I'M USING CHEF SO I'M DEVOPS RIGHT?

Dev

Raj Indugula

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- VP, Technology
- Experience: 20 years of industry; 12 years of Agile
- *Used* to be a Dev (Scrum/XP), *Now* Agile Process and Technical Coach, Trainer, Speaker

Passionate about learning, can't do without checklists, crave whiteboards!

Ops

Robert Brown

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- Cloud Solutions Developer
- Experience: 15 years of industry; 10 years of Operations
- *Used* to be operations, *Now* an IT Generalist, Trainer, Speaker

Tool geek, mad scientist and hacking things!

AGENDA

- The rise of the DevOps movement - A journey line
- Problem Context
- What-Why DevOps and Common Misconceptions
- The CALMS framework: Guiding Principles and Enabling Practices
- Roadmap to adoption
- Q & A

Take-home activities

Demming PDSA

NSF removed funding - Internet self supporting

Agile Infrastructure Patrick Dubois/Andrew Shafer

1st DevOpsDays Ghent Belgium #DevOps

The Rise of the a New IT Operations Model Gartner

AWS deploying every 11.6 seconds

Older

2001

2009

2010

2013

Developer & QA

1995

AGILE HotFixes make users want features NOW

2008

Velocity Conference Allspaw/ Hammond-Flickr
10+ Deployments/Day Dev and OPs Cooperation

2009

CAMS introduced Edwards/Willis Became CALMS

2011

The Phoenix Project by Gene Kim

Today

Problem Context

Business Agility

How fast can you learn?

Only as fast as you can get **feedback**

Real feedback comes from customers

Only outcomes matter

Outcomes come from deployed software

Why does this matter?

Avoid the fate of Nokia

Customers loved this…

…Until they tried this…

BE RELEVANT !

What does the term DevOps mean to you?

DevOps…

IS NOT

- A product or service
- Title, Role or even a Team
- Prescriptive
- Devs doing Ops work or vice-versa

Most of all…Competitive Advantage

IS

- From practitioners, by practitioners
- A cultural and professional movement based on experience
- Feedback across Business, Delivery, Run
- Automation and Behaviors over Documentation and Gates
- Decentralized and open to everyone

Why DevOps?

Challenges Exist in Delivery

- New features/releases
- New architectures
- New platforms
- Functional Req

- No downtime
- Stable platform
- NFRs

UUGGHHH

Remember the First Agile Principle?

Our highest priority is to satisfy the customer through early and **continuous delivery** of valuable software

DevOps

"defined"

“I’ll tell you EXACTLY what it means”

“Devops means <caring> about your job enough to not pass the buck.

Devops means <caring> about your job enough to want to learn all the parts and not just your little world.

Developers need to understand infrastructure. Operations people need to understand code.

People need to <bleep> work with each other and not just occupy space next to each other.”

