

DevOps

# DevOps: A Culture Transformation, More than Technology

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# Abstract

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DevOps is not a new technology or a product. It's an approach or culture of SW development that seeks stability and performance at the same time that it speeds software deliveries to the business. We will discuss this cultural shift where development teams have to accept the feedback of operations teams and the operations team should be ready to accept frequent updates to the SW that it's running.

# Agenda

1

**DEVOPS CULTURAL CONCEPTS**

2

**PEOPLE AND SKILLS**

3

**ORGANIZATIONAL STRUCTURES**

4

**PROCESS CHANGE**

5

**FOSTERING COLLABORATION**

6

**NEXT STEPS – WHERE TO START**

# DevOps Cultural Concepts

# Does Any of This Sound Familiar?

Speed, Quality and Cost Problems Across Software Lifecycles



## DEVELOPERS

I spend 70% of my time waiting



## INFRASTRUCTURE OWNERS

I don't have spare capacity



## TESTERS

Our test systems are not realistic



## LEVEL 1 OPS

I don't know who to escalate to



## APPS SUPPORT

I'm constantly fighting fires



## LOB EXEC

What is IT doing?  
I need new apps now!!

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“DevOps isn’t something you can buy --  
it’s something you have to do, and you  
have to do it yourself.”

John Michelsen, CTO, CA Technologies

DevOps 101: Why DevOps Matters to Large Enterprises, <http://blogs.ca.com/2014/01/27/devops-101-why-devops-matters-to-large-enterprises/>

# What is culture?

cul·ture noun \ˈkəl-cher\

1.

The beliefs, customs, arts, etc., of a particular society, group, place or time

2.

A particular society that has its own beliefs, ways of life, art, etc.

3.

A way of thinking, behaving, or working that exists in a place or organization (such as a business)

**CULTURE IS AN OUTPUT, NOT AN INPUT**

Miriam-Webster, <http://www.merriam-webster.com/dictionary/culture>

# But what does DevOps actually mean?

## METHODS FOR IMPROVING



COMMUNICATION



INTEGRATION

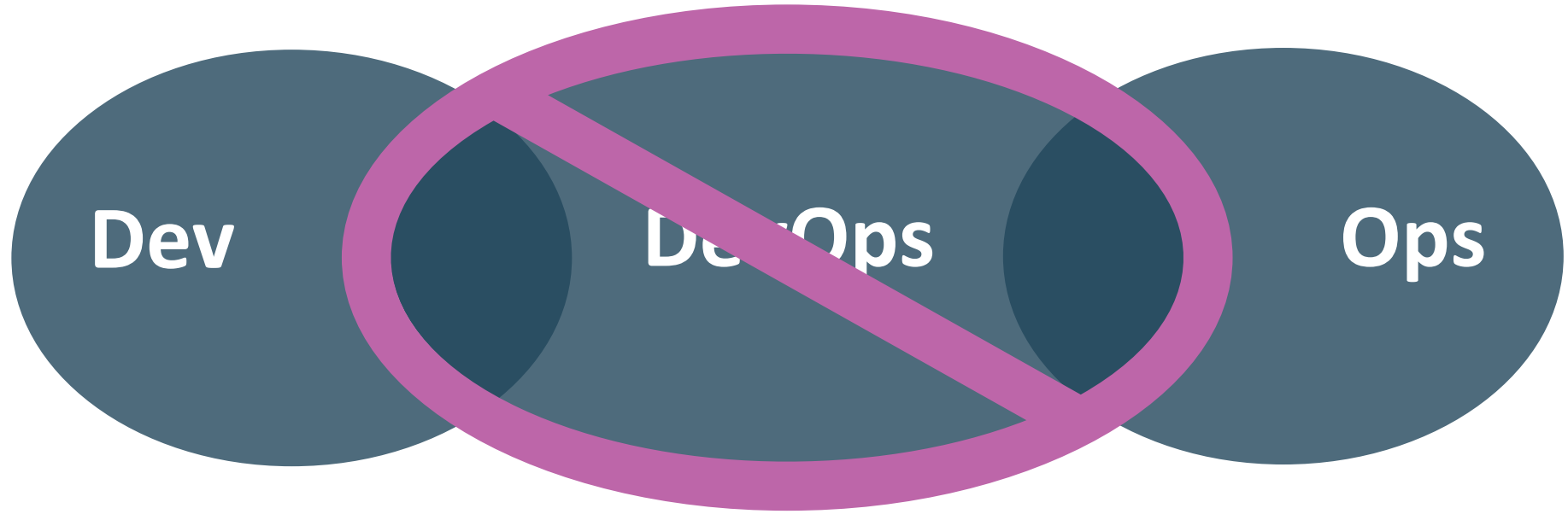


COLLABORATION

## BETWEEN DEV AND OPS



Culture is **not** about building another silo.



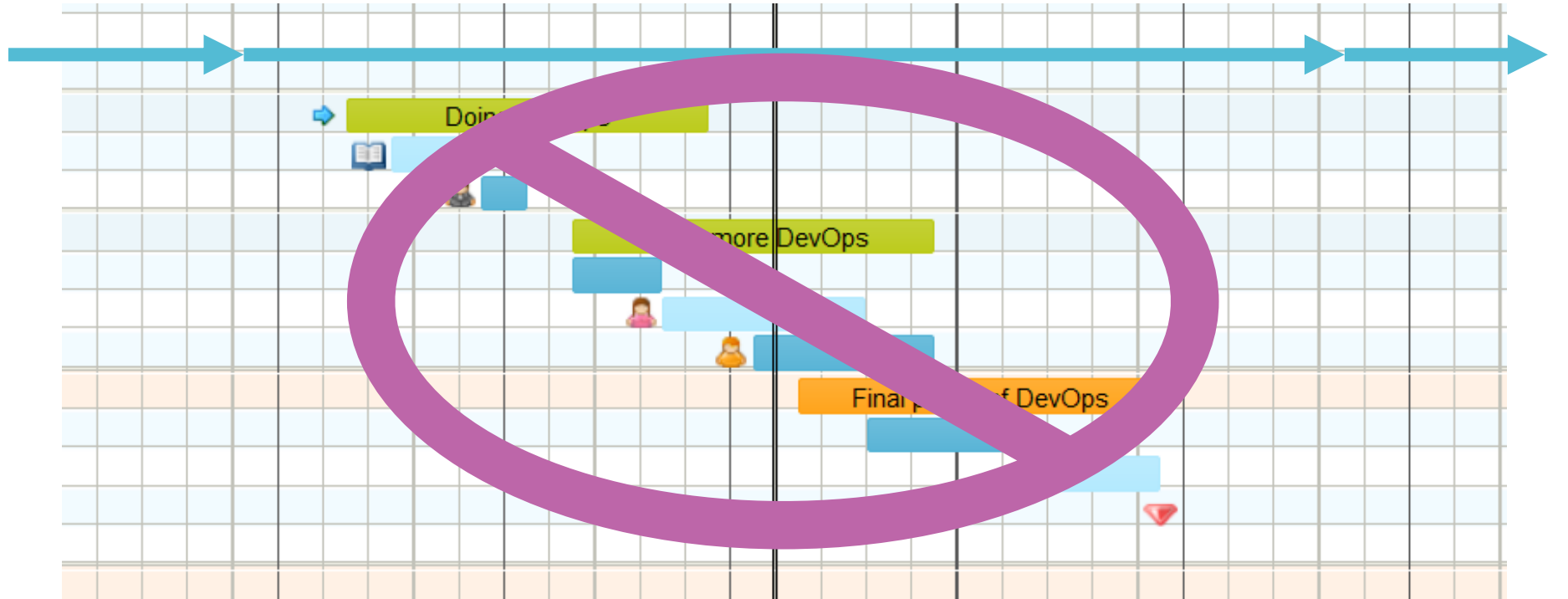
(... although a 'DevOps team' **can** work)

# Culture is **not** about a bounded 'DevOps project'.

No DevOps

DevOps!!

DevOps is Done!



(... although a 'DevOps Project' **can** help)

Culture is **not** about buying a new technology.



