IBM Software

IBM DevOps Overview & Roadmap

An approach for continuous delivery of software driven innovation for our enterprise clients

DevOps | IBM

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How I picked my insurer

… and how my current bank is about to lose it

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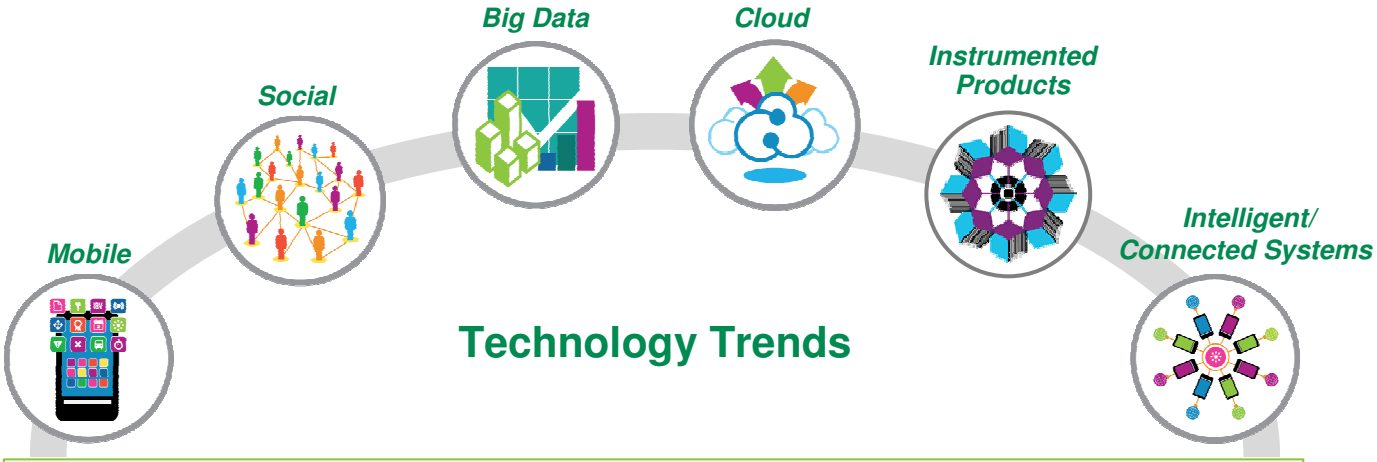
Market shifts require a fundamental change to the way businesses approach the development lifecycle

Evolving Customer Expectations
Consumerization of tools and products drives demand for higher quality and faster delivery

Changing Business Environment
Increasingly volatile economic and regulatory environments drive the need to reduce risk

Multi-sourcing/ Supply Chain
Increased outsourcing drives the need for governance



Technology Trends

Need to be agile and lean

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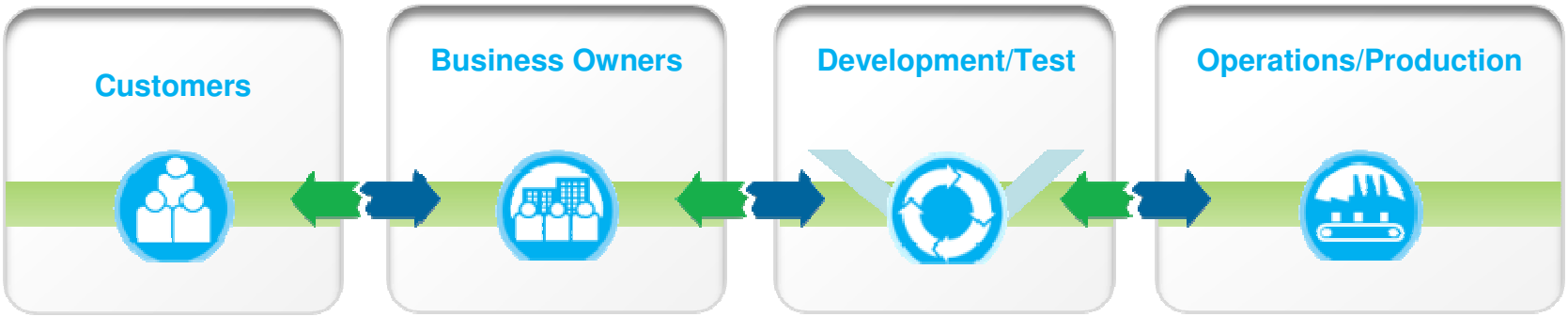
Challenges to accelerate software delivery



41% experience development delays

34% experience deployment delays

45% experience production delays

4-6 weeks to deliver code changes

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Software delivery is important to winning

86%

of companies believe software delivery is important or critical

But only…

25%

leverage software delivery effectively today

Source: "The Software Edge: How effective software development drives competitive advantage," IBM Institute of Business Value, March 2013

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The very fast

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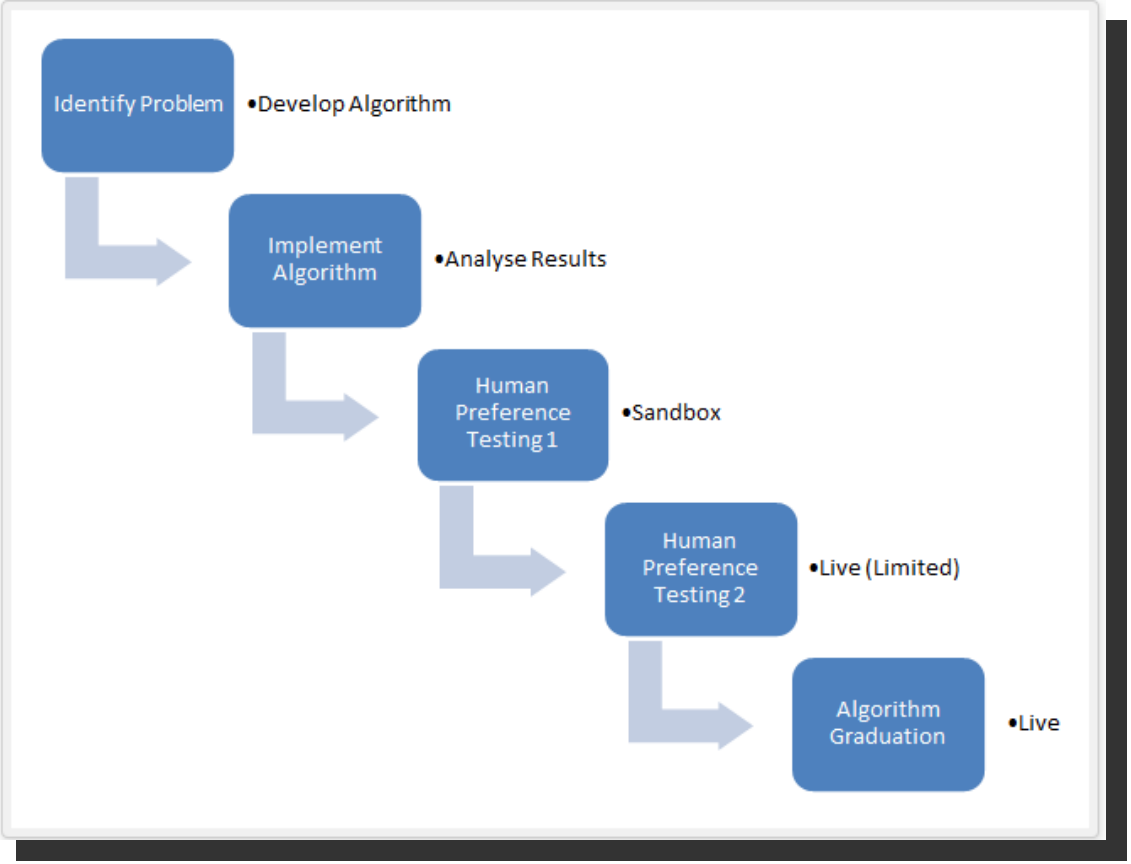
Examples of DevOps & continuous delivery



