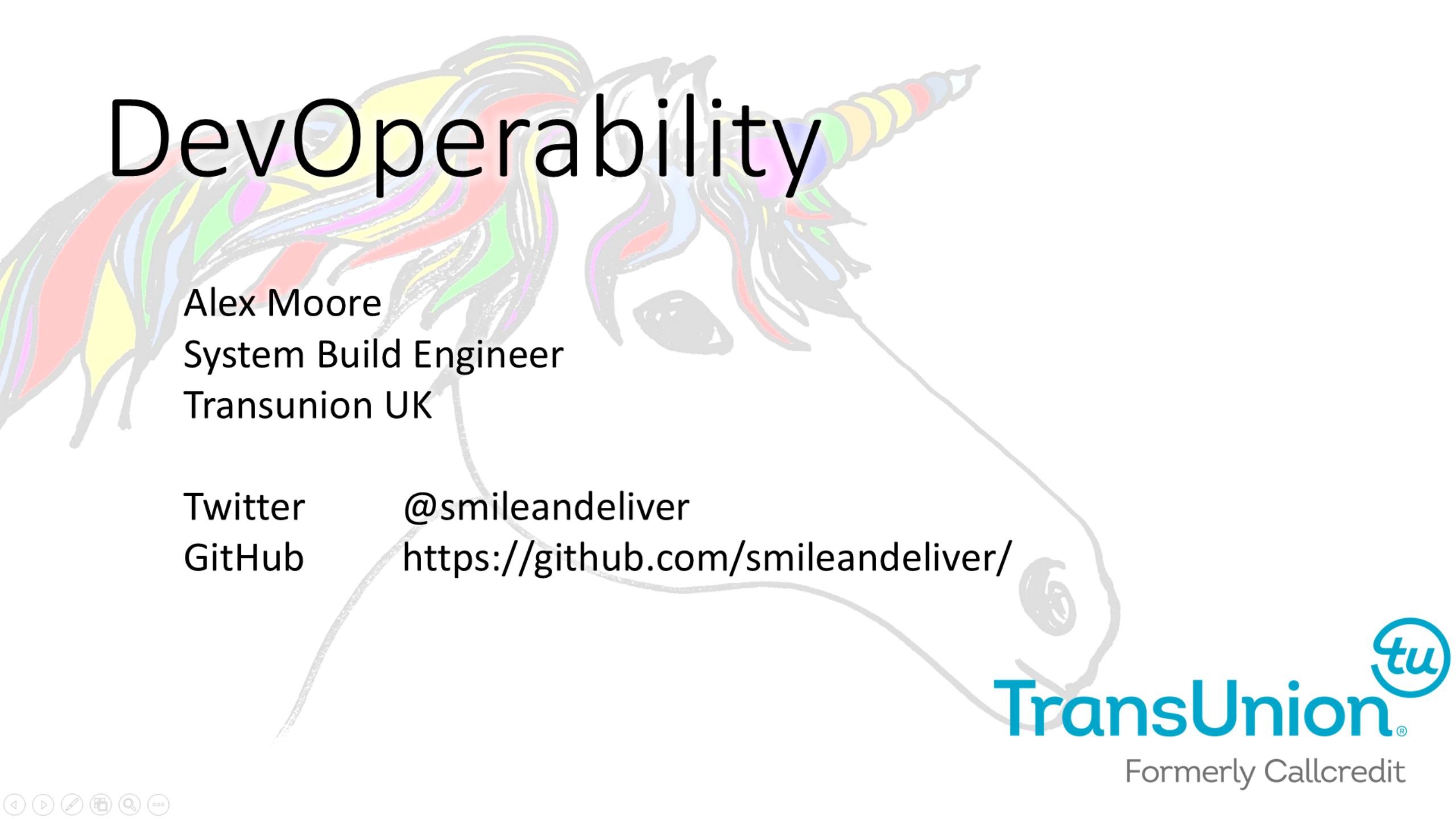


DevOperability



Alex Moore
System Build Engineer
Transunion UK

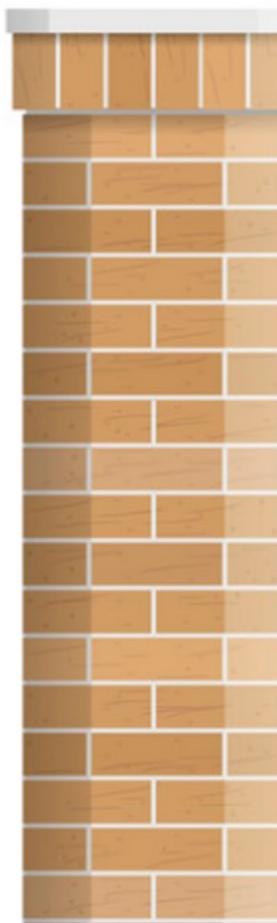
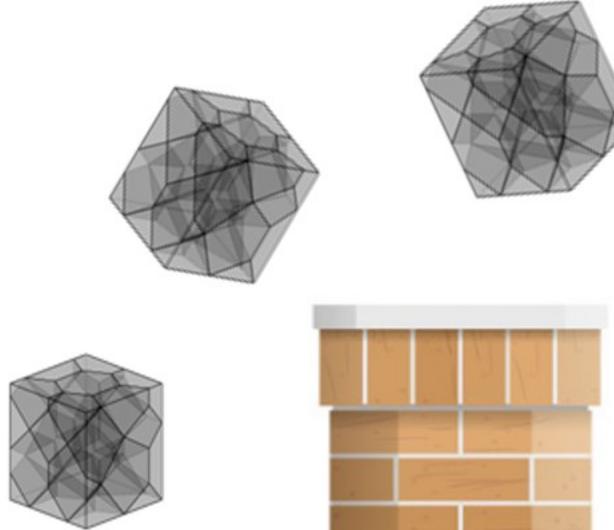
Twitter @smileanddeliver
GitHub <https://github.com/smileanddeliver/>



A black dog with brown eyes is looking at a large piece of raw meat on a red plate. The background is blurred, suggesting motion. The word "DevOps" is overlaid in large, bold, black letters.

