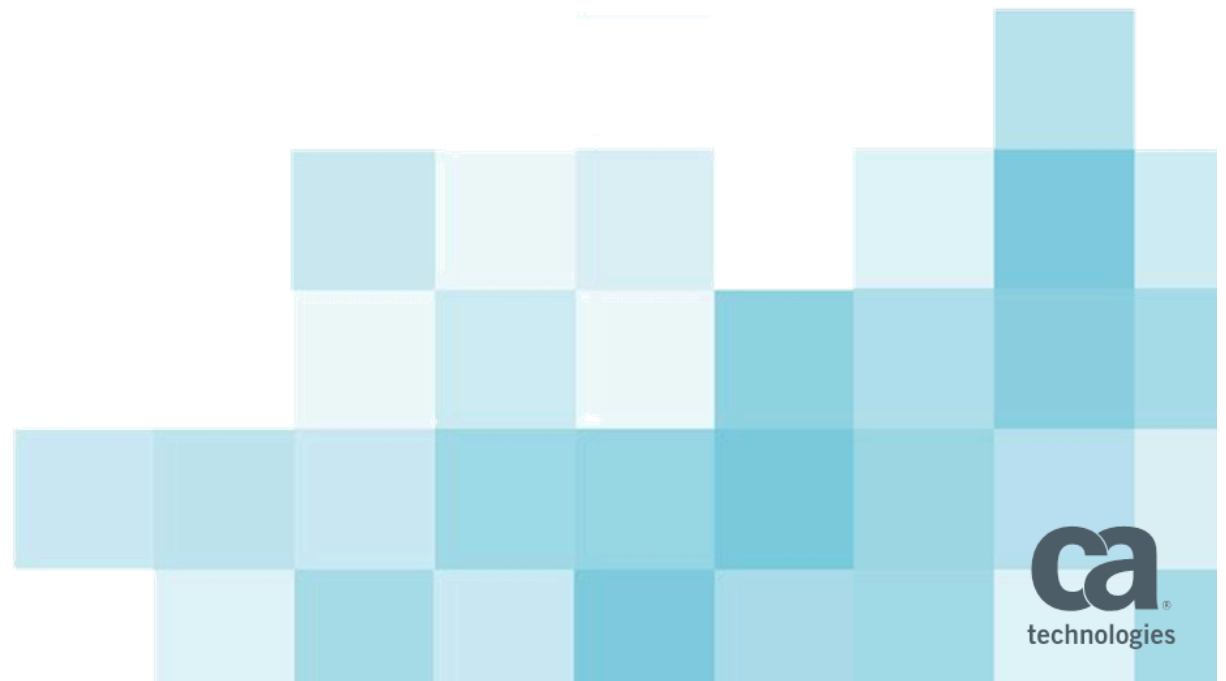# The DevOps Maturity Curve
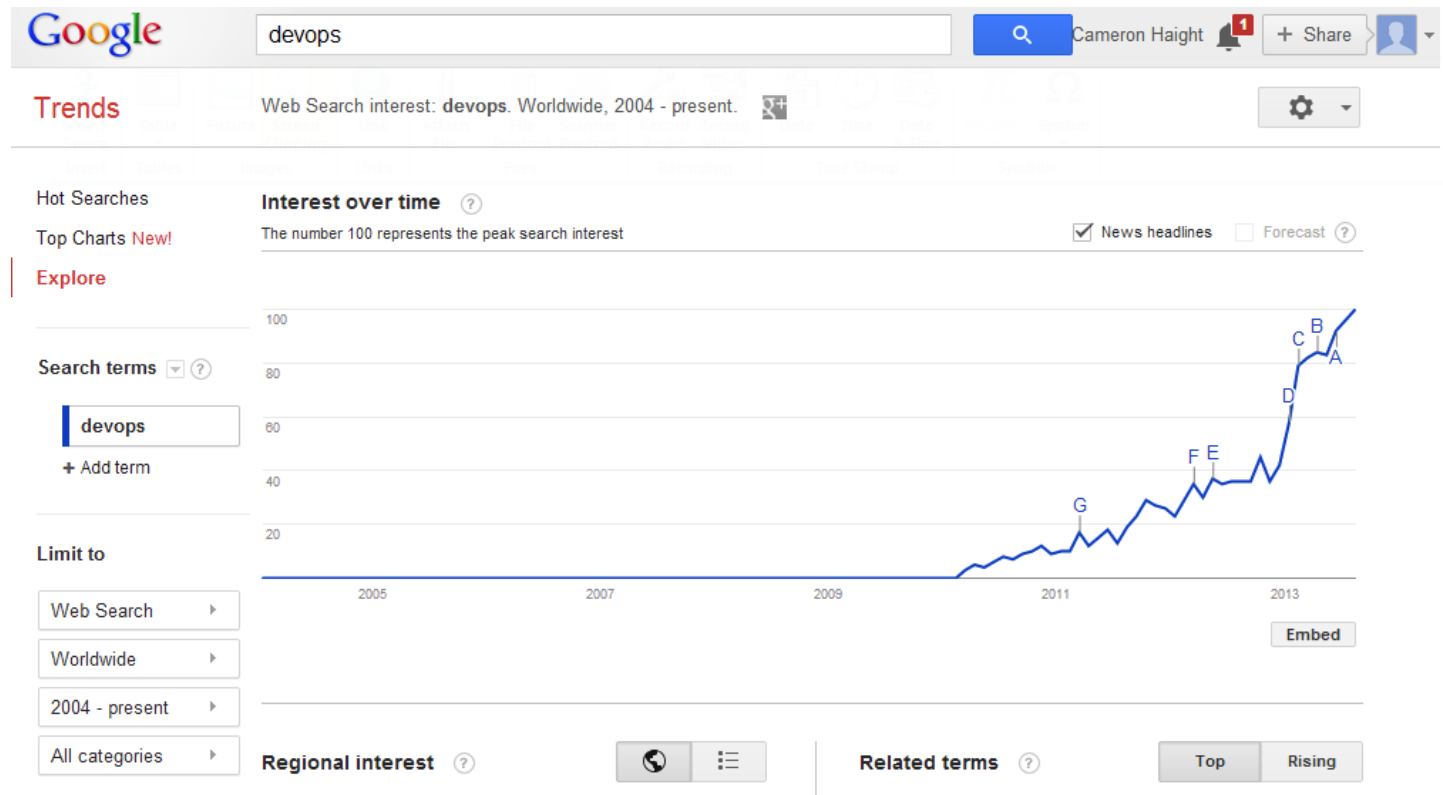## Where are you on it?