http://blog.lusis.org/blog/2013/06/04/devops-the-title-match/

Components of DevOps

Culture

Automation

Lean

Measurement

Sharing

CULTURE shock

All In Now…No Silos

Integrate Continuously

Quality is Continuous

Deployment is Automated

Delivery is Continuous

Build Measure Learn
Operate

Break Things…In Production

Systems Thinking

Network of Projects

Empathy

Agile Team

Centralized QA

IT Operations

Business

Development

Integration + QA

Release and Operations

End User

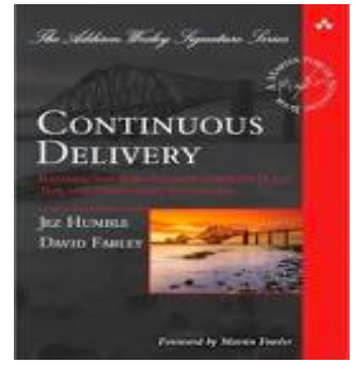
Business

Service Delivery

Delivery Team

Small autonomous builds

Continuous **Flow** of **New Features**



Jez Humble and David Farley

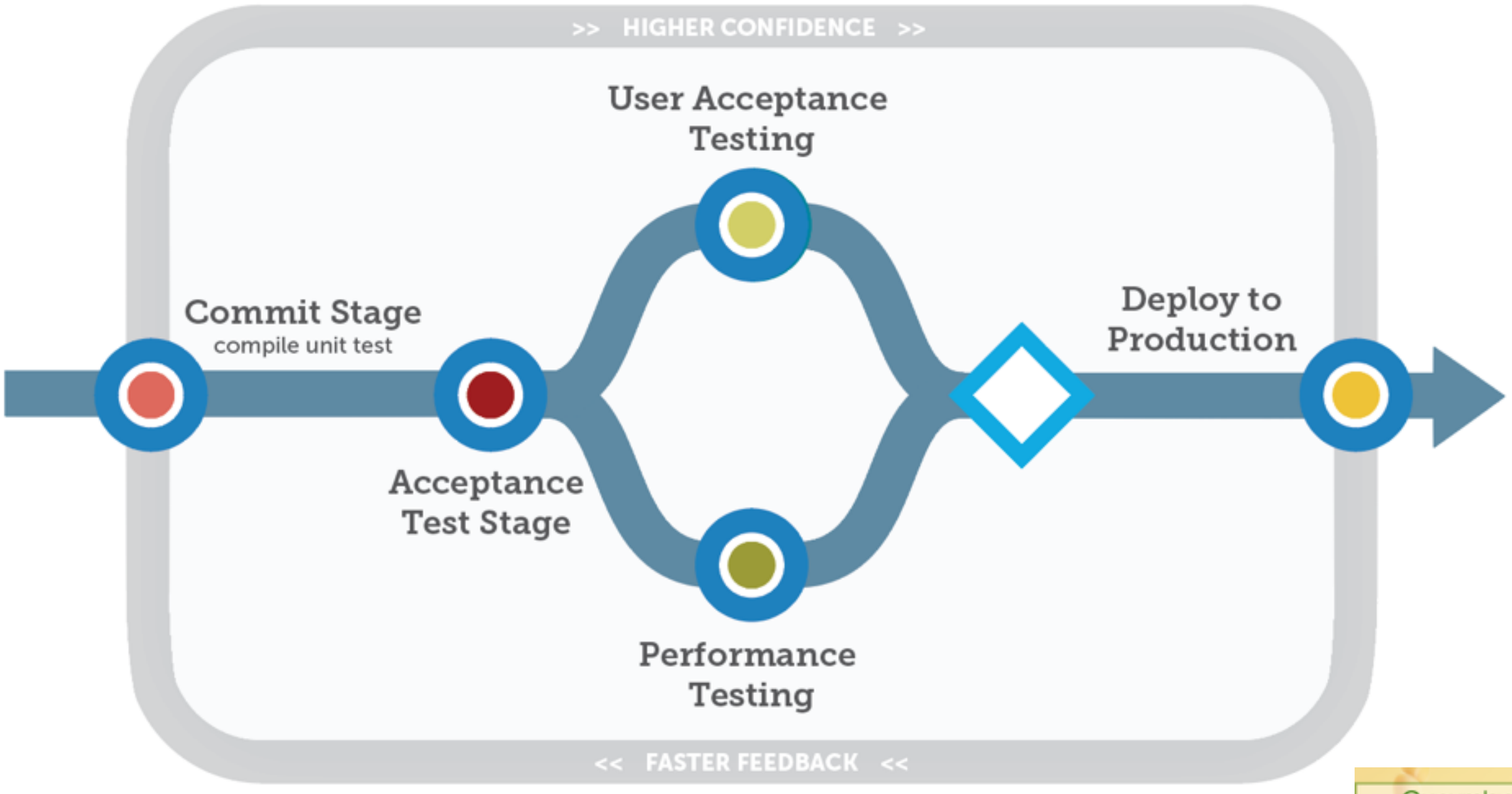
CD vs CD?

Automation is Key

"Our job as engineers (and ops, dev-ops, QA, support, everyone in the company actually) is to enable the business goals. We strongly feel that in order to do that you must have the ability to deploy code quickly and safely. Even if the business goals are to deploy strongly QA'd code once a month at 3am (it's not for us, we push all the time), having a reliable and easy deployment should be non-negotiable"

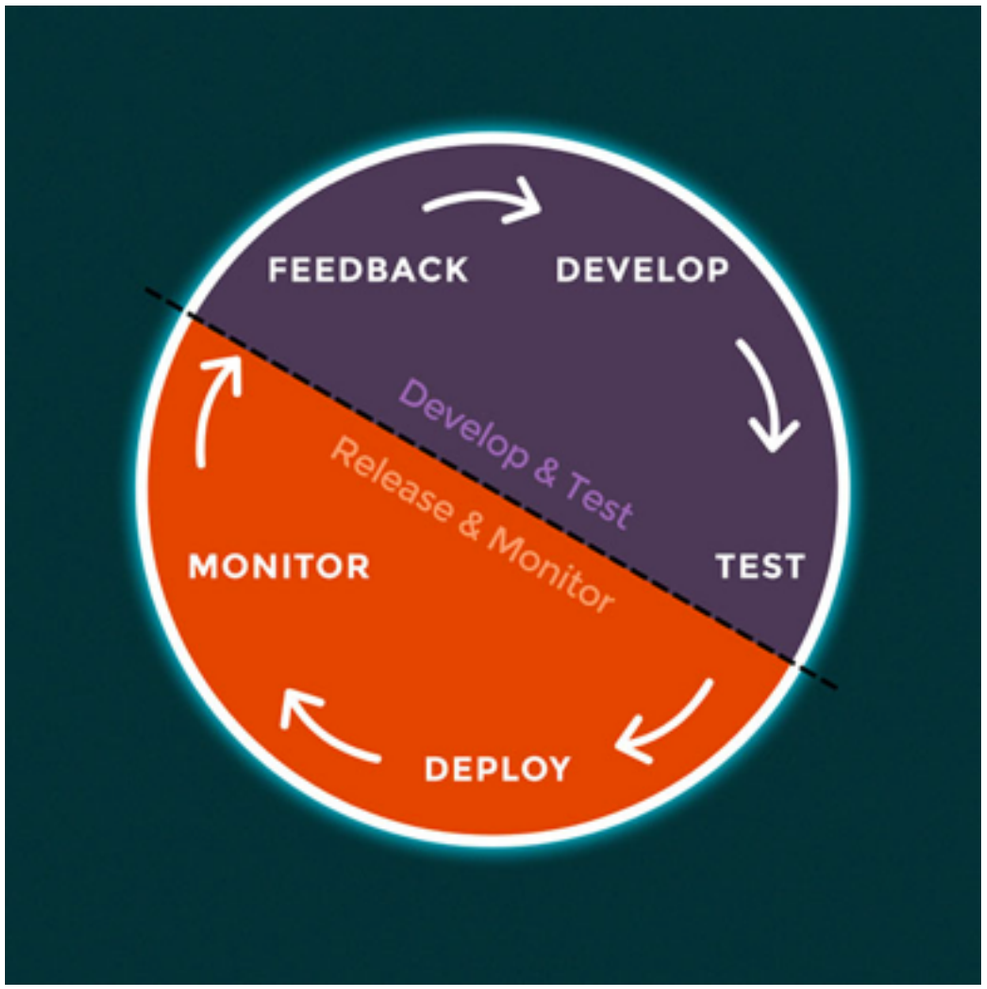
Etsy: https://codeascraft.com/2010/05/20/quantum-of-deployment/