DevOps

Dev

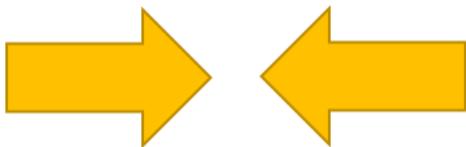


Ops





Dev



Ops



Build Teams

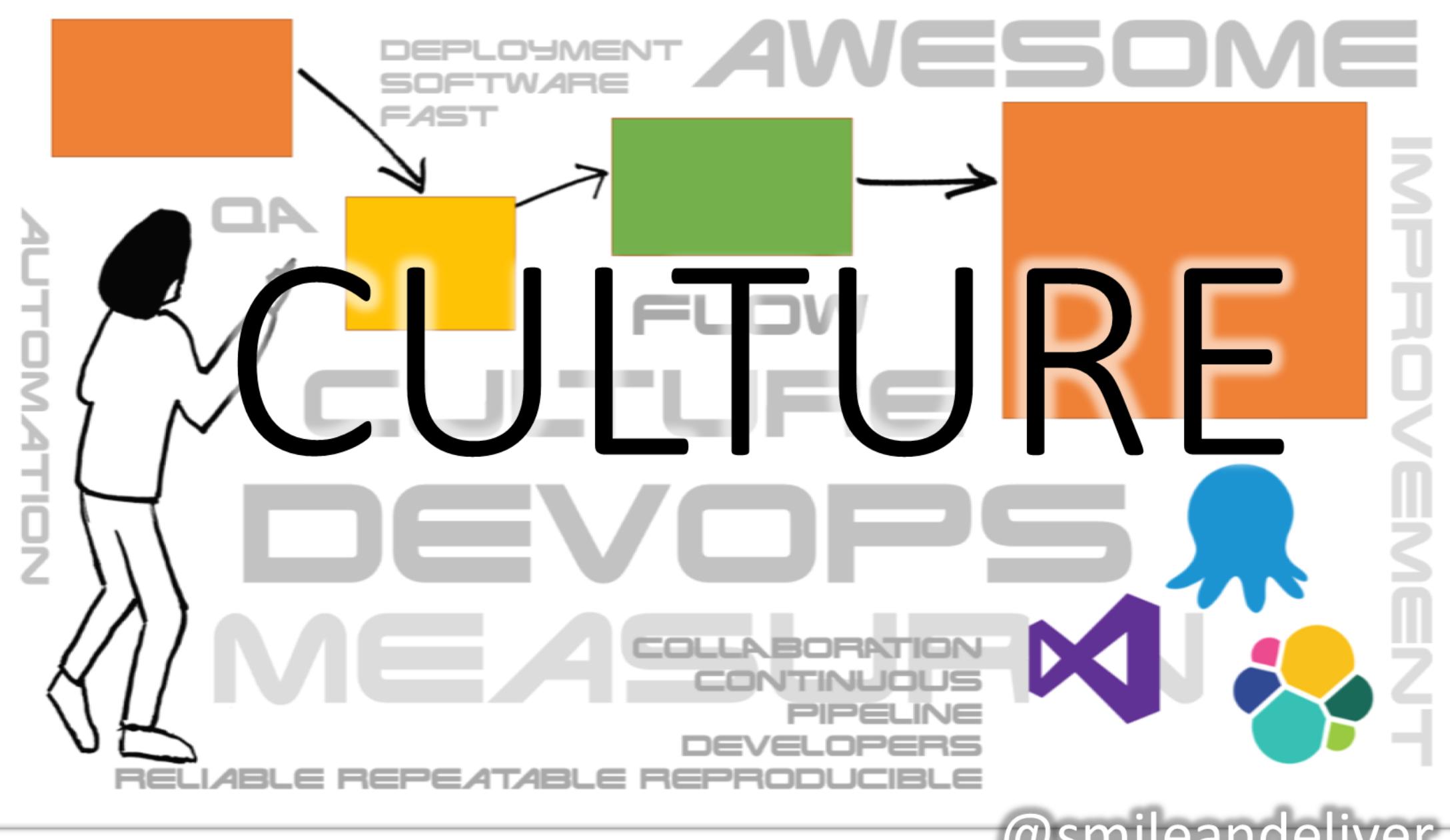
Dev



Ops

Build Teams

C
A
L
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S



C

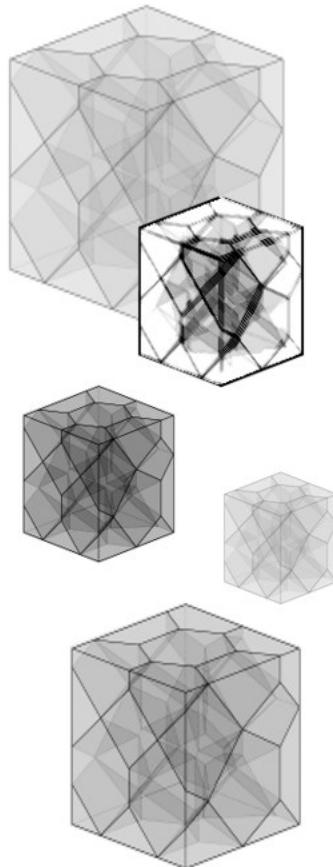
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AUTOMATION

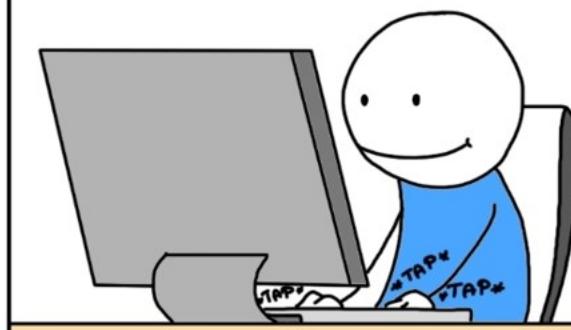


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C A L M S LEAN

UNFINISHED WORK

FRIDAY EVENING



PERFECT!
I'LL FINISH
THIS ON
MONDAY



MONDAY MORNING...