Michiel Kemperman

20-06-2014

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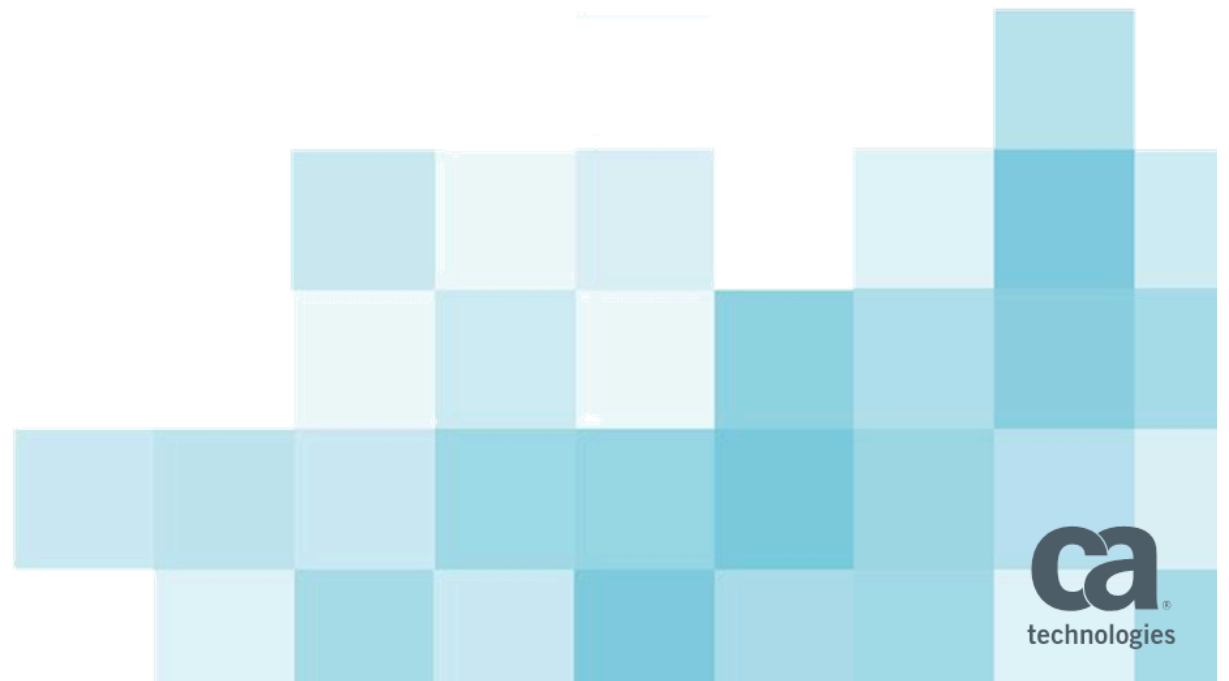
The Appeal of DevOps…Increase Number of Releases

Screen clipping taken: 8/12/2013 11:03 AM

"Its all about ~~number~~ of releases!"

Enterprises should really have a different approach...

Accelerate <u>throughput</u> ...speed with quality

Faster Delivery

- **New applications**
- **Changes to existing apps**
- **Bug fixes**

Faster Delivery

- **New applications**
- **Changes to existing apps**
- **Bug fixes**

Higher Reliability

- **Software is the customer experience**
- **Quality and performance are critical**

Faster Delivery

- **New applications**
- **Changes to existing apps**
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Higher Reliability

- **Software is the customer experience**
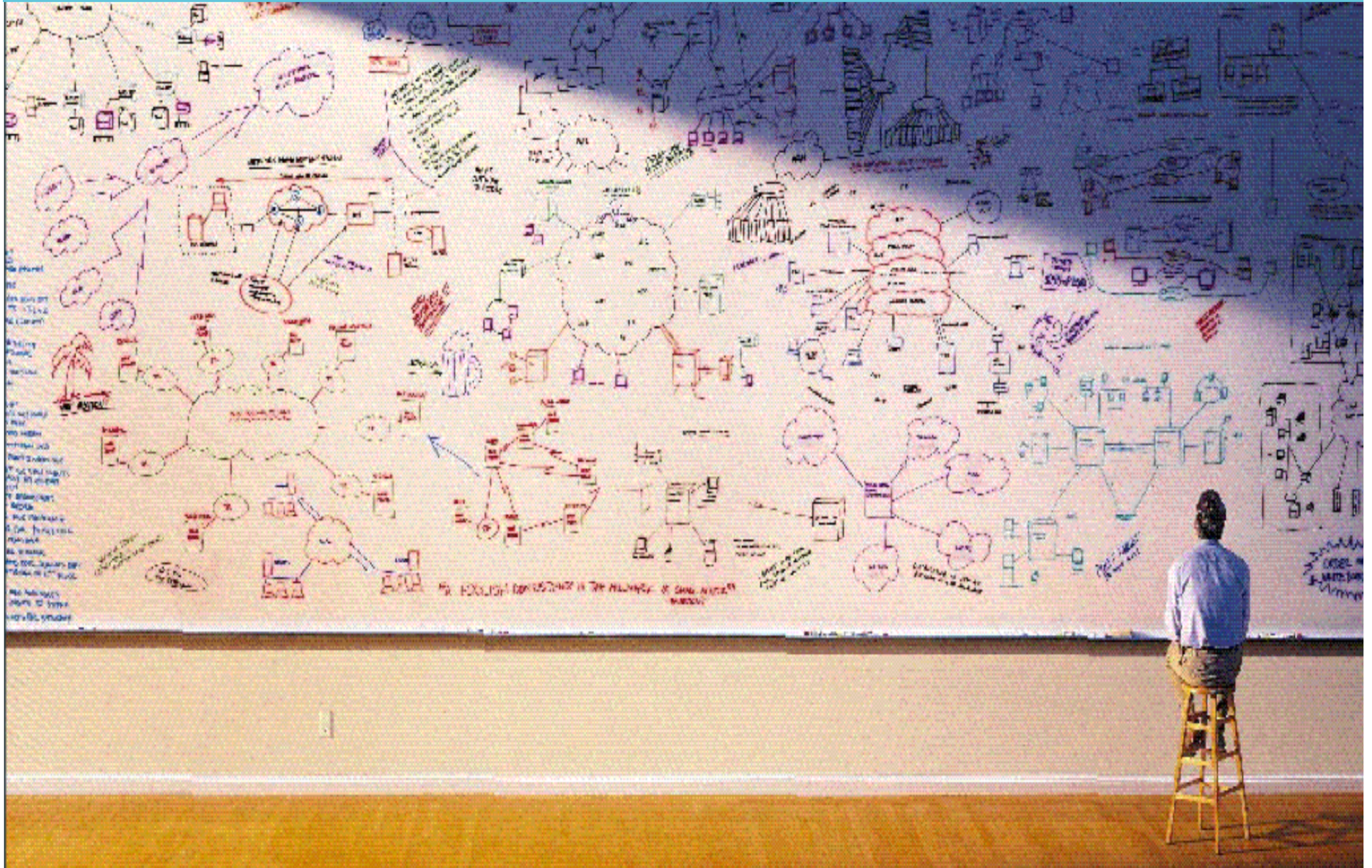- **Quality and performance are critical**