(... although technology **can** play a part)

# DevOps Culture – Patterns and Anti-patterns

**“Design for Failure”**

**“Systems Thinking”**

**“Test-Driven Development”**

**“Tribal knowledge”**

**“Agile for Infrastructure”**

**“Empathy”**

**“Two-Pizza teams”**

**“Willful Ignorance”**

**“Wall of Confusion”**

**“Agile, Lean, Scrum, Kanban, Extreme”**

**“Continuous Everything”**

**“Roll forward”**

**“Collaboration & Communication”**

**“Technology silos”**

# People and Skills

# DevOps Starts With People



**BREAKING DOWN BARRIERS BETWEEN TEAMS – AND EMPIRES**



**NEW ROLES, NEW TITLES, NEW (AND SHARED) RESPONSIBILITIES**



**CAPTURING AND CONVERTING TRIBAL KNOWLEDGE**

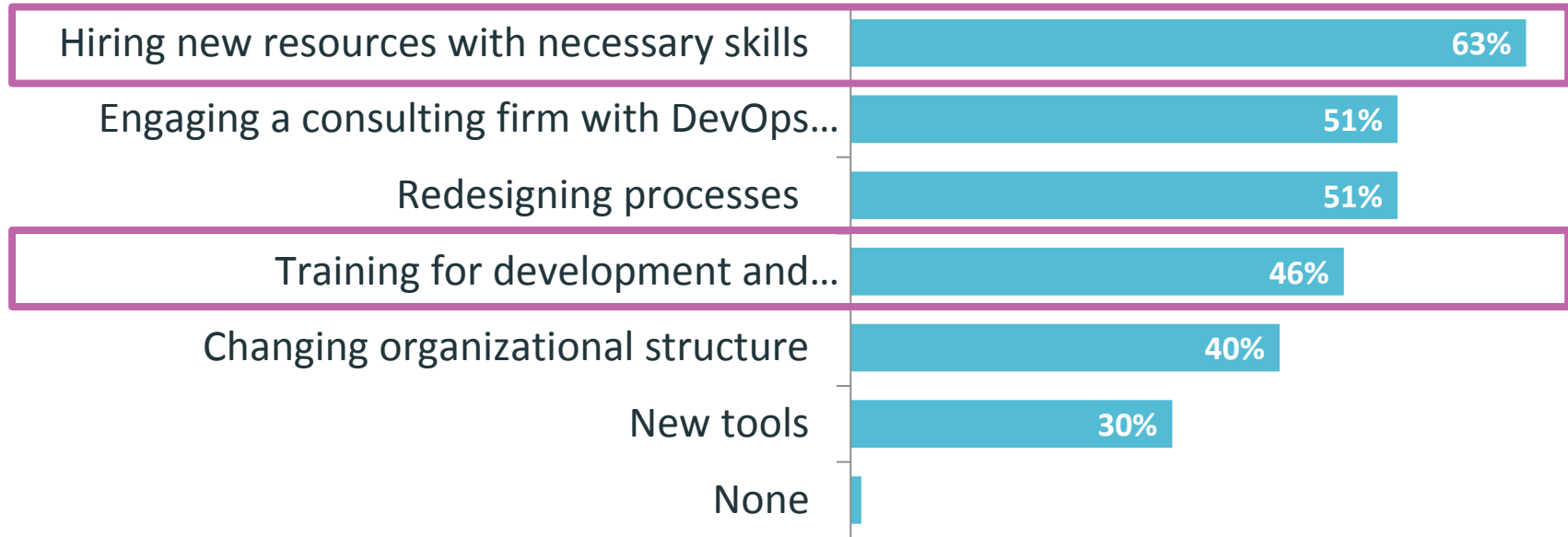


**ENSURING FOCUS ON BUSINESS SERVICE, NOT TECHNOLOGY**



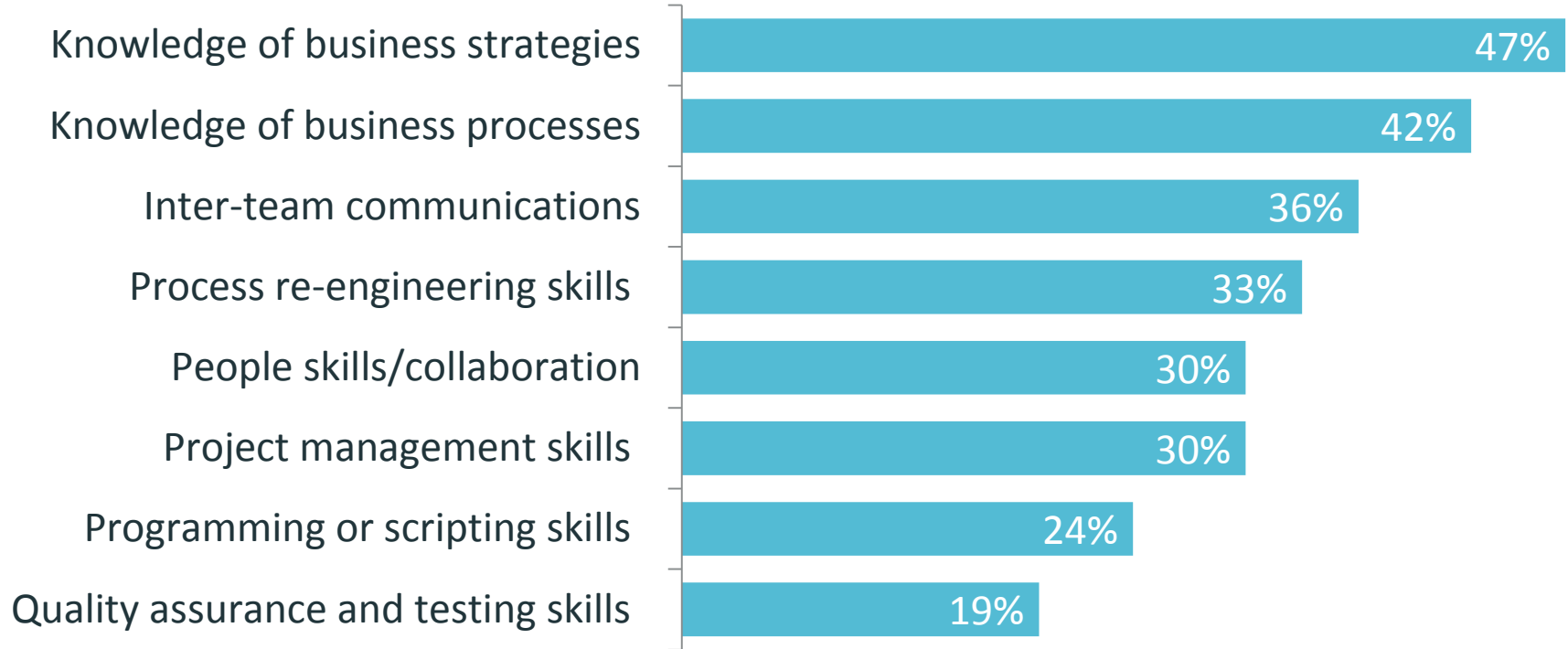
**BUILDING TRUST – IN EACH OTHER, IN TECHNOLOGY, IN PROCESS**

# Which of the following is your organization likely to invest in over the next year as part of your implementation of DevOps?



Source: DevOps: The Worst-Kept Secret to Winning in the Application Economy, Vanson Bourne (commissioned by CA Technologies), <http://rewrite.ca.com/us/articles/devops/research-report--devops-the-worst-kept-secret-to-winning-in-the-application-economy.aspx>

# What knowledge/skills do you need most to successfully implement a DevOps approach?



TechInsights Report: What Smart Businesses Know About DevOps, Vanson Bourne (commissioned by CA Technologies), <https://www.ca.com/us/register/forms/collateral/techinsights-report-what-smart-businesses-know-about-devops.aspx>