Search algorithm release at Google

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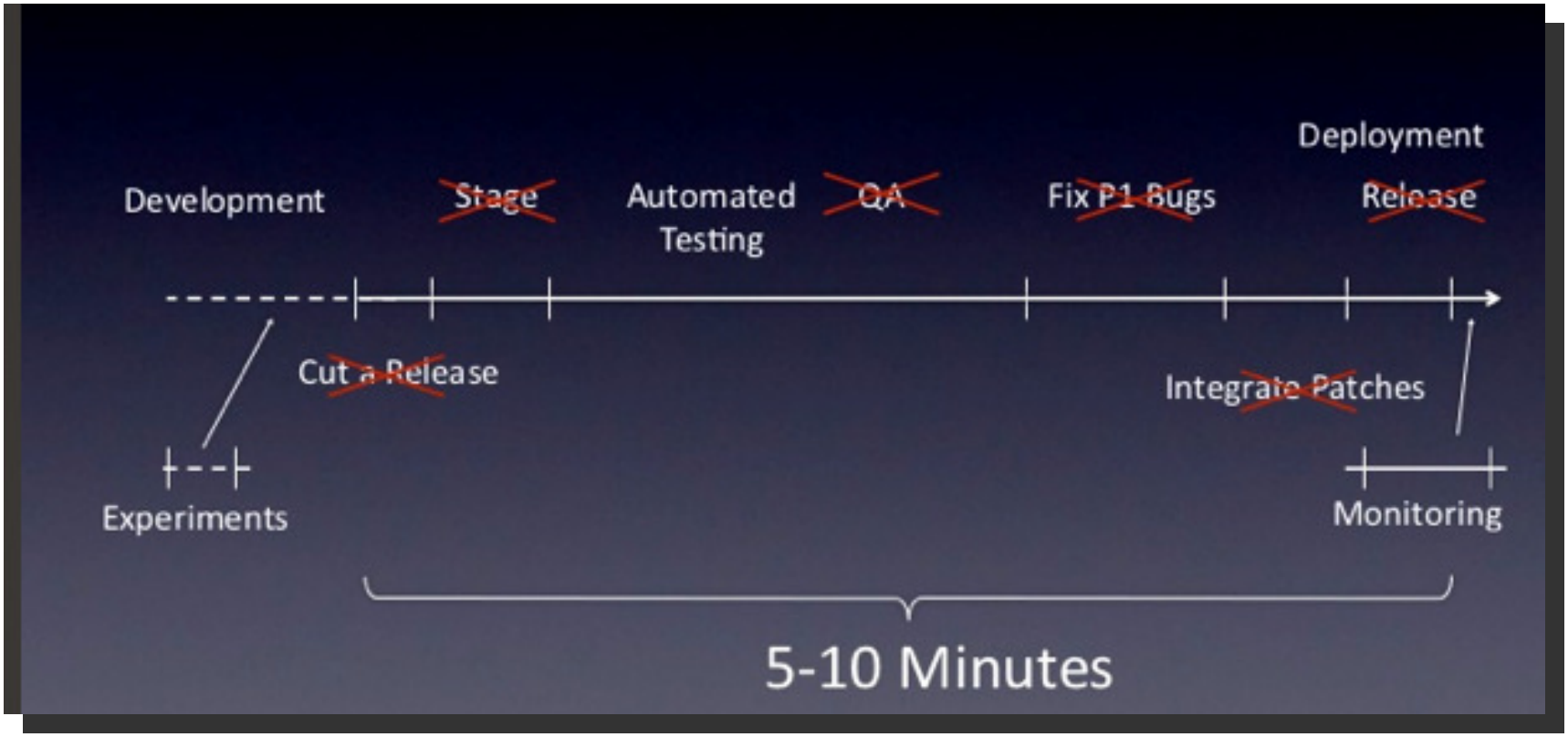
Examples of DevOps & continuous delivery

Release process at Wealthfront



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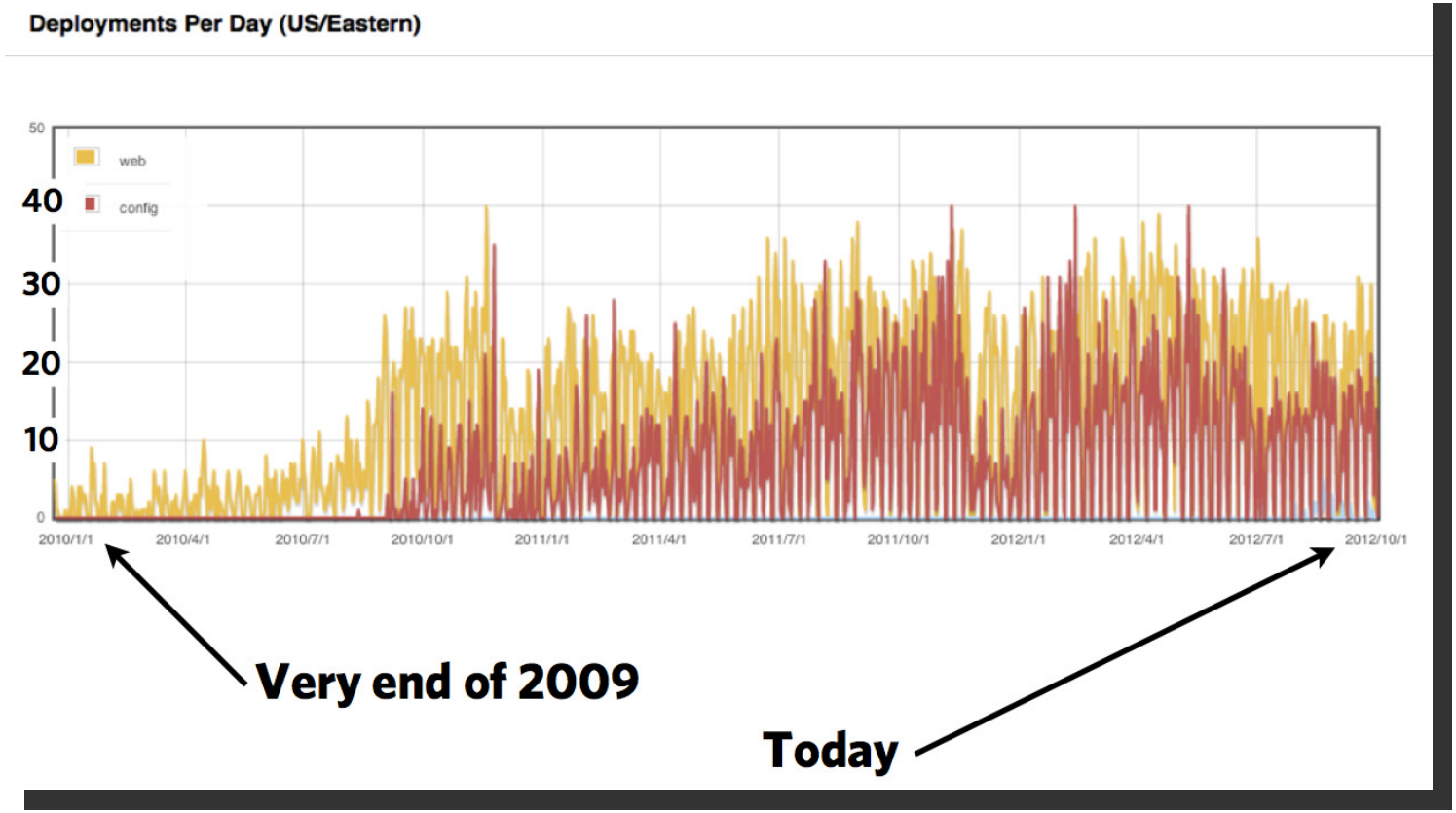
Examples of DevOps & continuous delivery