Against Complexity

- **Composite services and heterogeneous systems**
- **Reduced budgets**
- **Distributed development teams and IT partners**

Pace-Layered Application DevOps Approach

Systems of Innovation

Systems of Differentiation

Systems of Record

$+$ Change $-$

$-$ Governance $+$

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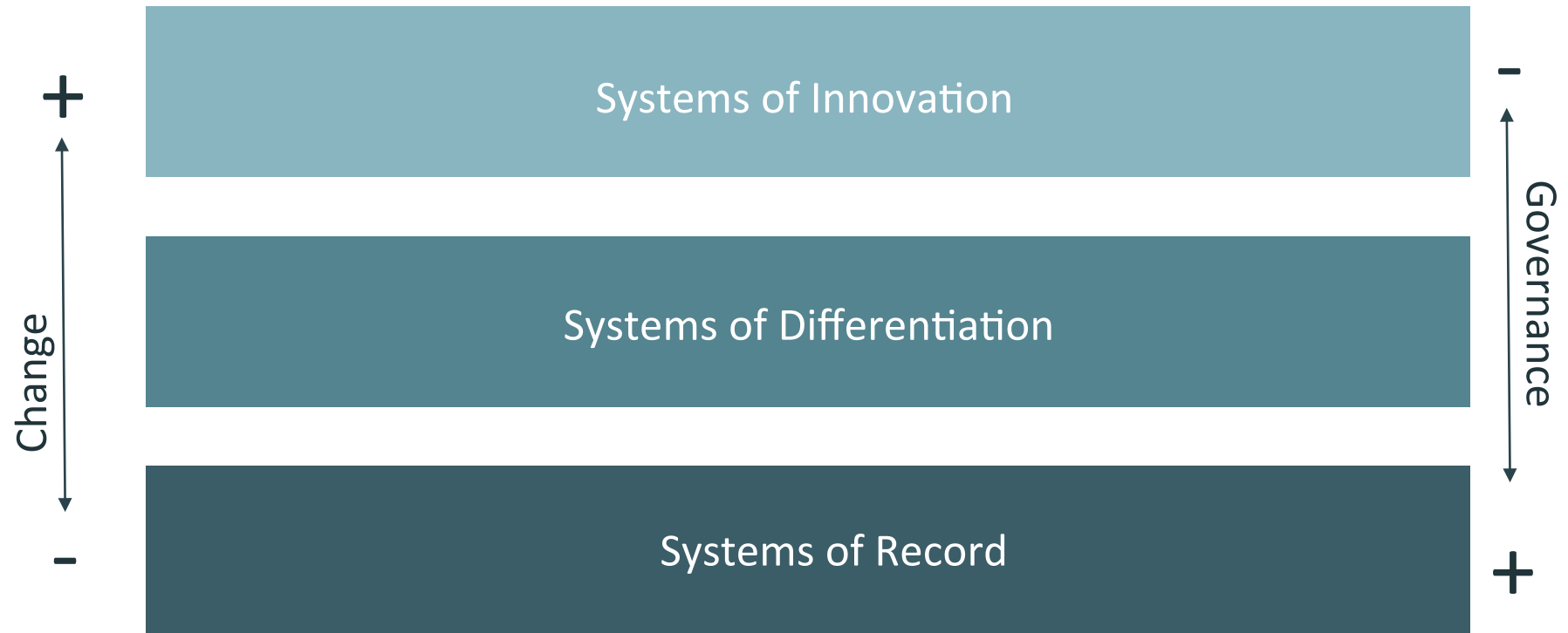
The Challenge of Today's Complex and Dynamic Application Delivery Environment

Lack of interface testing
too many bugs escape downstream

Lack of automated testing - small changes could have major unintended consequences

Difficulty in managing environments across multiple concurrent releases - longer lead times and configuration related defects

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Enterprise DevOps

True Agile Development
- Interface Testing
- Mobile Testing
- Service Virtualization
- API Management

