



Automate Everything I Changing the Culture at UHG

USING ANSIBLE FOR AUTOMATION AND GROWTH

Thomas Hudak

DevOps Director, Principal Software Engineer - Optum, Inc.

Mike Dahlgren

Chief Architect - RedHat, Inc

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Who are we?



"The future is
already here, it's
just not widely
distributed"

MIKE D

TWEET ME:
[@mikedahlgreen](https://twitter.com/mikedahlgreen)



TWEET ME:
@madhakish

I've been
using a
Deprecated
automation
tool for a
decade.

UnitedHealth Group Fast Facts

UnitedHealth Group is the largest healthcare company in the world

Ranked #5 on the Fortune 500 ~ 300,000 employees

Global Headquarters: Minneapolis

UnitedHealth Group and subsidiary companies serve ~ 126 million individuals

Ranked No. 1 overall in its sector on Fortune's 2019 "World's Most Admired Companies" list. This is the ninth straight year .

UnitedHealth Group Processes about 1 trillion digital transactions annually.

WHY?



Red Hat

UHG



CLOUD & DEVOPS VALUES

BENEFITS OF ADOPTING DEVOPS CULTURE AND CLOUD PLATFORMS

Noun

DevOps (uncountable)

1.(software development) A software development method that stresses communication and collaboration between software developers and other information technology professionals

Amplifies feedback loops to developers

Relies heavily upon automation toolchains and pipelines to achieve highly consistent outcomes