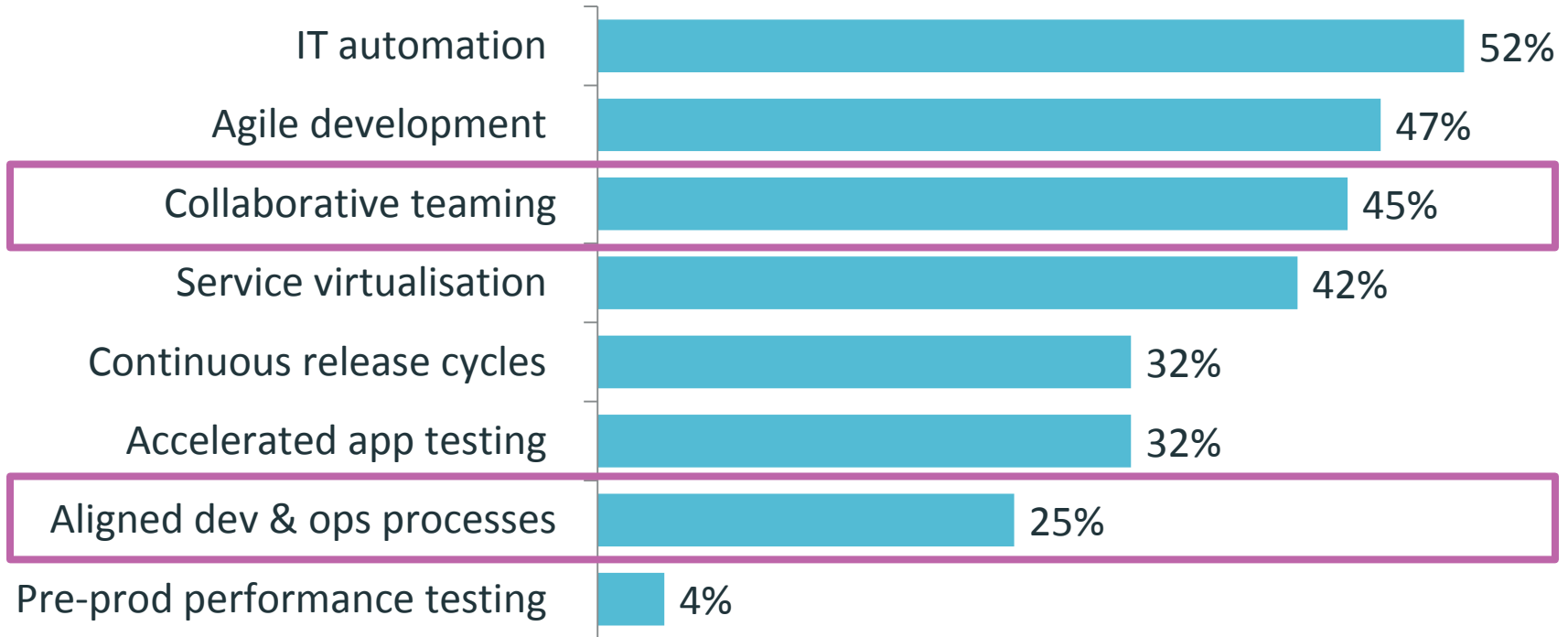
# Seven Habits Of Highly Effective DevOps

- 1 **ESTABLISH TRUST AND TRANSPARENCY BETWEEN DEV. AND OPS.**
- 2 **SEE EVERYTHING THROUGH THE EYES OF THE CUSTOMER.**
- 3 **STREAMLINE YOUR APPLICATION DELIVERY PIPELINE.**
- 4 **ADOPT A LOOSELY COUPLED SERVICE-ORIENTED ARCHITECTURE.**
- 5 **REWARD SOLUTION SIMPLICITY AND RELIABILITY.**
- 6 **ADOPT AND IMPROVE HOW YOU USE CUSTOMER EXPERIENCE DATA.**
- 7 **DEV. AND OPS NEED TO WALK IN THE OTHER'S SHOES.**

Source: Forrester Research, Inc., 'The Seven Habits Of Highly Effective DevOps', October 2, 2014

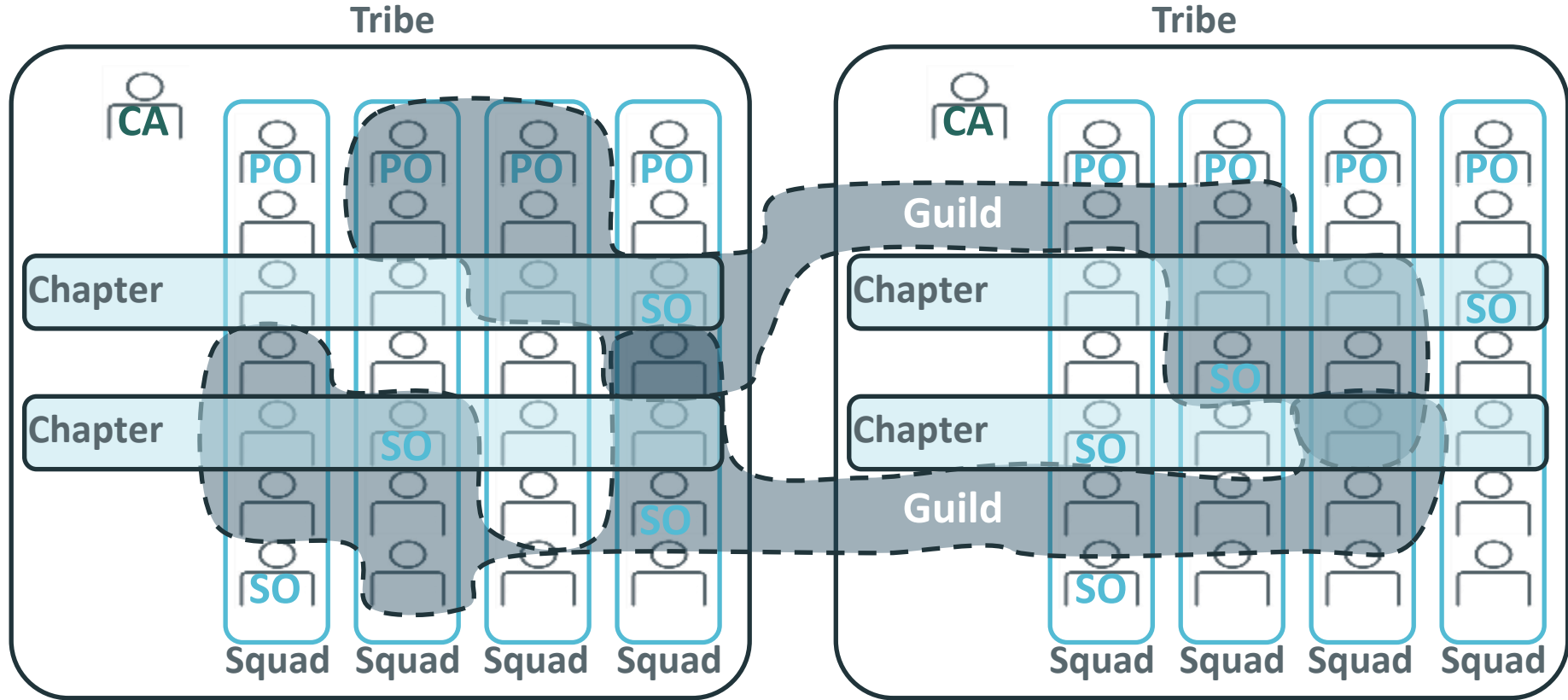
# Organizational Structures

# What is the most important component of a DevOps approach?



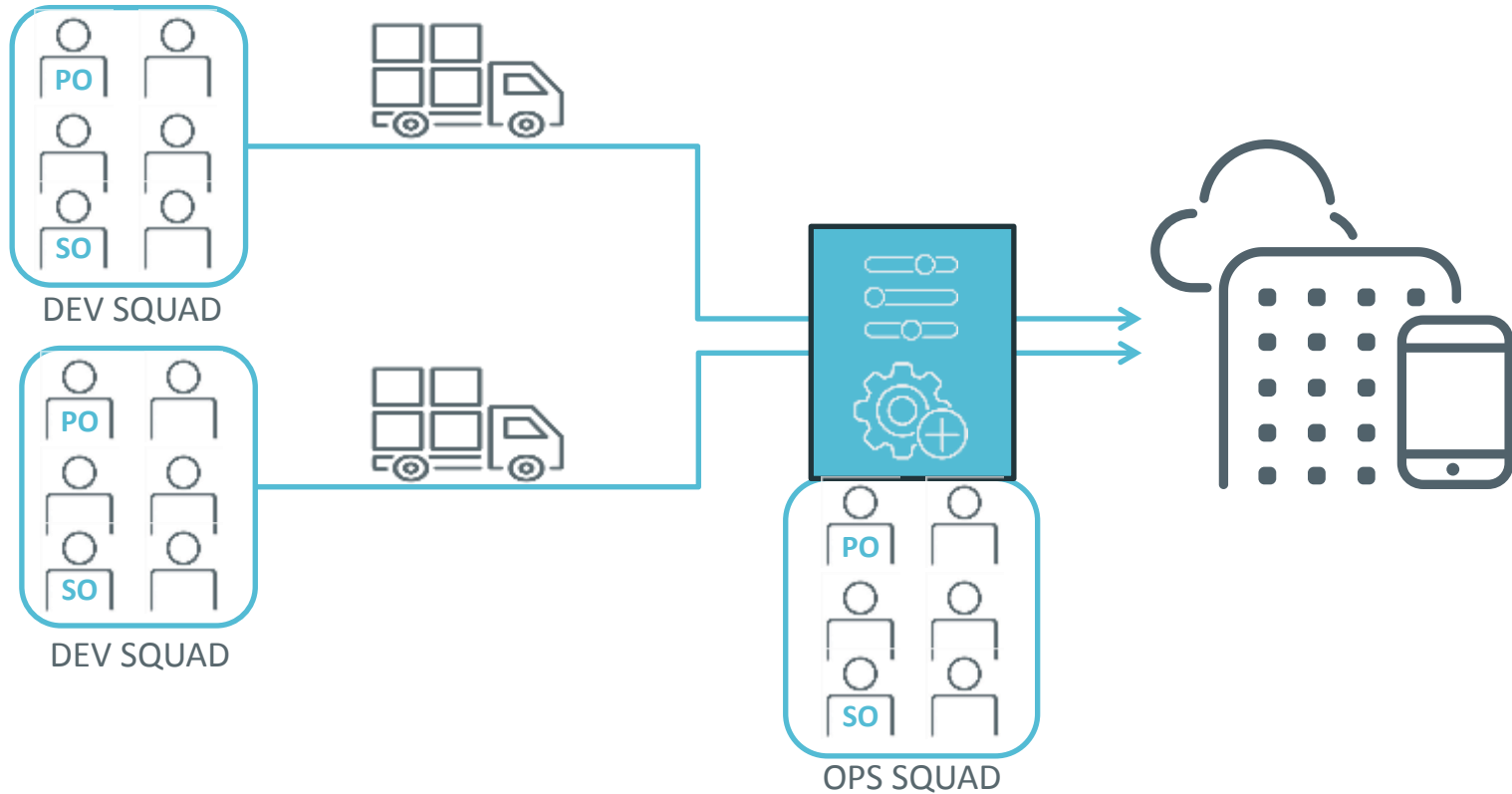
TechInsights Report: What Smart Businesses Know About DevOps, Vanson Bourne (commissioned by CA Technologies), <https://www.ca.com/us/register/forms/collateral/techinsights-report-what-smart-businesses-know-about-devops.aspx>