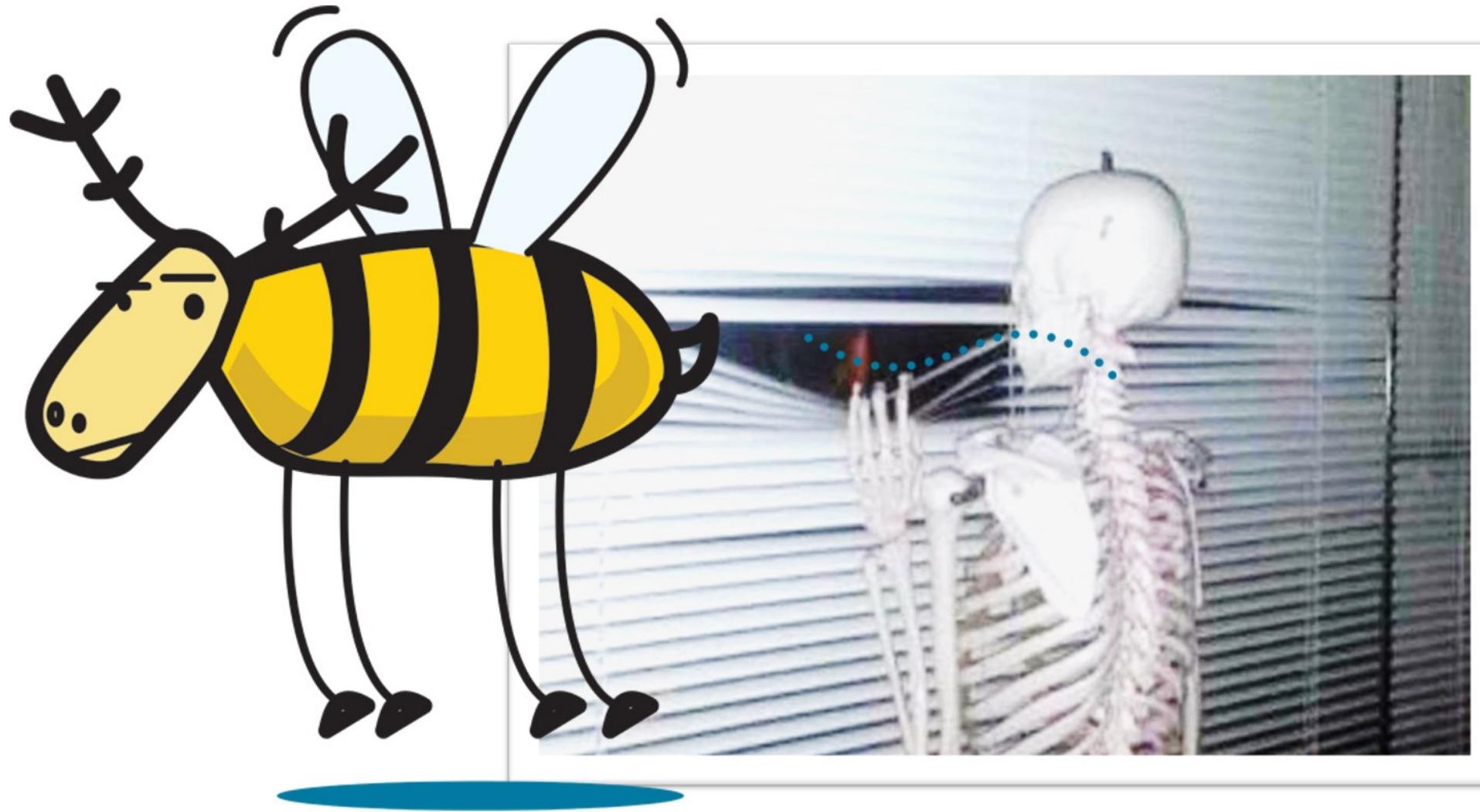
C
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MONITORING



C
A
L
M
S

MONITORING



C

A

L

M

S

SHARING

UGH, PEOPLE ARE MAD AT ME AGAIN
BECAUSE THEY DON'T READ CAREFULLY.

I'M BEING PERFECTLY CLEAR.
IT'S NOT MY FAULT IF EVERYONE
MISINTERPRETS WHAT I SAY.

WOW, SOUNDS LIKE YOU'RE
GREAT AT COMMUNICATING,
AN ACTIVITY THAT FAMOUSLY
INVOLVES JUST ONE PERSON.