Release automation at Etsy



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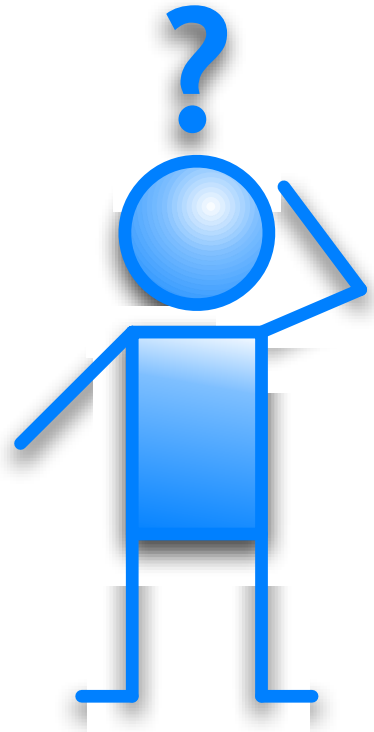
Are these guys crazy?

How fast would you drive a car with no brakes?



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Brakes are for speed. What controls help you go fast?

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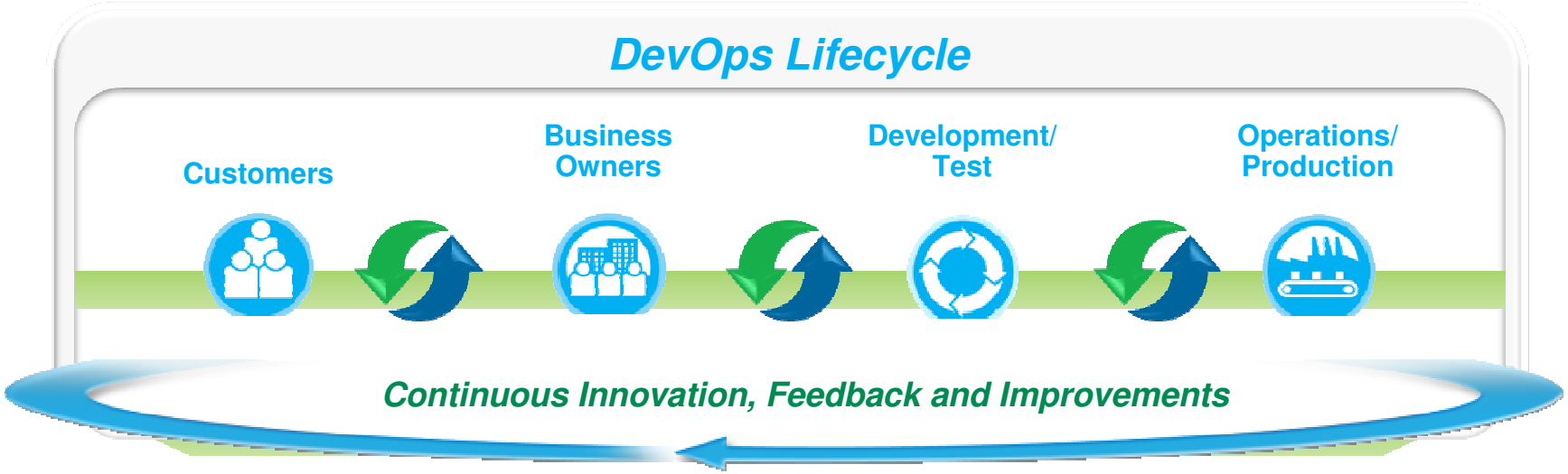
DevOps

Enterprise capability for continuous software delivery that enables clients to seize market opportunities and reduce time to customer feedback



Accelerate Software Delivery

Balance speed, cost, quality and risk

Reduce time to customer feedback

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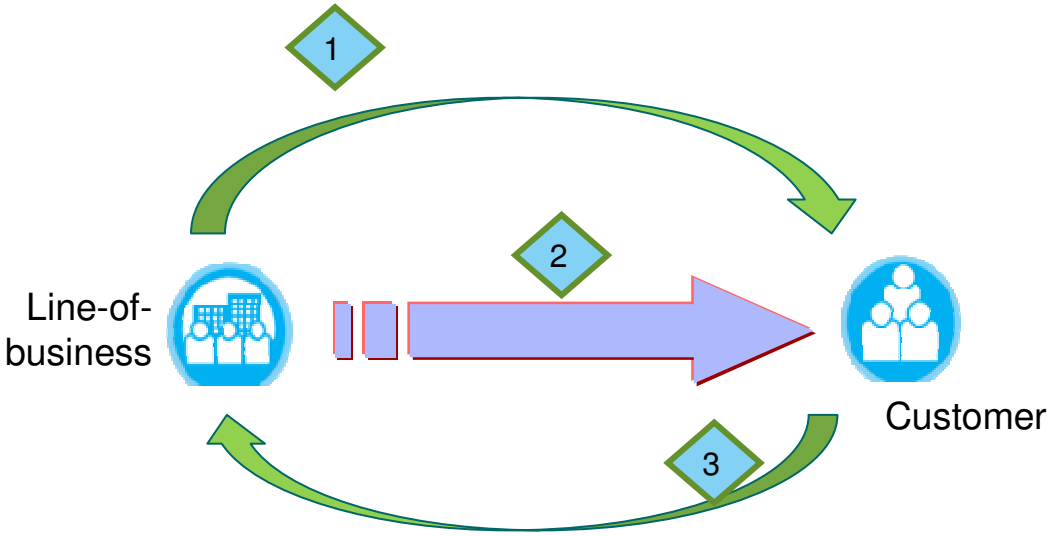
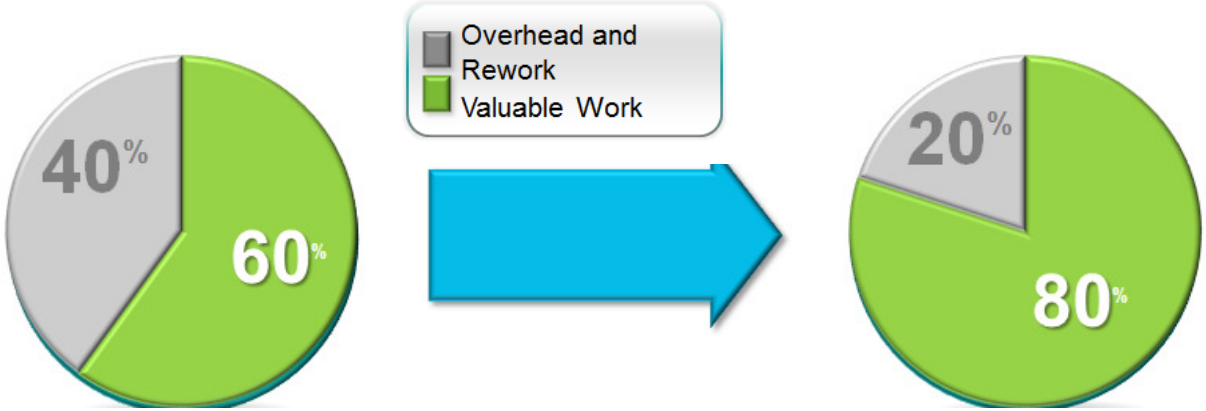
DevOps approach: Apply Lean principles to software innovation and delivery to create a continuous feedback loop with customers