# Web-scale Org – ‘Loosely-coupled’ Development Teams



Source: Scaling Agile @ Spotify with Tribes, Squads, Chapters & Guilds, Henrik Kniberg & Anders Ivarsson, <https://dl.dropbox.com/u/1018963/Articles/SpotifyScaling.pdf>

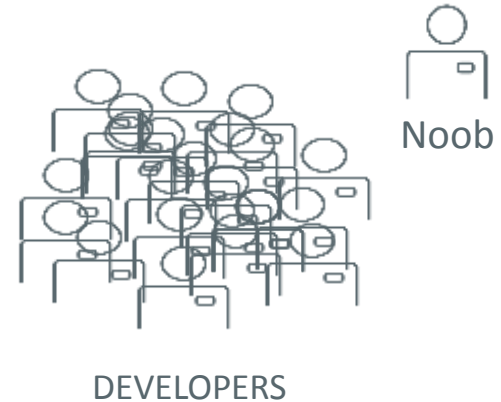
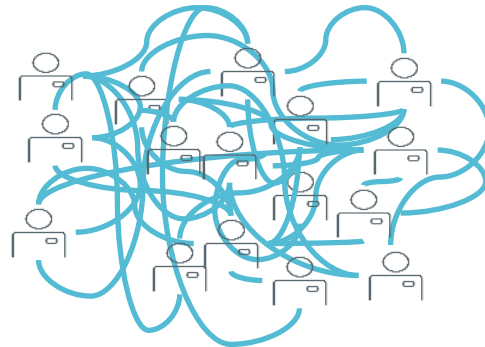
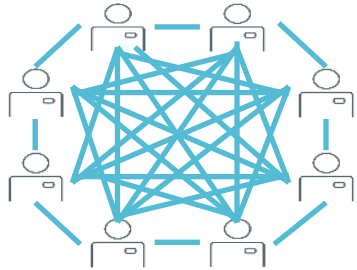
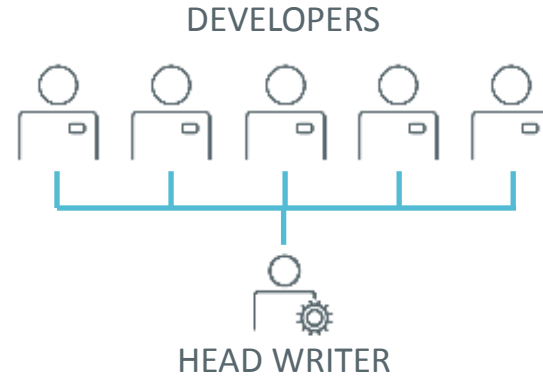
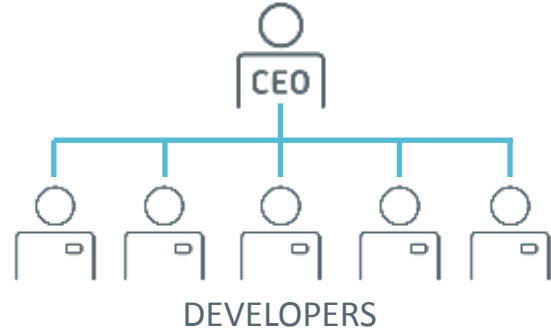
# Web-Scale Org – Ops as a Support Team for Dev



Source: Scaling Agile @ Spotify with Tribes, Squads, Chapters & Guilds, Henrik Kniberg & Anders Ivarsson, <https://dl.dropbox.com/u/1018963/Articles/SpotifyScaling.pdf>

# Gaming Company Organization(s)

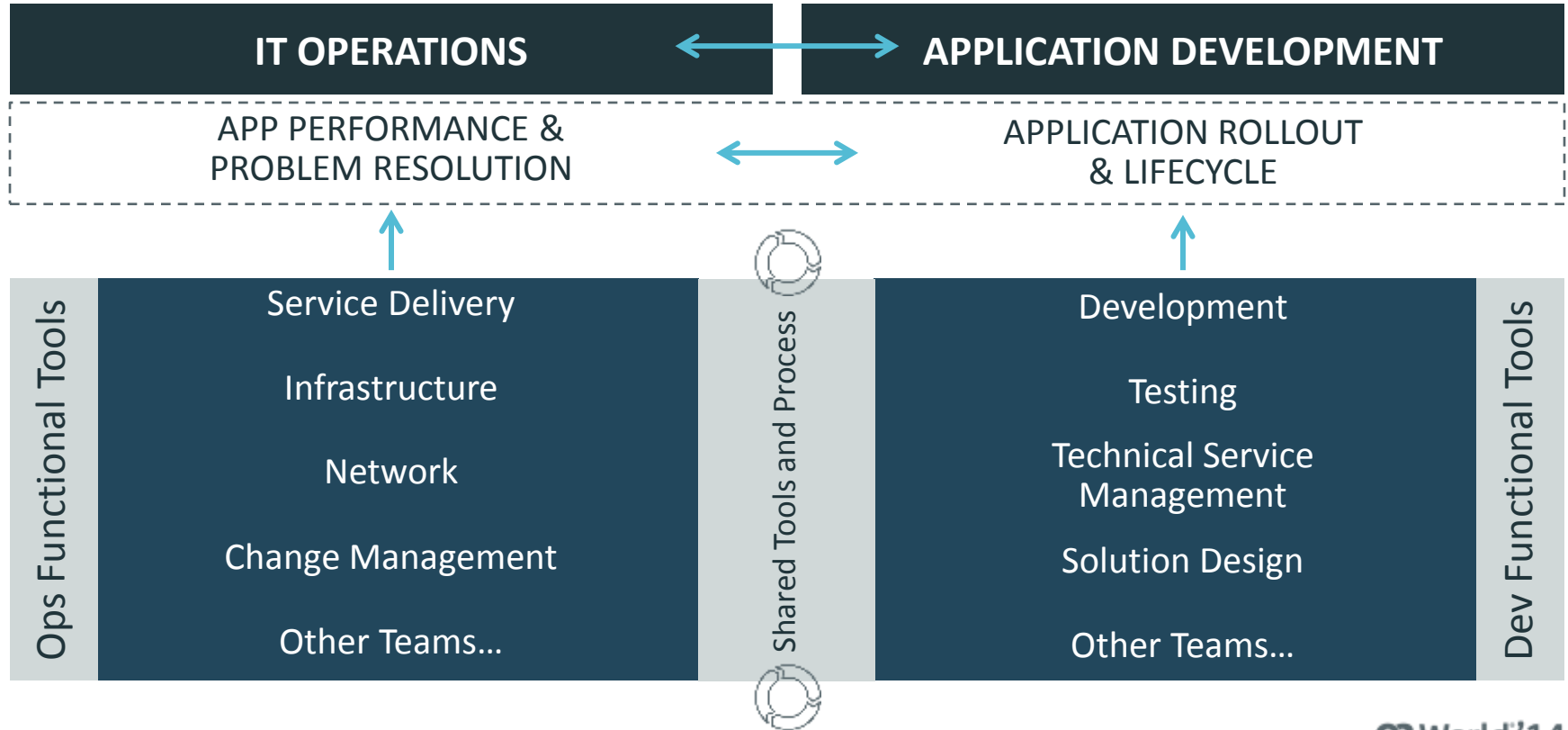
“Boss-free Since 1996”