Continuous Validation
- Functional, Performance Testing
- Mobile Testing
- Service Virtualization
- APM, IM
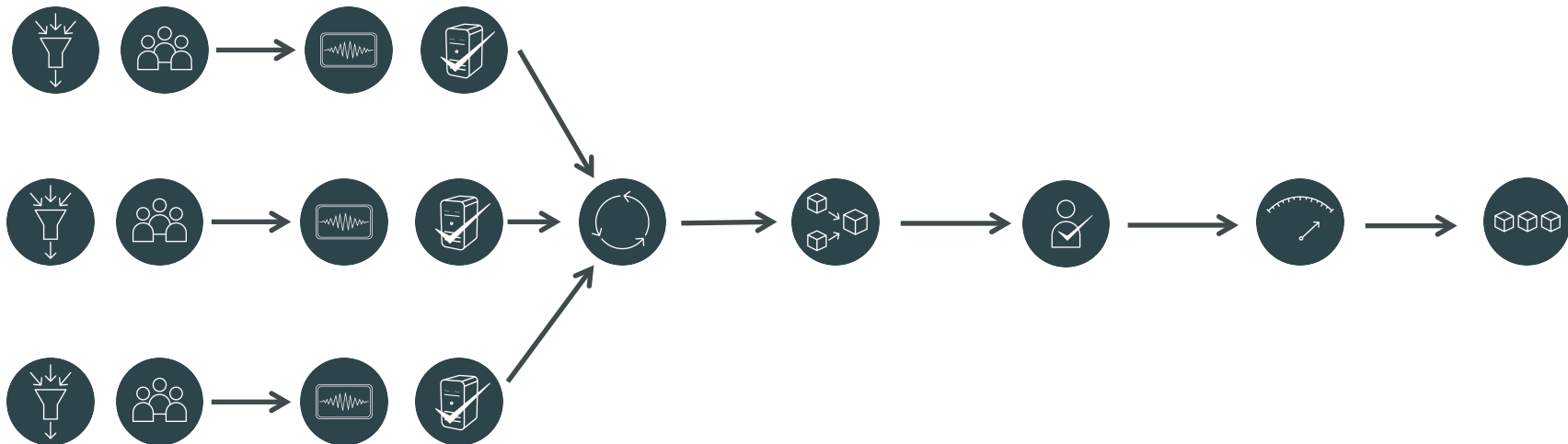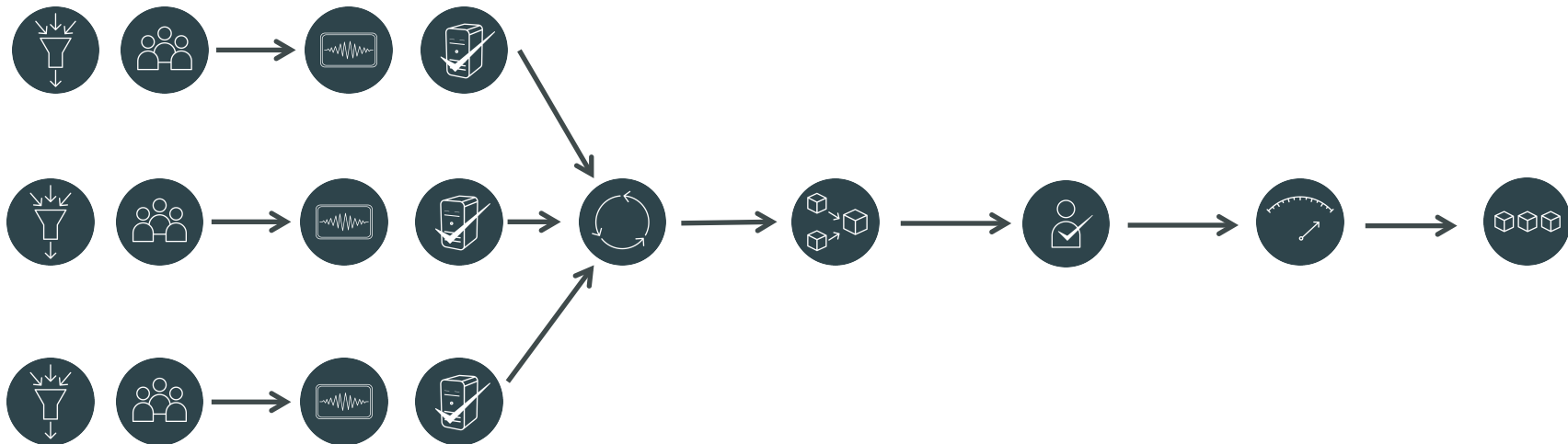
Continuous Delivery
- Release Automation
- Environment Management
- Service Virtualization, Capacity Planning

DevOps Data Mining – Close the Loop
- Intelligent Artifact Creation – Regression Tests, Virtual Services, etc
- Test Data Management
- Capacity Planning

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Constraints for Agile Development