Developers are accountable to one another and integrate code more frequently

Developers are accountable for supportability in production

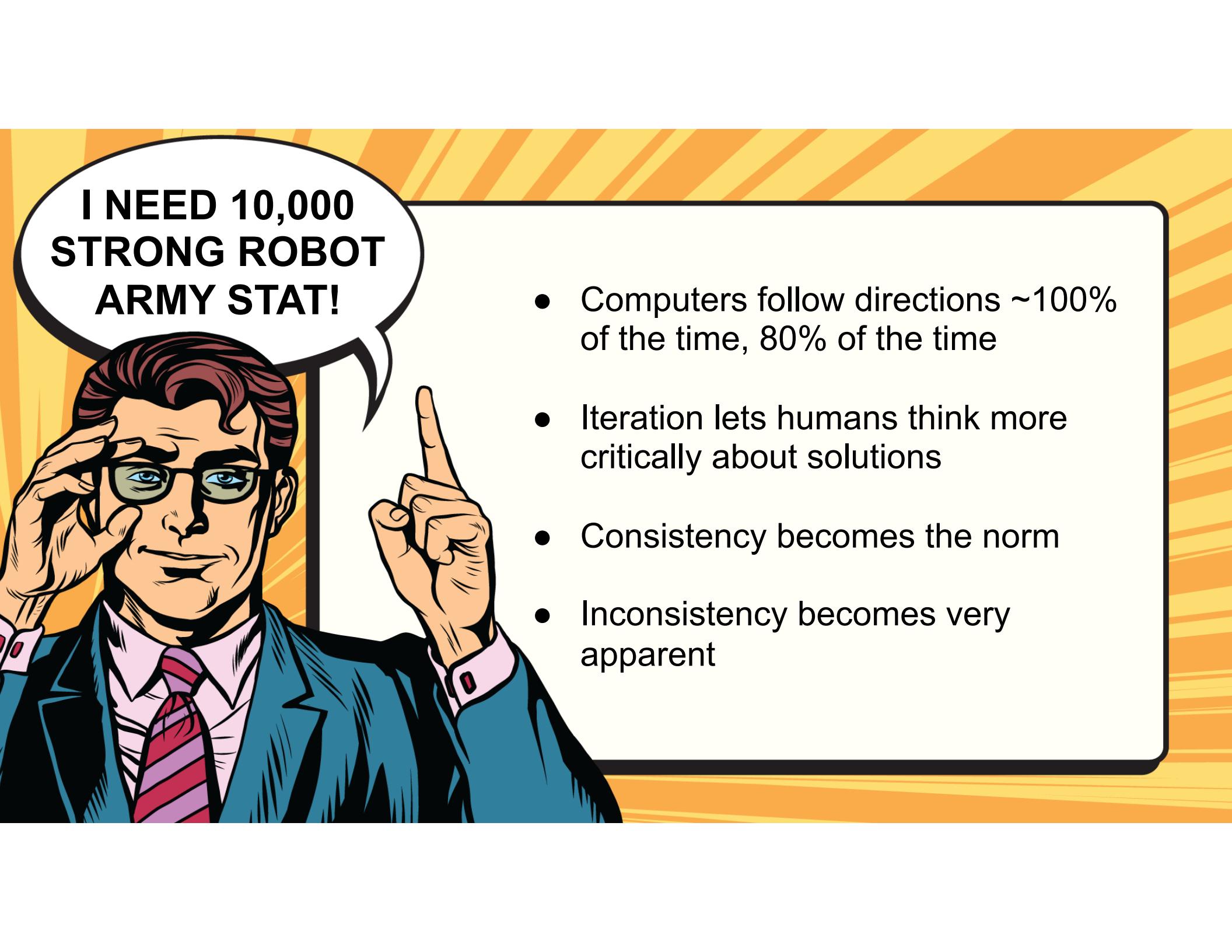
CLOUD & DEVOPS VALUES

BENEFITS OF ADOPTING DEVOPS CULTURE AND CLOUD PLATFORMS

Benefits

In addition to improvements in efficiency and cost optimization, cloud centric applications are more reliable and portable in a highly dynamic industry.

Reliability	Agility (with Quality)	Cost
Composable Environments Mean Regular Updates / Lifecycles Automated Failover, Multiple AZ's Disaster Recovery	Application Self Service Deployment Automation Focus on Solutions, not Platforms	Unequaled Economies of Scale Utility Billing: Pay as you go + Elastic Billing: Pay for use

A cartoon illustration of a man with glasses and a suit, pointing his index finger upwards. A speech bubble originates from his hand, containing the text "I NEED 10,000 STRONG ROBOT ARMY STAT!". The background features a yellow and orange striped pattern.

**I NEED 10,000
STRONG ROBOT
ARMY STAT!**

- Computers follow directions ~100% of the time, 80% of the time
- Iteration lets humans think more critically about solutions
- Consistency becomes the norm
- Inconsistency becomes very apparent

CLOUD & DEVOPS VALUES

MISSION, STRATEGY, TACTICS

“DevOps is a practice, not a role. Much like Agile - you don’t have an Agile team, you have a team that exhibits agility.” - Dave Thomas, “Agility Redux”

Objectives	Guiding Principles	Key Performance Indicators
<ul style="list-style-type: none">• Develop teams from operators (admins) and developers to Cloud Engineers• Establish a culture of software engineering and design thinking• Migrate legacy applications into 12-factor apps on cloud platforms, both internal and external.	