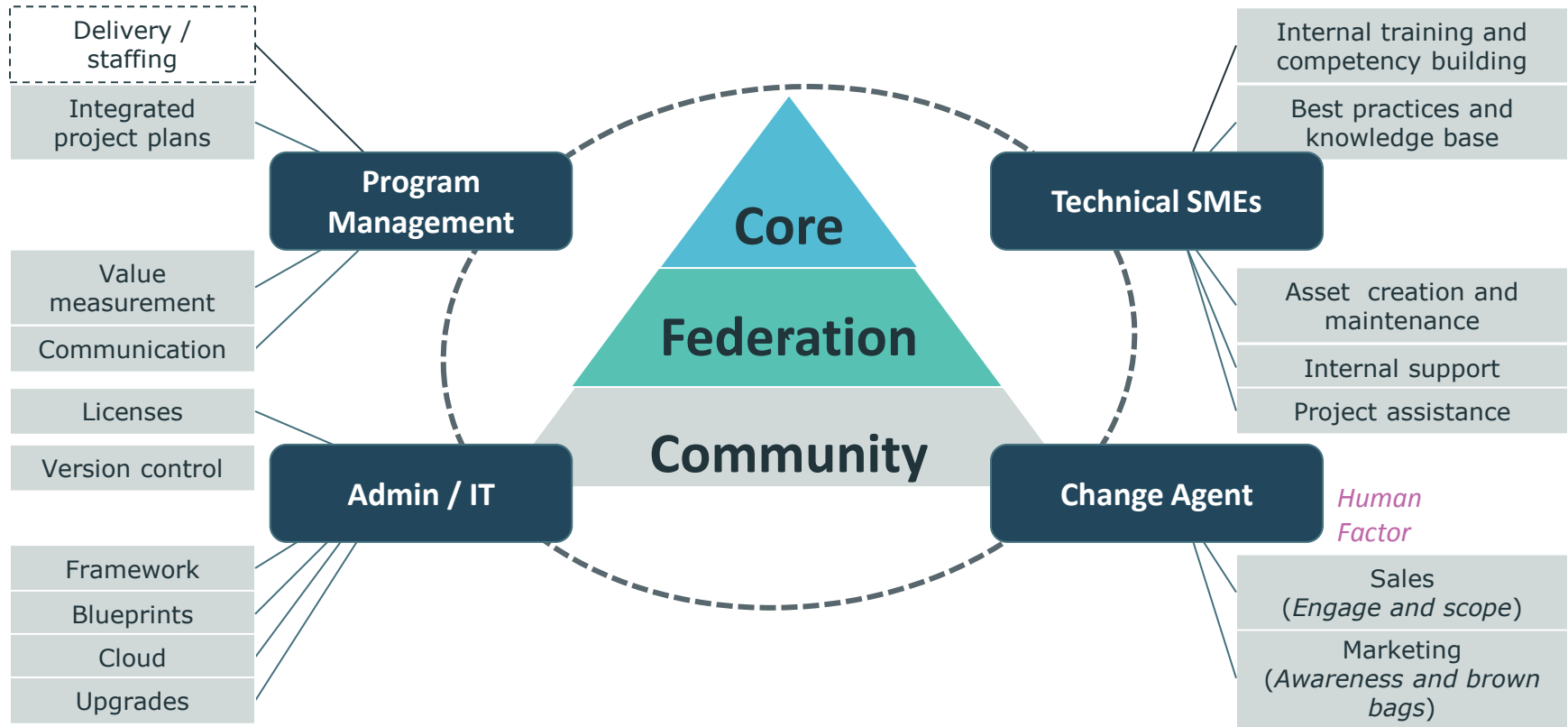
Source: Valve Handbook For New Employees, [http://media.steampowered.com/apps/valve/Valve\\_Handbook\\_LowRes.pdf](http://media.steampowered.com/apps/valve/Valve_Handbook_LowRes.pdf)

