

# Four Quadrants of DevOps Maturity

Brian Dawson



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# Four Quadrants of DevOps Maturity

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# Introduction

## Background:

- QA, Development, Sys Admin, Development Management, etc
- Software development optimization
  - 1990s
    - Graphics pipeline optimization
    - Tools and middleware
  - Early 2000's
    - OSS practices
  - Late 2000's
    - Process consulting
    - CI, CD, and DevOps transformation practice
- Knowledge redistribution = IT Socialist





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## Session Goals

- Review the definition of DevOps and it's relationship to continuous delivery (CD).
- Explore a simple, lightweight model for measuring organizational DevOps maturity
- Leave inspired with new ideas on implementing CD and DevOps

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# Continuous Delivery, DevOps, and the Market

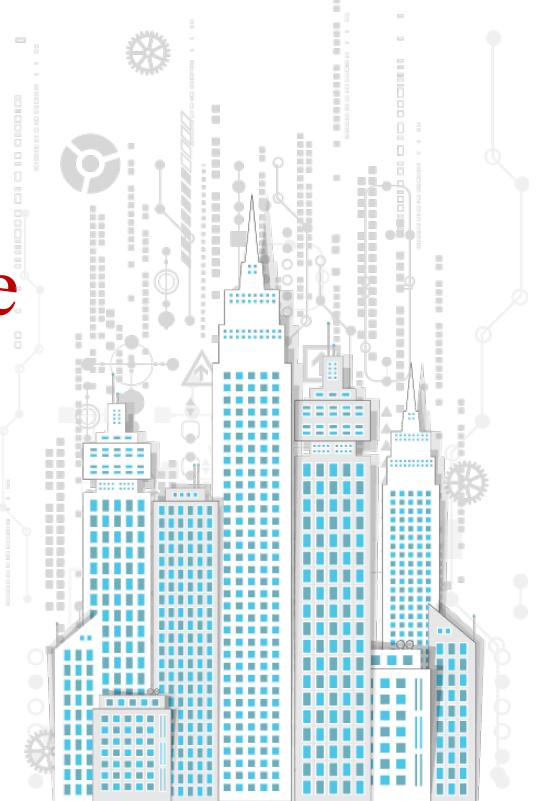
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“Software is eating the world.”

“Every business is in the software business.”

“It’s an application economy.”





*“Technology is critical to our competitive advantage and to the protection of our clients and customers.”*

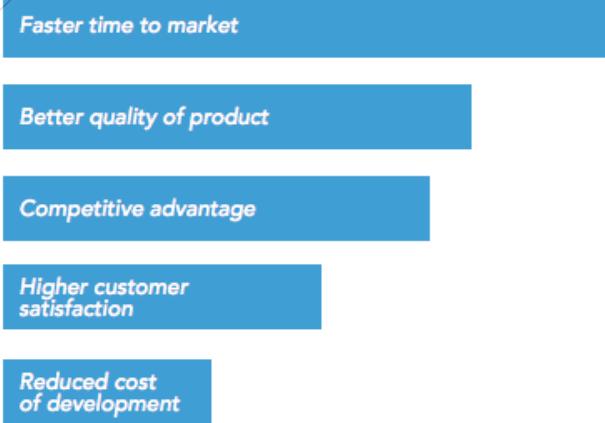
**– JP Morgan Chase**

Software plays an important role in Ford's new vehicles. Indeed, the company stated that it is the “secret sauce” to the fuel efficiency delivered by its EcoBoost engine technology because it allows engineers to maximize the use of each drop of fuel at a molecular level. The company's new F-150 features 150 million lines of software code, ten times more than that in a typical smartphone. Acquiring advanced software technologies through strategic investments will work in Ford's advantage to enhance the features in its vehicles and provide enhanced mobility experiences for consumers.

*“...50% of our technology investment spend will be in support of [initiatives] including:*

- **Digital:** End-to-end digital commerce across web, mobile...
- **Mobile, Unified Communications:** Communications...to enrich interaction among employees, clients and customers.
- **Next Generation Cloud Infrastructure:** ...to enhance cost efficiency and flexibility using highly elastic, on-demand, self-service infrastructure.
- **Next Generation Development:** Increased developer productivity, quality and pace of application delivery.”   **– JP Morgan Chase**

## Ranking of Benefits



Based on ranking  
of top 3 benefits.

## Adoption by All Company Types



**65%**

of software developers, managers, and executives report that their organizations have started down the path to Continuous Delivery.

# Agile, CI, Continuous Delivery and DevOps



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**DevOps** → Cultural approaches & technical practices

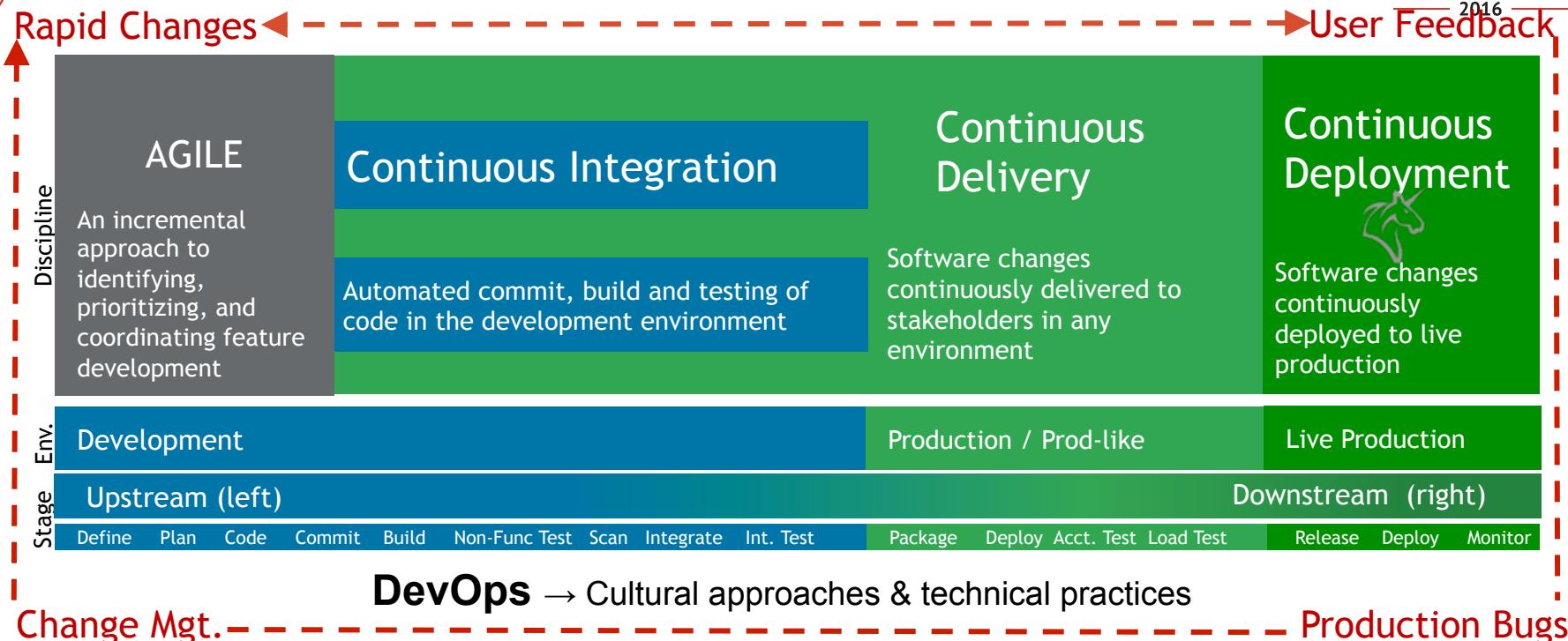
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# Agile, CI, Continuous Delivery and DevOps



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# DevOps Word Soup

## CONTINUOUS DELIVERY

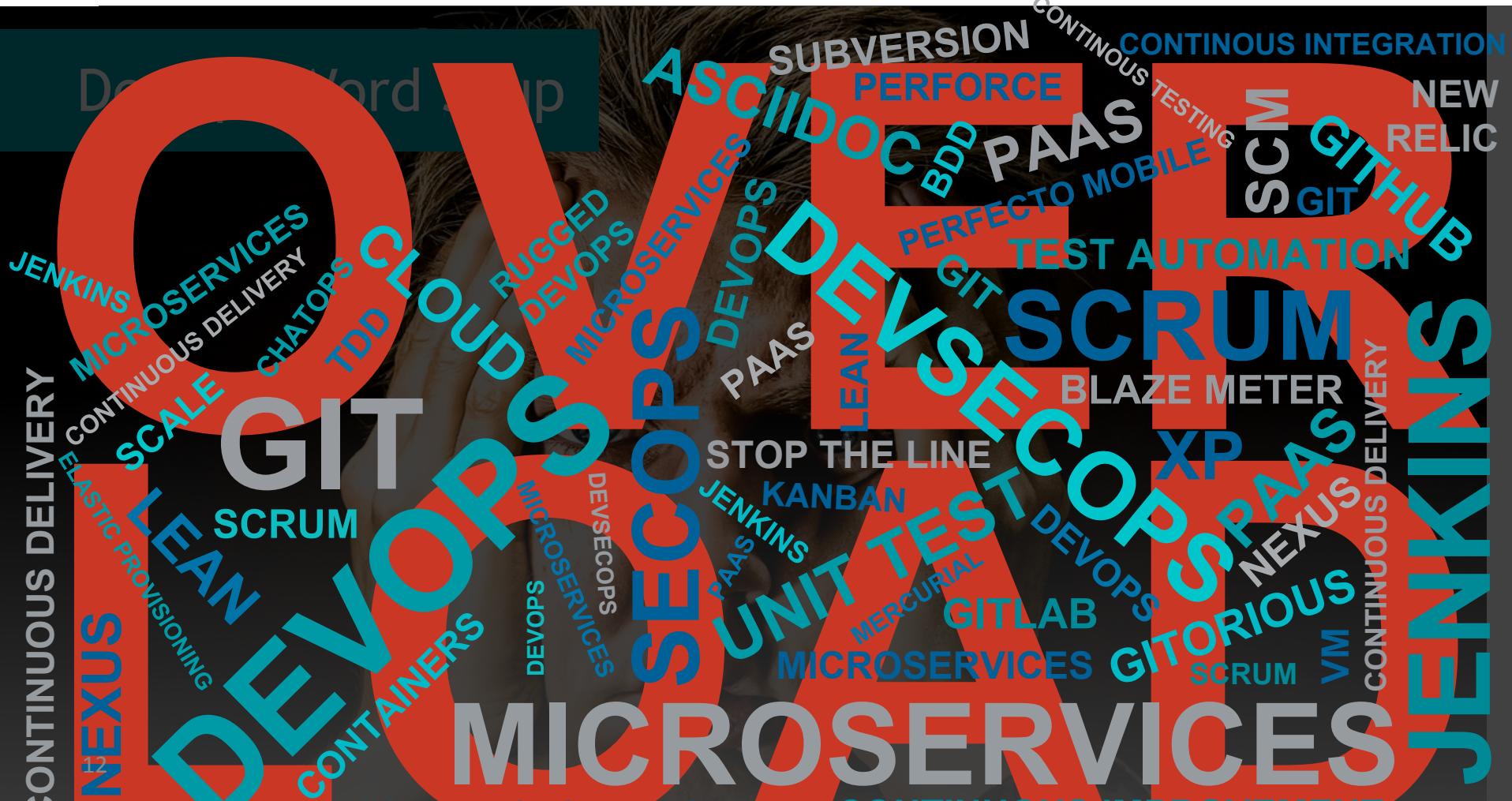
**NEXUS**

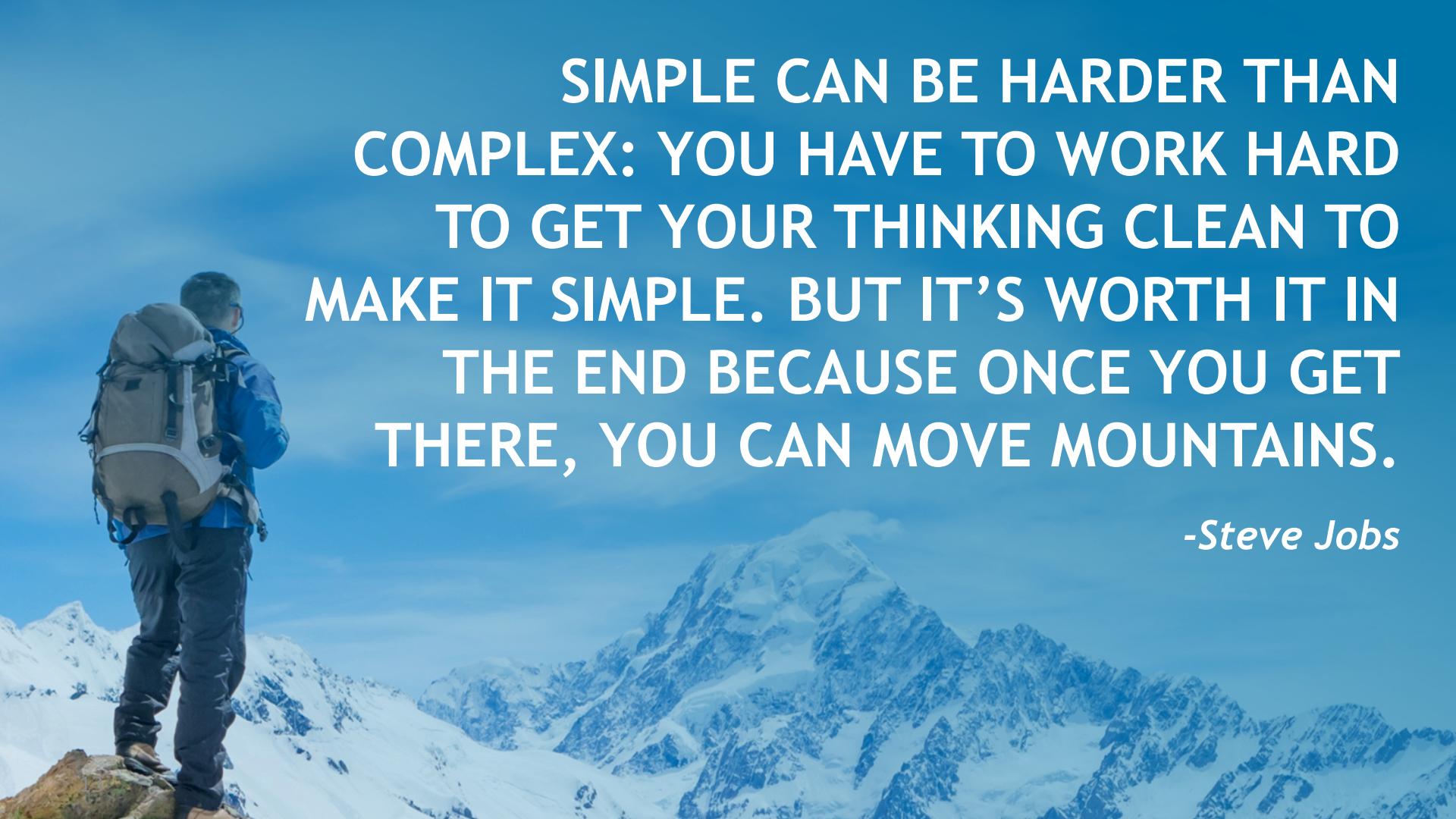
A collage of various software development and management buzzwords in different colors and orientations. The words include 'CALENDAR', 'GIT', 'SCRUM', 'LEAN', 'VISIONING', 'DEVOPS', 'CONTAINERS', 'MICROSERVICES', 'MI', and 'CONTINUOUS'. The words are arranged in a non-linear, overlapping fashion across the page.

