explained*

EMBRACE CHANGE

Kent Beck

# Feedback Loops

Pairing

TDD

Customer

Deploy

# Iterations & Release Planning

*"Plan releases once a quarter. Plan iterations more frequently"*

(XP Explained)

We do none of these things

# Goal

Deliver value as quickly as possible

Minimise time from conception to value

*The Addison-Wesley Signature Series*

# CONTINUOUS DELIVERY

RELIABLE SOFTWARE RELEASES THROUGH BUILD,  
TEST, AND DEPLOYMENT AUTOMATION

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JEZ HUMBLE  
DAVID FARLEY

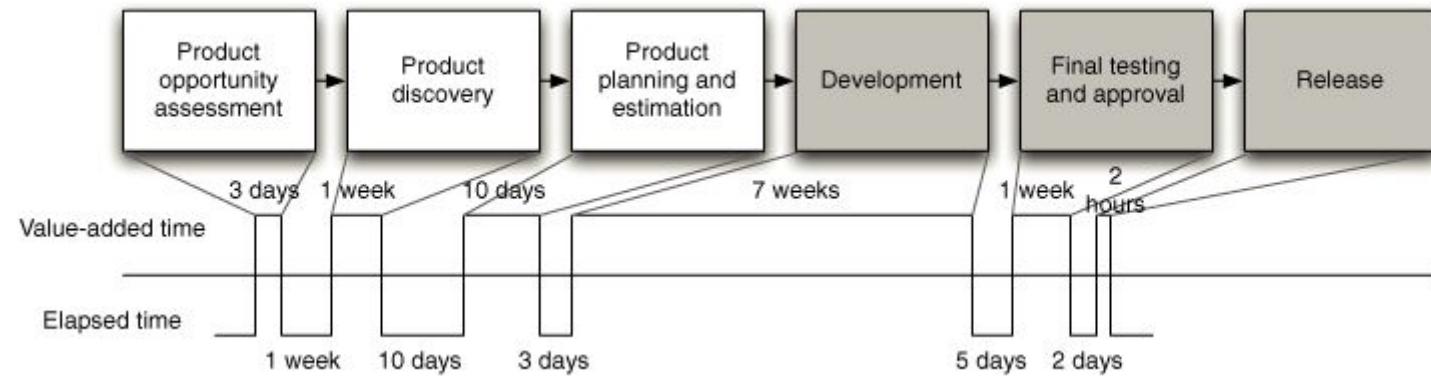


*Foreword by Martin Fowler*



A MARTIN FOWLER SIGNATURE  
Book  
Martin Fowler

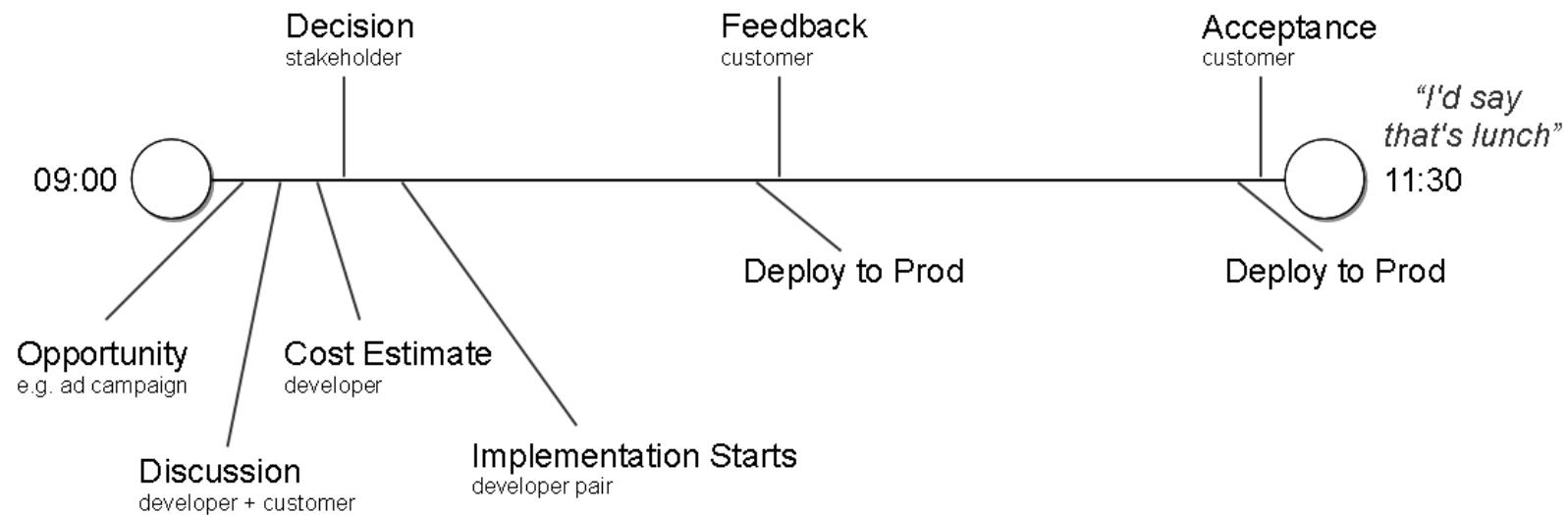
# Value Stream



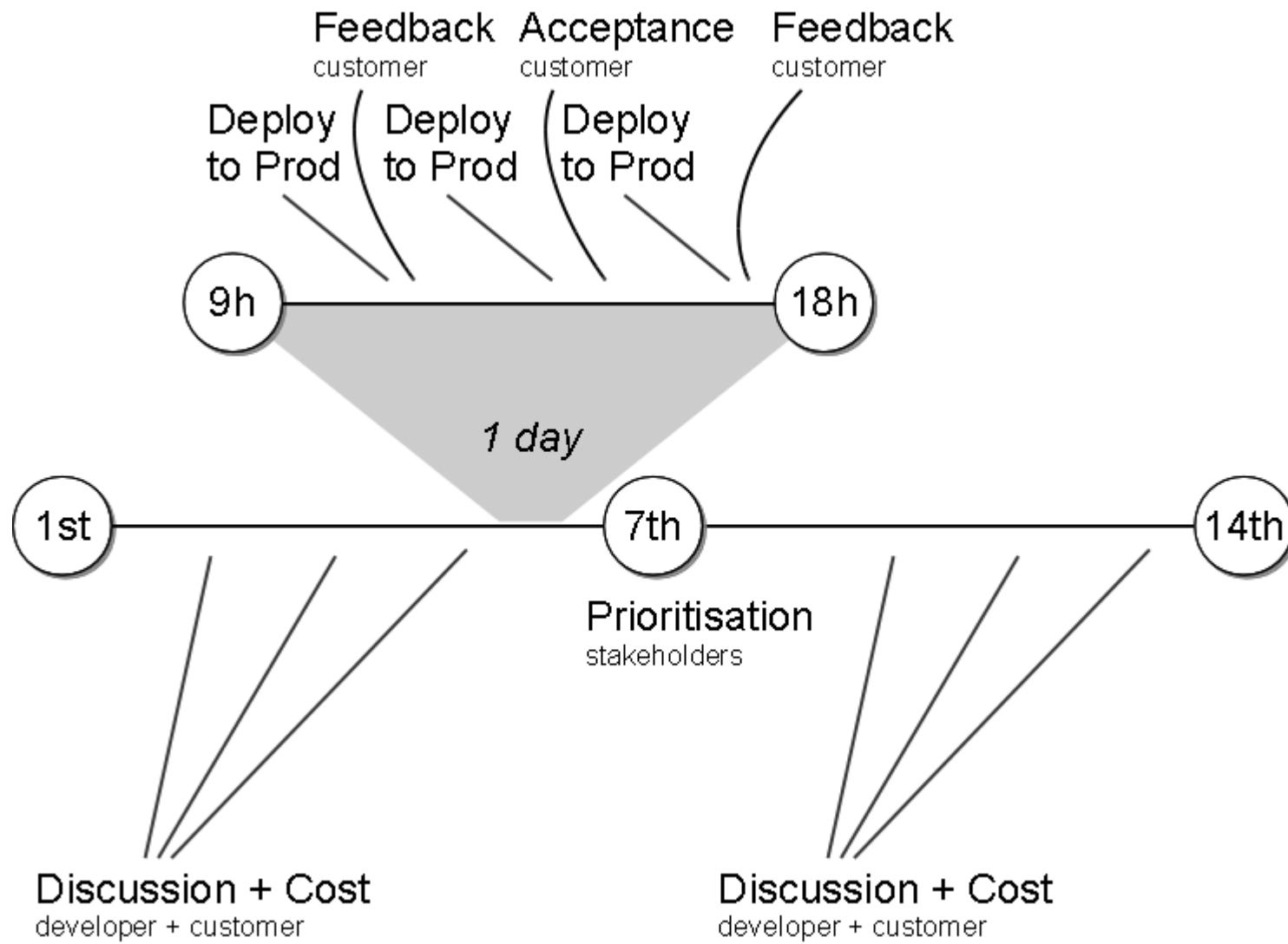
(Continuous

Delivery, Jez Humble & David Farley)