Incomplete development

System unavailable

Invalid data

Access fee
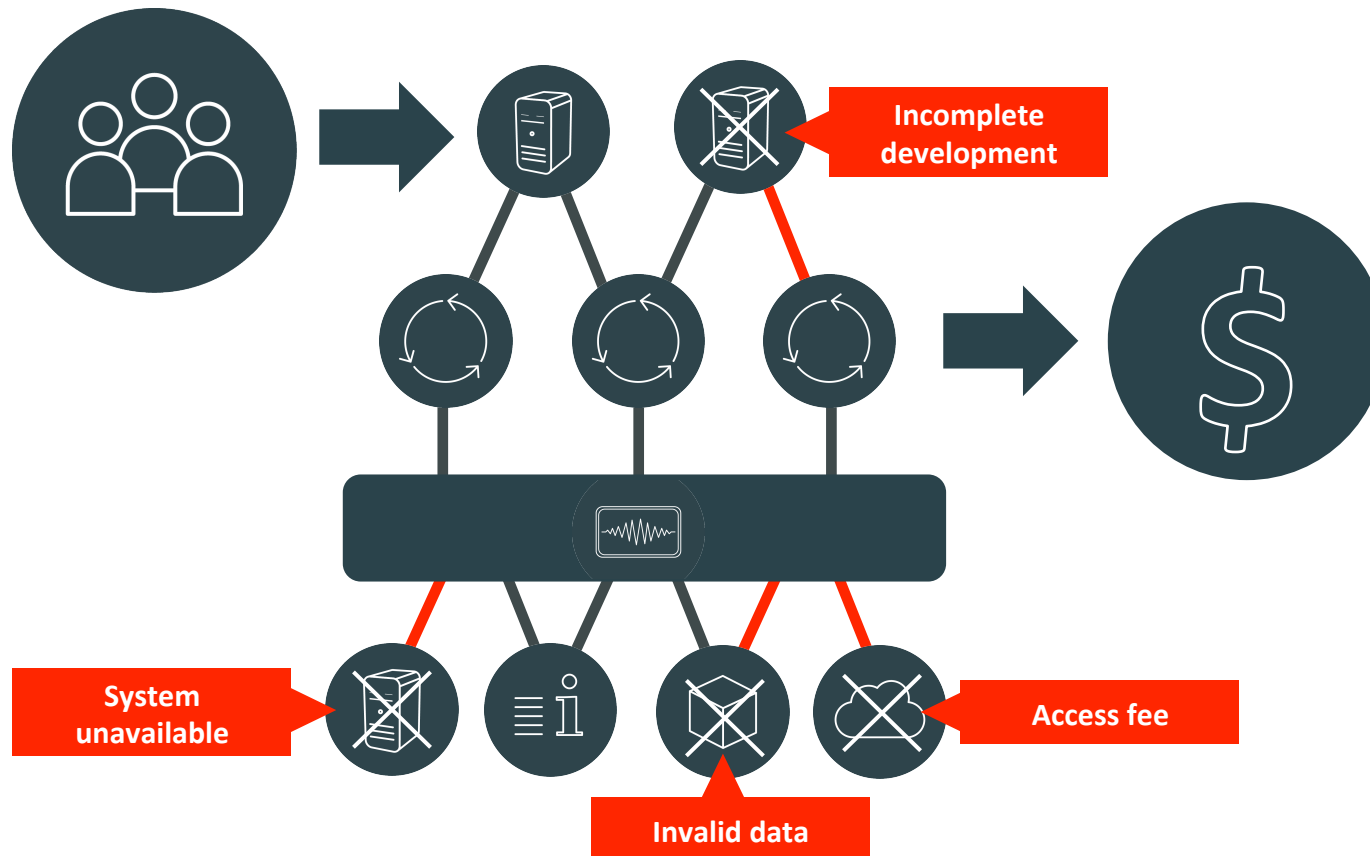
"I can't do anything until I have everything… and I never have everything!"

Service Virtualization
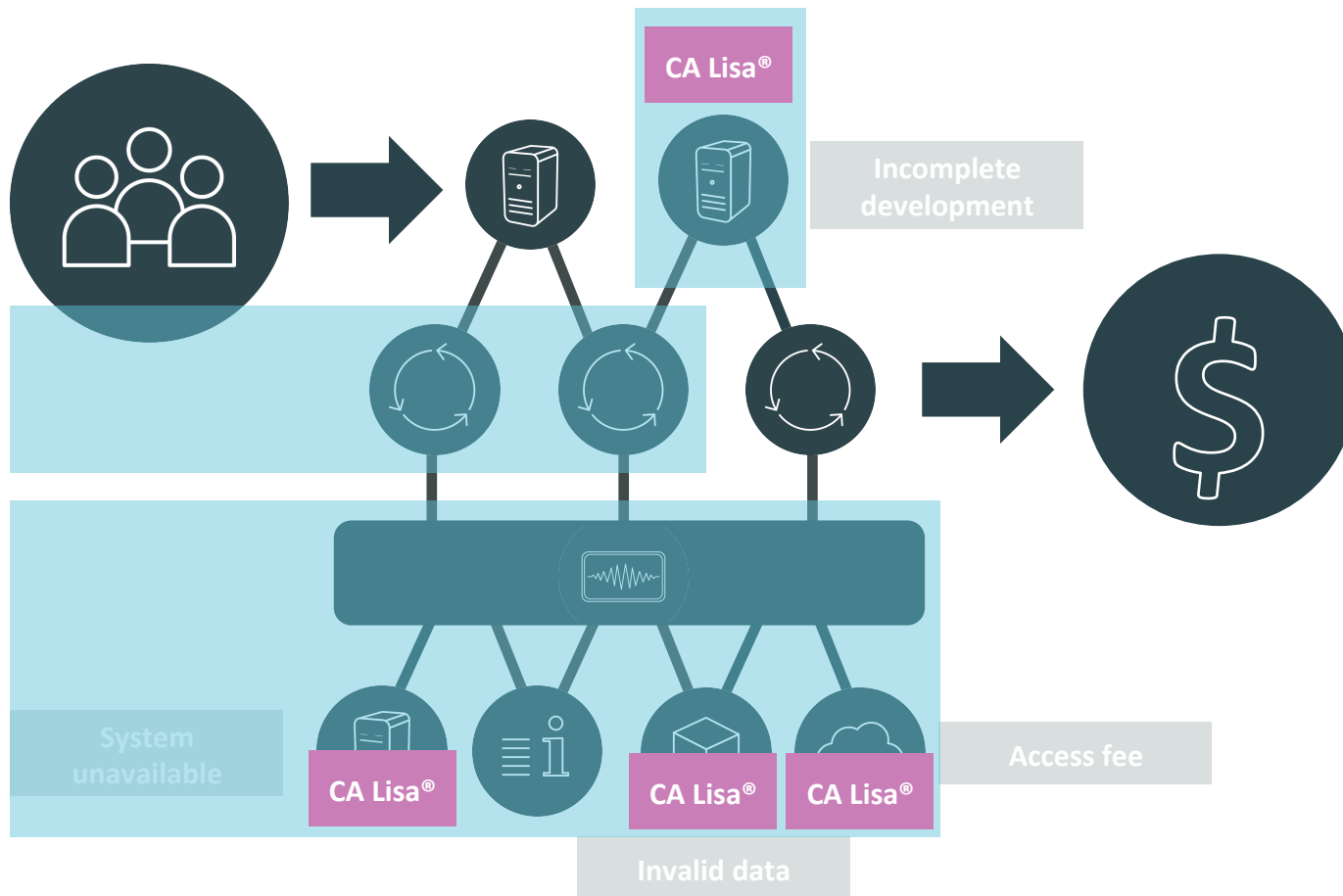
"I have everything I need, when I need it!"