DevDev



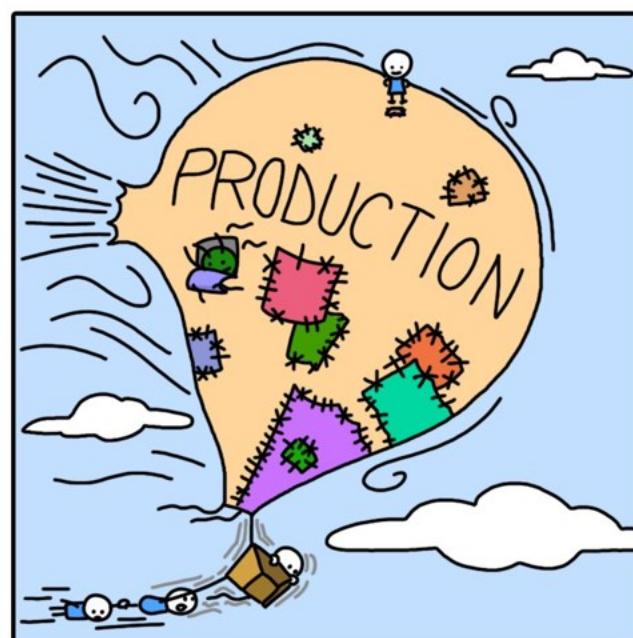
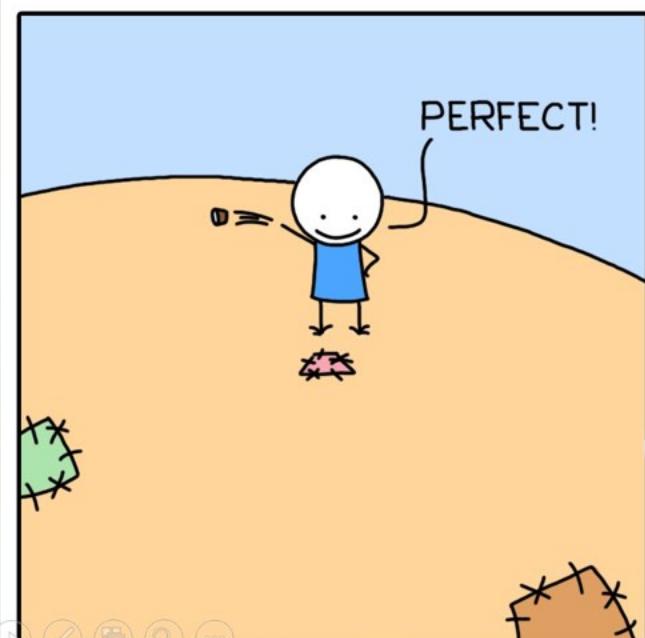
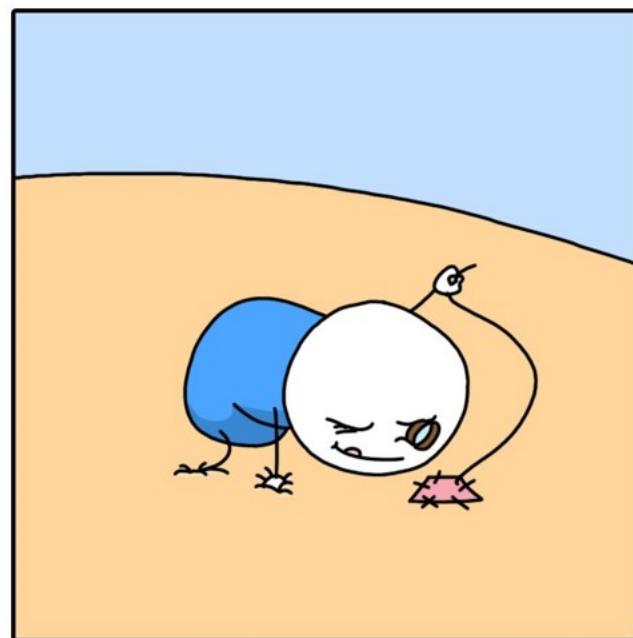
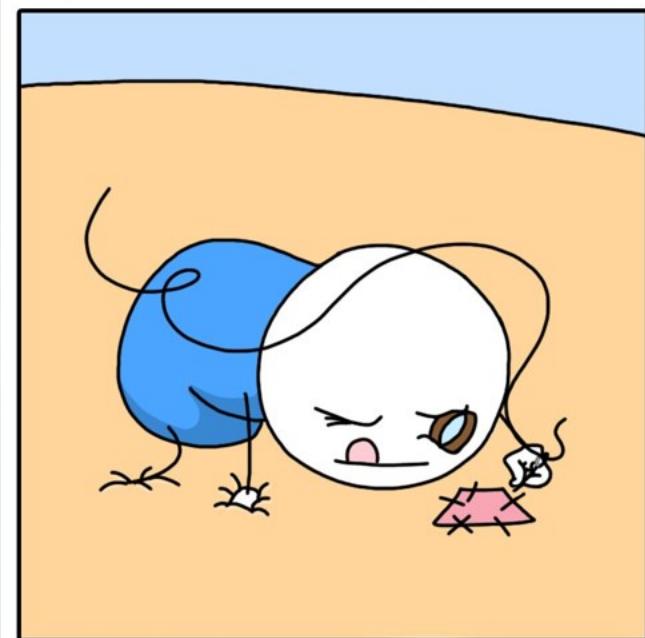
We can have fantastic sales,
account management,
innovative products,
good pricing,
fabulous marketing...

But if we don't deliver the service
they will not come to us
and/or walk away



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FINAL PATCH



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thus A romantic,
candlelit dinner
would be
incomplete without

**An email about a
critical production
bug**

"Development" teams get something "working" then throw it to an "Operations" team who struggle to wrestle with the day-to-day running and support of it.

- ❖ Software Scoped to Functional Reqs
- ❖ No Resources once in Production
- ❖ Deliverable ≠ Operable

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Complexity:

One of the greatest
enemies of Operability



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Do you know what just
happened and why?

- ❖ The Right Metrics
- ❖ Dependencies
- ❖ Sterile Environments
- ❖ Access Auditing
- ❖ Diagnostics

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Hero Or Victim?

“Well done everyone
on the mammoth effort
it took to....”



Operability

Your Ops Teams are now the Customer

- ❖ Deployment Engineers
- ❖ Ops Engineers
- ❖ Customer Support
- ❖ Configuration Team



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Operability

WHAT IS IT?