<ul style="list-style-type: none">• <u>12-factor application</u> methodology• Staff growth and skill development aligned to program goals• Improving deployment and delivery methods is as important as the toolsets• Emphasis on design and architecture patterns which are critical to enterprise-ready outcomes• Communication between application owners, business owners and service partners is critical	<ul style="list-style-type: none">• Measurable improvements in availability / uptime• Percentage of rollbacks• Cost of deployed solutions compared to legacy/on-prem• Improved Mean Time To Identification & Recovery - MTI/R• Faster release cadences

PROGRAM ORGANIZATION

TEAM RESPONSIBILITIES

DevOps Team

Provide embedded expertise and highly automated delivery platforms to simplify and streamline application delivery, agile development and cost-effective cloud solutions

- Work with development teams to understand requirements around build, deploy, testing, and provisioning processes
- Introduce and reinforce best practices, reusable patterns, reference implementations and tools
- Define cloud integration
- Ongoing analysis and optimization
- Assist in creating training plans
- Mentoring and support for new and transitioning teams

Leadership Team

Provide strategic leadership and guidance to the DevOps Enablement team, work across business units and act as a liaison between business, application, and technical owners across Optum

- Project management engagement
- Provide technical and strategic assessment and make DevOps and Cloud recommendations
- Cross-connecting capability owners with application owners
- Establish and develop vertical and horizontal collaboration between teams
- Reporting, dashboards, and metrics of KPI's to leadership

What if internal IT teams focus was on INNOVATION not task management?