# MICROSERVICES

CONTINUOUS DEPLOYMENT CONTINUOUS IMPROVEMENT

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A photograph of a person from behind, wearing a large beige backpack and blue outdoor gear, standing on a rocky outcrop and looking towards a range of snow-capped mountains under a clear blue sky.

SIMPLE CAN BE HARDER THAN  
COMPLEX: YOU HAVE TO WORK HARD  
TO GET YOUR THINKING CLEAN TO  
MAKE IT SIMPLE. BUT IT'S WORTH IT IN  
THE END BECAUSE ONCE YOU GET  
THERE, YOU CAN MOVE MOUNTAINS.

*-Steve Jobs*

# SIMPLIFY

A photograph of a man from behind, wearing a blue jacket and a large tan backpack, standing on a rocky outcrop and looking towards a range of snow-capped mountains under a clear blue sky.

WHERE ARE  
WE?



WHERE ARE  
WE GOING?



HOW DO WE  
GET THERE?





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# Introducing the 4Qs of CD and DevOps Maturity

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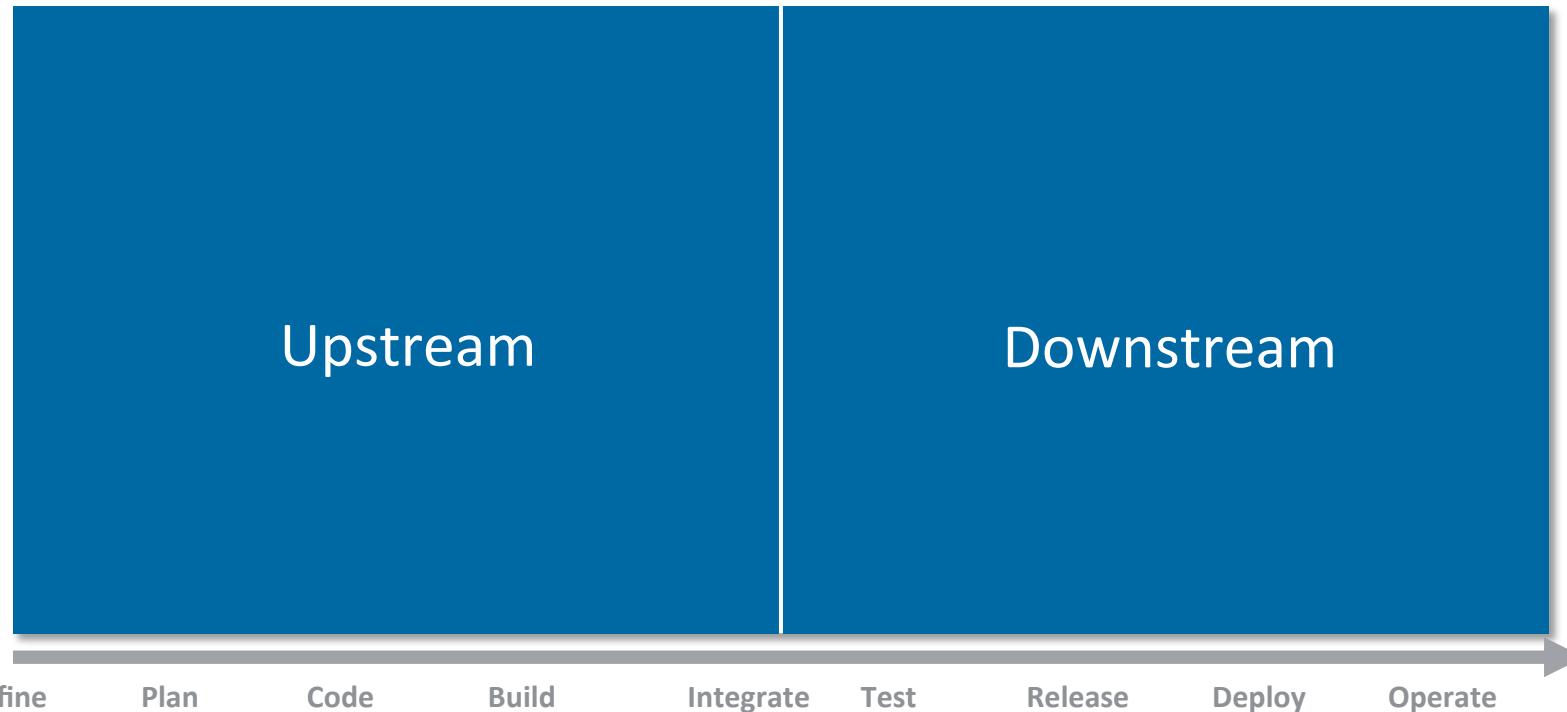
## The 4Qs Quadrants Model

- Simplified model for assessing, and discussing DevOps transformations
- Derived from and applied in real-world DevOps transformations
- Flexible vs rigid, allows for subjective definition of maturity
- Extensible as method of driving, monitoring and measuring transformation



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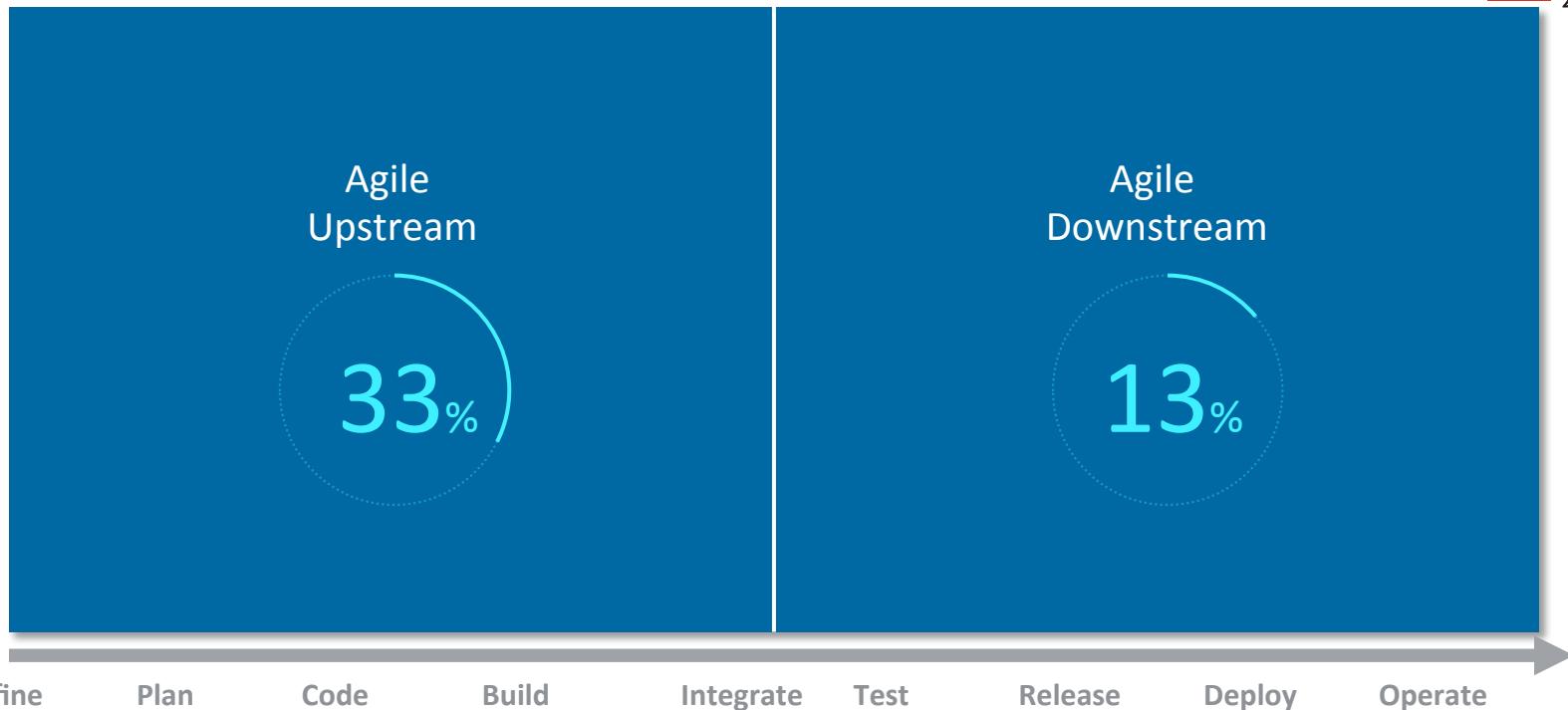
## X-Axis: SDLC Phases



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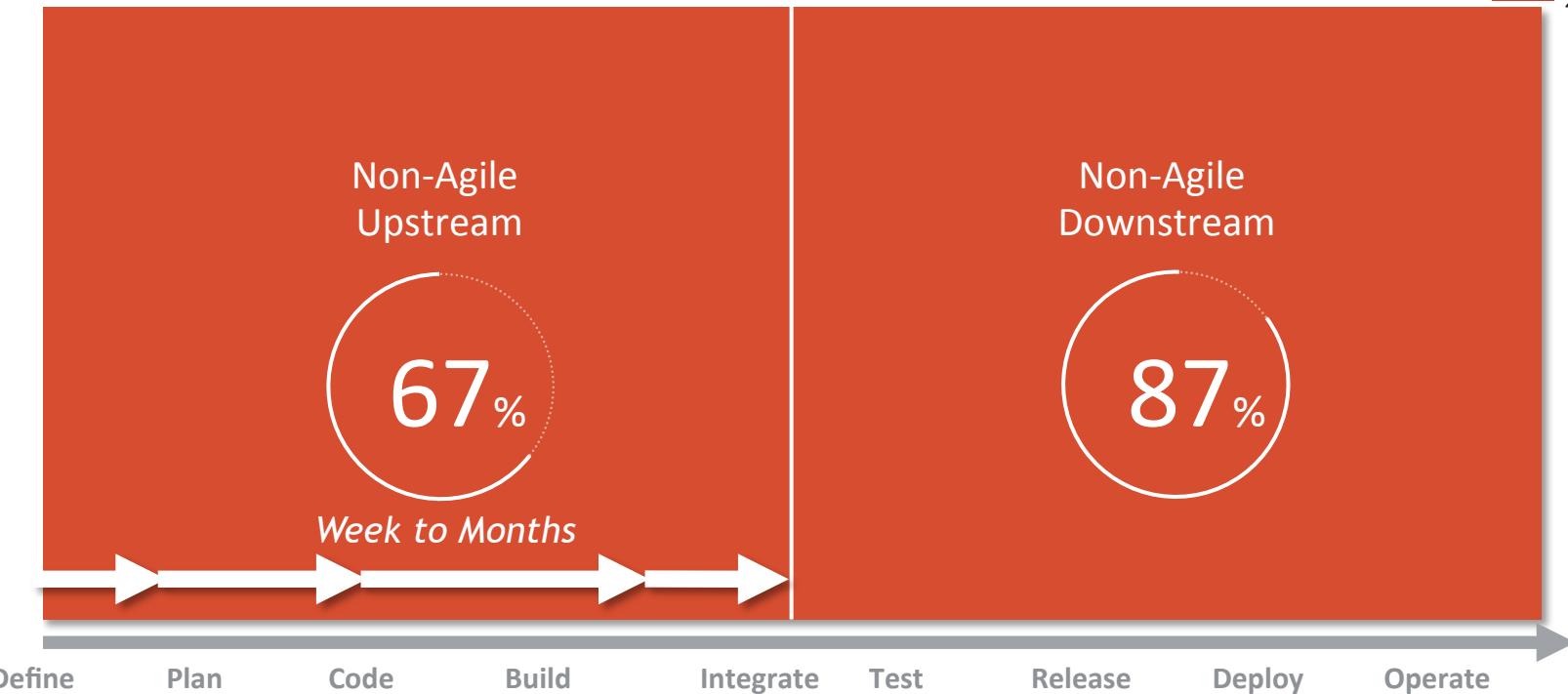