# Accelerated Value Stream



# Normal Value Stream



# Definition of Done

~~When tests pass~~

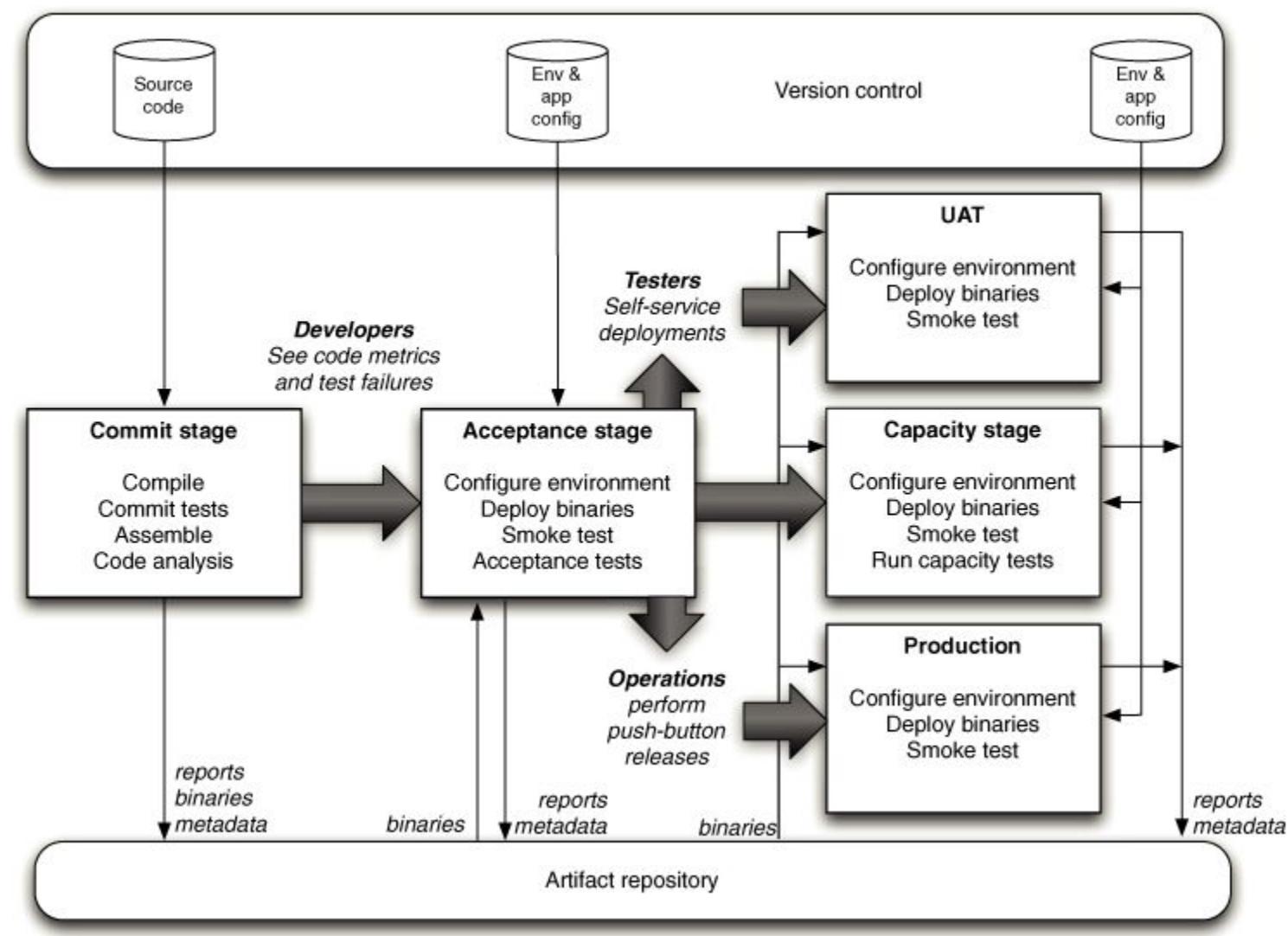
~~When integrated~~

~~When deployable build~~

~~When deployed~~

When measurably delivering value

# Deploy Pipeline



(Continuous