Deployment Pipeline



PIPELINE STAGES = FEEDBACK OPPORTUNITIES

Metrics: To know where you're going, you need to know where you are



Rapid Release Cycle with strong Feedback Loop

People
- Customer satisfaction (NPS)
- Employee satisfaction

Process
- Release/Change Frequency
- Failure Rate
- Cost/Release

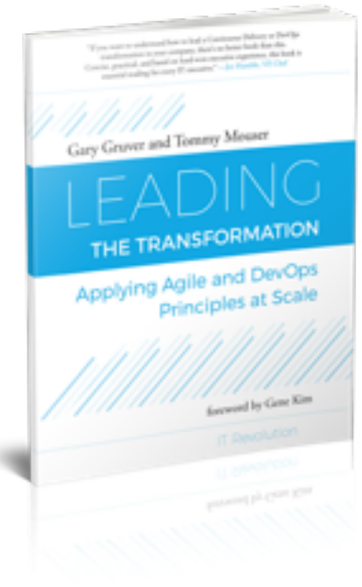
Technology
- Application & Performance Monitoring
- Log Management
- Mean Time to Detect (MTTD)
- Mean Time to Repair (Fix) (MTTR)

Build, Measure, Learn, Operate

Ideas

Version Code + Infrastructure

Development/Test + Continuous Integration



Operate and Measure

Continuous Deployment

Automate Infrastructure

Break things….in Production!

- **Chaos Monkey**

Randomly disables our production instances

- **Latency Monkey**

Induces artificial delays to RESTful calls

- **Doctor Monkey**

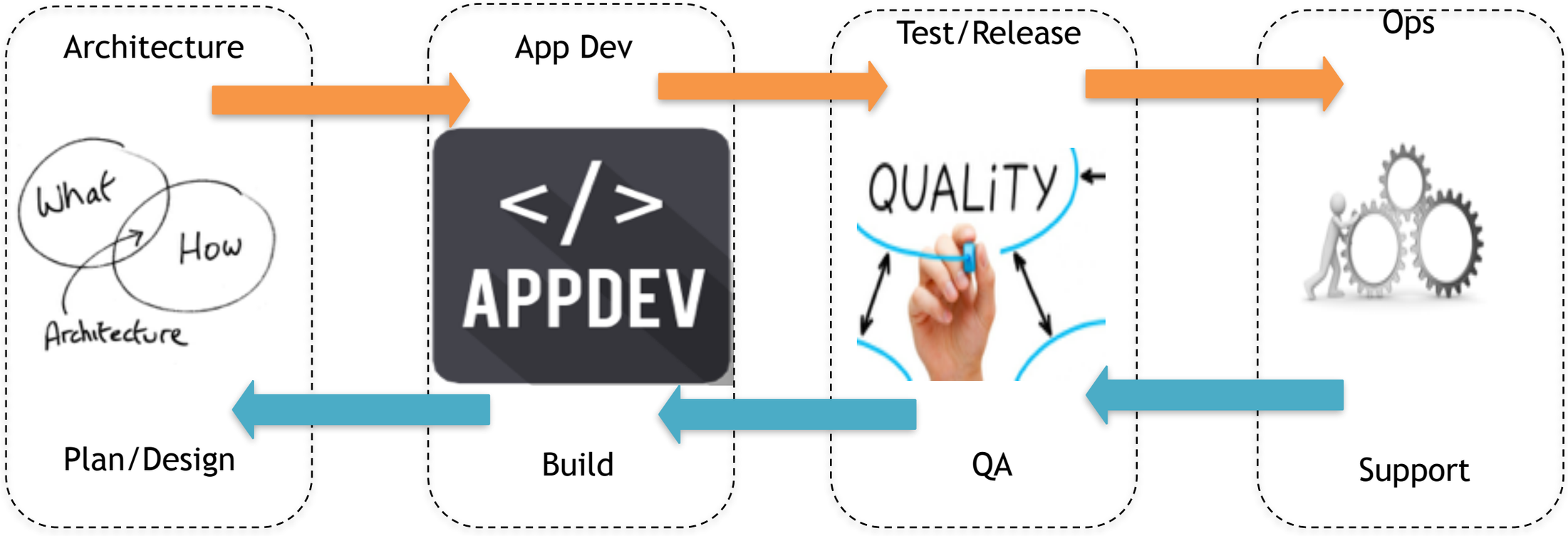
Shuts down unhealthy instances

Be Scientific !!!