Look At Your System In Terms Of Users...

Who?

- DEPLOYMENT ENGINEERS
- OPS ENGINEERS
- CUSTOMER SUPPORT
- CONFIGURATION TEAM.

Your Ops teams are now the Customer

DEPLOY

- RELIABLE
- REPEATABLE
- RAPID
- ROLL - BACK

Pipeline

- EACH STEP UNDERSTOOD BY TEST TEAM
- TEST DURING DEPLOYMENT
- UNDERSTAND BEHAVIOR OF
 - APPLICATIONS
 - DATABASES
 - ENVIRONMENTS
- ... DURING DEPLOYMENT

- UNDERSTAND DIFFERENCE BETWEEN ENVIRONMENTS.

DOCUMENTATION

- AIs DOCUMENT (ACCEPTANCE INTO SERVICE)
 - THIS IS A CONTRACT BETWEEN THE PRODUCT TEAM & OPS.
 - TEST FOR CLARITY
 - UNDERSTANDING
- PRODUCT DOCUMENTATION
 - CUSTOMER
 - SUPPORT TEAMS

Operability

- USERS = Ops Teams.

INSPECT / ANALYSE

- What queries need to be run?
 - Source - controlled
 - Automated
- Access: No matter what - must not violate security reqs.
- Test + Ops able to trigger appropriate queries + reports.

Diagnose / Debug

- RELEVANT / MEANINGFUL ERRORS
- PREREQUISITES CLEARLY DOCUMENTED
- APPLICATION CONFIGURATION: SIMPLE
- ARCHITECTURE - SIMPLE AS POSSIBLE

CONTROL

- Protection against inappropriate access
 - Internally
 - Externally.
- Constantly review & Reduce Permissions → MINIMUM VISIBLE PERMISSIONS

MAINTAIN

- What is generated over time?
 - Logs
 - Data
 - Audit
 - Disk Usage
 - Memory Usage / Handles.
- What maintenance is needed?
 - Automatic
 - Manual

MONITORING

- APPLICATION LOGS
- SYSTEM PERFORMANCE
- LINK OPERATIONAL MONITORING TO TEST RESULTS.

QUESTION ? ? ?
EVERYTHING ! ? ?

Operability Documentation

AIS DOCUMENT (Acceptance into Service)

Operability Contract between All teams

- ❖ Clarity
- ❖ Understanding
- ❖ Completeness

PRODUCT DOCUMENTATION

- ❖ Customer Facing
- ❖ Support
- ❖ Architecture

Section 2 - Service Information

- 2.1 - Service Information - Service Overview
- 2.2 - Service Information - Stakeholders
- 2.3 - Service Information - Service Level Agreements
- 2.4 - Service Information - Service Relationships

Section 3 - Support Requirements

- 3.1 - Support Requirements - Support Model
- 3.2 - Support Requirements - Internal Support
- 3.3 - Support Requirements - External Support
- 3.4 - Support Requirements - Support Hours
- 3.5 - Support Requirements - Monitoring
- 3.6 - Support Requirements - Incident Impact Statements

Section 4 - Operational Maintenance

- 4.1 - Operational Maintenance - Maintenance Tasks - Overview
- 4.2 - Operational Maintenance - Backups, restores, and data retention

Section 5 - Change Control

- 5.1 - Change Control - Release approach

Section 6 - Service Continuity

- 6.1 - Service Continuity

Section 7 - Capacity Management

- 7.1 - Capacity Management

Section 8 - Asset Management

- 8.1 - IT Asset Management

Section 9 - Group Security

- 9 - Group Security Requirements

Section 10 - Service Desk



Deployability

- ❖ Walking Skeleton
- ❖ Reliable
- ❖ Repeatable/Reproducible
- ❖ Rapid
- ❖ Roll-back

PIPELINES

- ❖ Each step understood
 - ❖ Applications / Services
 - ❖ Databases
 - ❖ Environments
- ❖ Test During Deployment

Maintainability

What builds up over time?

- ❖ Logs
- ❖ Data
- ❖ Audit
- ❖ Memory Usage

What Maintenance is Needed?