## X-Axis: SDLC Phases



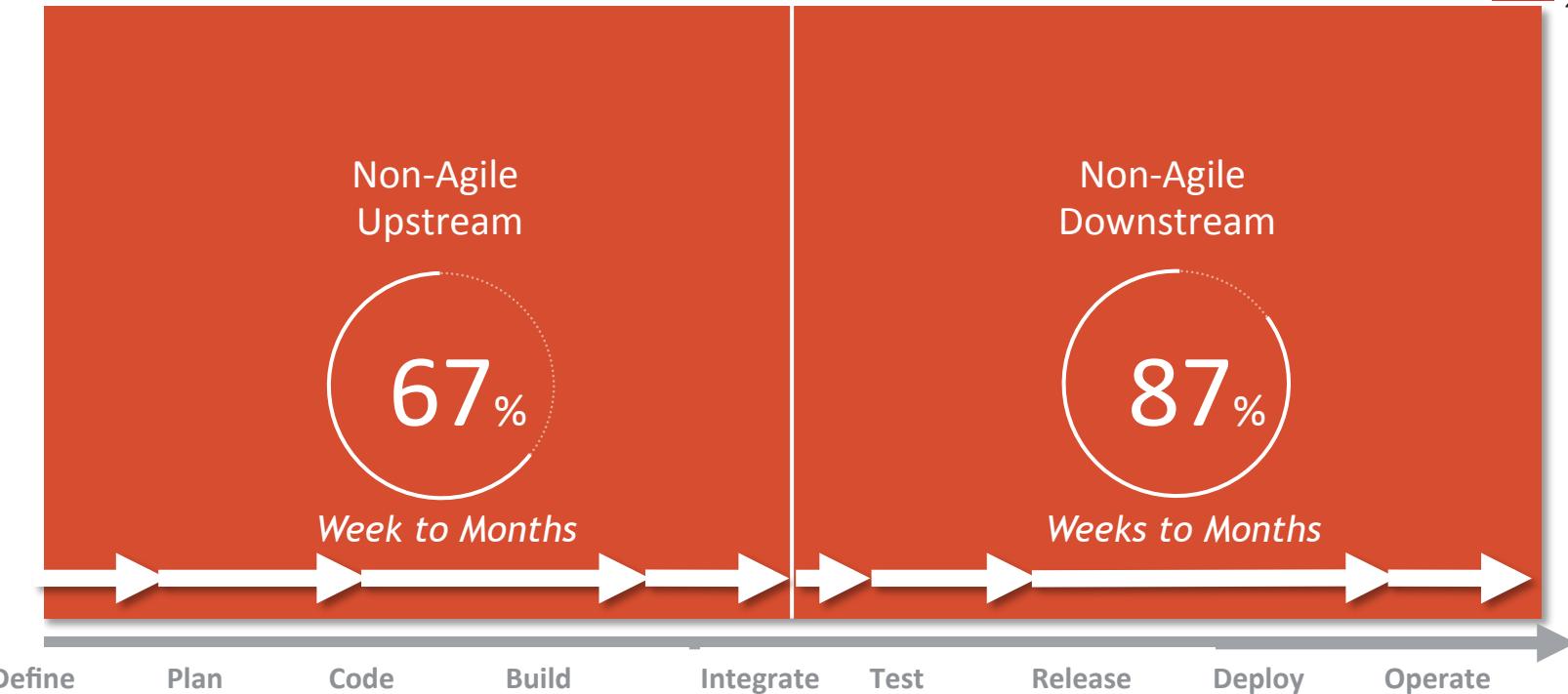


## Cycle Times: Non-Agile



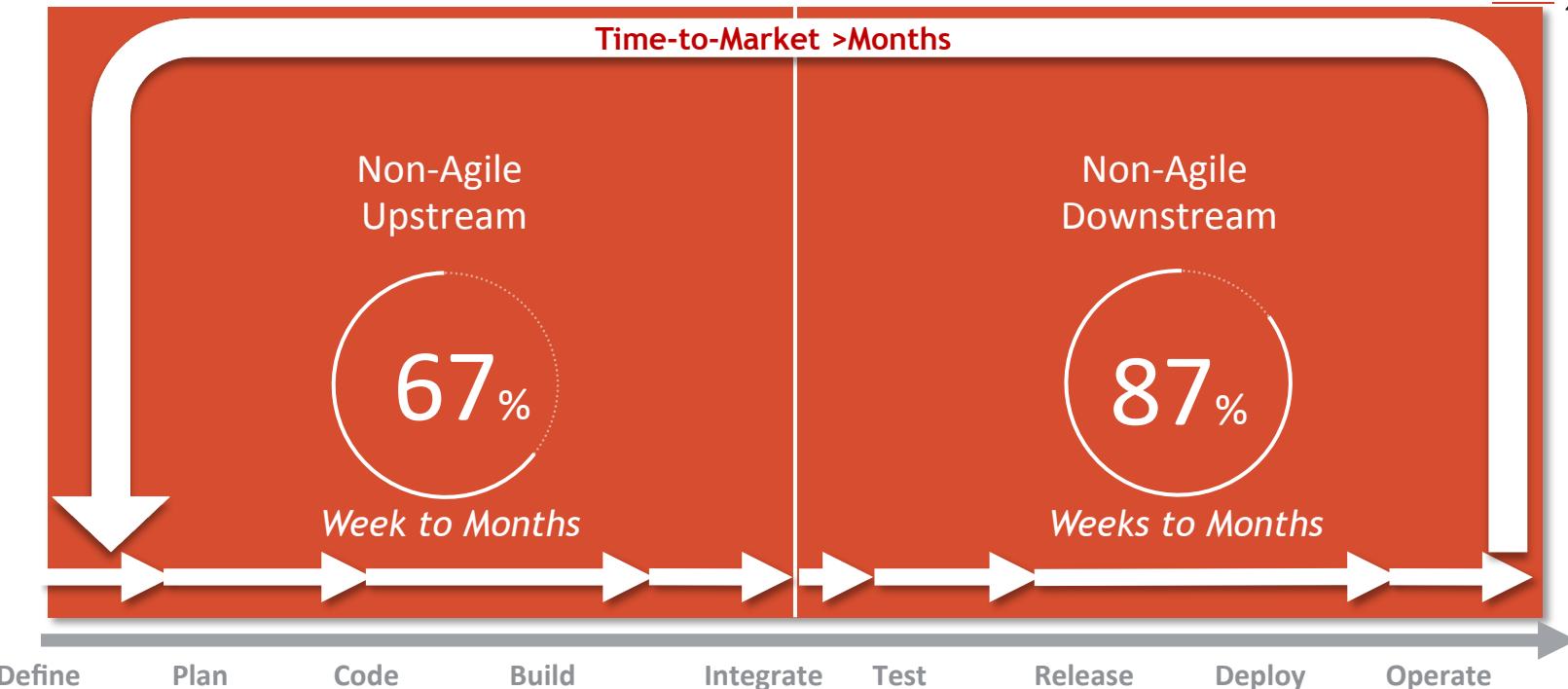


## Cycle Times: Non-Agile



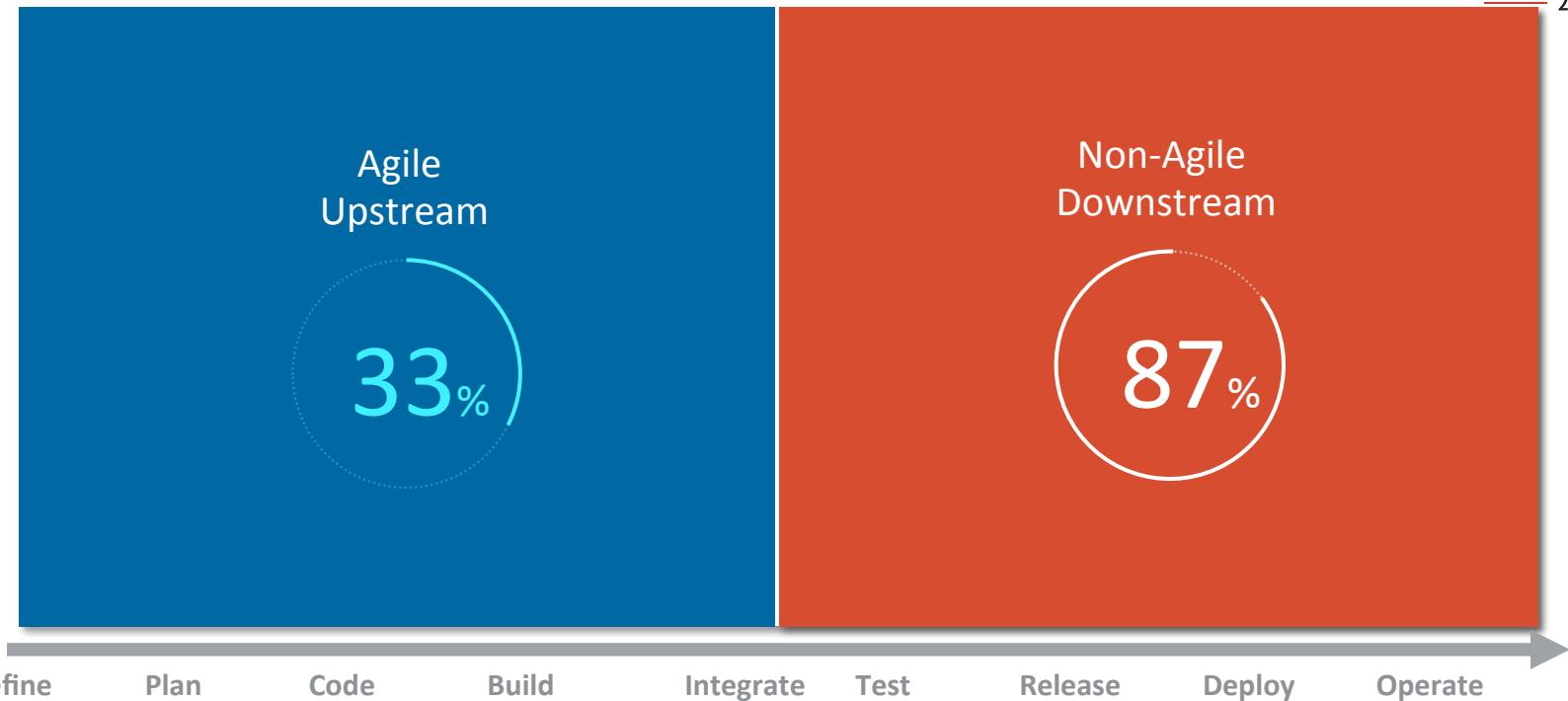


# Cycle Times: Non-Agile



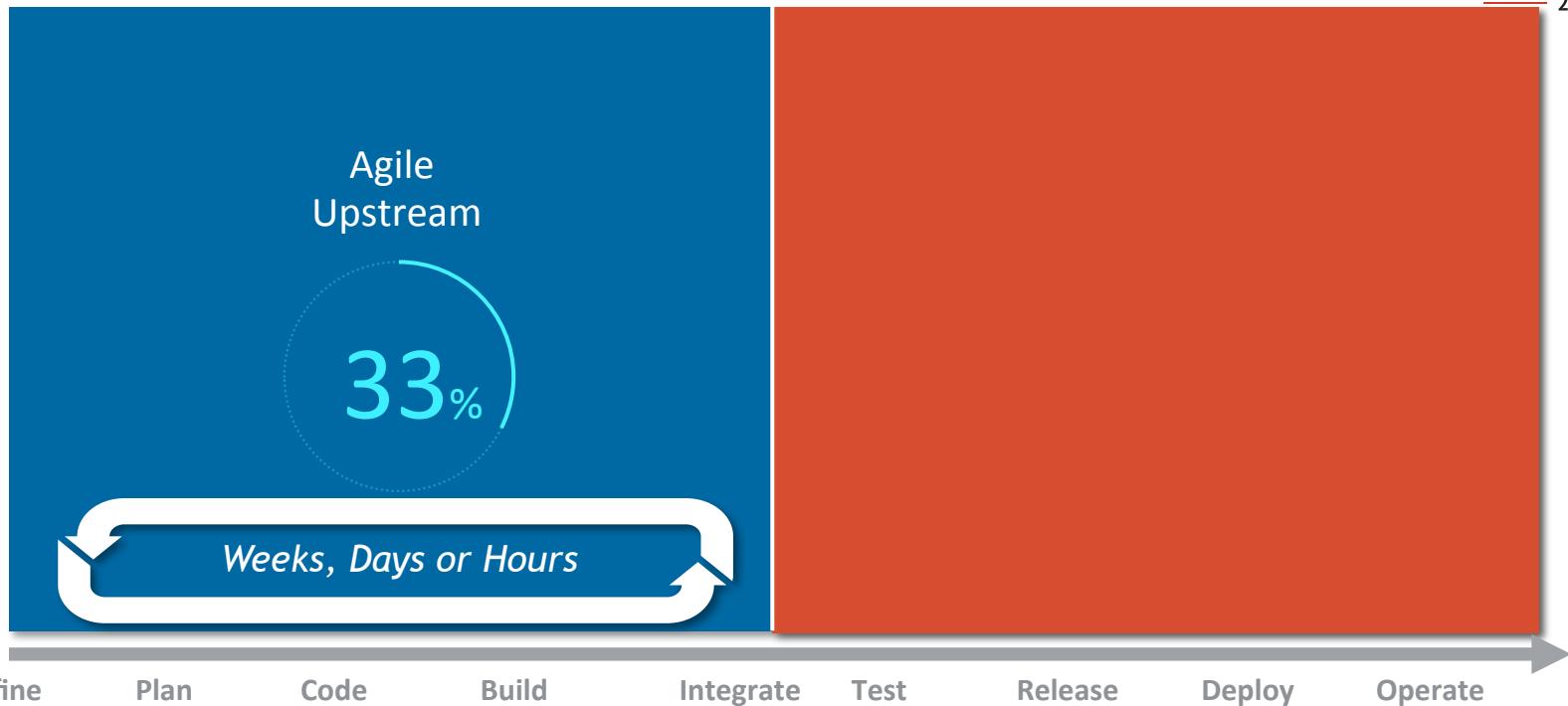


# Cycle Times: Mixed Streams



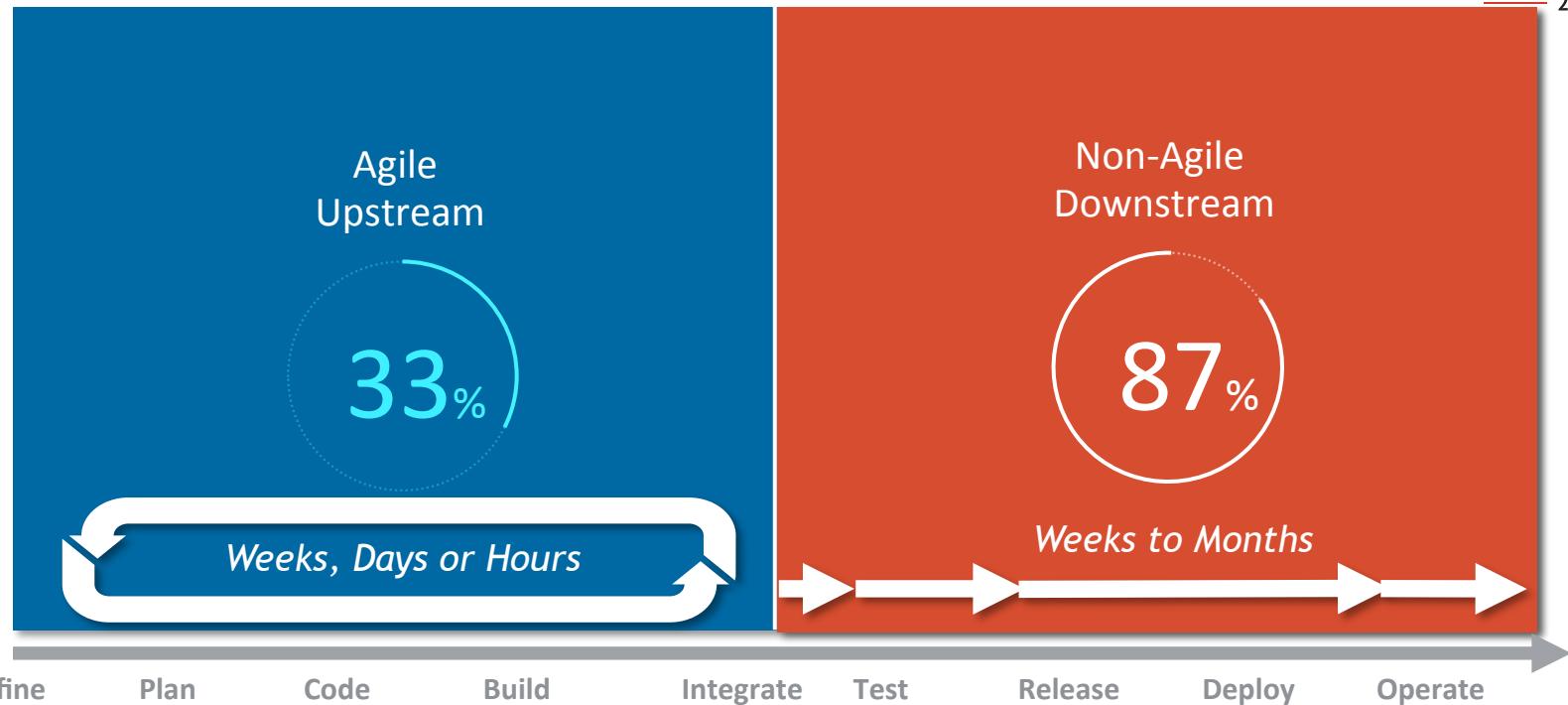


## Cycle Times: Mixed Streams



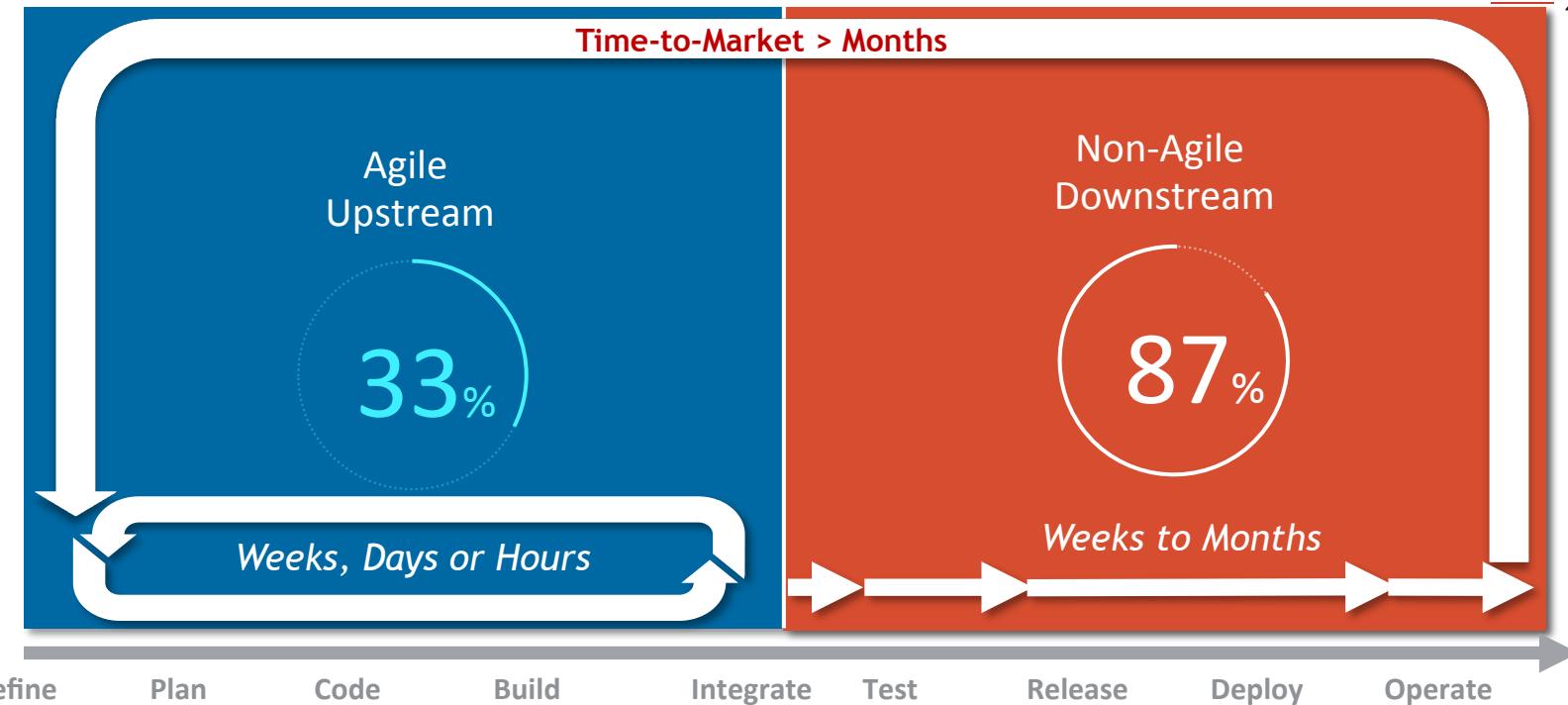