Delivery, Jez Humble & David Farley)

# Waterfall in a Tube



# Gate Metaphor



# Automate all the Things

Acceptance

Integration

Component/Unit

Performance

...

# Move Checks Post-Deploy

Live with broken

Monitoring

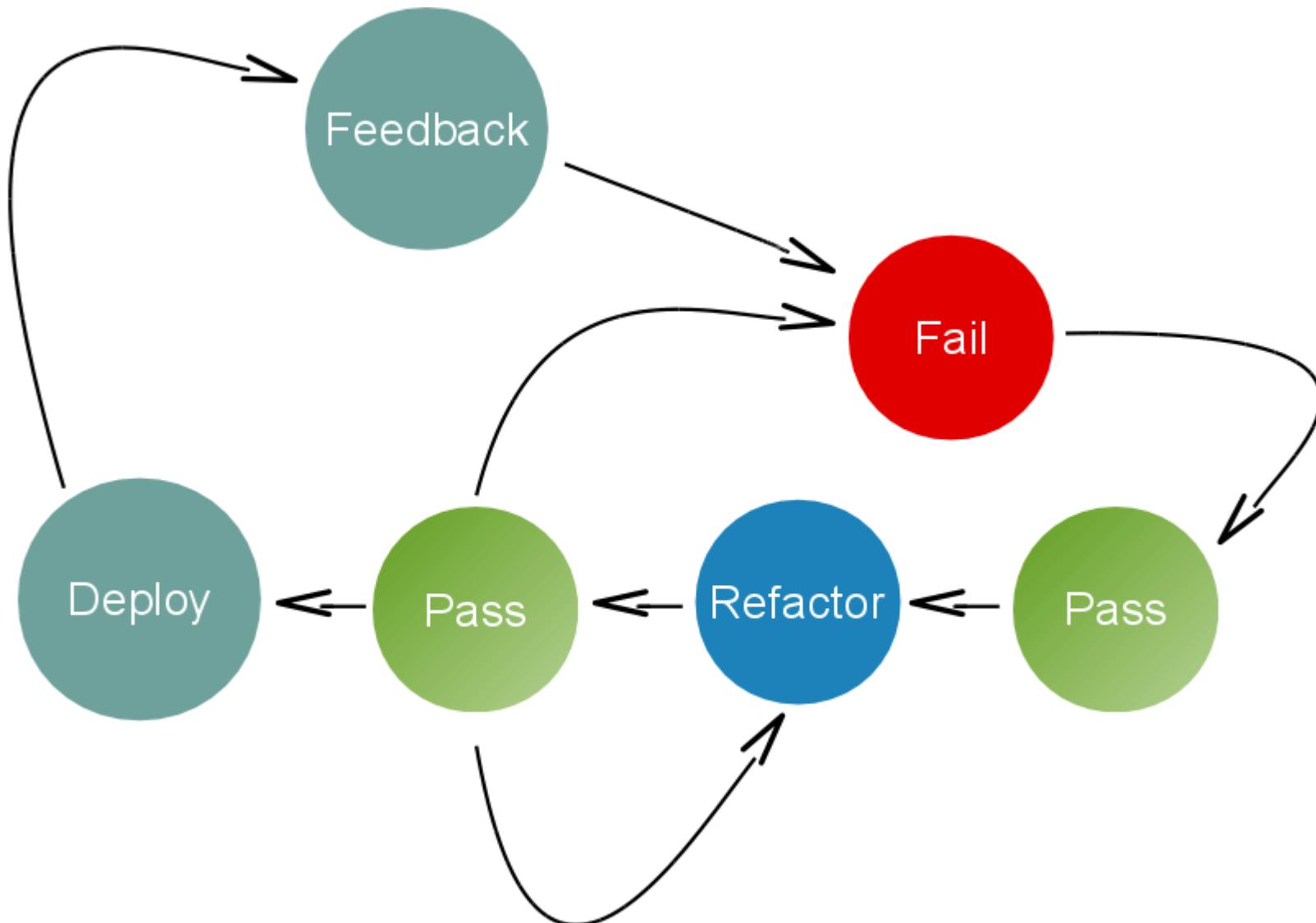
What's Broken & Why?