“Move fast and break things” - Facebook dev principle

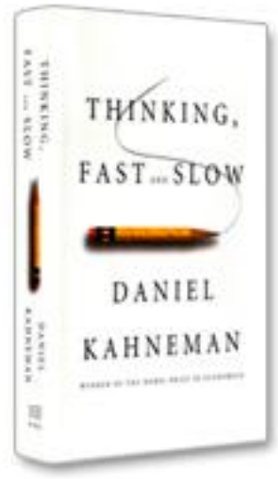
Sharing is Caring

New App and Release Information. New Feature, Bug Fixes, etc.



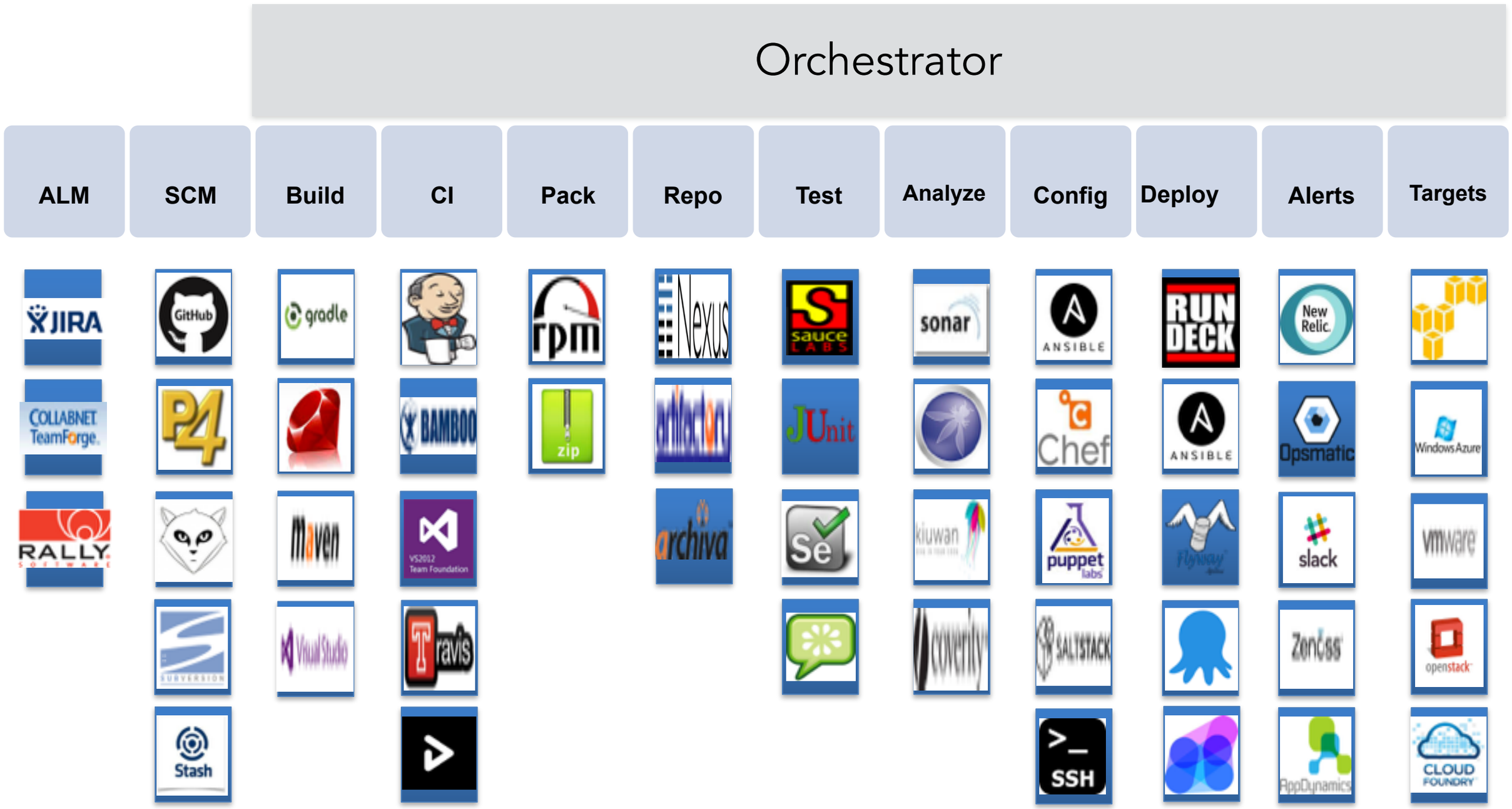
App performance info, usage info, issues, failures, etc.