The
80/20
Rule!

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THE TEAM

"Successful DevOps requires business, development, QA, and operations organizations to coordinate and play significant roles at different phases of the application lifecycle. It may be difficult, even impossible, to eliminate silos, but collaboration is essential." -Laurie Wurster, Gartner

PROGRAM APPROACH

BIGGER PICTURE: ONE TEAM, TWO APPROACHES

Approach #1: Integrated Effort

Preparation...

Planning

- Determine Inventory
- Analyze inventory and application classification
- Identify/Collect gaps
- Create migration plan
- Select candidates for migration

Selection

- Research cloud providers
- Create cloud selection criteria
- Map candidates to cloud framework
- Create and define cloud architecture, patterns
- Establish agreements and provision services

Action!

Implementation

- Implement base cloud/devops arch patterns in PoC sandbox
- Implement operational patterns
- Handover support / management

Repeatable processes

- Technical assessment
- Replatform applications
- Deploy to cloud
- Create SLA's

Re-engagement / Follow-up

- On-going or As-needed

PROGRAM APPROACH

BIGGER PICTURE: ONE TEAM, TWO APPROACHES

Approach #2: Supporting Effort

Planning

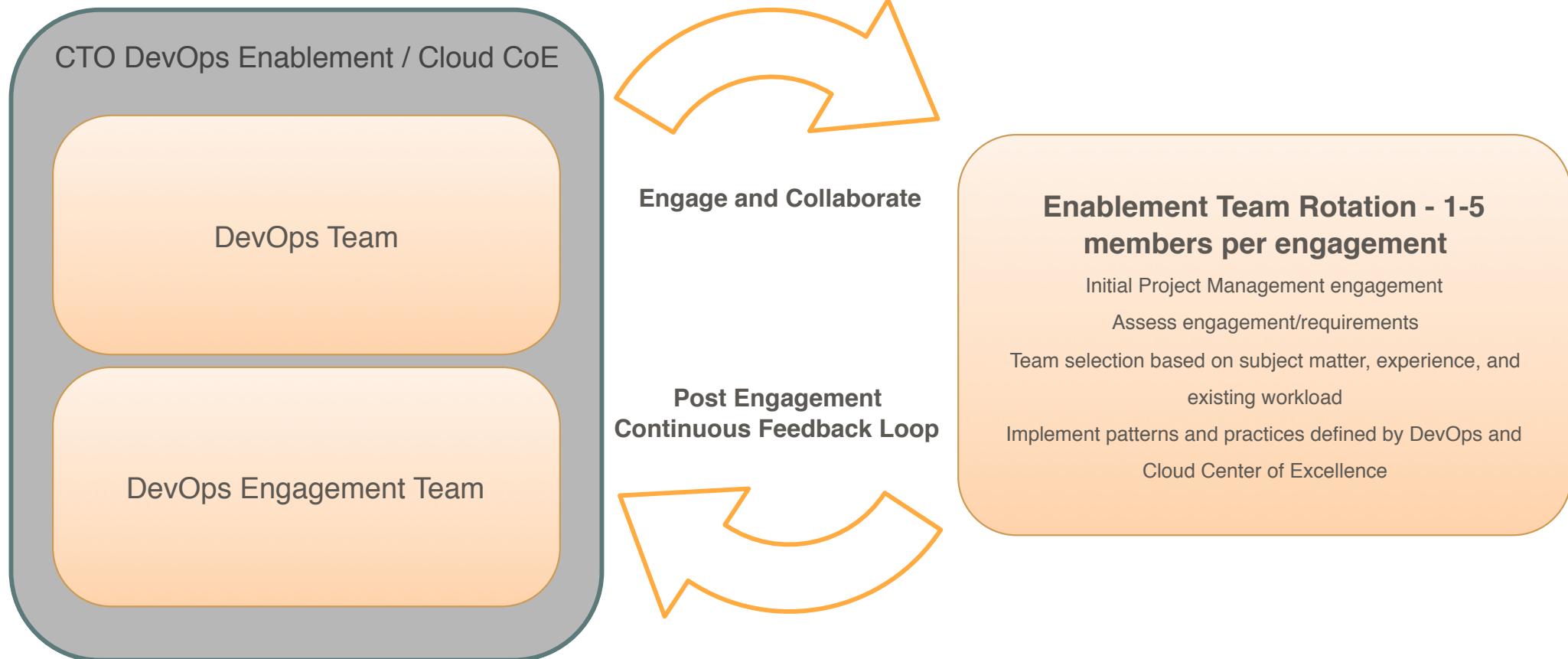
- Create team narrative
- Benchmark analysis
- Define pilot requirements
- Assess release automation
- Cost evaluation/planning
- Training assistance