# Cycle Times: Mixed Streams





# Cycle Times: Mixed Streams



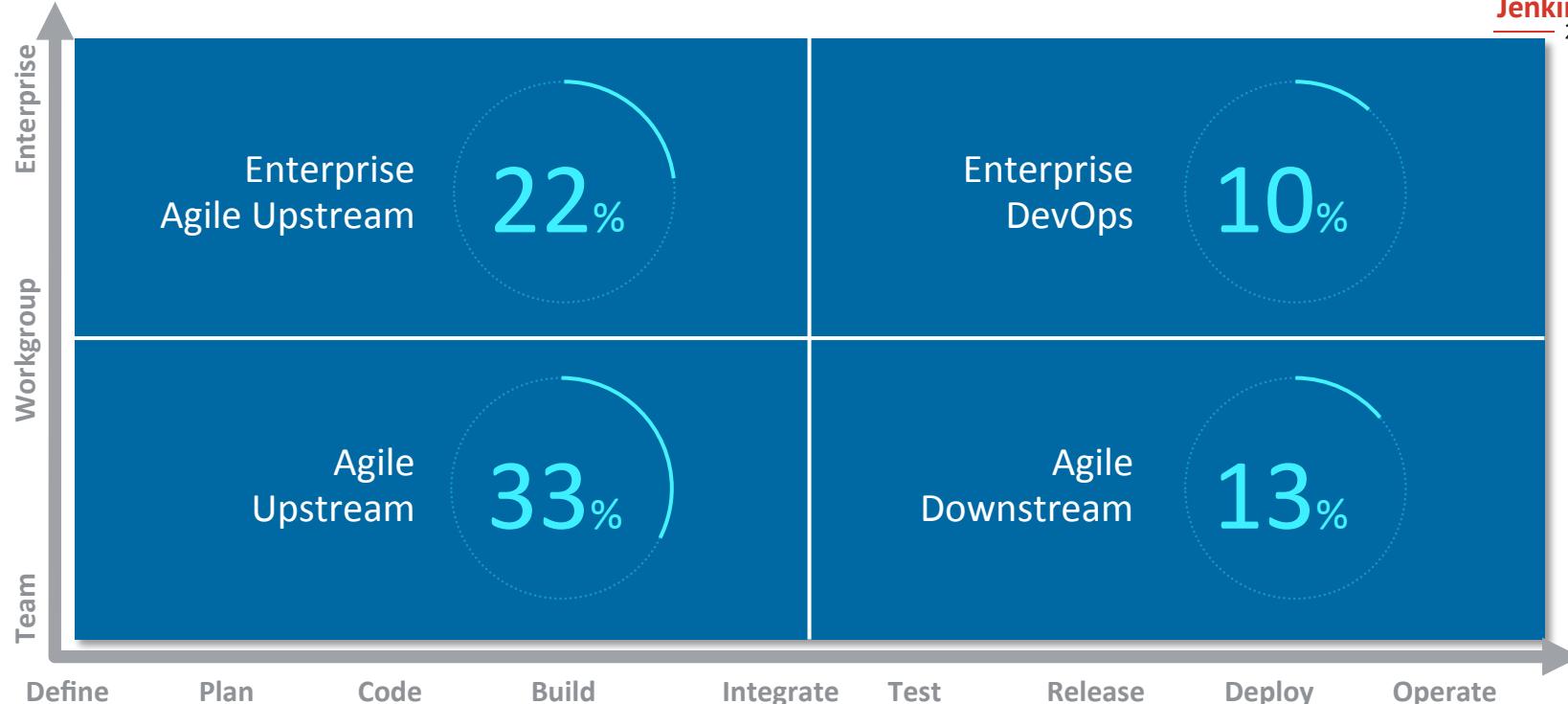


# Cycle Times: Continuous Flow



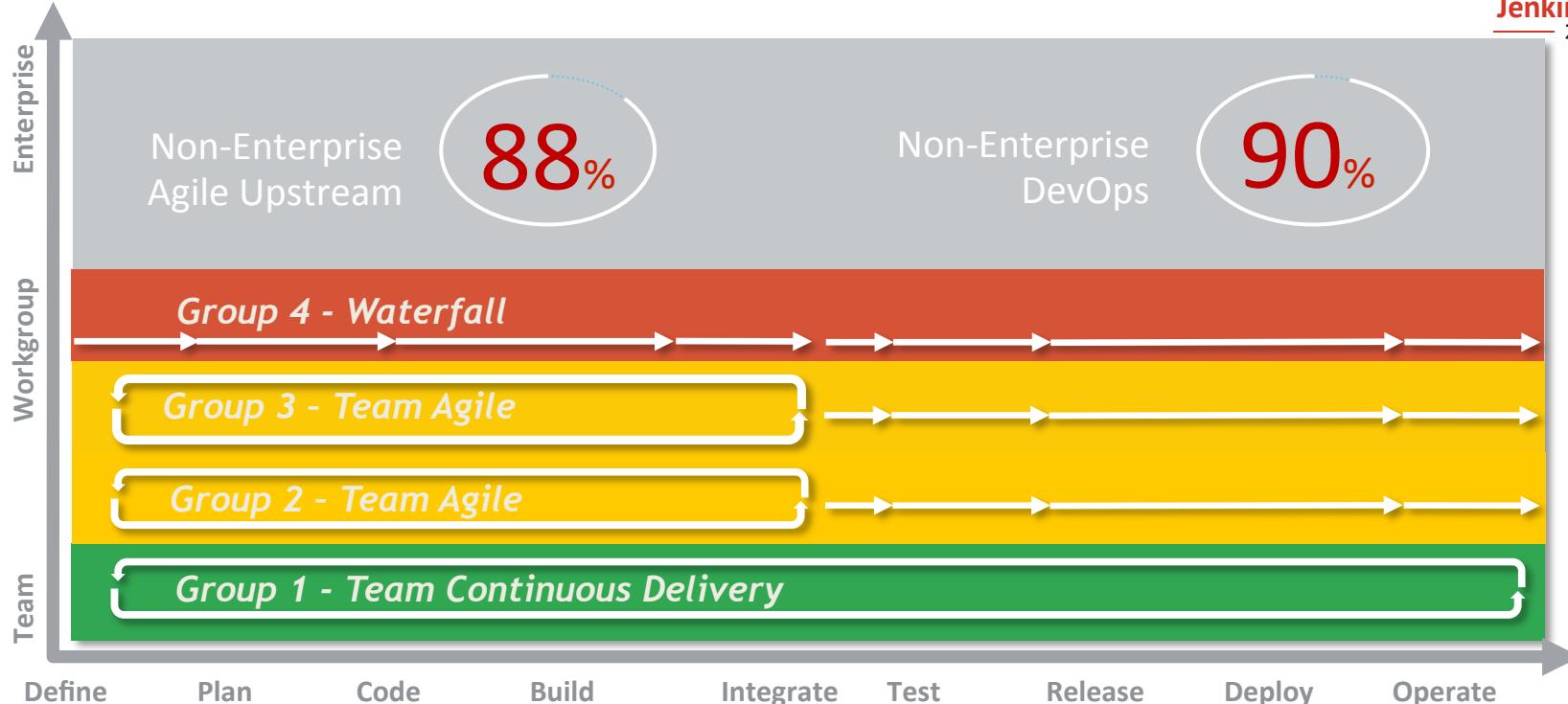


## Y-Axis: Levels of adoption





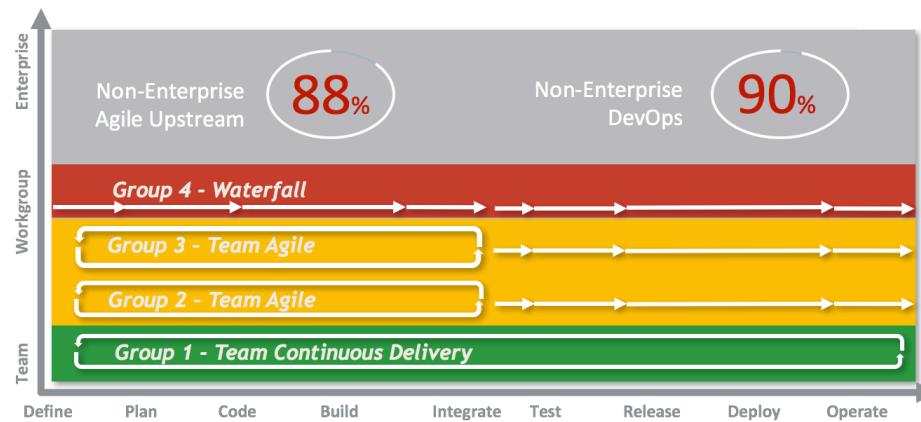
# Cycle Times: Non-Enterprise Scale





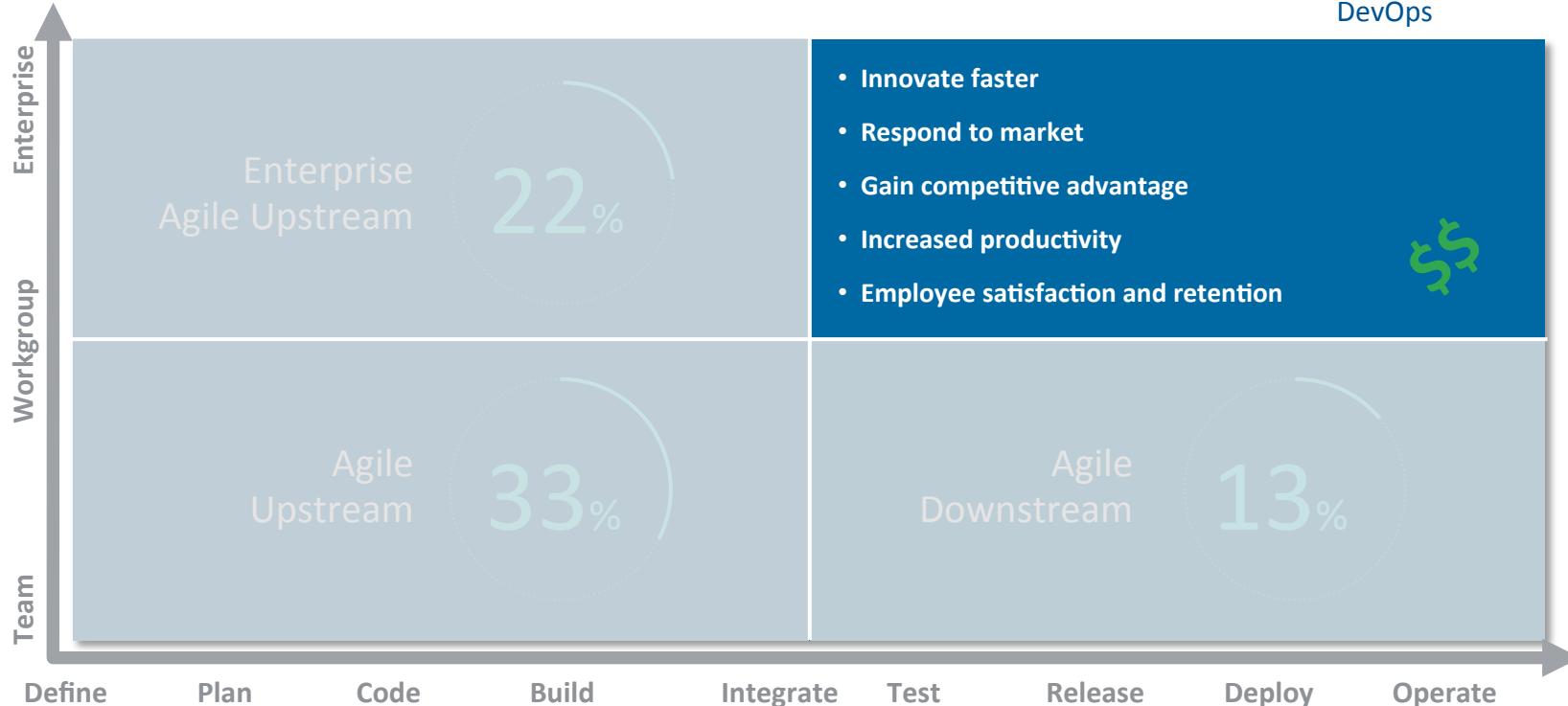
# Issues with non-scaled development and delivery

- Higher tools and infrastructure costs
- Lack of shared best practices
- Lack of visibility and metrics
- Inconsistent security and compliance