1. Get ideas into production fast
2. Get people to use it
3. Get feedback

Adopt DevOps approach to continuously manage changes, obtain feedback and , deliver changes to users



Eliminate any activity that is not necessary for learning what customers want

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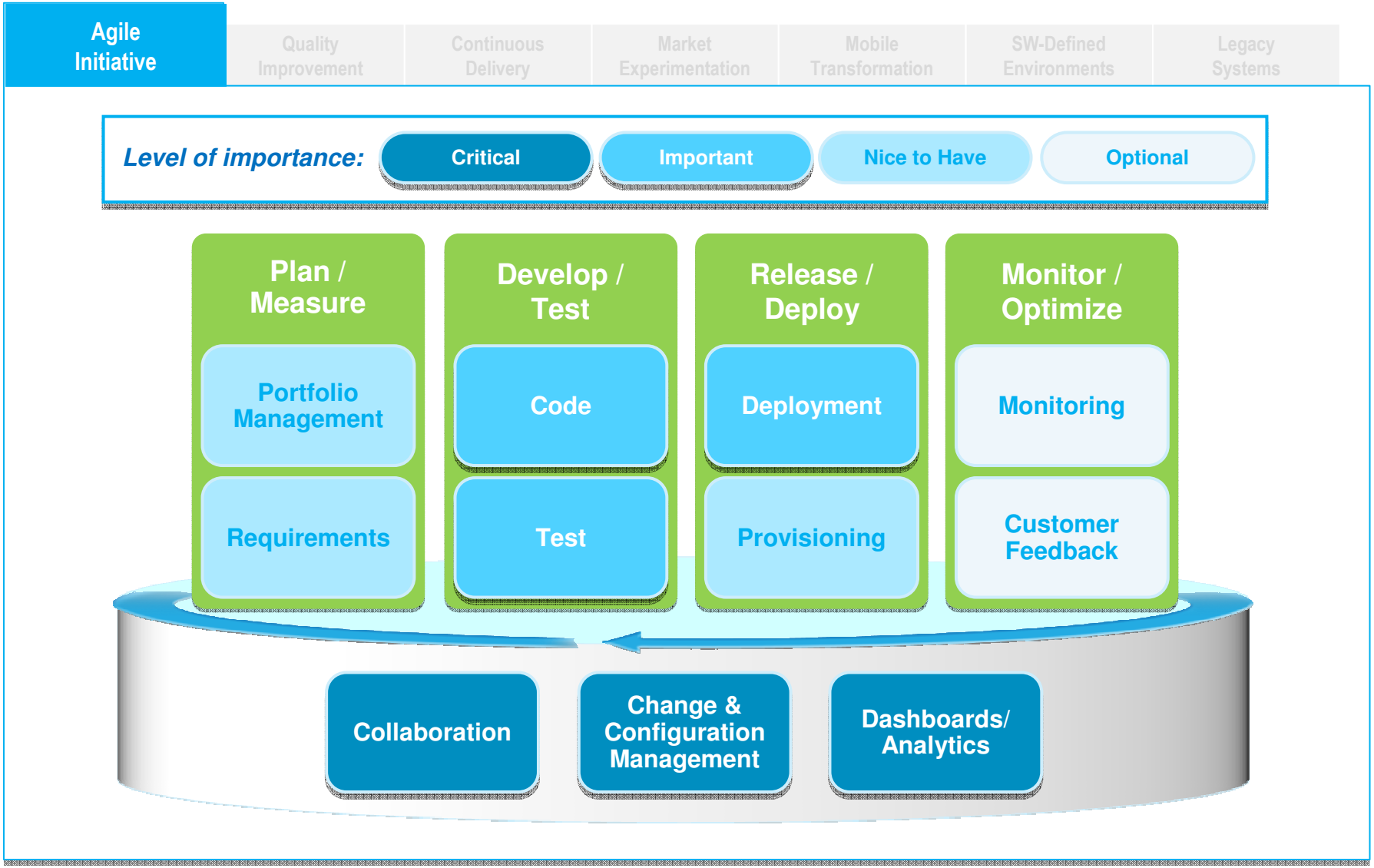
Bottlenecks get passed around: An Agile Adoption Heat Map



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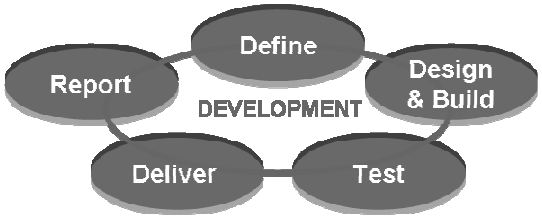
Lifecycle Integration for DevOps

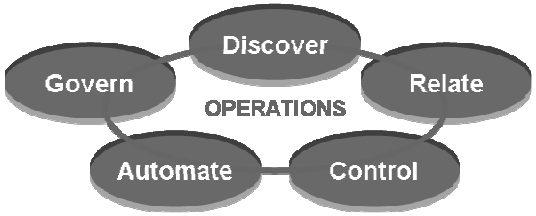
People

Culture
Collaboration
Communication

Process



Management
Accountability
Integration



Technology

Dev
Tools

Development
Models, Assets, Data
and Stores

Automation
Integration
Visibility

Ops
Tools

Operational
Models, Assets,
Data and Stores

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Examples of Waste

Waste of overproduction

Waste of time and resources waiting

Waste of processes themselves (overhead)