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Continuous Application Delivery Maturity Model

Key Achievements (vertical axis, bottom to top):
- Heroes
- Process
- Standardization
- End-to-end Delivery
- On-going improvements

Delivery Levels (horizontal axis): 1, 2, 3, 4, 5

Data points:
- Manual (1)
- Scripting (2)
- Automation (3)
- Continuous (4)
- Optimization (5)

Callout box:
Missing go live date
Release failures
Competiveness

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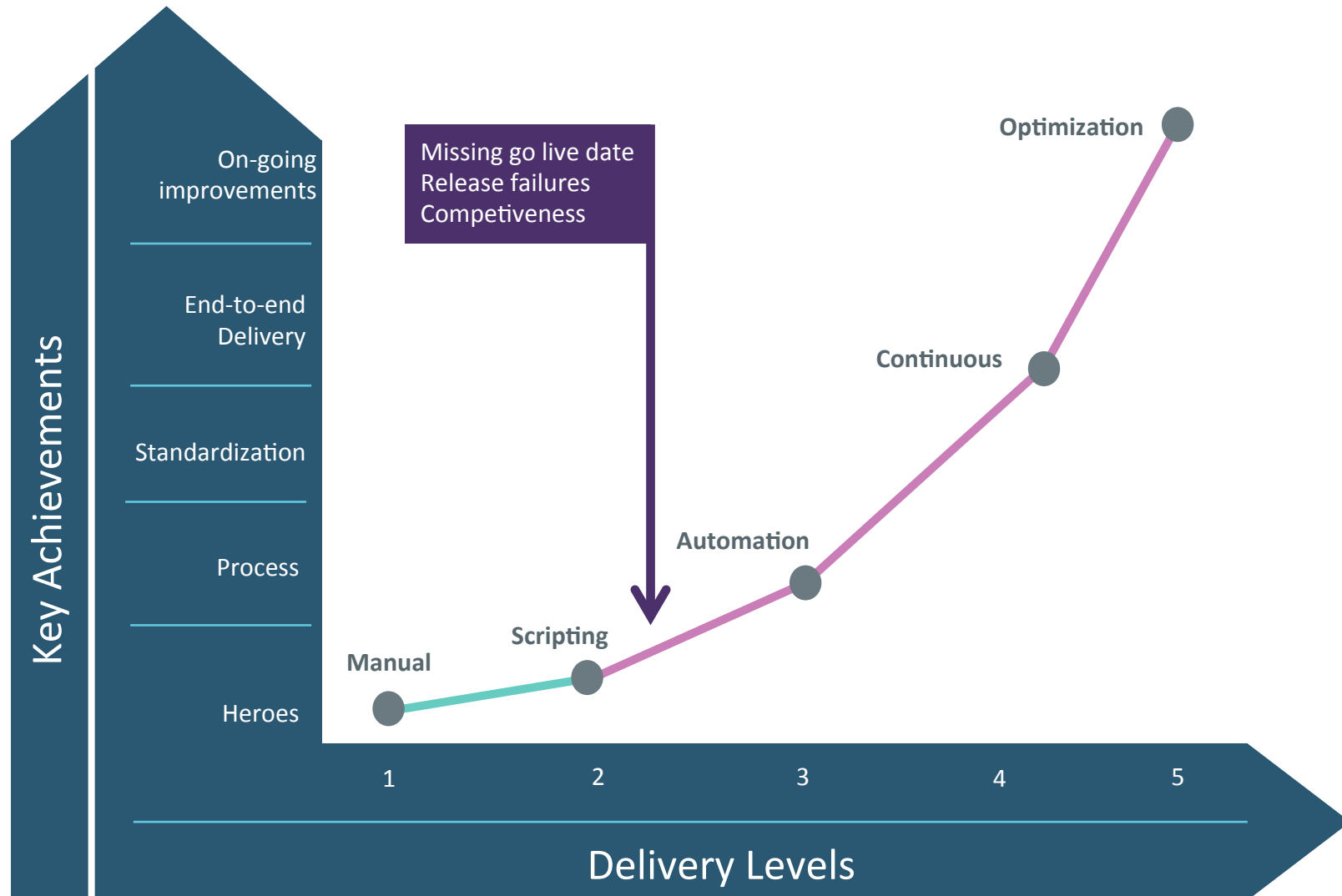
Continuous Integration
Automating the Creation of the Software Package

4. This is the key integration point for Release Automation...the new build and the associated artifacts are what gets deployed into a dev or test or production environment.