- ❖ Automatic
- ❖ Manual



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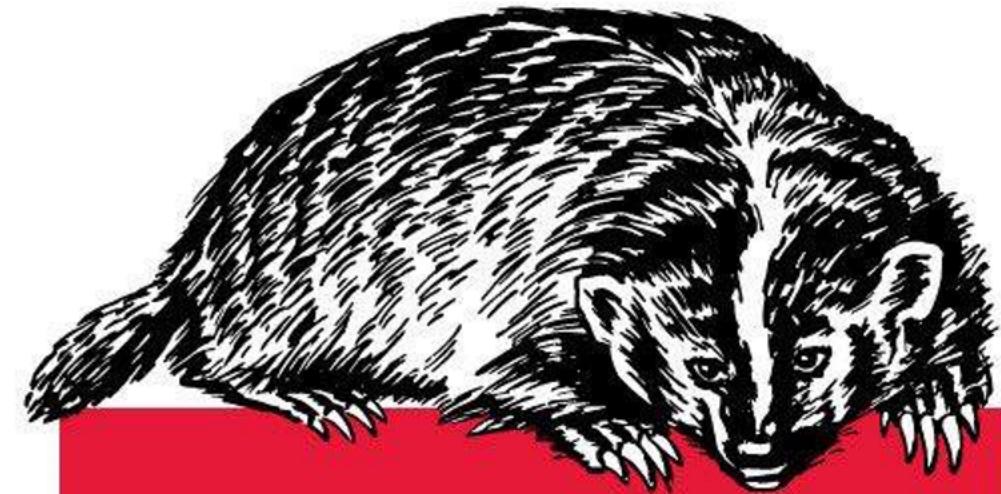
Control

Protection against inappropriate access

- ❖ Internally
- ❖ Externally

Regularly Review and Reduce Permissions

- Minimum Viable Permissions
- Access via Controlled System
- Access Audit



What the F* Is Security?**

How to ignore it and deliver your project

O'RLY

Awn Thyme

Monitoring

- ❖ Application Logs
- ❖ System Performance
- ❖ Link Ops Monitoring to Test Results
- ❖ Everyone has access to the same dashboards
- ❖ Signal to Noise Ratio

Diagnose/Debug

- ❖ Relevant / Meaningful Errors
- ❖ Prerequisites Clearly Documented
- ❖ Simple:
 - ❖ Application Configuration
 - ❖ Architecture

Inspect/Analyse

- ❖ What queries need to be run?
 - ❖ Source-Controlled
 - ❖ Automated
- ❖ Access: Must comply with Security Reqs
- ❖ Test & Ops Teams able to trigger Appropriate Queries & Reports