Waste of poor quality products

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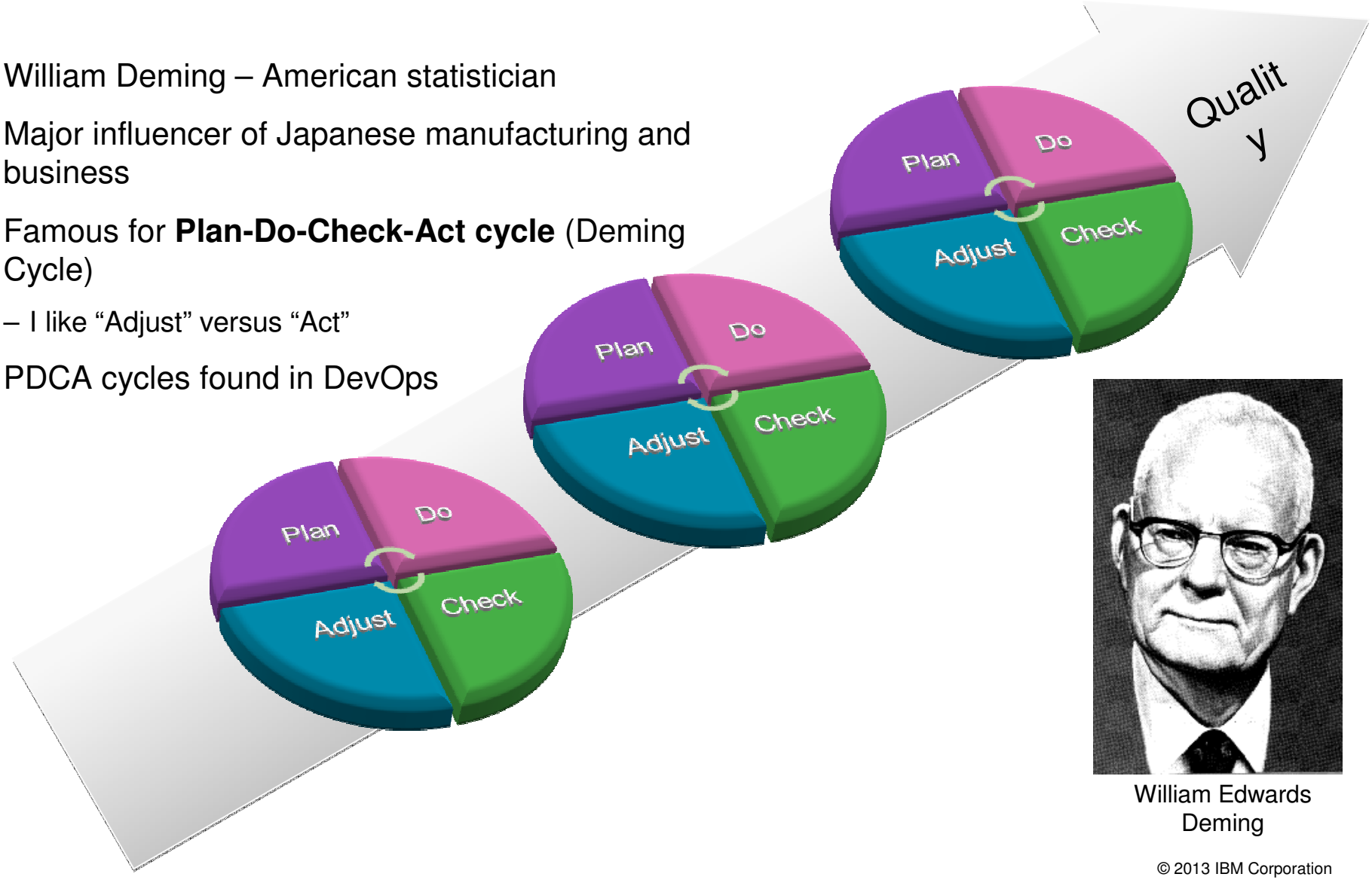
Deming Cycle

- William Deming – American statistician
- Major influencer of Japanese manufacturing and business
- Famous for **Plan-Do-Check-Act cycle** (Deming Cycle)
  - I like “Adjust” versus “Act”
- PDCA cycles found in DevOps



William Edwards Deming

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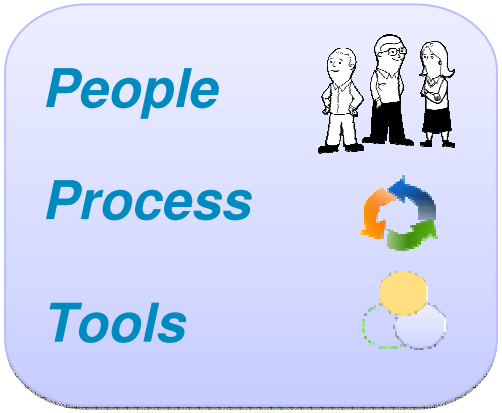
DevOps Principles and Values

Develop and test against a production-like environments

Iterative and frequent deployments using repeatable and reliable processes

Continuously validate operational quality characteristics

Amplified feedback loop drives improvements



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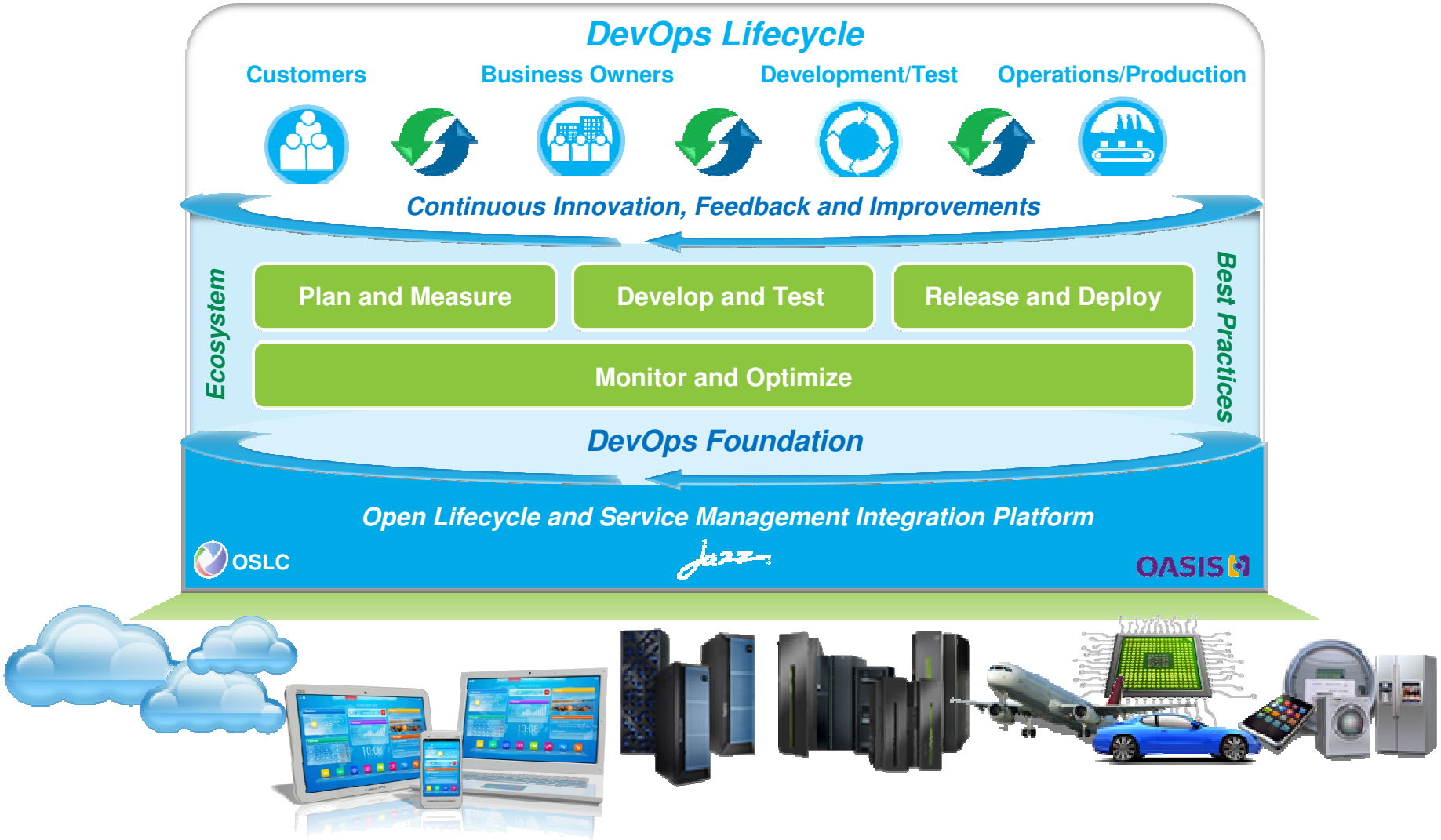
Capabilities to enable a DevOps approach