Stakeholders

Continuous integration

Continuous reporting

Development team

SCM

3. When the Continuous Integration server creates a new build, it also creates artifacts (distribution packages, WAR files, log files, configuration settings, etc.) and stores them in a artifact repository.
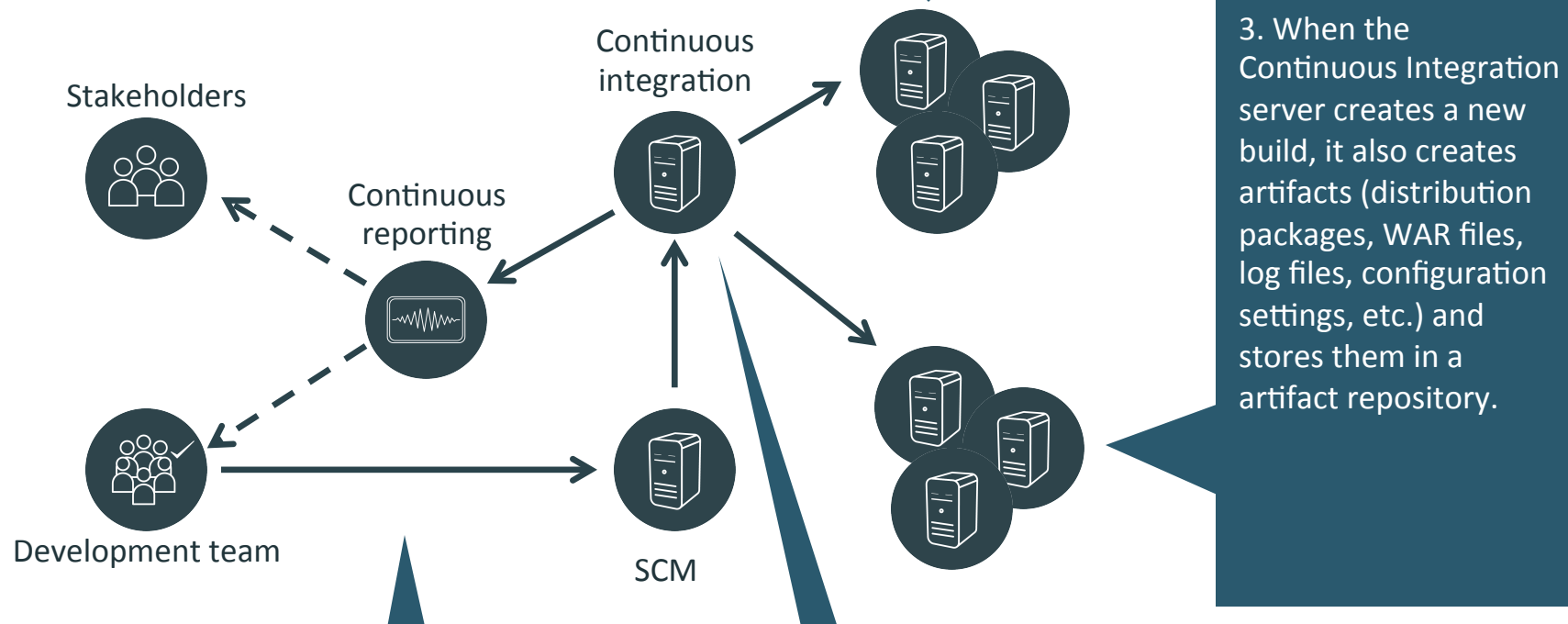
1. Developers "check in" their work to the software configuration management system.

2. The Continuous Integration server detects the change and initiates the process of creating a new "build".

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Release Automation
Automating the Steps Required to Deploy the Software Package

Will my existing scripts work with these packages/changes?

What order do I install these different components?

Do I need to turn off any services before or after I start ?

Dependencies and sequencing

Scripts

App presentation

What servers?

What OS?

What middleware?

Any special network access controls?

Environment details

App logic

What versions?

What configurations?

How is this different than my dev environment?

App content

Config files

Binaries

Reference data and SQL scripts

What combination of packages get deployed?

Do I have the right packages?

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Bringing It All Together

- Release Automation
- Configuration Tracking
- Release Reporting

Deploy ▶

Development ▼

- Continuous Integration
- Artifact Repositories
- Vulnerability scanners
- Requirements Management

- On-demand Environments
- Cloud Management
- Self service

Environment ▲

◀ **Test**

- Service Virtualization
- Test Automation
- Defect Tracking

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Bringing It All Together

- Release Automation
- Configuration Tracking
- Release Reporting

Deploy ▶ **Development**

- Continuous Integration
- Artifact Repositories
- Vulnerability scanners

At each step in the process, environments need to be built and configured, packages need to be deployed, tests need to be run, change requests need to be approved…all of this needs to be orchestrated so that the application can be promoted

- Environments
- Cloud Management
- Self service

Environment ◀ **Test**

- Virtualization
- Test Automation
- Defect Tracking

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DevOps Data Mining
Continuous Improvement

Application Development			Test and Acceptance			Production

| Reqs | Coding | Delivery | Integration | Performance | Acceptance | Production |