Feedback and Feed-forward loop

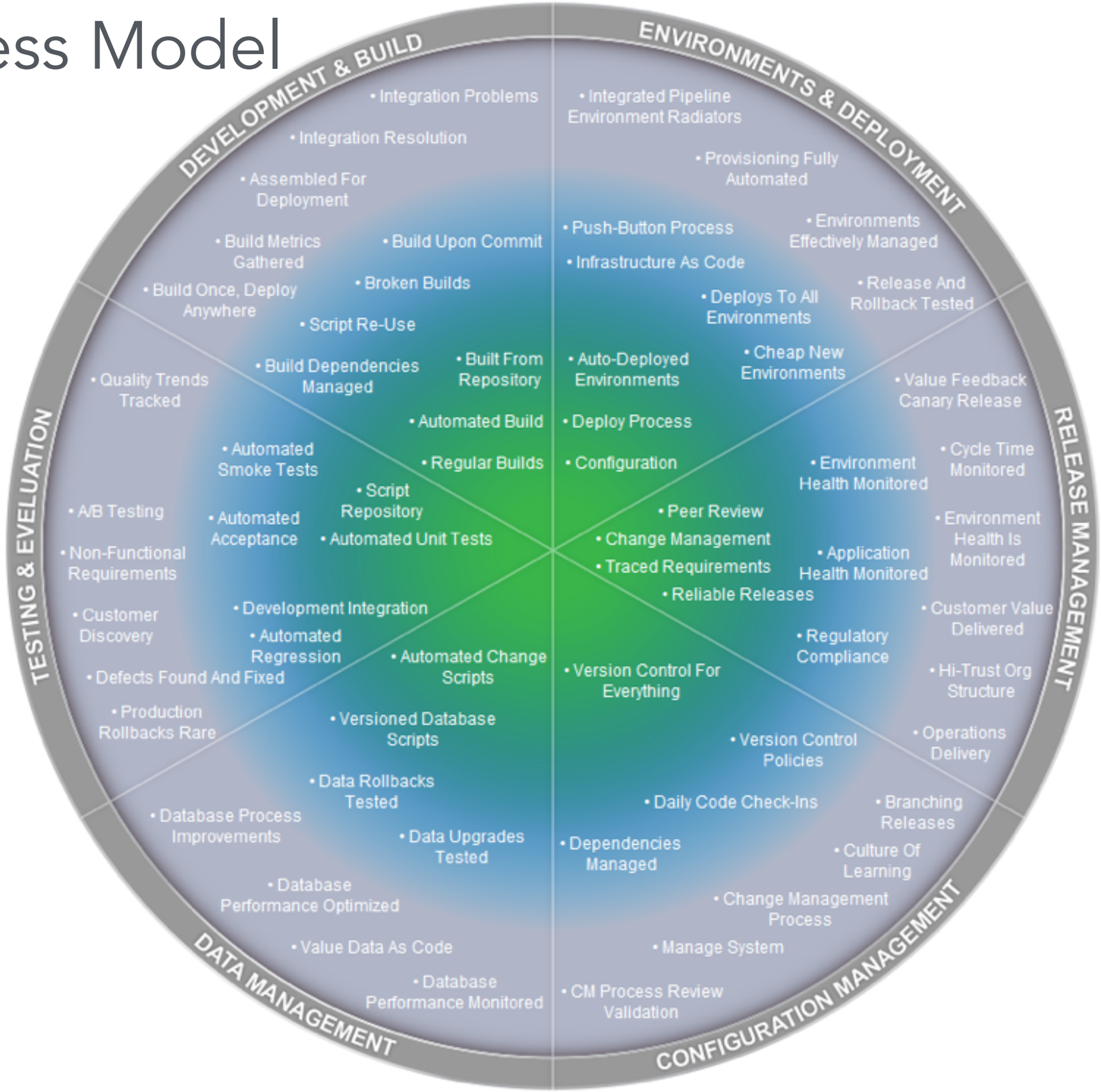


Roadmap to Adoption

The Right Tools Enhance the Right Behavior



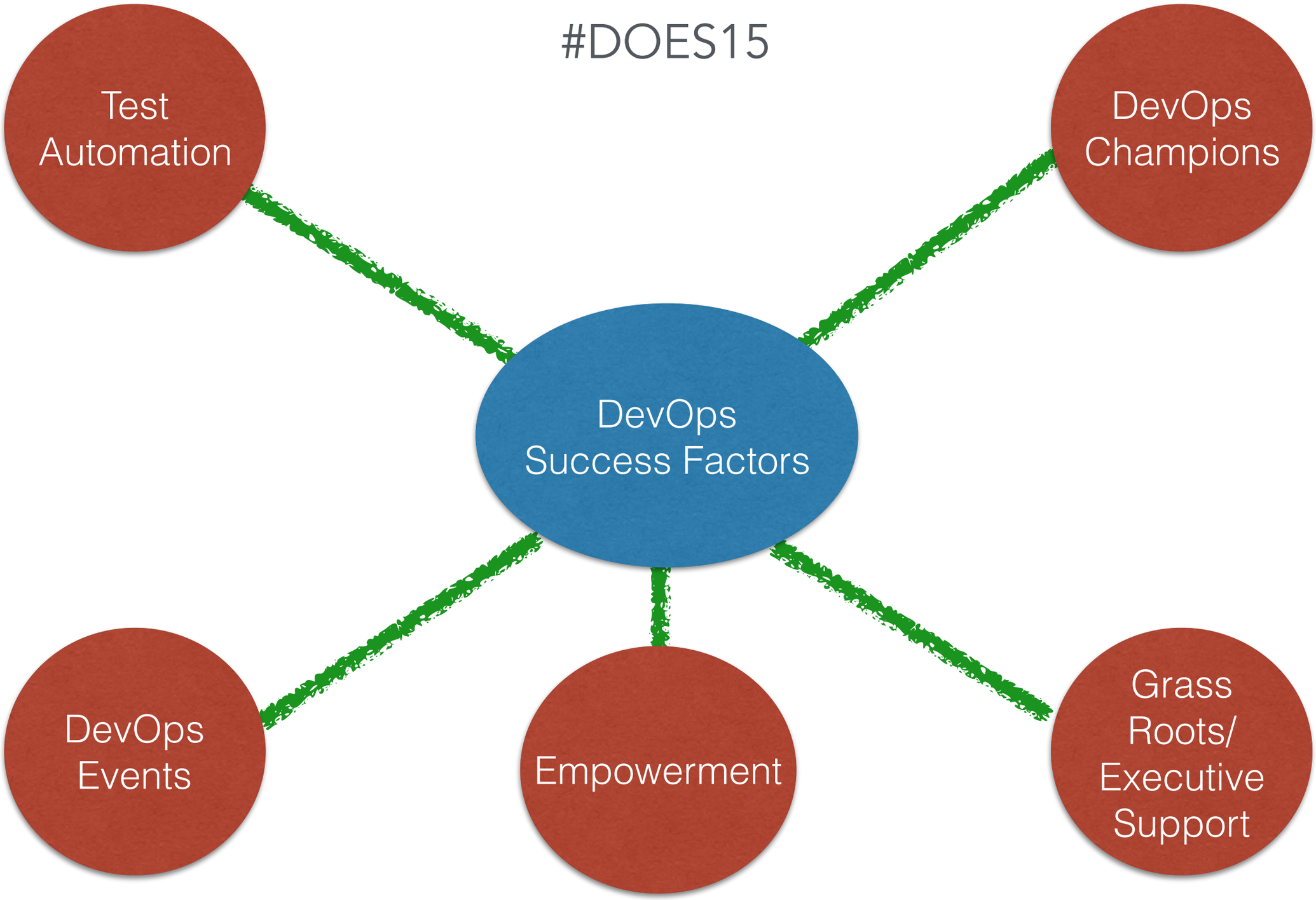
Fitness Model



Summary

Success Factors