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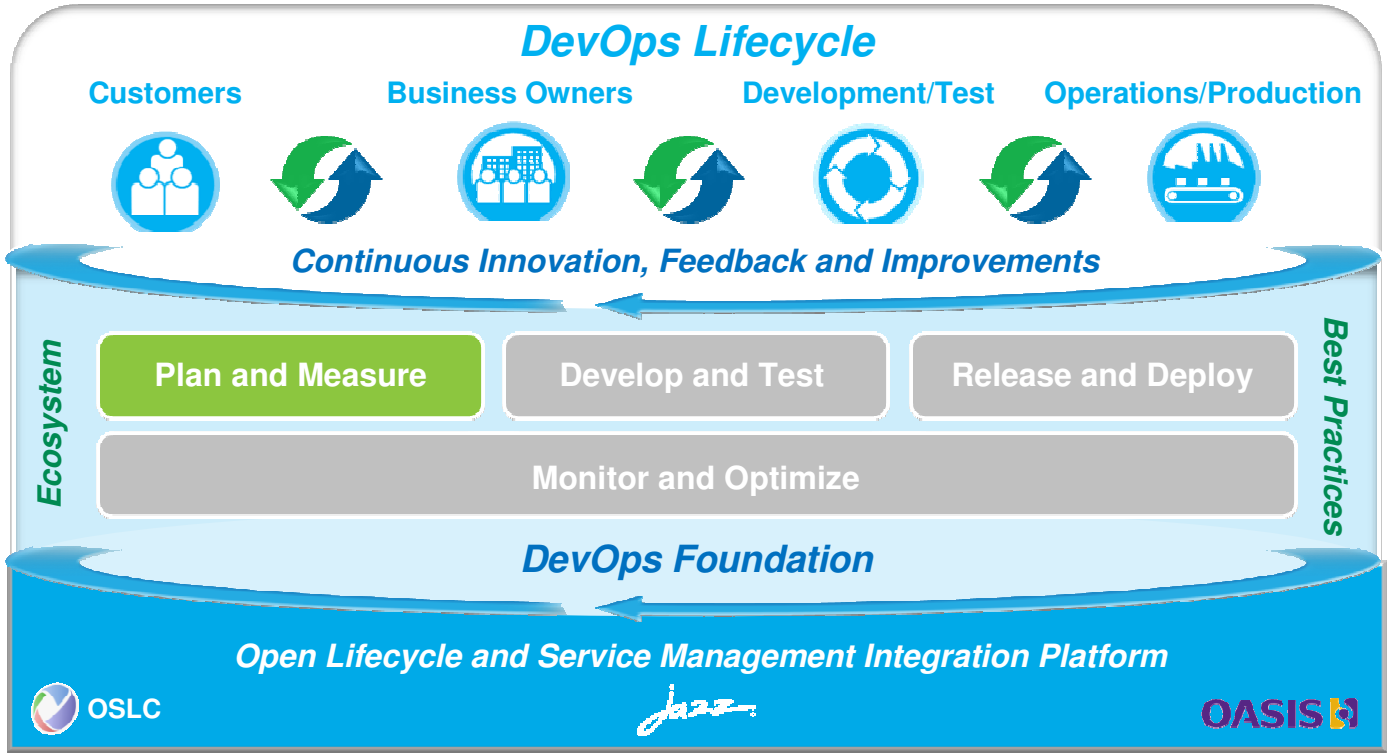
Capabilities to Plan and Measure



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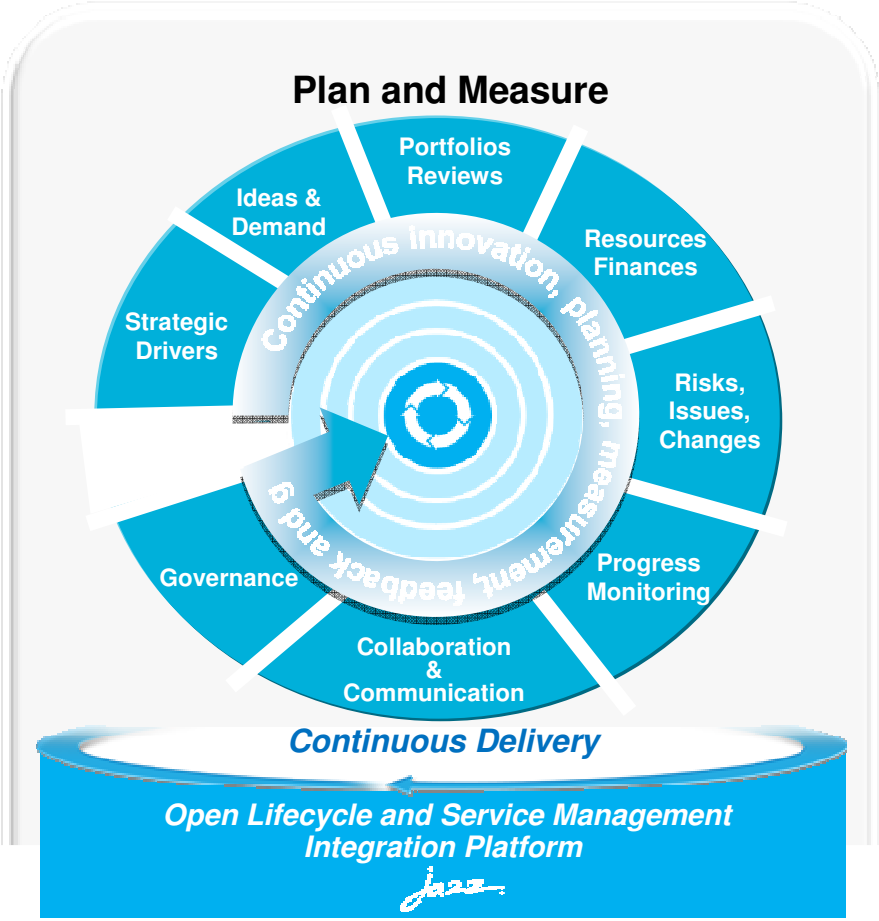
Continuously plan, measure and bring business strategy and customer feedback into development lifecycle

Plan and Measure

Continuous business planning employs lean principles to start small by identifying the outcomes and resources needed to test the business vision/value, to adapt and adjust continually, measure actual progress and learn what customers really want and shift direction with agility and update the plan.

Benefit

Maximize business outcomes and value through an open collaborative, standards-based platform and strong governance framework.