Data Mining

Defect Information	Virtual Services	Regression Tests	Constraint Analysis	
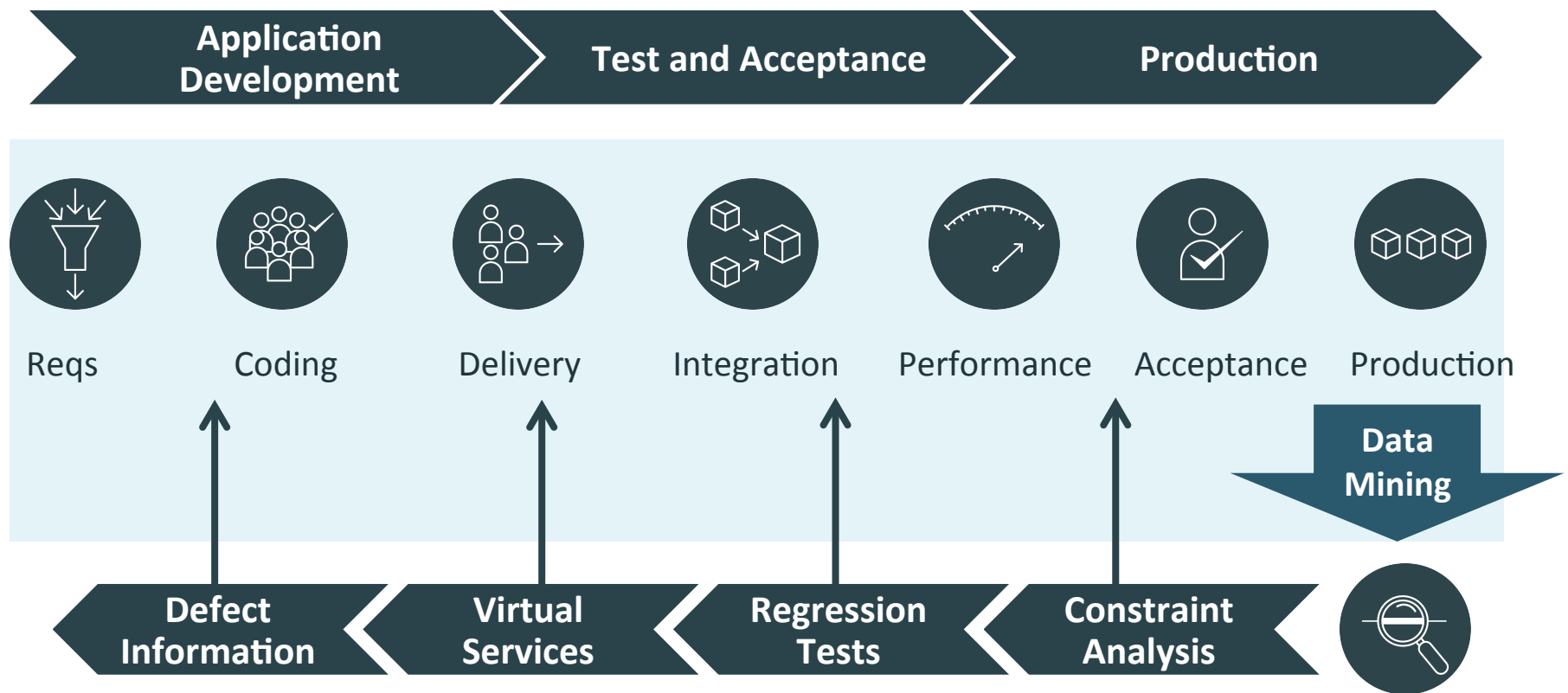
Capture and analyse downstream data to make upstream processes more focused

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DevOps Maturity Curve

Value

Close the Loop

Continuous Validation

Continuous Delivery

Complete Agile Development

Time

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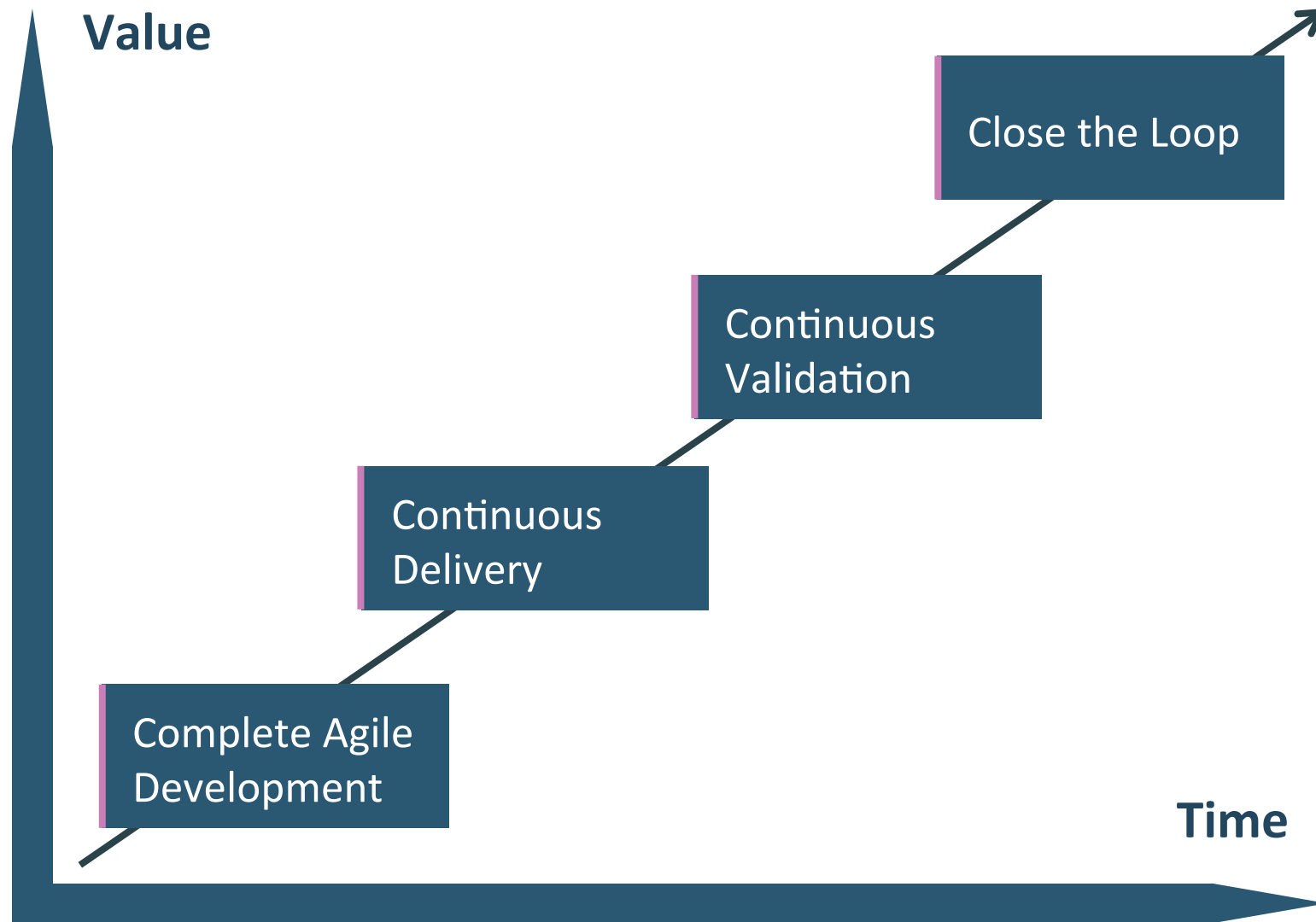
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