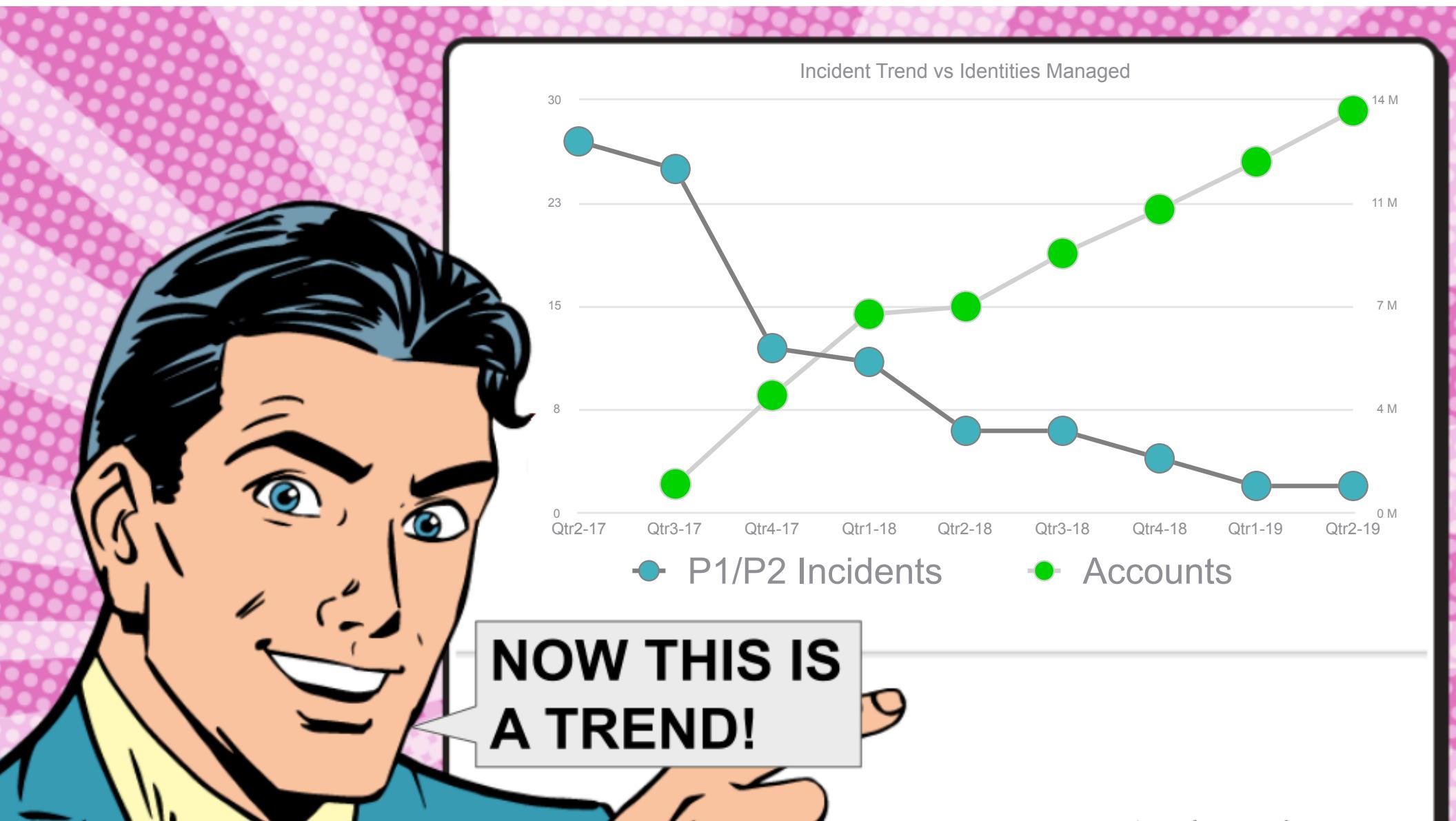
Implementation

- Support existing ops and dev teams
- Guidance and assistance migrating
- Definition of cloud services
- Subject Matter Expert Liaisons to
Optum Technology partners

PROGRAM ORGANIZATION

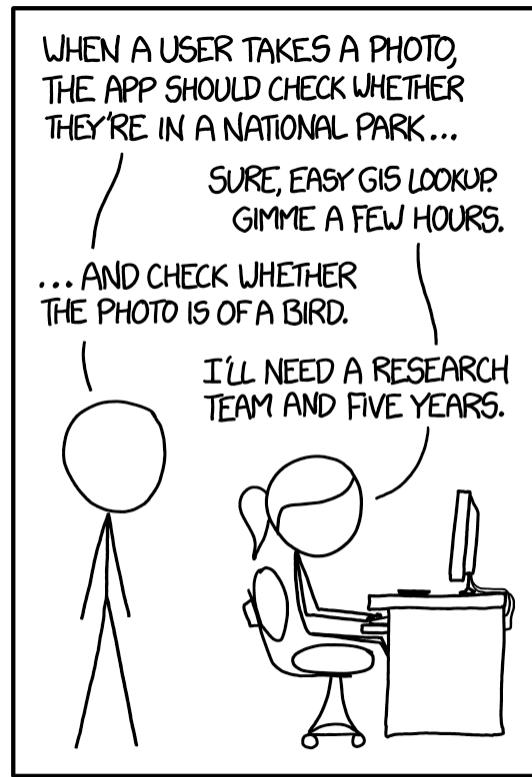
TEAM STRUCTURE: ROTATING ENGAGEMENTS





CLOUD & DEVOPS VALUES

Complexity



IN CS, IT CAN BE HARD TO EXPLAIN
THE DIFFERENCE BETWEEN THE EASY
AND THE VIRTUALLY IMPOSSIBLE.

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Complexity

“... organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations. — Melvin Conway, Conway’s Law

Complex things are hard to understand, and even harder to explain

Empathy is critical to understanding wants, needs, and behaviors - diverse ideas and opinions should be encouraged and explored

Build expertise and skills necessary to communicate in real-time

Learn to adapt and improvise - Letting go of the 5 C’s
consistent, comfortable, competent, confident, and control

Delegate and distribute leadership - Best idea wins, no censoring the ideas of your peers

Too much structure kills creativity - avoid the urge to turn everything into a hierarchy

- The importance of common shared language!
 - Operations
 - Development
 - Change Management
 - QA Testing
 - App Teams
- Communication, Empathy, Creativity!
- Value of Internal Knowledge and Culture



You have been learned!