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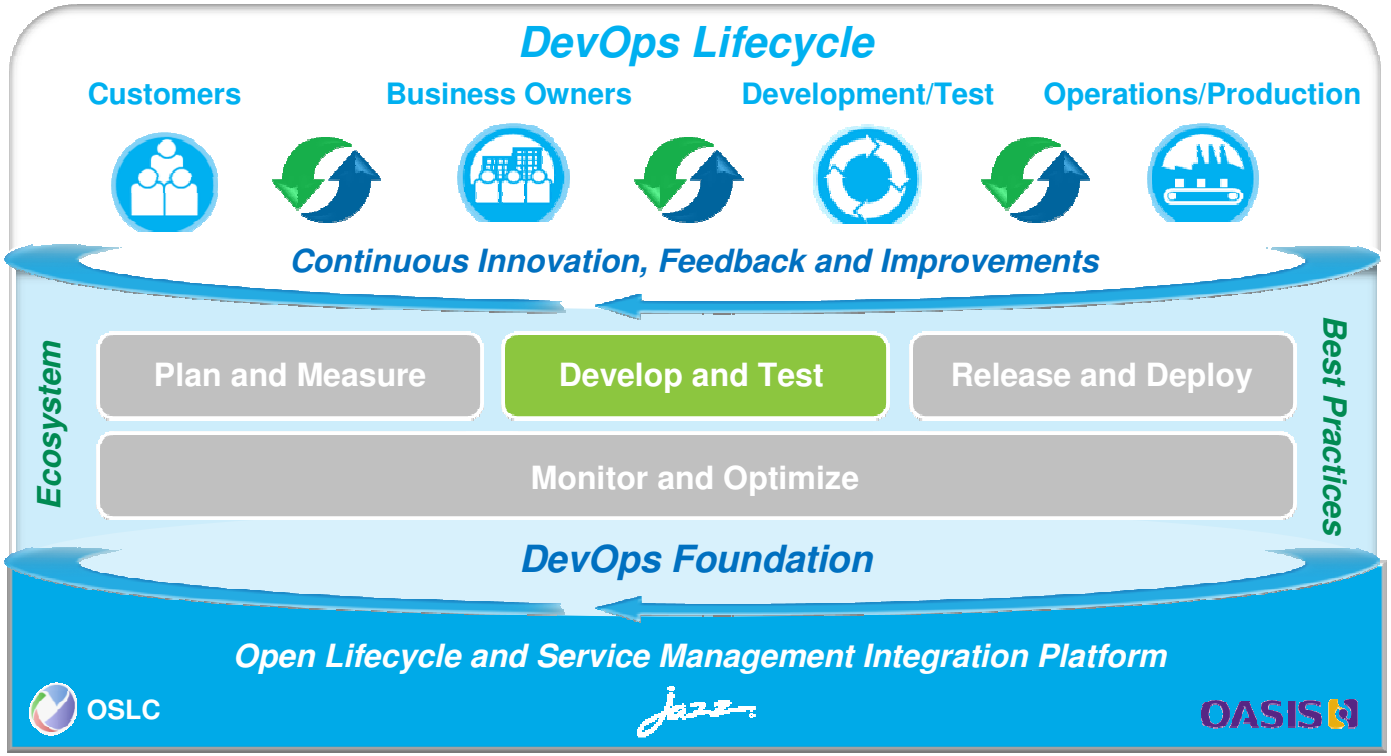
Capabilities to Develop and Test



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Single, integrated platform for broad development needs

Mobile, cloud, agile, traditional, and mainframe

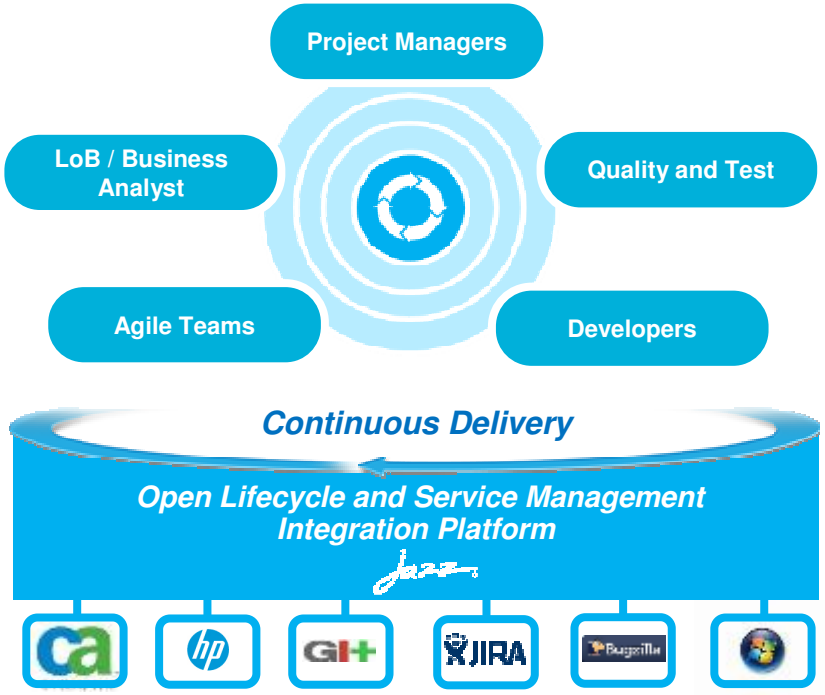
Develop and Test

Collaborative development enables collaboration between business, development, and QA organizations—including contractors and vendors in outsourced projects spread across time zones—to deliver innovative, quality software continuously.

Benefit

Unify across a diverse environment—disciplines, platforms and tools; minimize duplication, less time-consuming and error-prone tasks.

Collaborative Development



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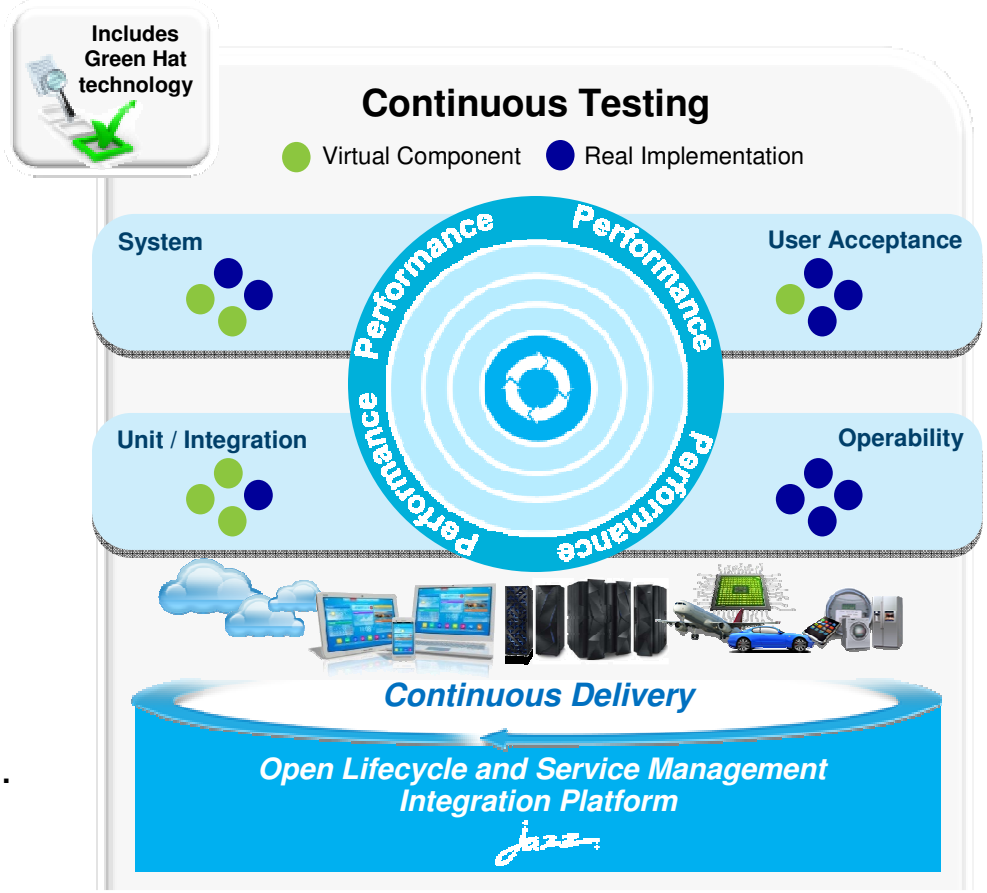
Testing capabilities for multi-channels
Traditional, web, mobile, and mainframe