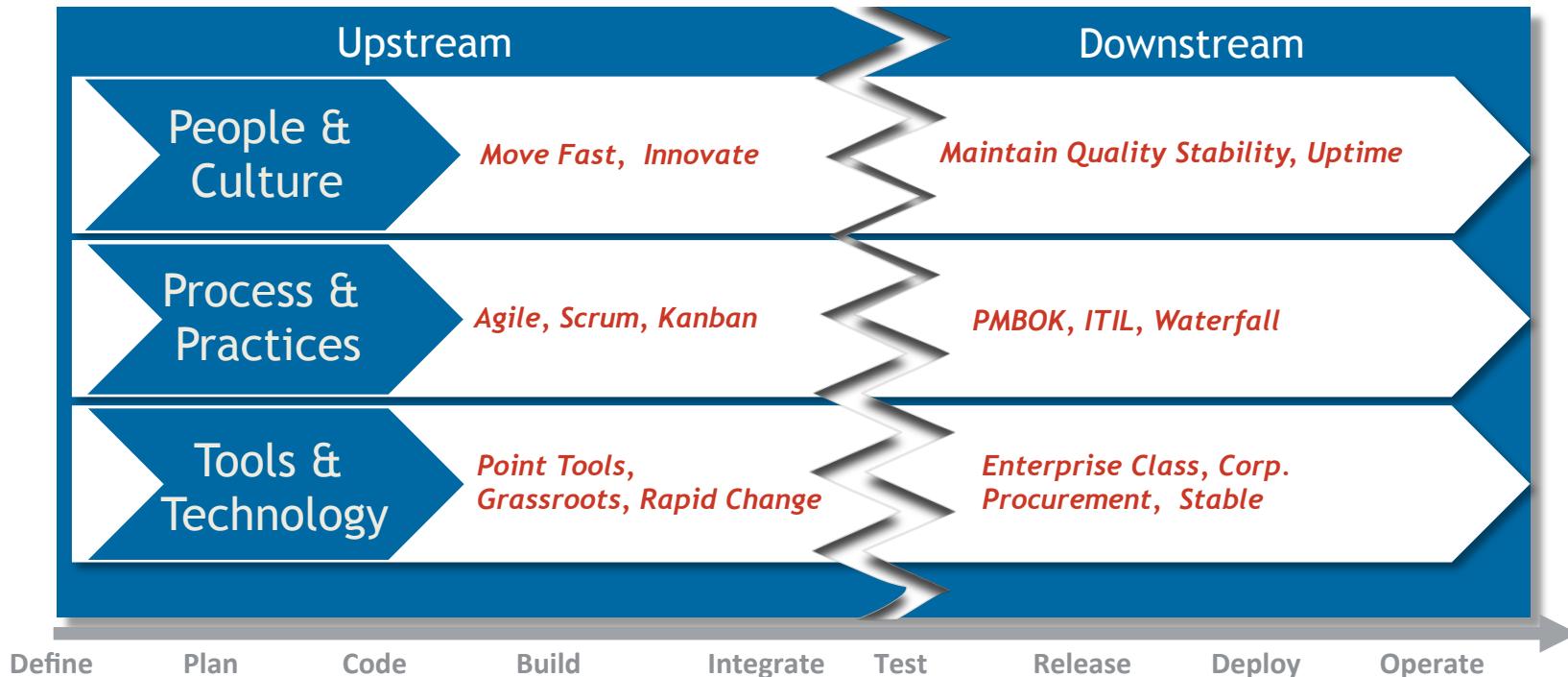


# The Destination



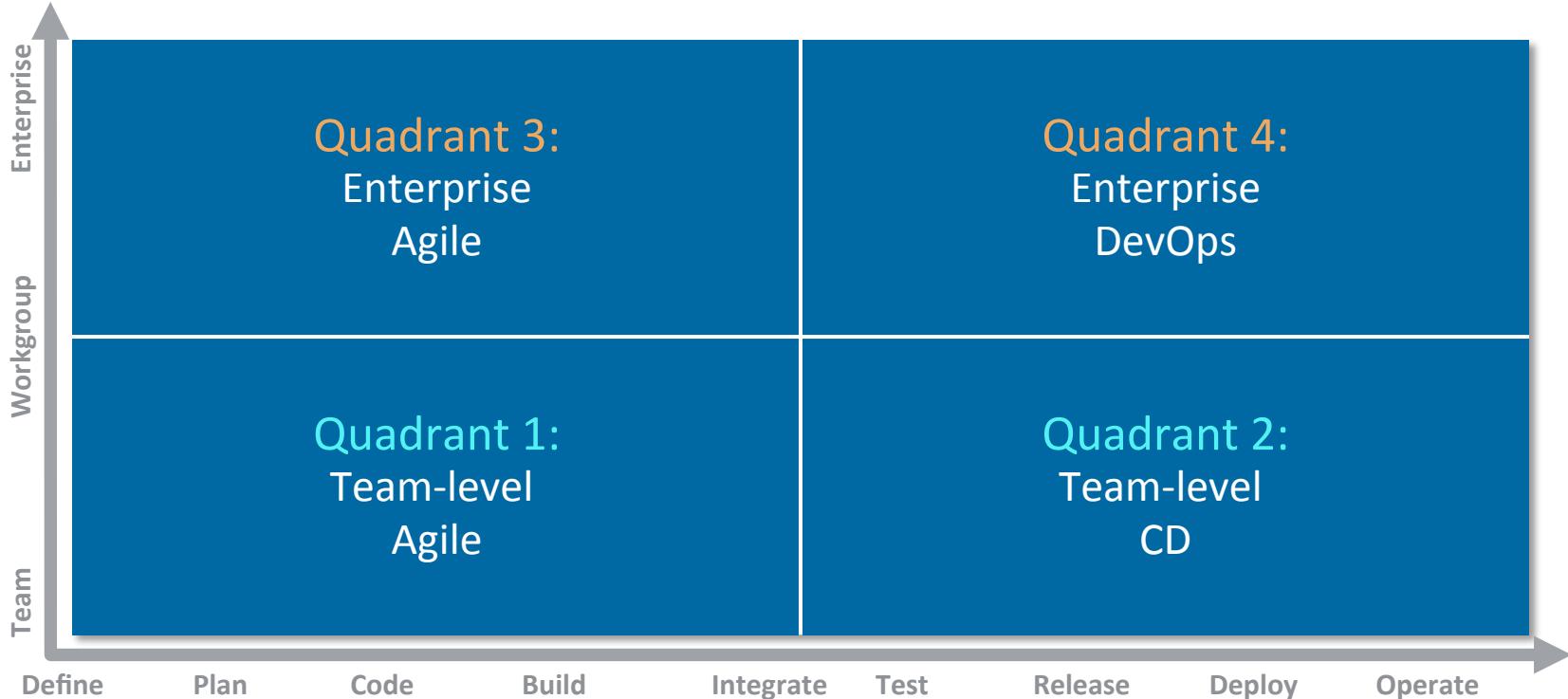


# The Trinity and the Chasms





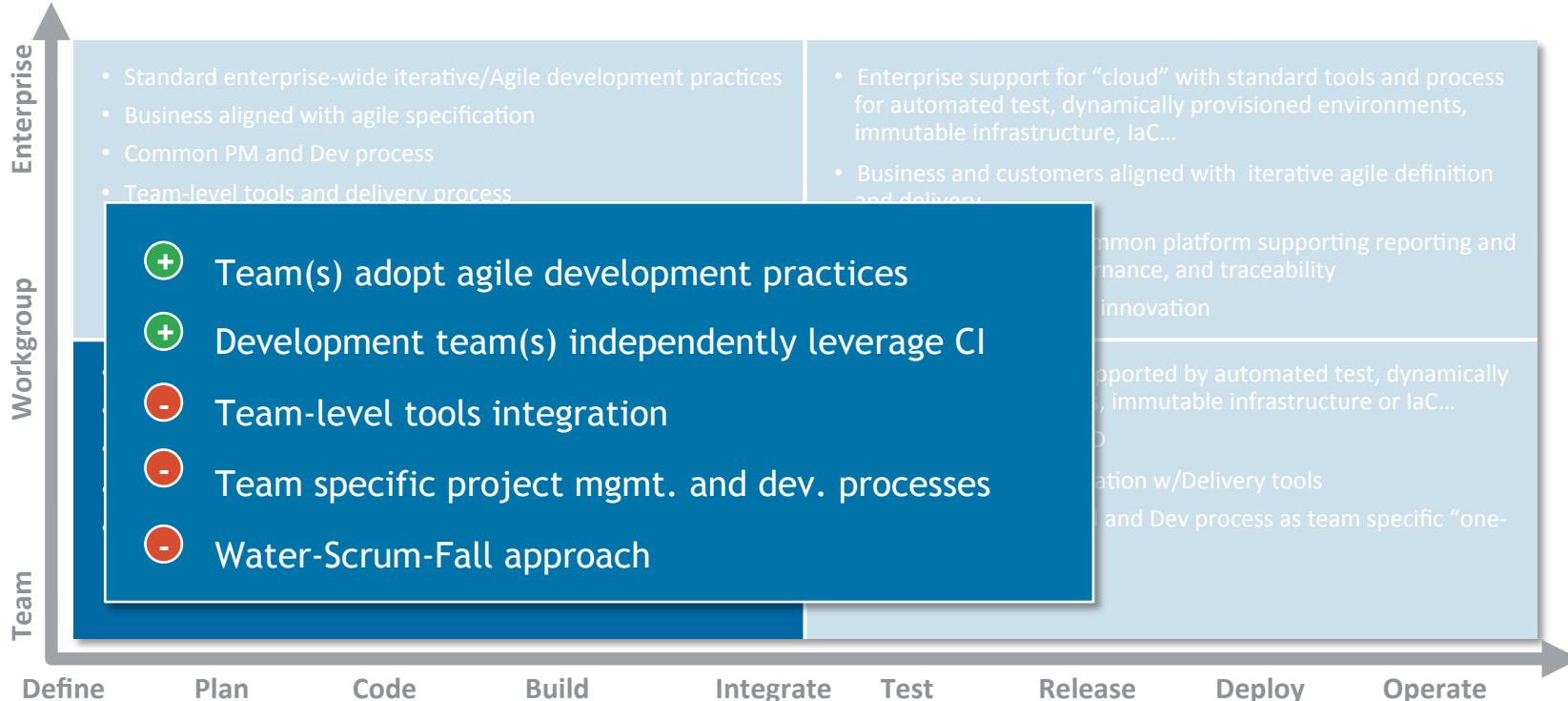
# The Quadrants





# Quadrant 1: Team-Level Agile

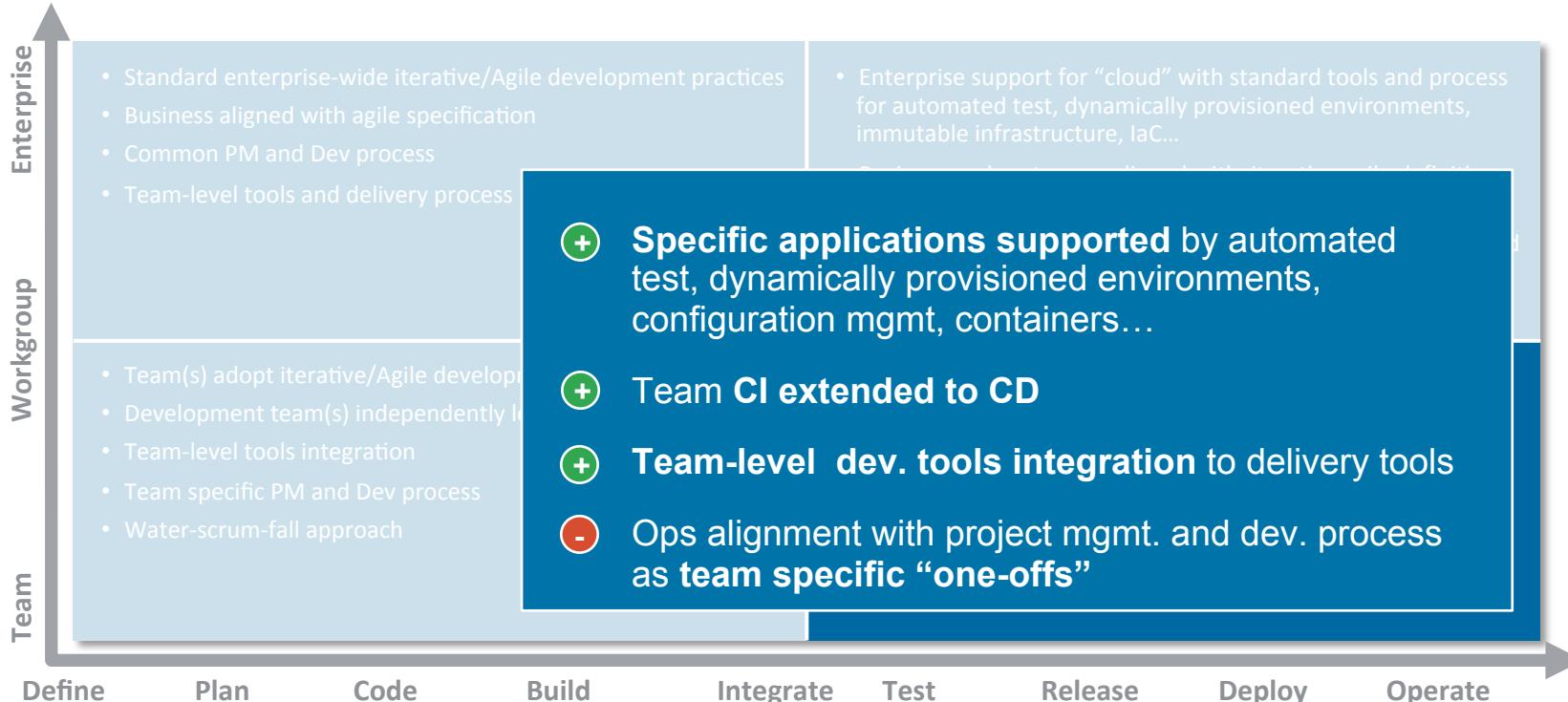
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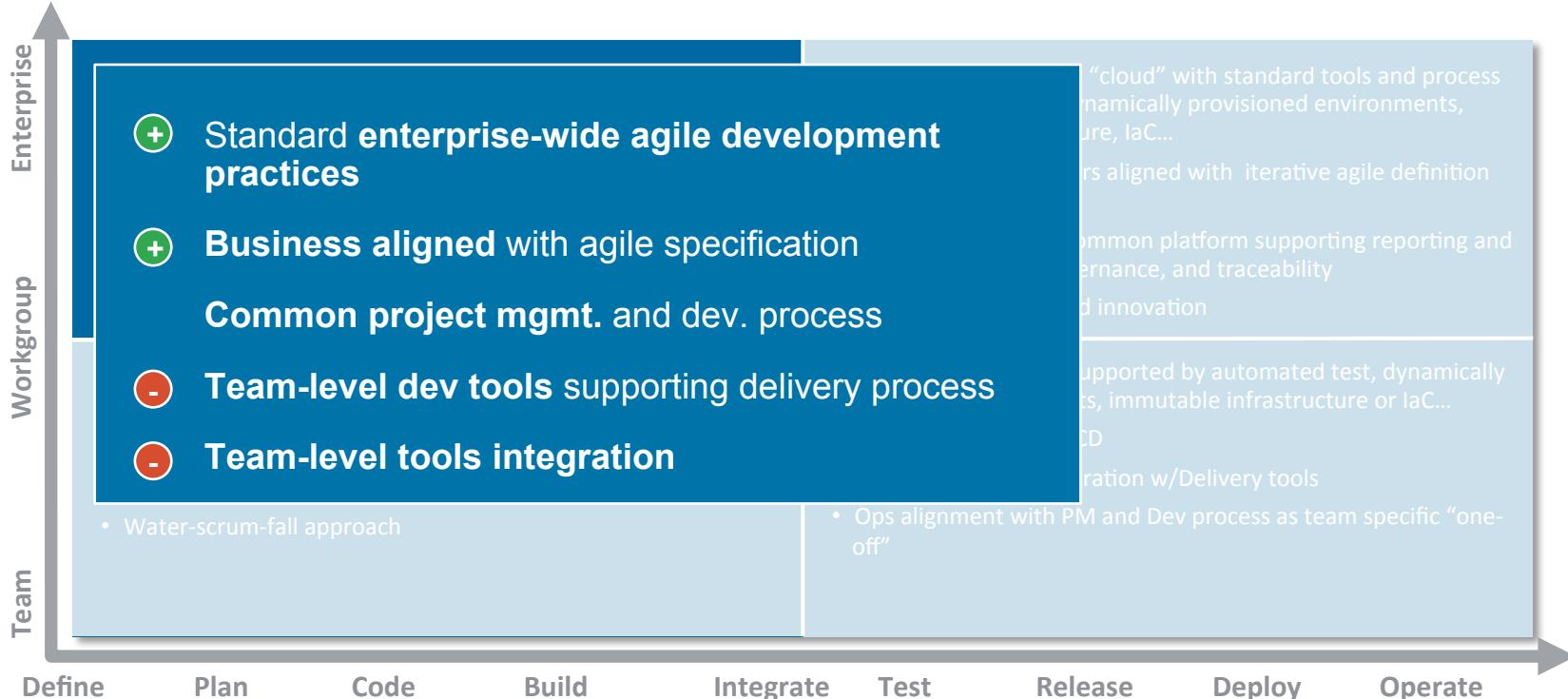


## Quadrant 2: Team-Level CD



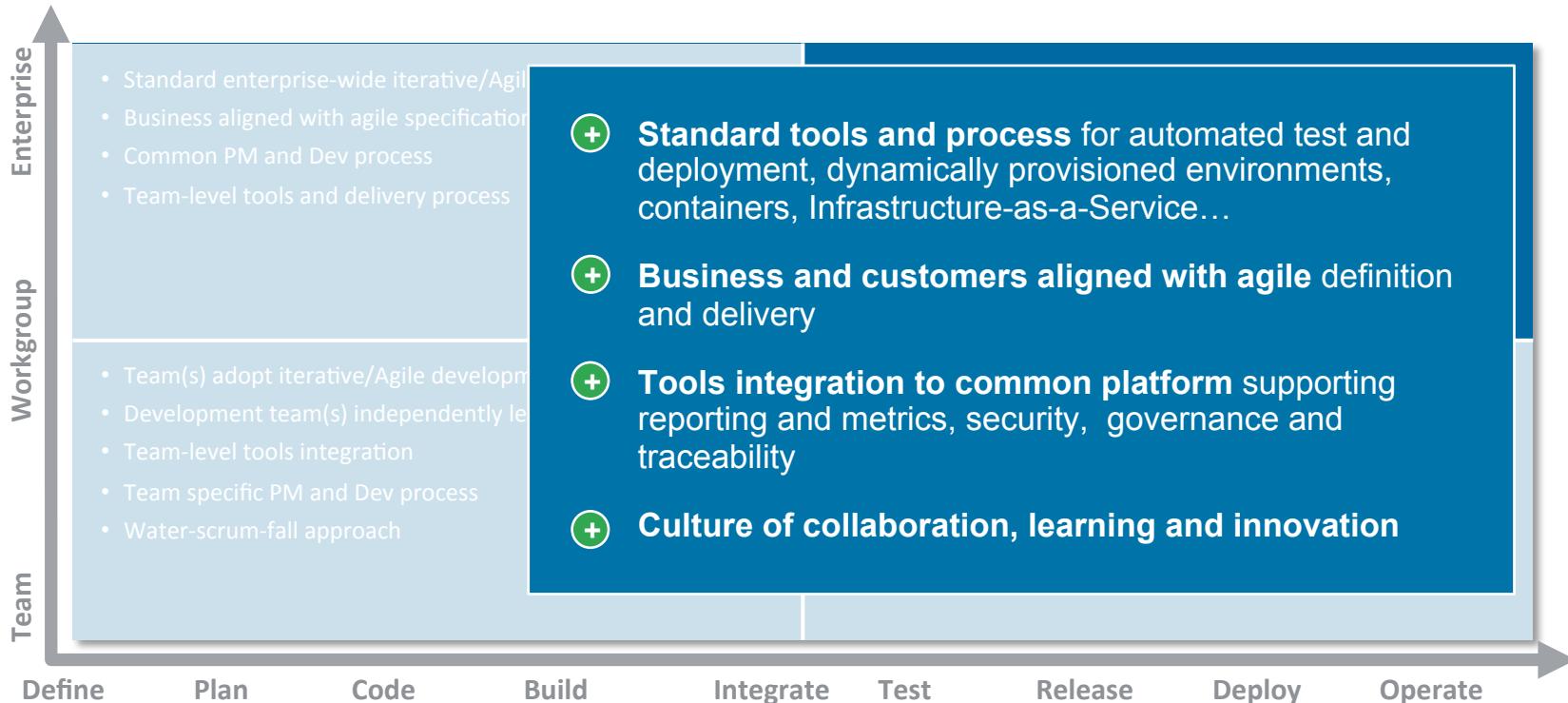


# Quadrant 3: Enterprise Agile





## Quadrant 4: Enterprise DevOps





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## Survey:

<https://www.surveymonkey.com/r/4Qs-Survey>

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# Which quadrant are you in?

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# Which quadrant do you want to be in?

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# 4Qs and Industry Adoption Patterns

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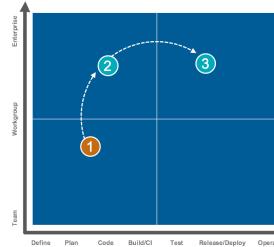