Fix rapidly

NagDD

Constantly running tests against production

# TDD-Deployment



# Synchronous

Deploy & Feedback

Inform next change

Motivation to keep deploy fast



## Who does CI?



# Continuous Isolation



# No CI Server

# No Branching

No long lived feature branches

No pushed branches

Real CI

Integrate with users and data

# Promotion

Business Dev decides when to deploy

Feature Toggles

# **UAT in Production**

Global Org

Production-like

Performance feedback early

Canary deploys

# **Accessible Customer**

Essential

Harder across multiple time-zones

# Continuous Delivery Deployment

Every build is capable of being deployed

Every push is deployed

Even after beer o'clock

Should I deploy on a  
Friday at 5pm?

YES

But I'm worried that...

Don't you trust  
your tests?

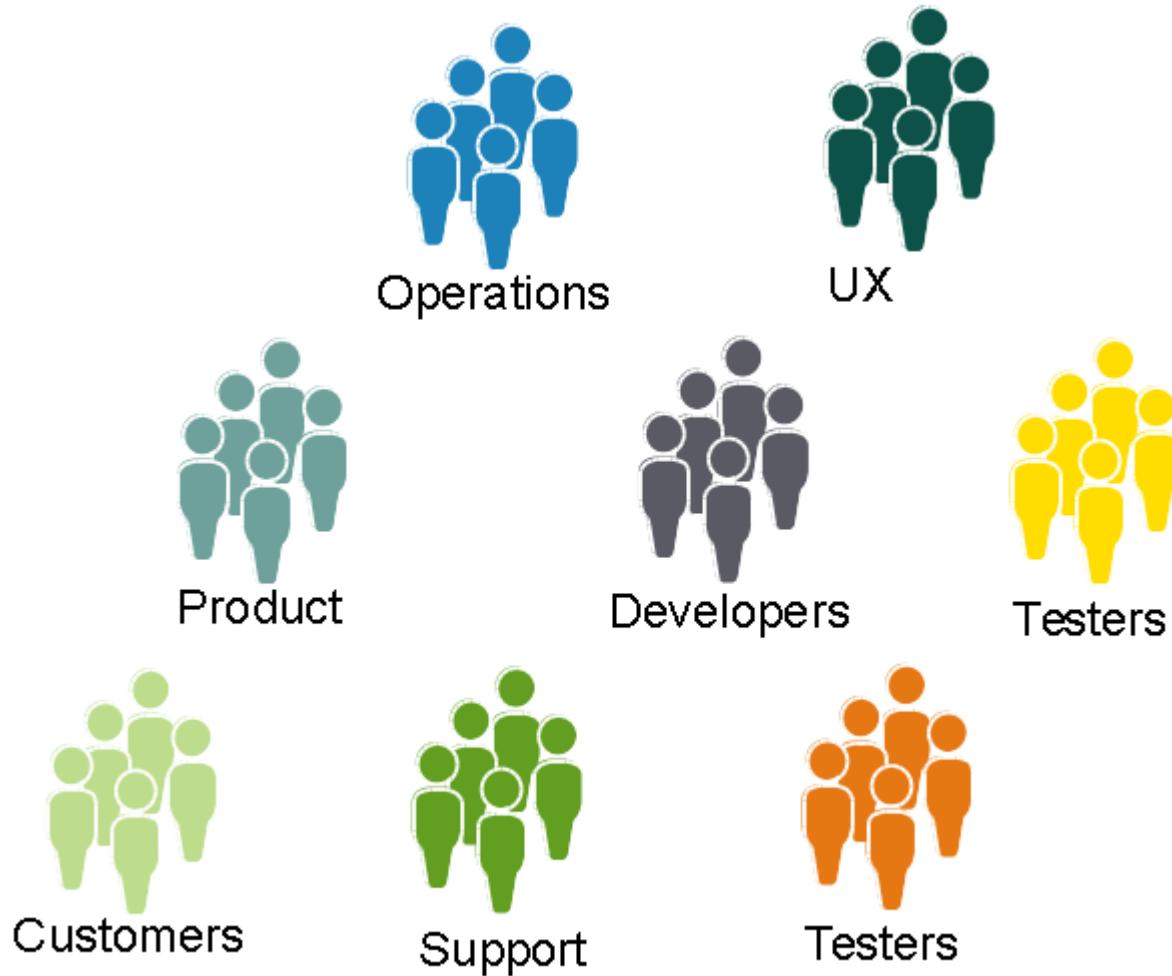
~~@iamdeveloper~~ @benjiweber

# Roll Back Forward



# People & Culture

# Siloing is Bad



# Split by Project Product



Product A



Product B



Product C

# Generalists over Specialists

Specialists help generalists do better



Product A



Product B



Product C

# **Product Team**

Didn't work - became a bottleneck

Replaced with Product Strands

# Collective Ownership

Code

Tests

Requirements

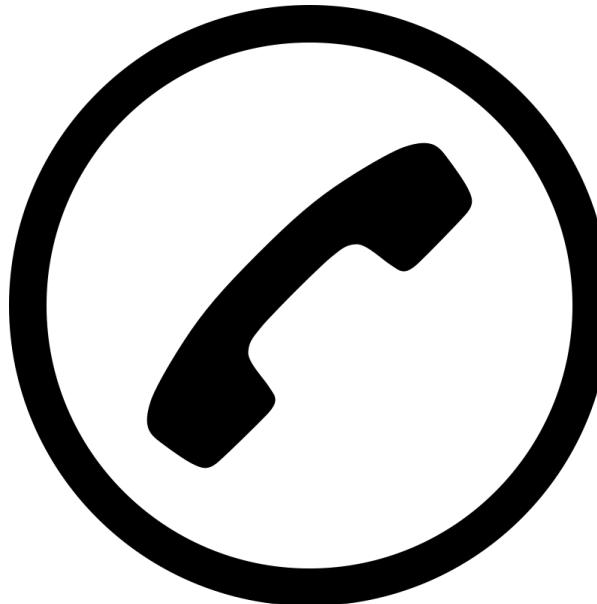
Ops

Support



# Devs on Call

Freedom and responsibility



# Pair Programming

Real-time code review



# **Self-Improvement**

Retrospectives

20% Time

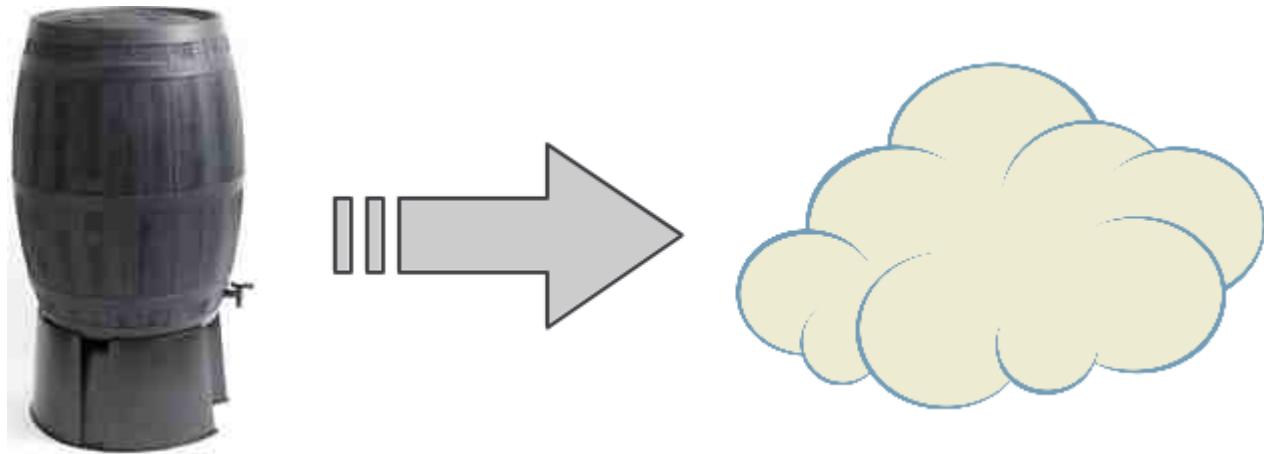
Dev Tasks



Questions  
so far?