# Banking Org

Independent Teams, Shared Tools & Processes



# COE Model - With Federated Members





# Process Change

# DevOps Requires Fundamental Change To Process



**COLLABORATION BETWEEN DEVELOPMENT AND OPERATIONS**



**IMPROVING AND AUTOMATING HANDOFFS BETWEEN SILOS**



**REMOVING CONSTRAINTS AND OPENING UP BOTTLENECKS**

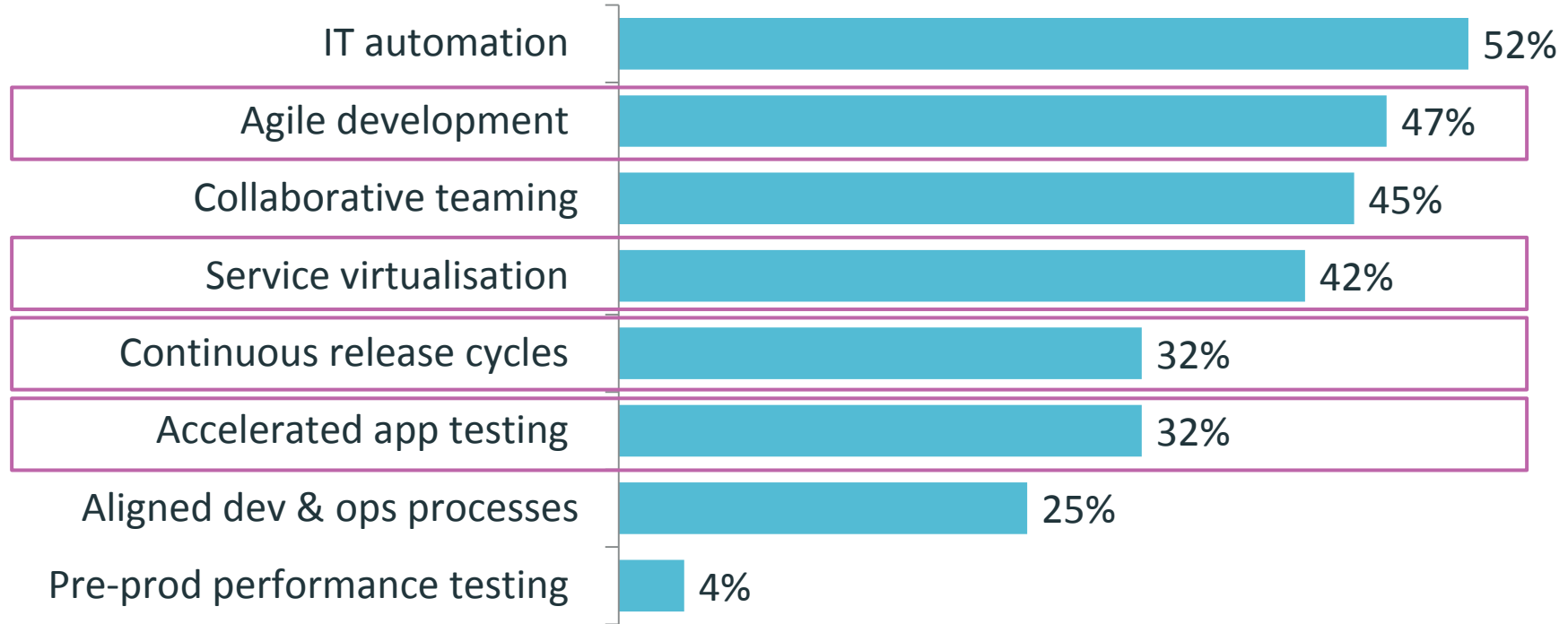


**IMPROVING THE FLOW OF CODE FROM IDEATION TO DELIVERY**



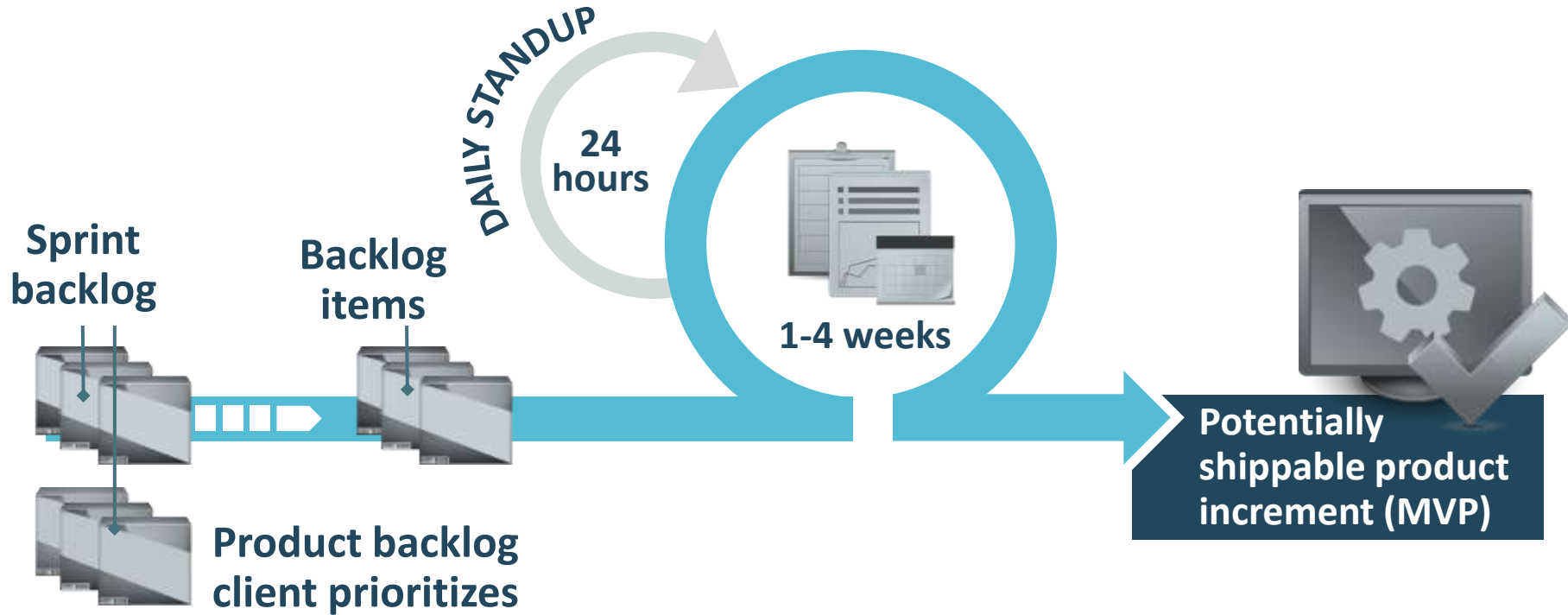
**CREATING FEEDBACK LOOPS AT EVERY STAGE**

# What is the most important component of a DevOps approach?

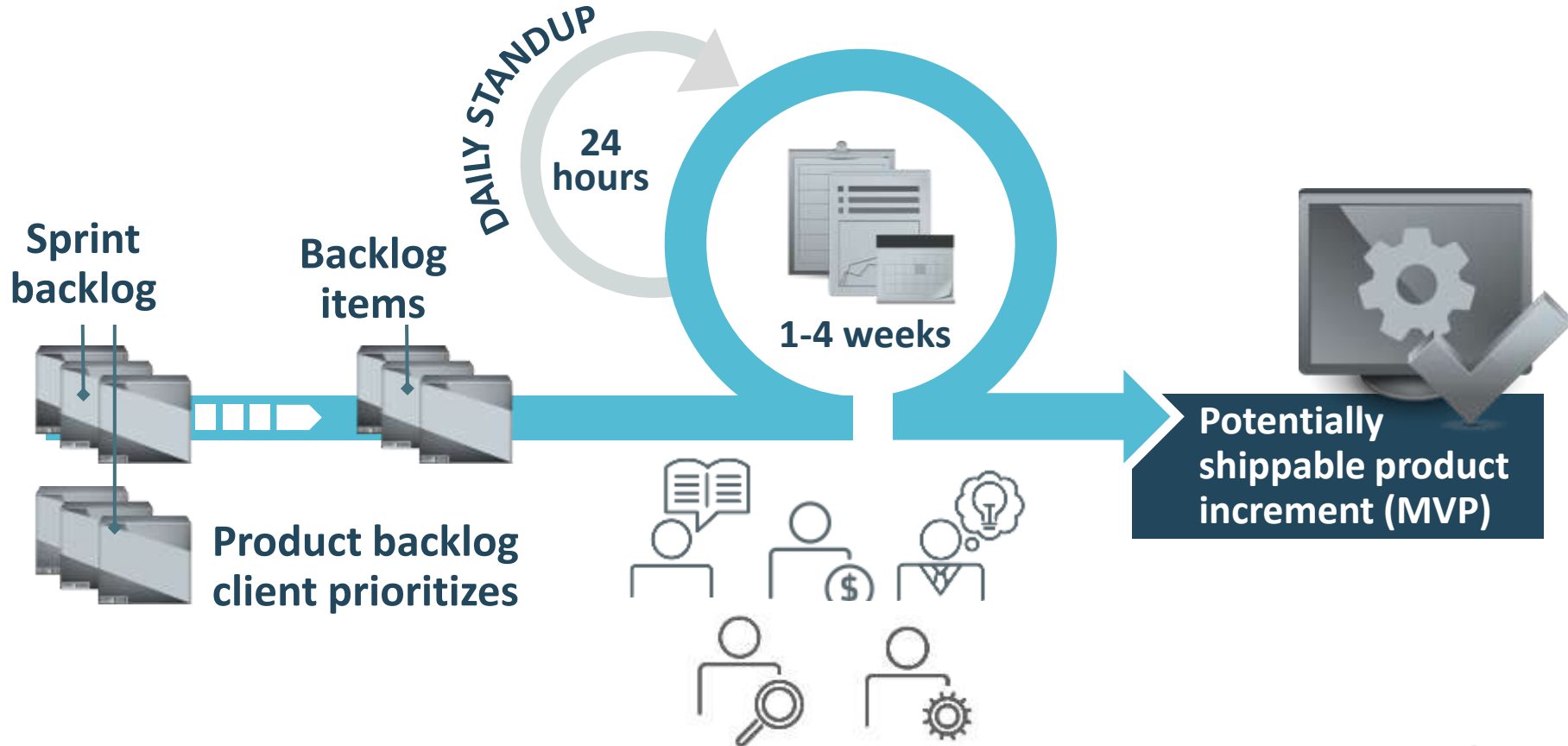


TechInsights Report: What Smart Businesses Know About DevOps, Vanson Bourne (commissioned by CA Technologies),  
<https://www.ca.com/us/register/forms/collateral/techinsights-report-what-smart-businesses-know-about-devops.aspx>

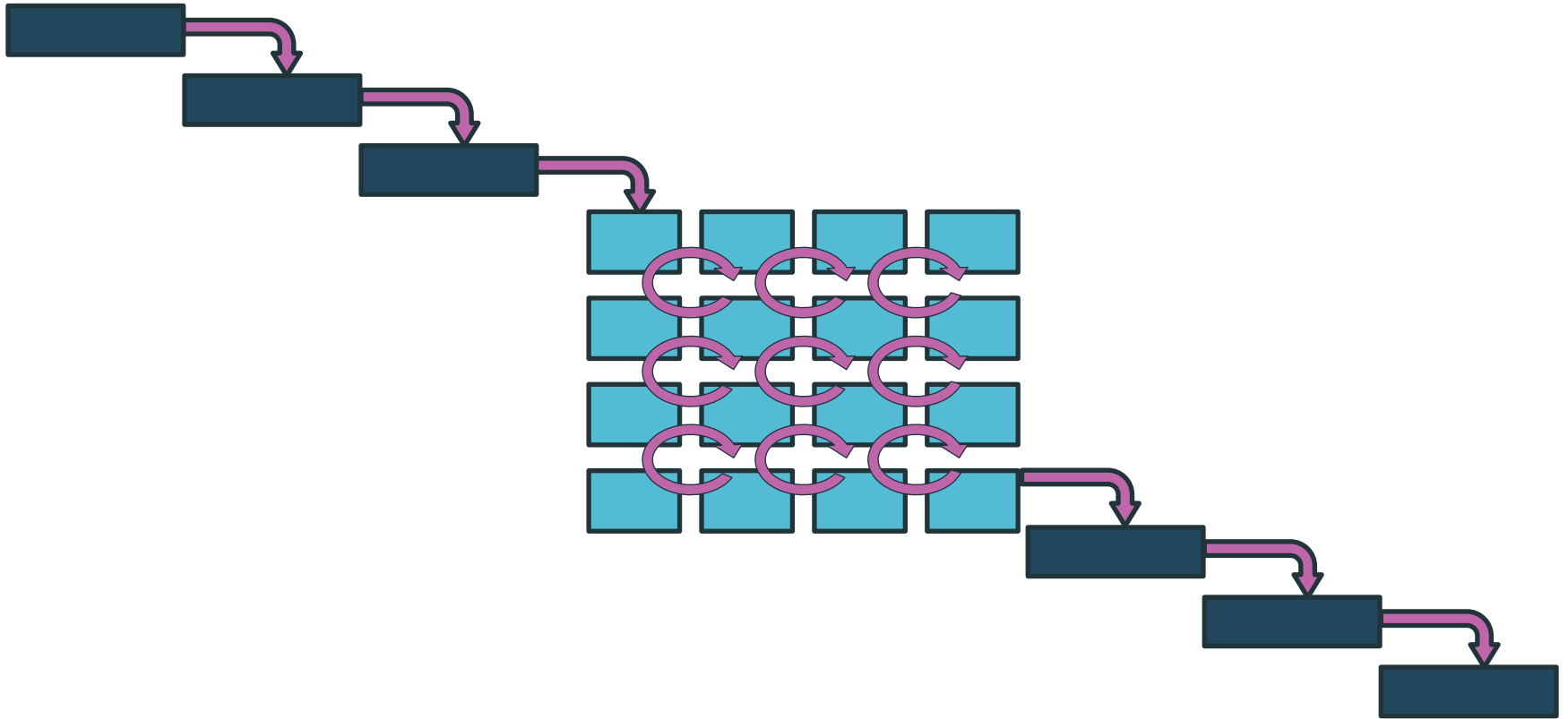
# Agile development – Deliver real requirements, faster.