#DOES15

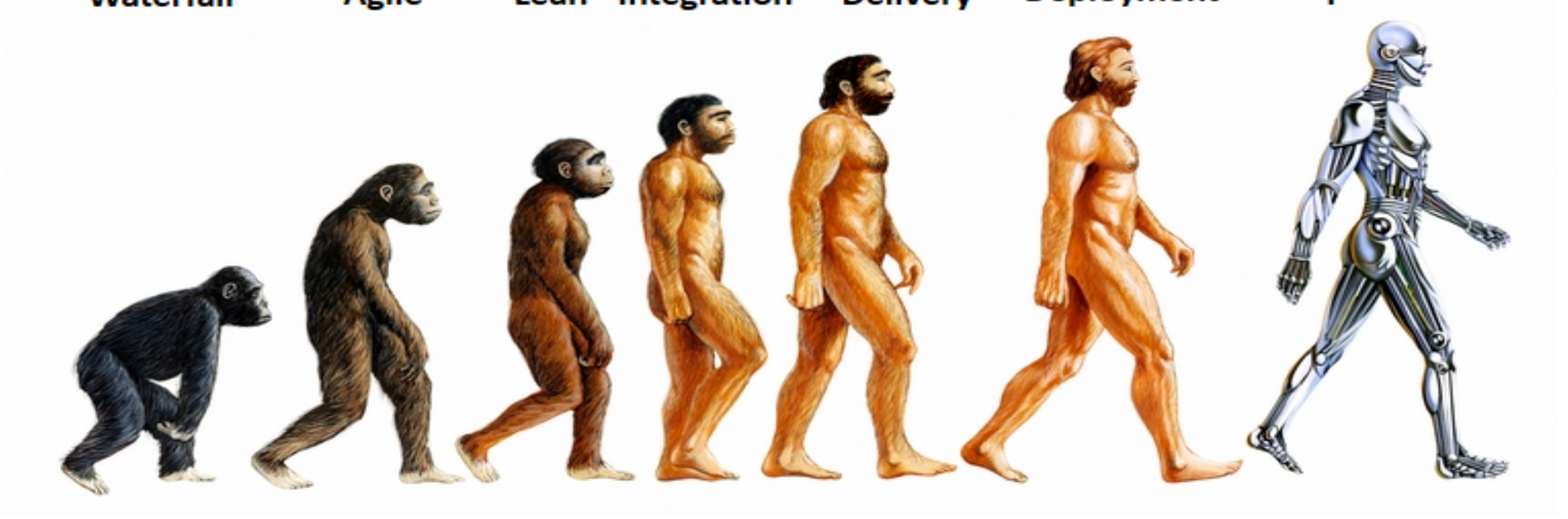


Journey Line

DevOps Movement

2001 2003 2010 2012

Waterfall Agile Lean Continuous Integration Continuous Delivery Continuous Deployment Continuous Operations