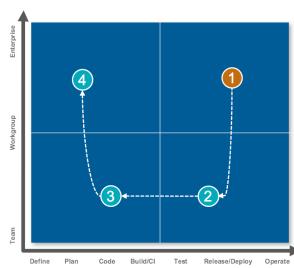
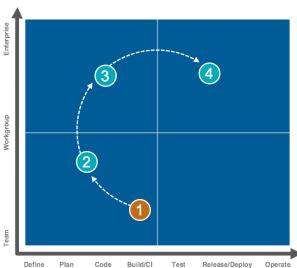
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# Adoption Patterns Ex: #3

Agile > CD > Enterprise Agile > DevOps

1. Team(s) adopt agile planning and project management
2. Team(s) extend CI to Continuous Delivery
3. Organization implements agile
4. Organization aligns on DevOps strategy with teams using common CI/CD process and tools





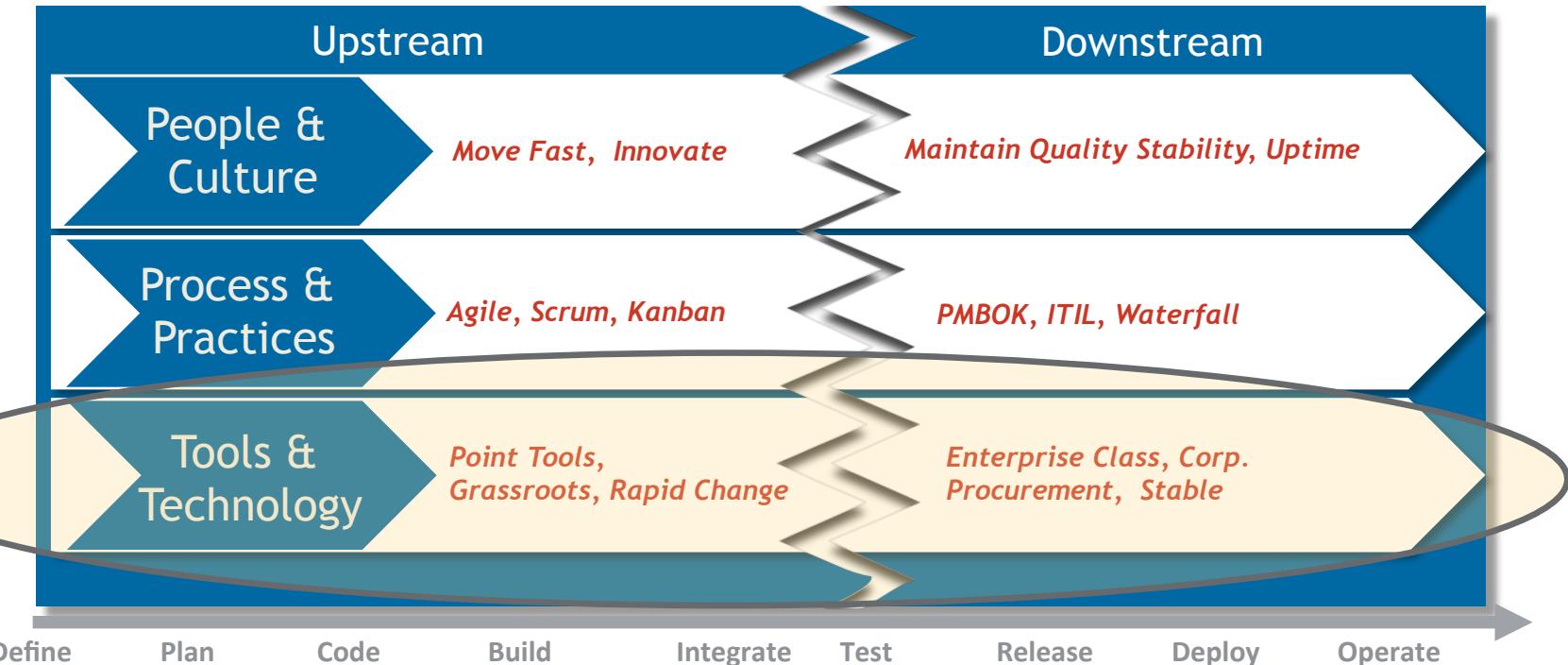
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# Crossing the Chasms with Tools and Technology

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# Tools as the Foundation





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# DevOps Trinity and Tools

- People, Process and Tools
- DevOps (practically) requires automation
- Automation requires tooling
- Tools are the most quantifiable
- Starting point and foundation