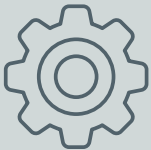
# Bring ops (and others) into agile methodology.



# Stepping Stone to Agile - 'Agile-fall'



# Continuous Release Process – Release Automation



Source

From existing  
build/continuous  
integration



Model

To a continuous delivery/release  
automation system



Promote



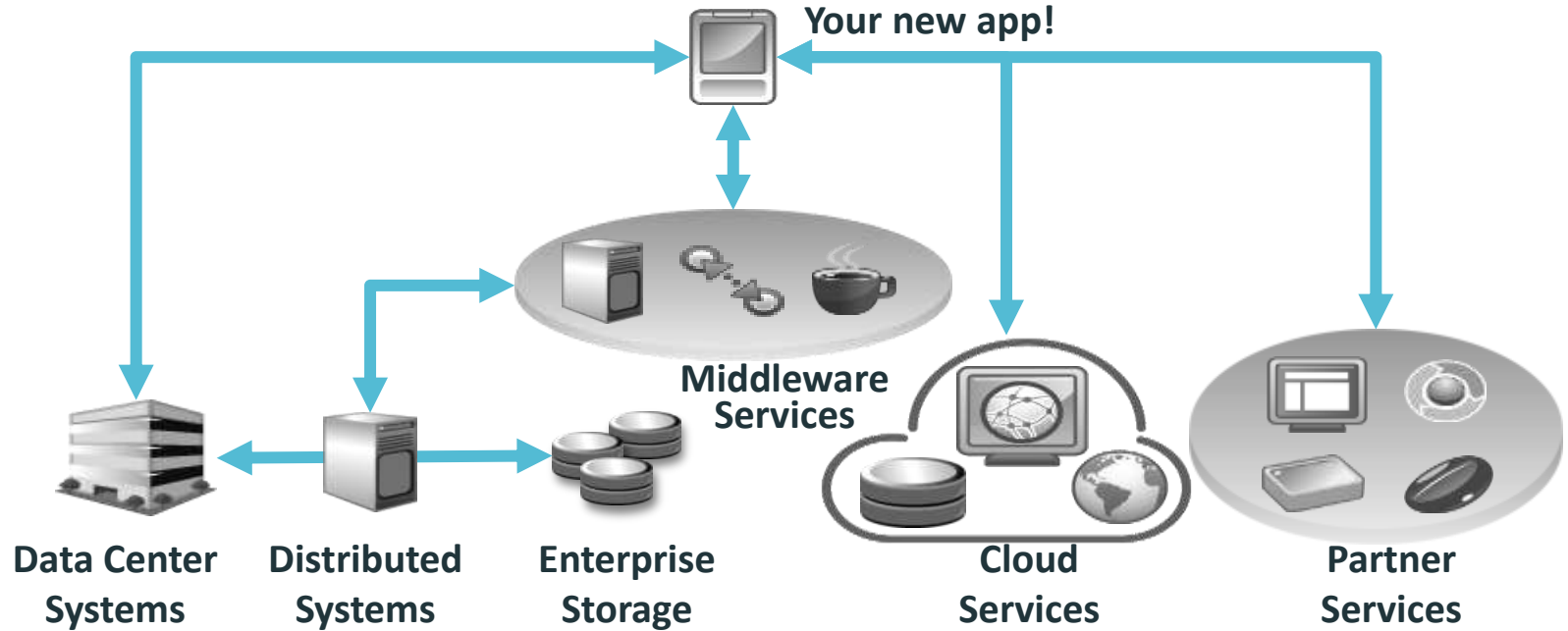
Deploy



Target

Onto on-premises,  
hosted, or  
cloud infrastructure

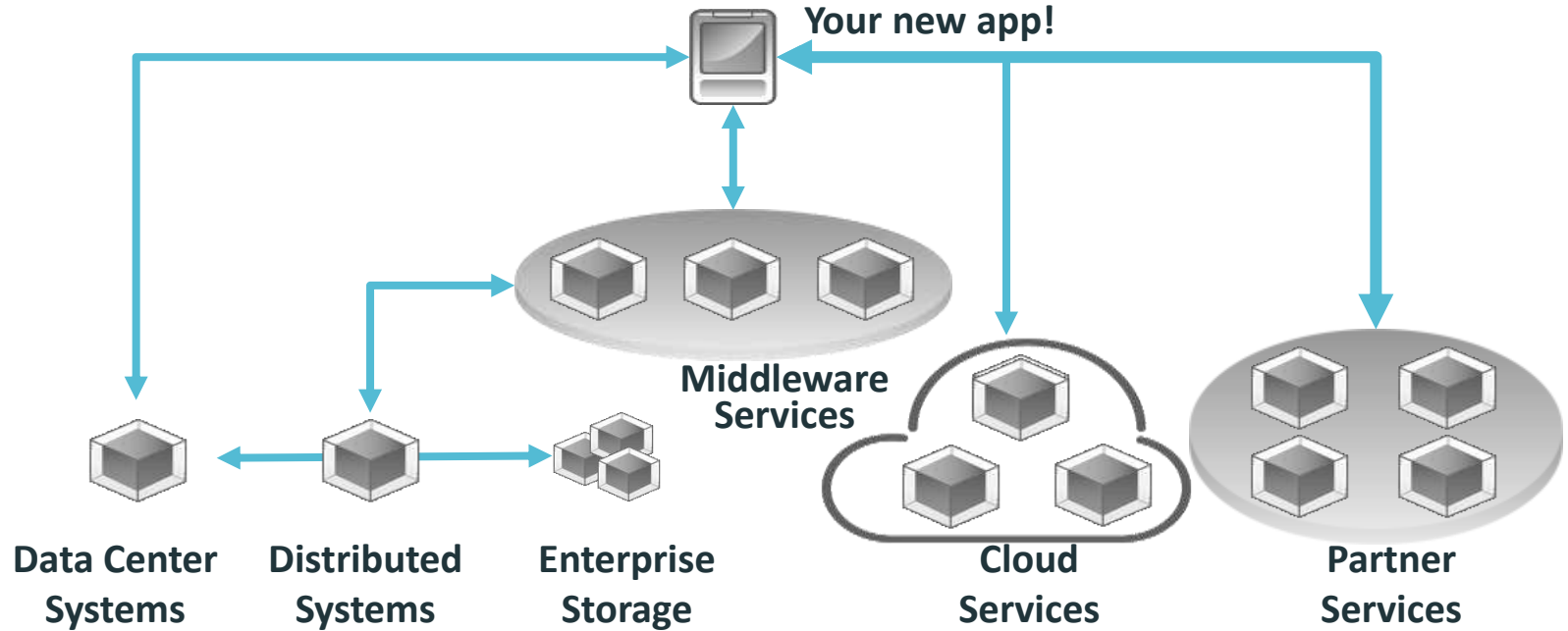
# Accelerate Application Testing – From Serial Testing ...



**"I can't test or QA anything until I have access to everything!"**



# Accelerate Application Testing – To Parallel Testing



**Test and QA against virtual services – faster, better, safer**

# Fostering Collaboration

# Some Ideas To Go On With ...

## **FAMILIARIZATION**

Paintball, brownbags, LAN games...