Key Takeaways

- DevOps is a movement, not a job description or tool
- Dev and Ops need to walk in the other's shoes
- Use automation to detect problems early
- Work in small batches and improve flow
- Measure and improve customer outcomes by sharing and learning

THANK YOU

RAJ AND ROB

DEV — OPS

https://github.com/browngeek666/agiledc2015.git

TAKE HOME EXERCISES

RAJ AND ROB

DEV — OPS

Take-Home Activity

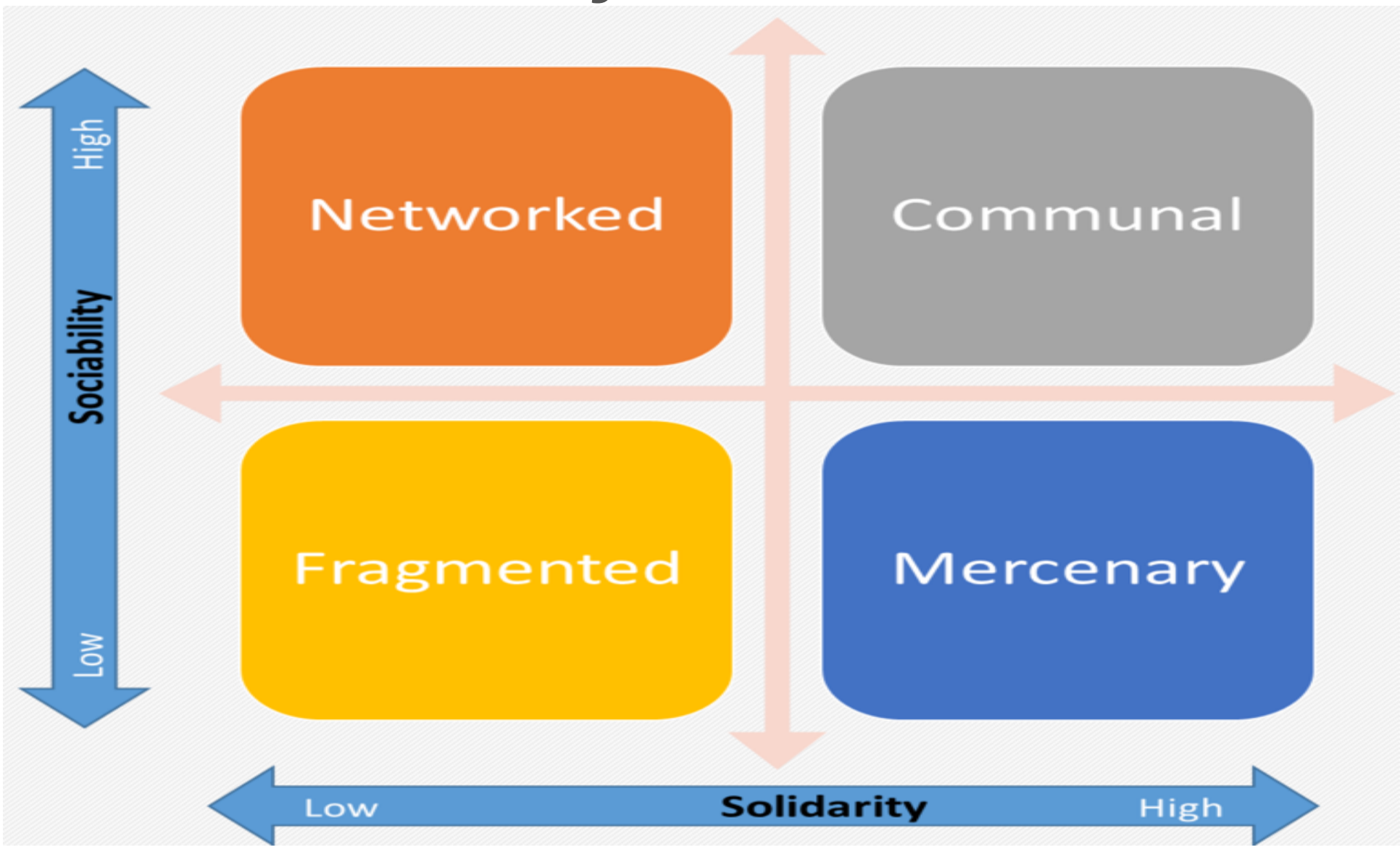
How frequently do your teams commit code to a common code stream? And, to mainline?

How do you deal with “broken” builds on CI?

Can team members commit into a “broken build?

Take-Home Activity

Where is your Team?