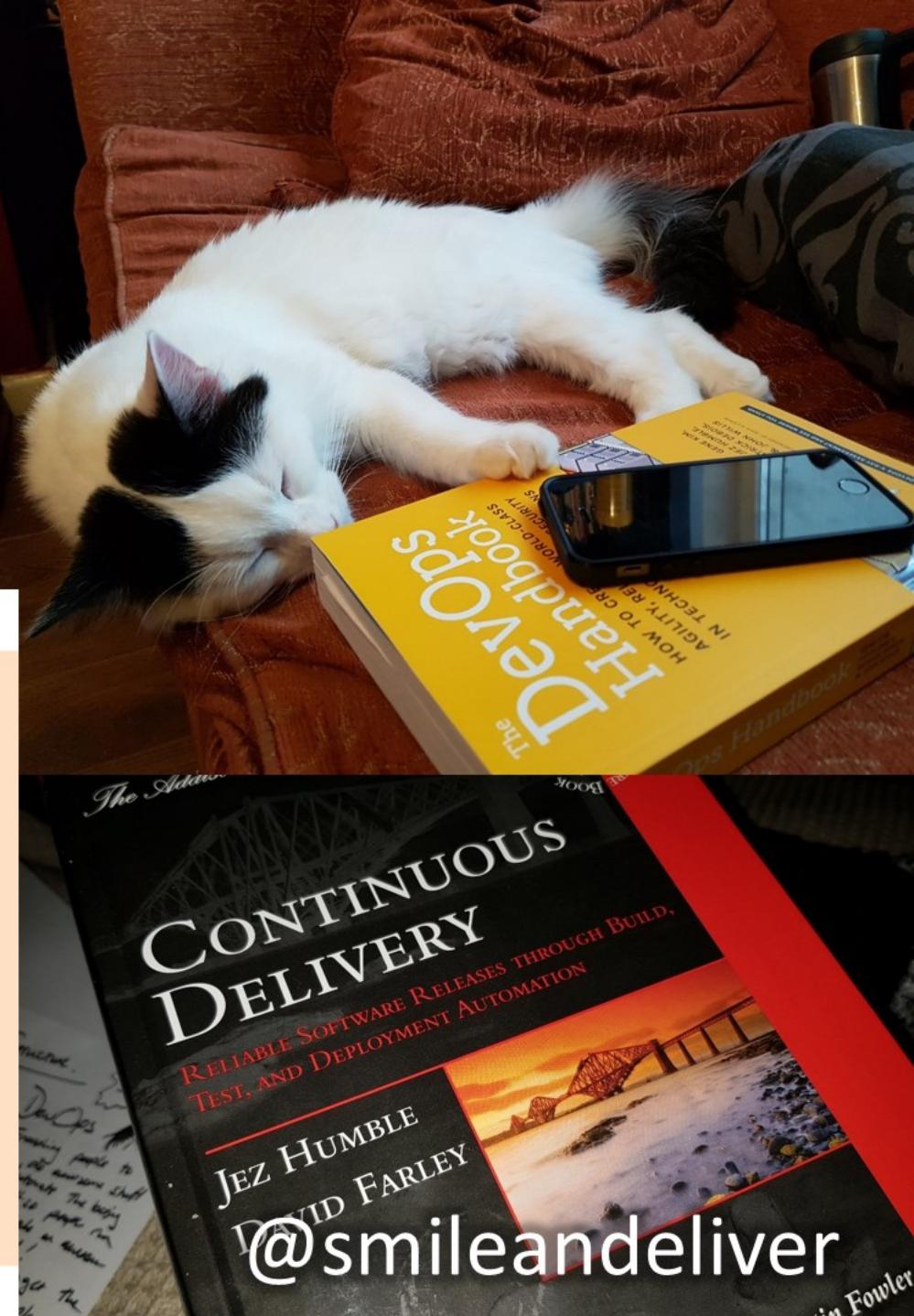
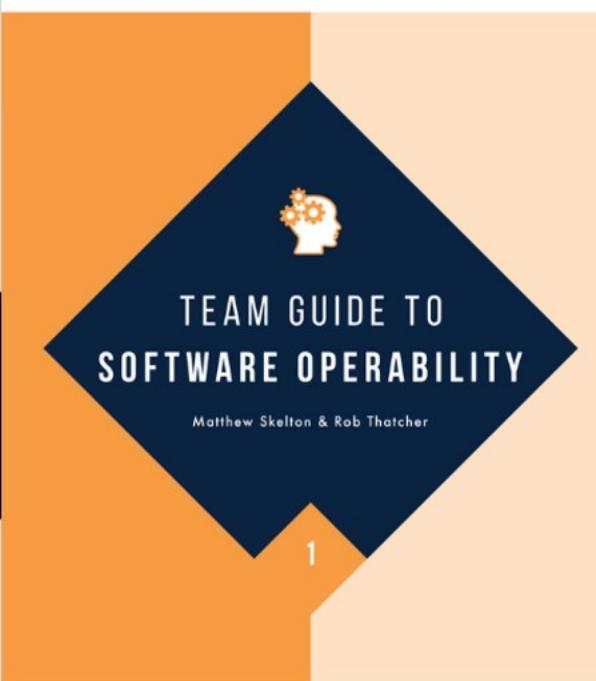
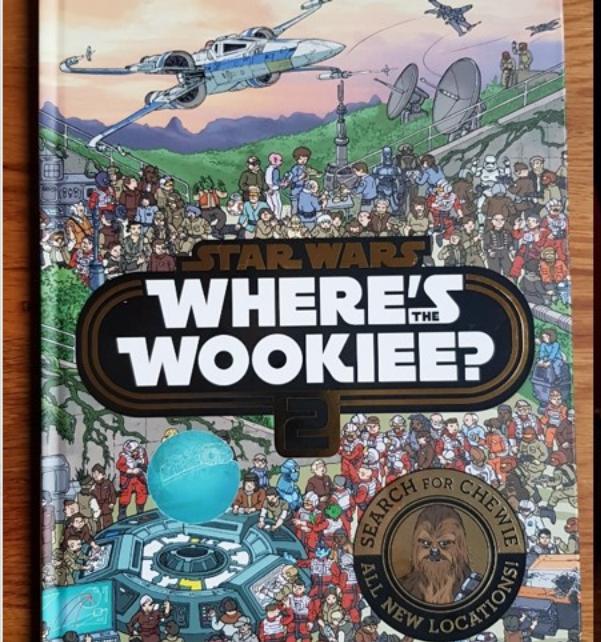


The Phoenix Project

A Novel About IT, DevOps,
and Helping Your Business Win

REVISED
WITH NEW
RESOURCE
GUIDE

Gene Kim, Kevin Behr, and George Spafford



@smileanddeliver

A wide-angle photograph of a rural landscape. In the foreground, there's a dry stone wall and a small stream. The middle ground shows rolling green fields and a few small buildings. The background consists of more hills and mountains under a blue sky with scattered white clouds.

@smileanddeliver

<https://github.com/smileanddeliver/>