## **CO-LOCATION**

Face-to-face, real time, real people

## **GEO ALIGNMENT**

Local issues, smaller teams, business-focused

## **SECONDMENT**

Walk a mile in another man's moccasins

## **EVENT HOSTING**

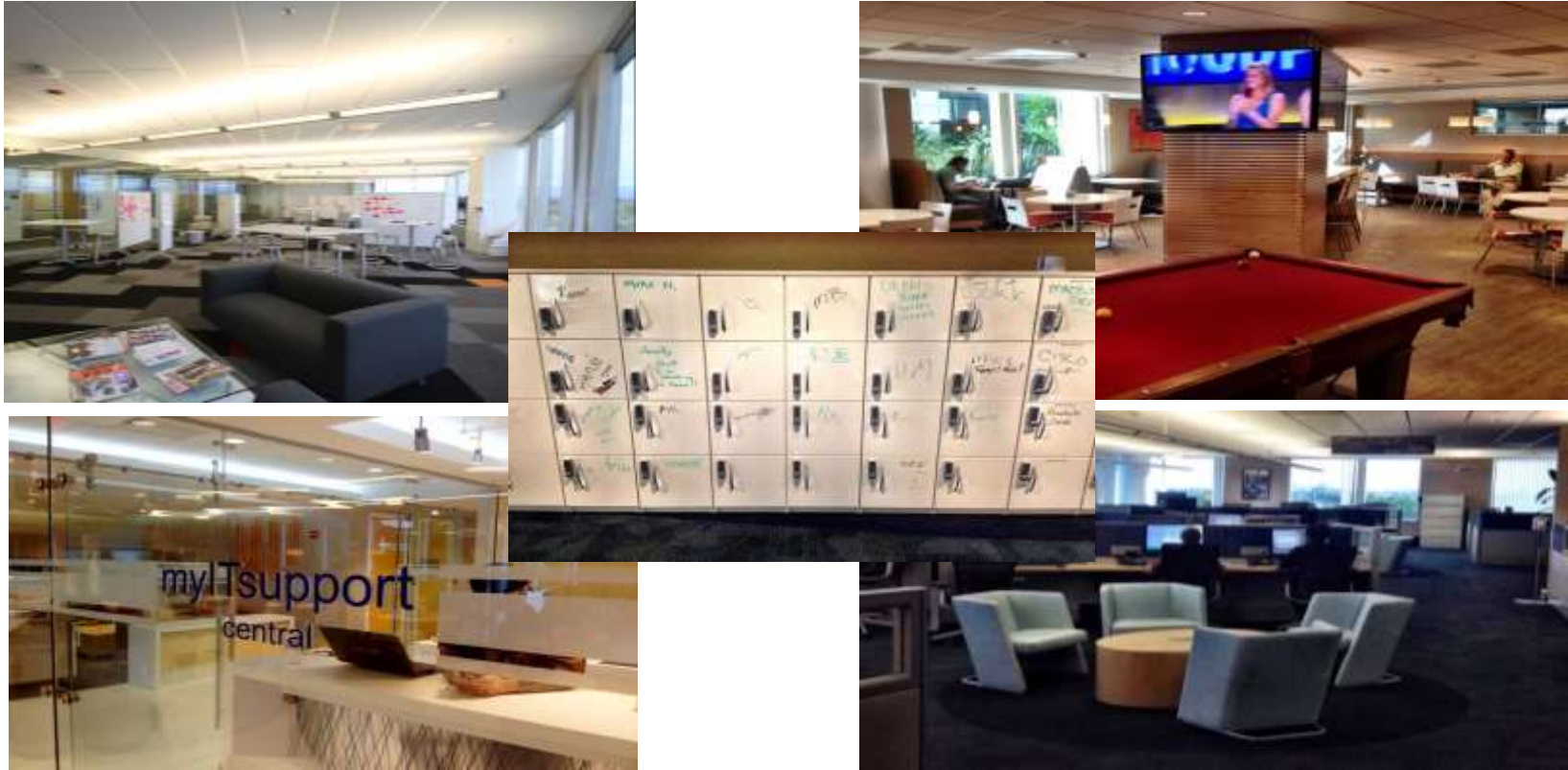
Share problems with peers and colleagues

# Collaborative Teaming at Valve



Source: Valve Handbook For New Employees, [http://media.steampowered.com/apps/valve/Valve\\_Handbook\\_LowRes.pdf](http://media.steampowered.com/apps/valve/Valve_Handbook_LowRes.pdf)

# Collaborative Teaming At Citrix



Source: South Florida Business Journal, A look inside Citrix's shared workspace offices – slideshow, [http://www.bizjournals.com/southflorida/blog/2013/12/a-look-inside-citrix-shared-workspace.html?s=image\\_gallery](http://www.bizjournals.com/southflorida/blog/2013/12/a-look-inside-citrix-shared-workspace.html?s=image_gallery)

# Collaborative Teaming At Centurylink

Team rooms, organized  
by function

Desks suited to pairing

Built-in collaboration spaces

Spaces for “spikes”

Meeting rooms of all shapes  
and sizes – few cubes

Large Projection Space

Open lunch room (complete with catered lunches)

Source: DevOps Gets Physical (Office Space), CenturyLink, <http://www.centurylinkcloud.com/blog/full/devops-gets-physical-office-space>

# Next Steps – Where to Start

# Where To Start Your DevOps Transformation?



Improve education,  
communications,  
and cross-skilling



Evaluate new  
processes to  
support DevOps



Re-evaluate and  
rebuild your service  
delivery cycle



Evaluate new tech  
to support DevOps

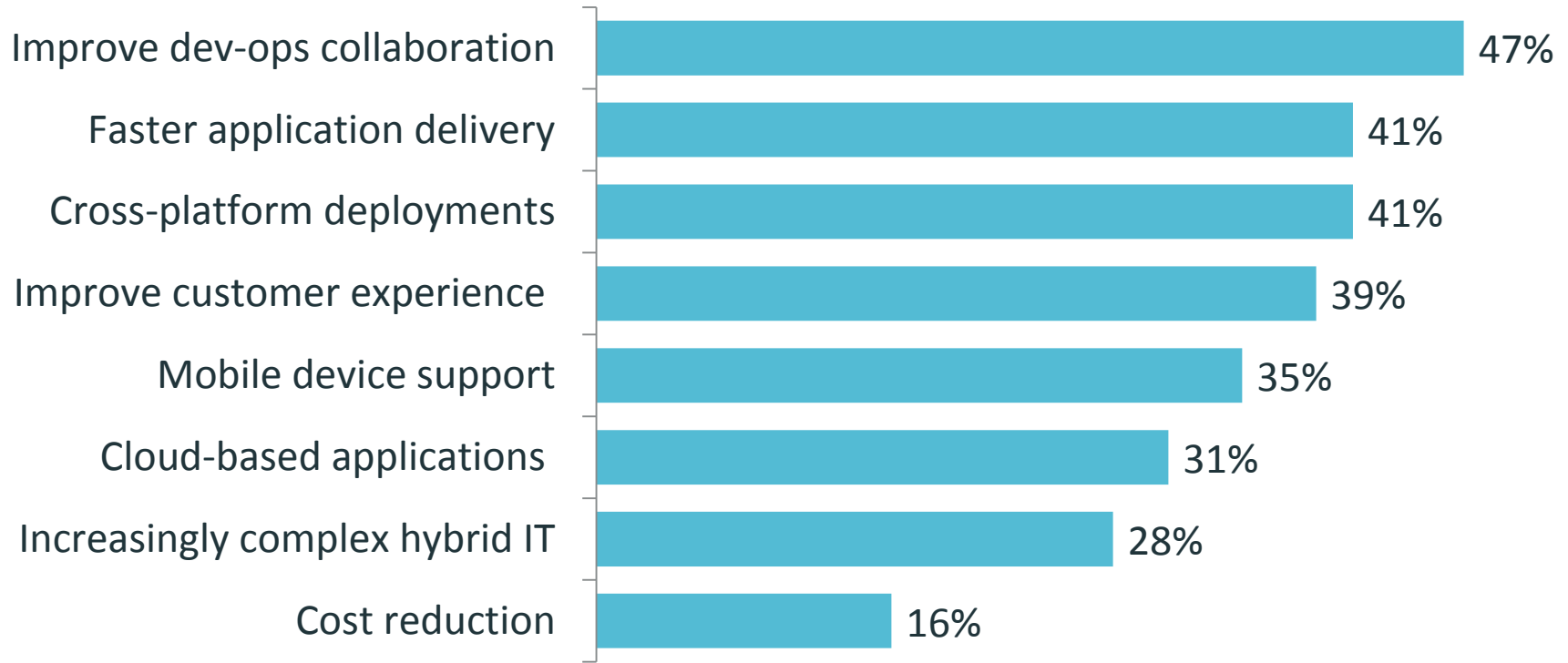


Try it in a small part  
of the org, a new  
project, or  
skunkworks



# Start With The Goals In Mind

## Why Are You Implementing/Considering DevOps?



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# For More Information



## DevOps

To learn more about DevOps, please visit:

<http://bit.ly/1wbjjqX>

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