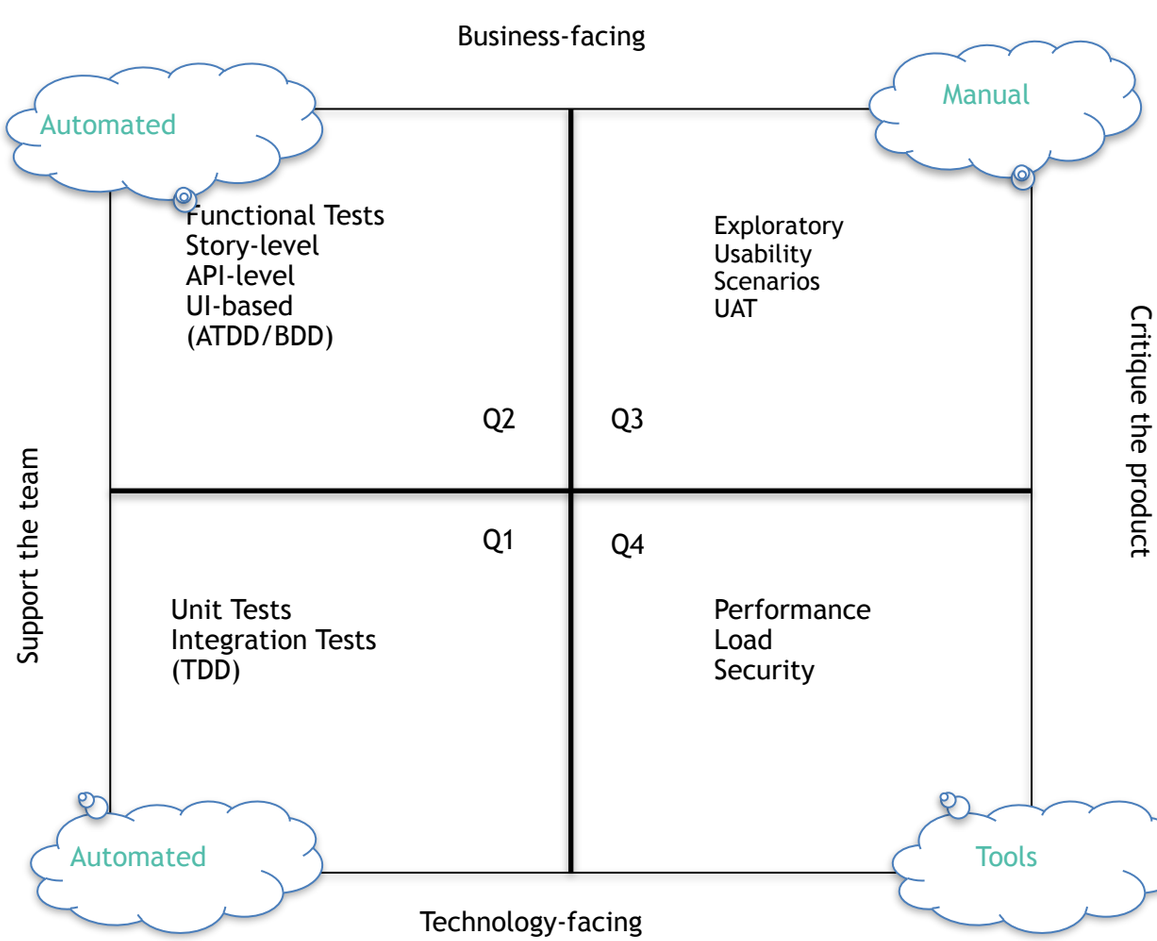
Trust is the currency of Speed

Take-Home Activity
Draw your Test Quadrants

With your teams:

- Draw the four test quadrants on a big sheet of paper.
- Make notes in each quadrant where your team lacks one or more types of tests.
- What's the weakest quadrant?
- Any ideas to improve?
- Is your automation strategy guided by the automation pyramid?

Adaptation of Lisa Crispin's Agile Test Quadrants



Take-Home Activity
Draw your Deployment Pipeline

How long would it take to deploy into production a change involving just one single line of code?

- Value stream mapping of the events to deploy
- Visualize the delays and the environments

Are there opportunities for automation & optimization (eliminate, consolidate, parallelize steps)?

Take-Home Activity

Lean & 7 Wastes of Knowledge Work
Identify your wastes

Waste	Description	Example
Partially done work	*Work Started, but not complete*	➢ *Code waiting for testing* ➢ *Specs waiting for development*
Extra processes	*Extra work that does not add value*	➢ *Unused documentation* ➢ *Unnecessary approvals*
Extra features	*Features that are not required, or thought of as nice-to-haves*	➢ *Gold plating* ➢ *Technology features*
Task switching	*Multi-tasking between different projects when there are context-switching penalties*	➢ *People on multiple projects or tasks*
Waiting	*Delays waiting for reviews and approvals*	➢ *Waiting for document approvals*
Motion	*The effort required to communicate or move information or deliverables from one group to another*	➢ *Distributed teams* ➢ *Handoffs*
Defects	*Defective documents or Software needs correction*	➢ *Requirements defects* ➢ *Software bugs*

Mary & Tom Poppendieck

Take-Home Activity

What sort of quality metrics do you collect and socialize? Have you considered risk-based test case prioritization, defect rate and defect density?