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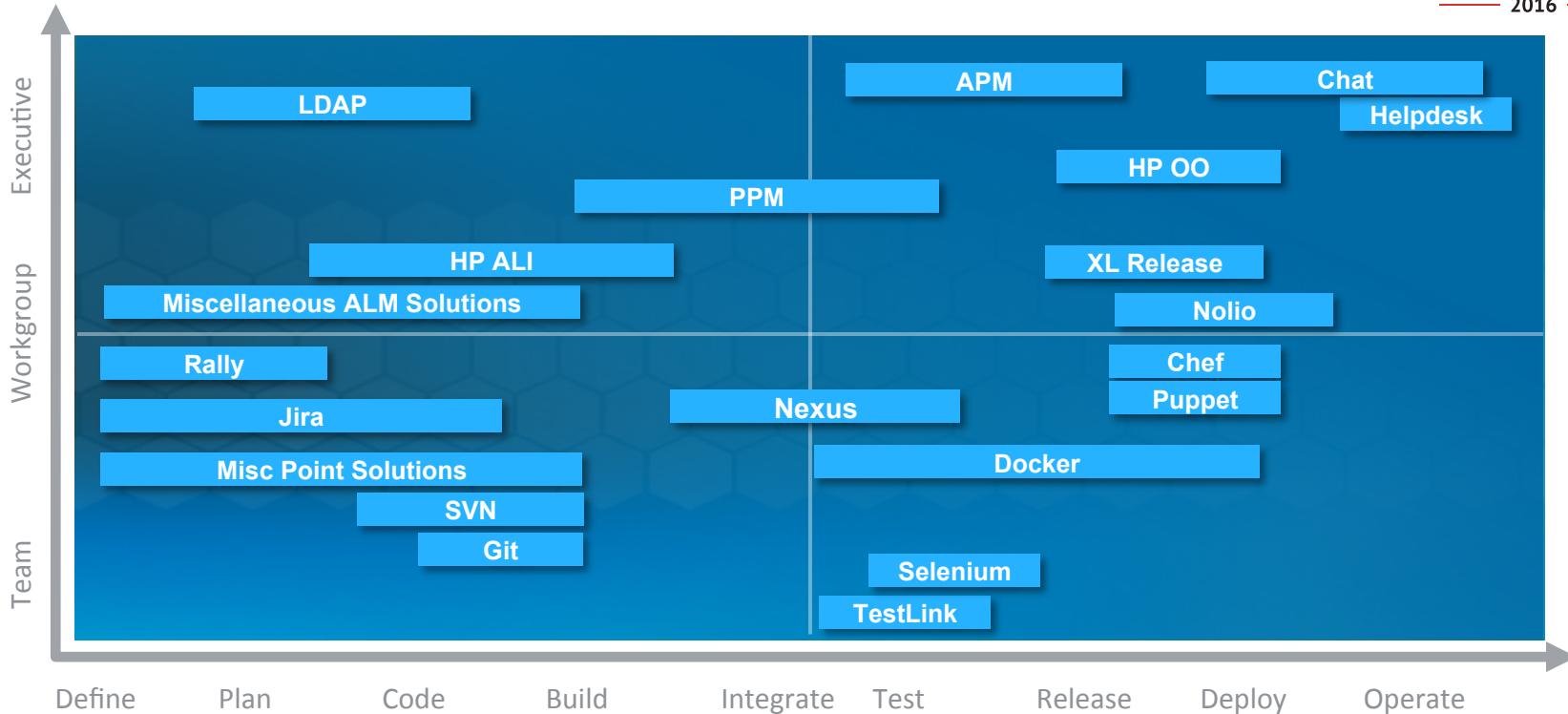
# Tools & Technologies enable “crossing the chasm”

Normalized	Rich Integration Support	Automated	Increase Confidence In Downstream Deliverables	Scale To Enterprise
<ul style="list-style-type: none"><li>✓ Language and practice agnostic</li><li>✓ Not Dev or Ops specific</li><li>✓ Distributed</li></ul>	<ul style="list-style-type: none"><li>✓ Tools as microservices</li><li>✓ Modular</li></ul>	<ul style="list-style-type: none"><li>✓ Repeatability</li><li>✓ Reportability</li><li>✓ Flexibility</li></ul>	<ul style="list-style-type: none"><li>✓ Support supply-chain</li><li>✓ Traceability</li><li>✓ Immutability</li><li>✓ Measure and report</li></ul>	<ul style="list-style-type: none"><li>✓ Cross-domain visibility metrics</li><li>✓ Security and governance</li><li>✓ Supported</li></ul>



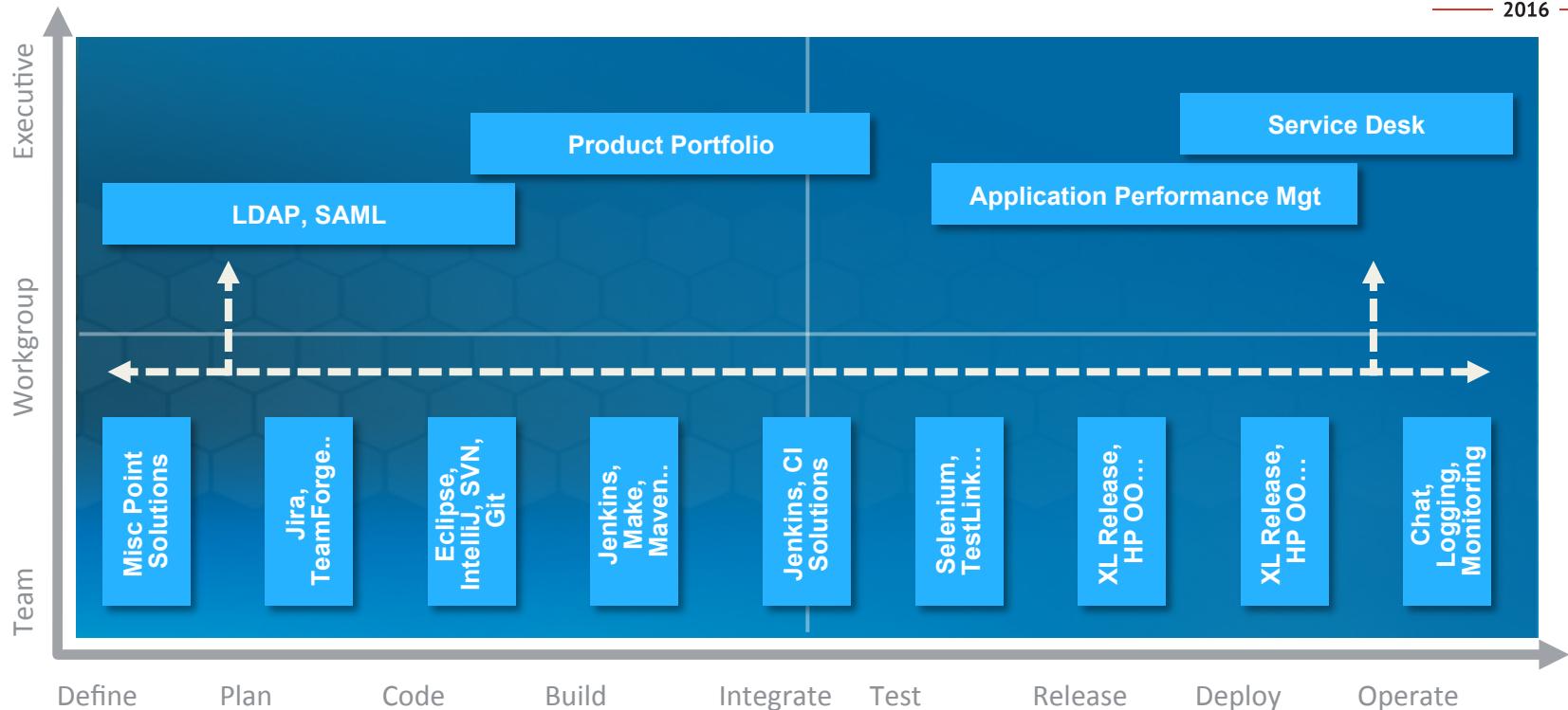


# Solution Soup





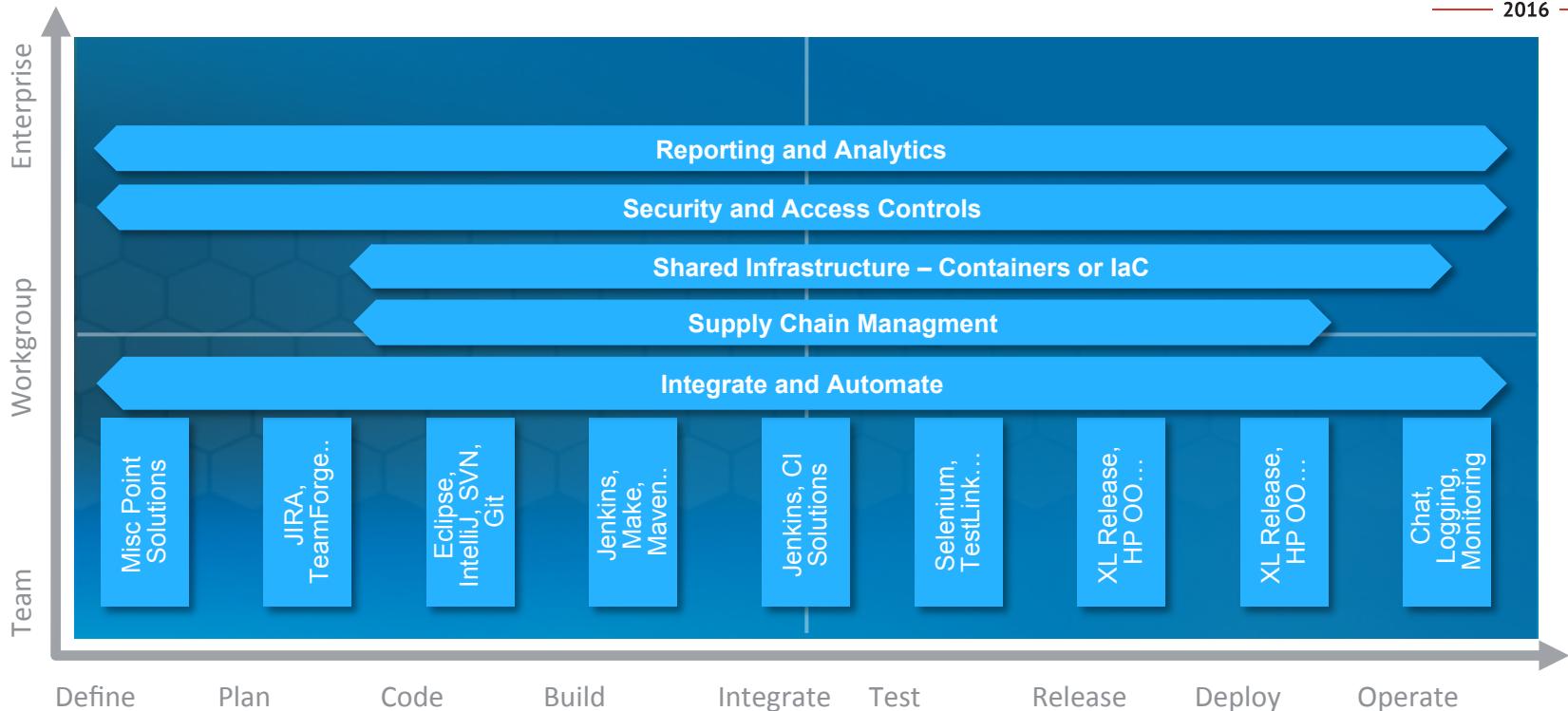
# Integrate and Automate





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# Security, Scalability and Manageability



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# Measuring and mapping example

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## Example: Financial Services Company

- Large accounting platform, 65% and growing SaaS business
- Practiced Scrum in Development (2 week sprints)
- Practiced waterfall in Operations and QA teams
- 6 month releases with monthly maintenance releases
- Virtual machine farm, gated by Operations and requested via help desk
- Development, QA, and Operations have dedicated non-integrated tools
- Excessive firefighting and burnout in Operations
- High number of Severity 1 production issues



# Order of Operations



Discover: Determine current state and maturity



Define: Establish objectives



Map: Journey through the quadrants



Cross chasms, connect quadrants, continuously  
improve

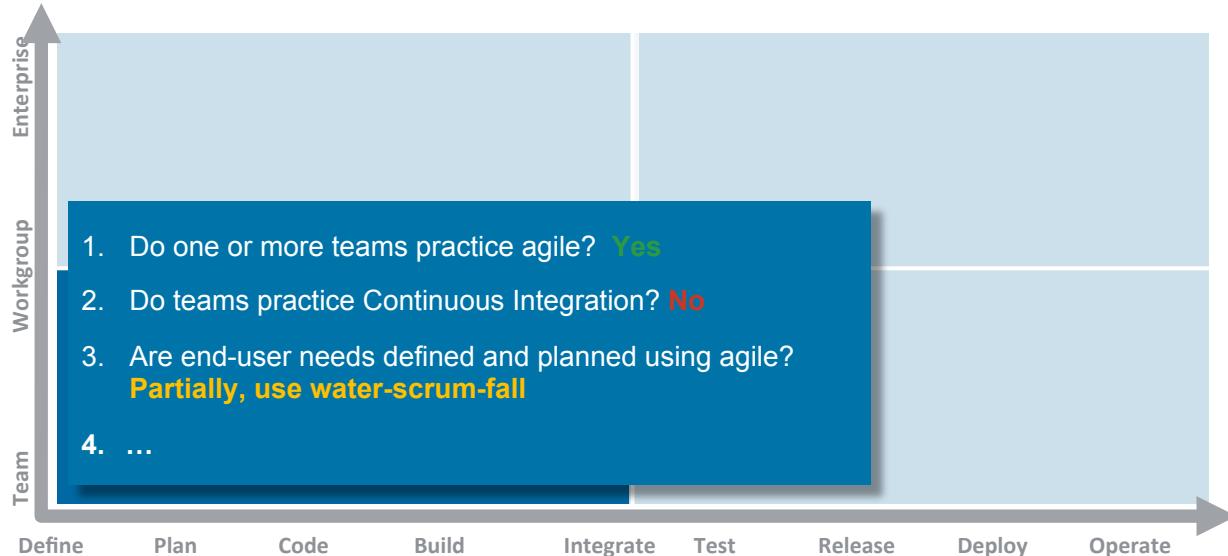
*Involve and align key stakeholders at start of transformation and communicate with them frequently.*

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# Discover: Q1 Team-Level Agile