# Infrastructure Challenges

**1-100 Servers**



# Infrastructure as Code

TDD

Pairing

Tight feedback loop



## Making Snowflakes Disposable

More frequent machine death during growth

## Continuous Disposal

Caught out by assuming servers were rebuildable - they weren't



# **First Day**

Any project's first step - deploy "Hello World"

Deploy something, iteratively improve

## TDD (sort of)

Unit-testing less useful

Acceptance testing much more informative

# Acceptance Testing

```
@test "apache should redirect to https" {  
    run curl http://analytics.unrulymedia.com/  
    [ "$status" -eq 0 ]  
    echo "$output" \  
    | grep -q '< Location: https://analyti...'\  
}
```

# Module Testing

```
@RunWith(ServerSpec.class)

public class AnalyticsWeb {{
    describe(service("httpd"), it -> {
        it.should(be.enabled);
        it.should(be.running);
    });

    describe(port(80), it -> {
        it.should(be.listening);
    });

    describe(port(443), it -> {
        it.should(be.listening);
    });
}}
```

# Shared Infrastructure

Assumed care; Ensured suffering

Cross-team collaboration



**DevOps Borat** @DEVOPS\_BORAT · 15 Feb 2013

Devops is intersection of lover of cloud and hater of wake up at 3 in morning.

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## **Reduce Variance, Increase Mean**

Homogenous systems are easier to reason about.

MTBF becomes less important than MTTR

# **Phoenix Workstations**

Cronned Code Deletion

# Dev Scaling Challenges

# Existing Product Boundaries



# Cross-Pollination

Internal tech-talks

Team rotation

Team *lead* rotation



## Conway's Law

*"organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations"*

Take advantage

# **Split on Demand**

You know least when you start

# **Monolith vs MicroServices**

Deploy speed vs Dependency Hell

# **Single Repo vs Versioning**

# State



# **Continuous Investment**

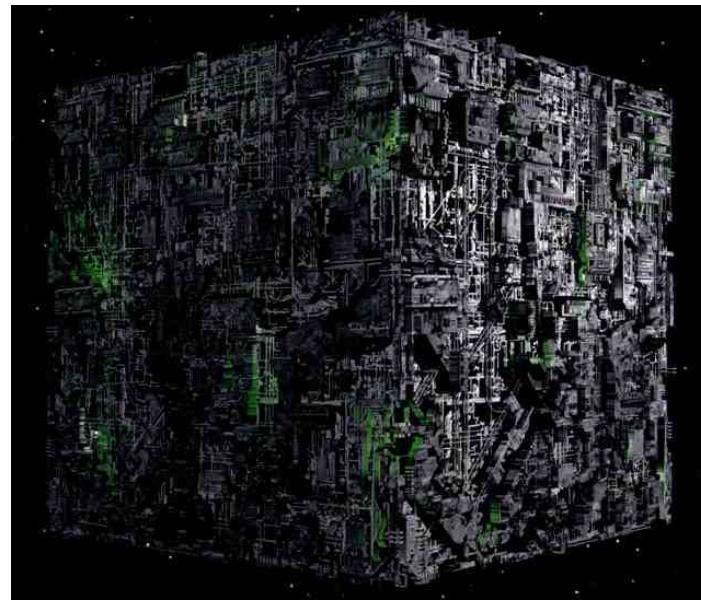
Deploy Speed & Reliability

## **@QuarantineRule**

0.1% failure rate is annoying with 100 tests

0.1% failure rate is impossible with 10,000 tests

# Collective Ownership vs Freedom



# Unusual things

Continuous Deployment  
Synchronous Deploy  
No CI Server  
Cronned Code Deletion

# Key Points

Short pipeline  
Fast feedback  
Early value



**Build Quality In**

**Continuous Delivery  
and DevOps  
experience reports**

edited by Steve Smith and Matthew Skelton

Thanks for Listening

# Any Questions?

Heckle us on Twitter – @pr0bablyfine @benjiweber

We're hiring – [talent@unrulymedia.com](mailto:talent@unrulymedia.com)