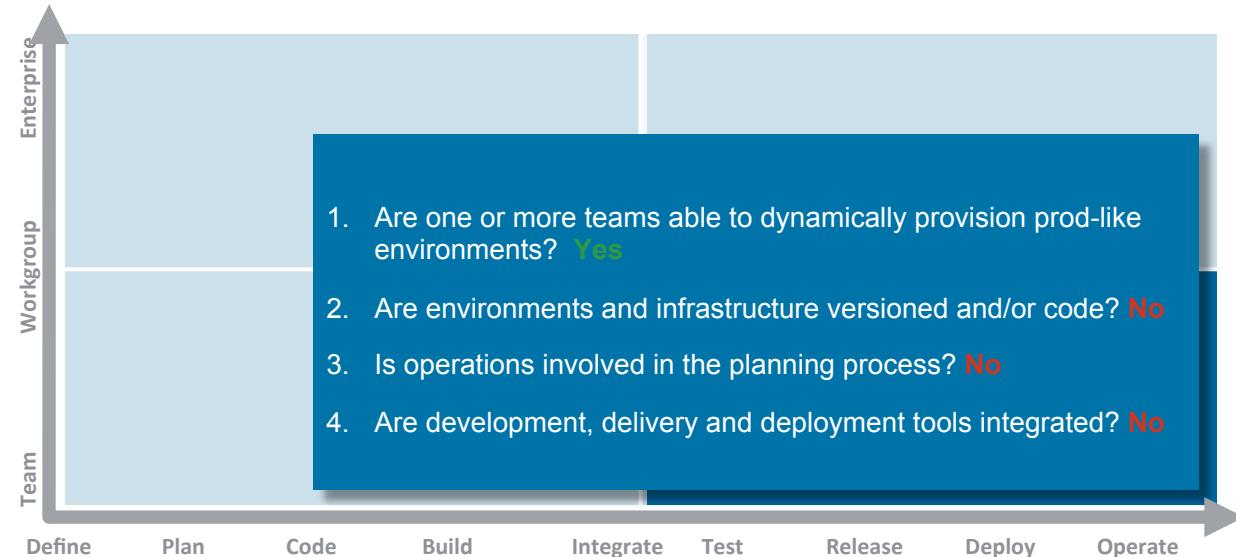


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# Discover: Q2 Team-Level CD

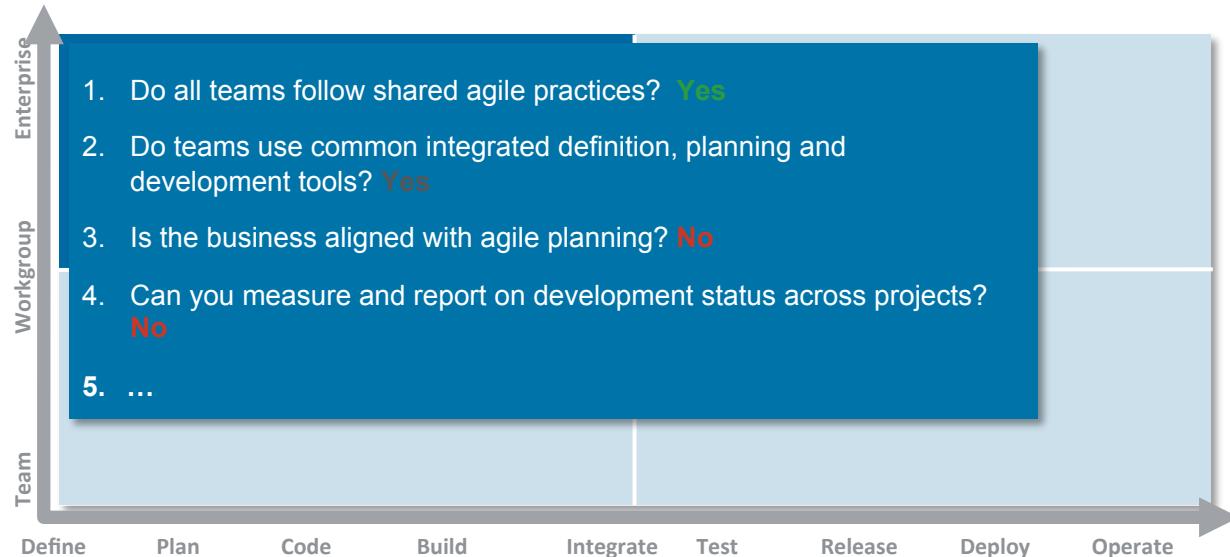


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# Discover: Q3 Enterprise Agile

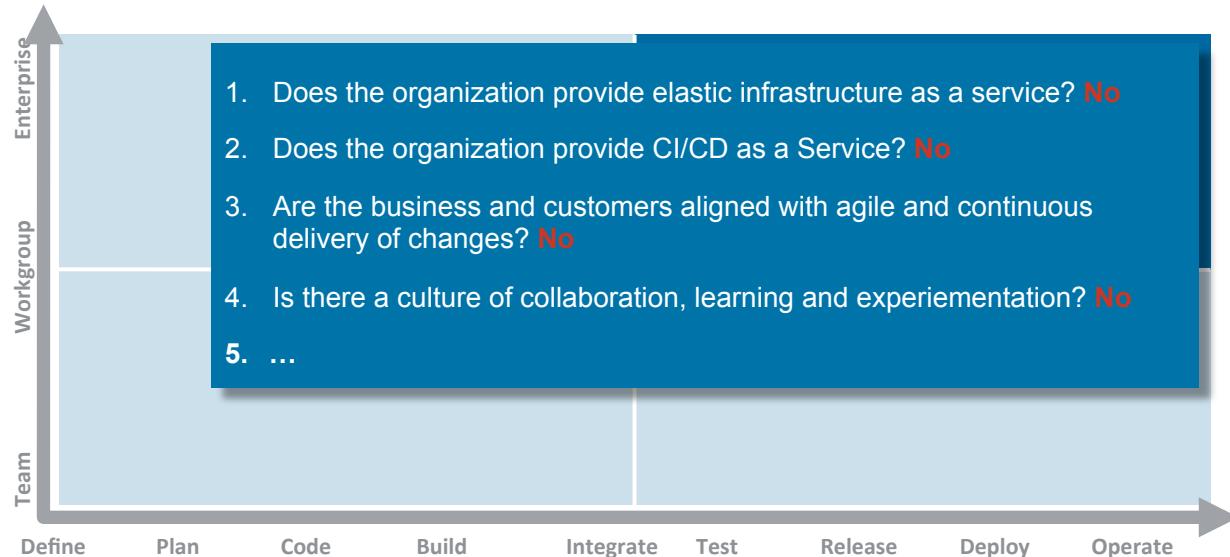


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# Discover: Q4 Enterprise DevOps



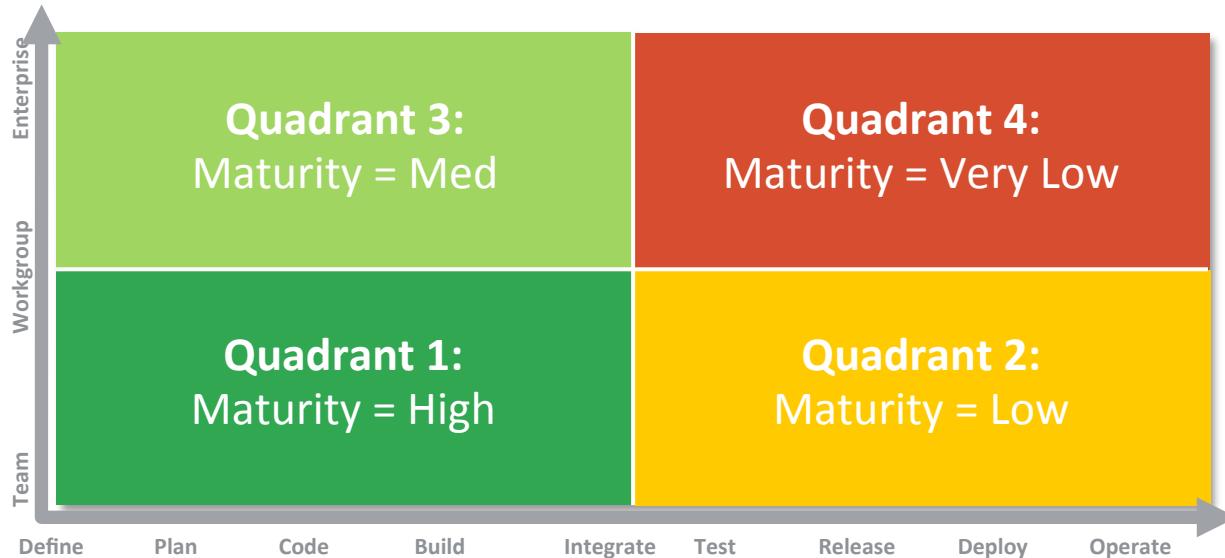
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# Discover: Current State by Quadrant Maturity



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Modern DevOps practices can be applied to Hybrid or Bi-modal organizations which have a mix of legacy "systems of records" and modern "systems of innovation." i.e Accounting vs Mobile.

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# Define: Establish Objectives



## Long term/Strategic:

- All applications released every 2 weeks
- Reduce Severity 1 defects by 100%
- Reduce all defects by >50%
- Reduce operations and developer "overtime" by 80%
- Reduce IT costs
- Increase responsiveness to customer



# Define: Establish Objectives



## Short term/Tactical:

- Establish shared Continuous Delivery as a Service platform
- Implement automated testing for all applications
- Form cross-functional teams
- Foster collaborative culture

*Objectives should be based on **Shared Priorities**, those which can be translated to benefits to all stakeholders, to encourage “buy-in”*



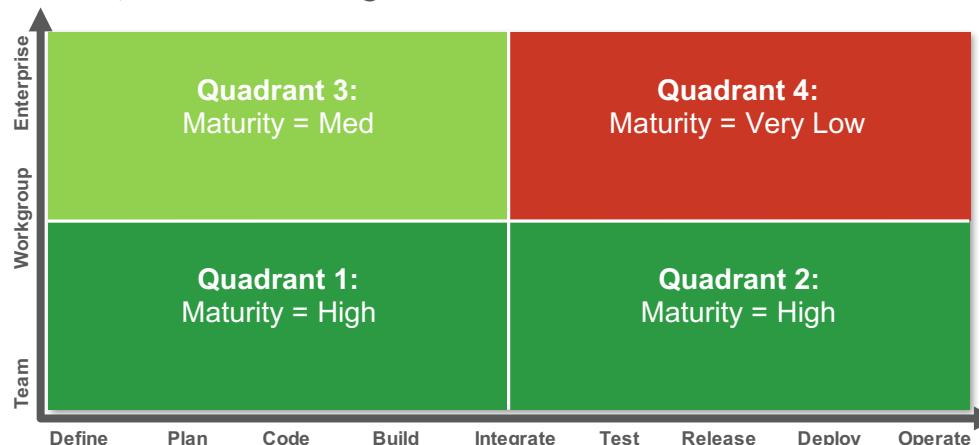
# Map: Journey through Quadrants



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## Quadrant 1 to Quadrant 2

- Establish team-level CD
  - Shared platform, dynamic provisioning, automated testing
- Form cross-functional team
  - Open communication, shared knowledge



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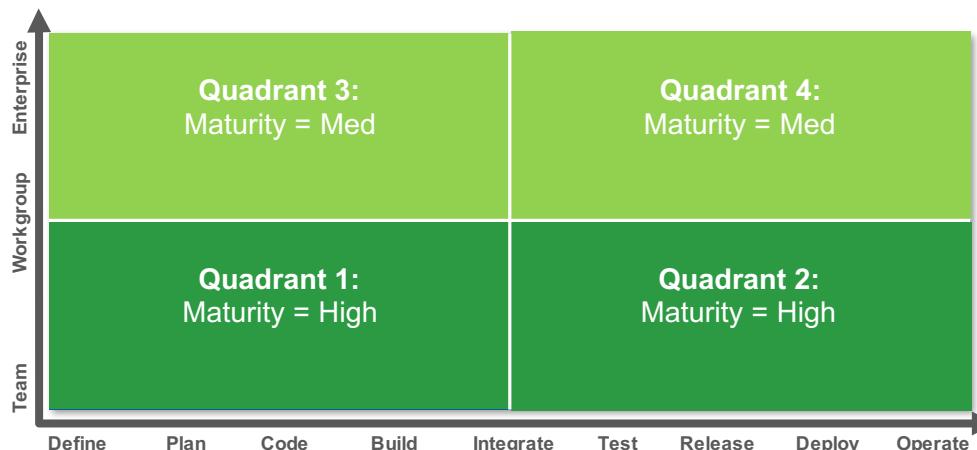
# Map: Journey through Quadrants



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## Quadrant 2 to 3\* and 4

- Establish shared project management and development tools and process
  - Have common, "connecting" process parts but support deviation outside of those
- Adopt enterprise infrastructure and CD as a Service strategy
  - Connect common development tools to enterprise solution



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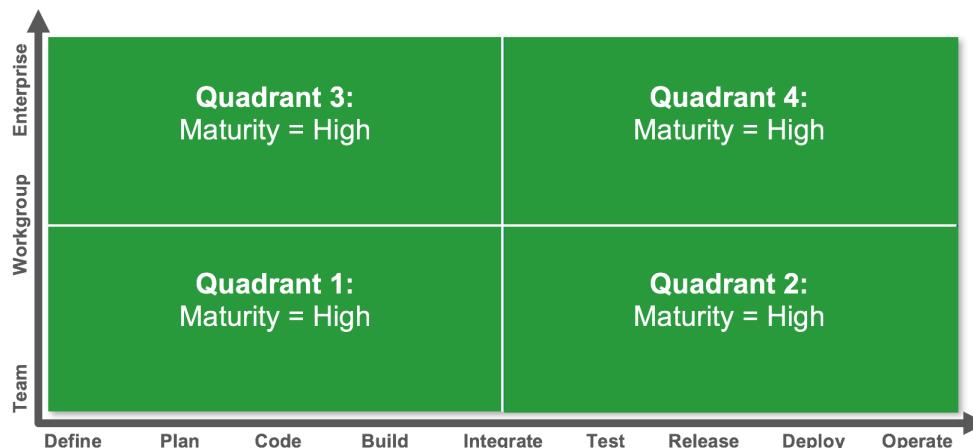
# Map: Journey through Quadrants



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## Quadrant 2 to 3 and 4\*

- Build DevOps Center of Excellence based on lessons from “red” team
  - Central, cross-functional team. Service oriented but with authority
- Onboard new teams and extend common tools and processes
  - Continuously, pragmatically refine to balance team needs with enterprise needs



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# Transformation Strategies

- Identify pilot project
- Form cross-functional "red" team
- Adopt unifying technologies
- Establish plan with measurable KPI's and milestones
- Go!
  
- Measure, document report, refine



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## Survey:

<https://www.surveymonkey.com/r/4Qs-Survey>

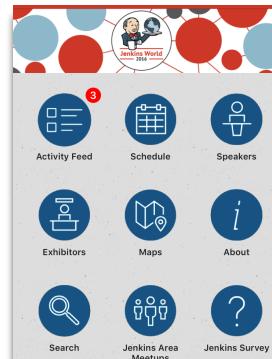
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## Q&A and Next Steps

- Download the white paper on “Assessing DevOps Maturity Using a Quadrant Model”:
  - <https://pages.cloudbees.com/DevOps-Maturity-Using-Quadrant-Model.html>
    - <https://goo.gl/iLKdCm>
- Don’t forget to complete the community survey!
  - Access from the Jenkins World mobile app
  - <https://www.surveymonkey.com/r/jenkins2016>



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# Contact me!

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