Develop and Test

Continuous testing reduces the cost of testing while helping development teams balance quality and speed. It eliminates testing bottlenecks through virtualized dependent services, and it simplifies the creation of virtualized test environments that can be easily deployed, shared, and updated as systems change.

Benefit

Test earlier and more often across multiple platforms, methodologies and test domains.



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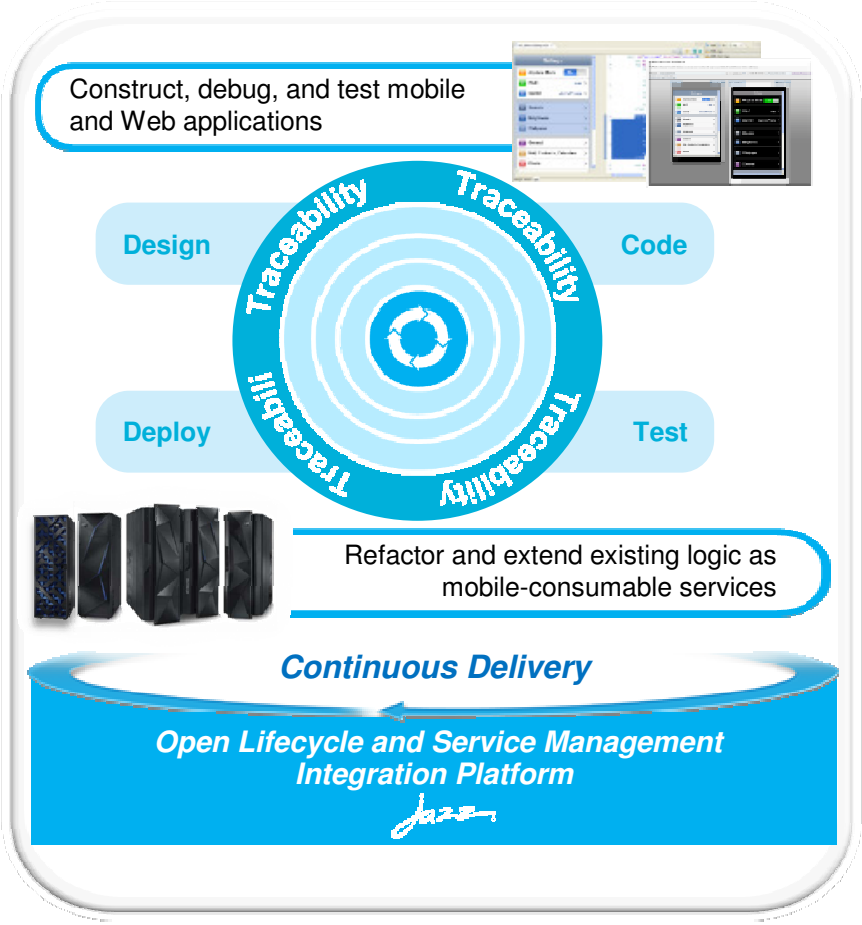
Develop and test capabilities for mobile applications

Develop and Test



Improve response time to feedback with efficient infrastructure for mobile application delivery with IBM MobileFirst.

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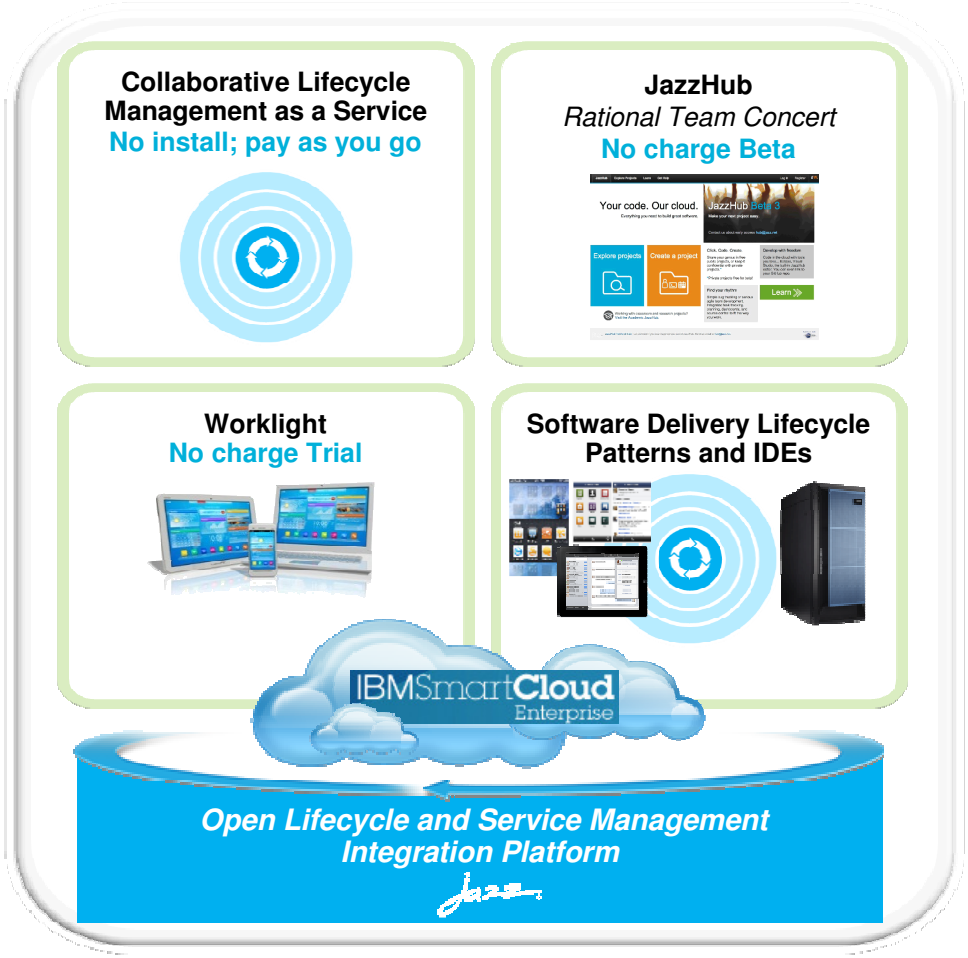
Cloud environments for broad development needs

Develop and Test



Save time and costs by leveraging pre-configured, integrated solutions and flexible licensing in the Cloud.

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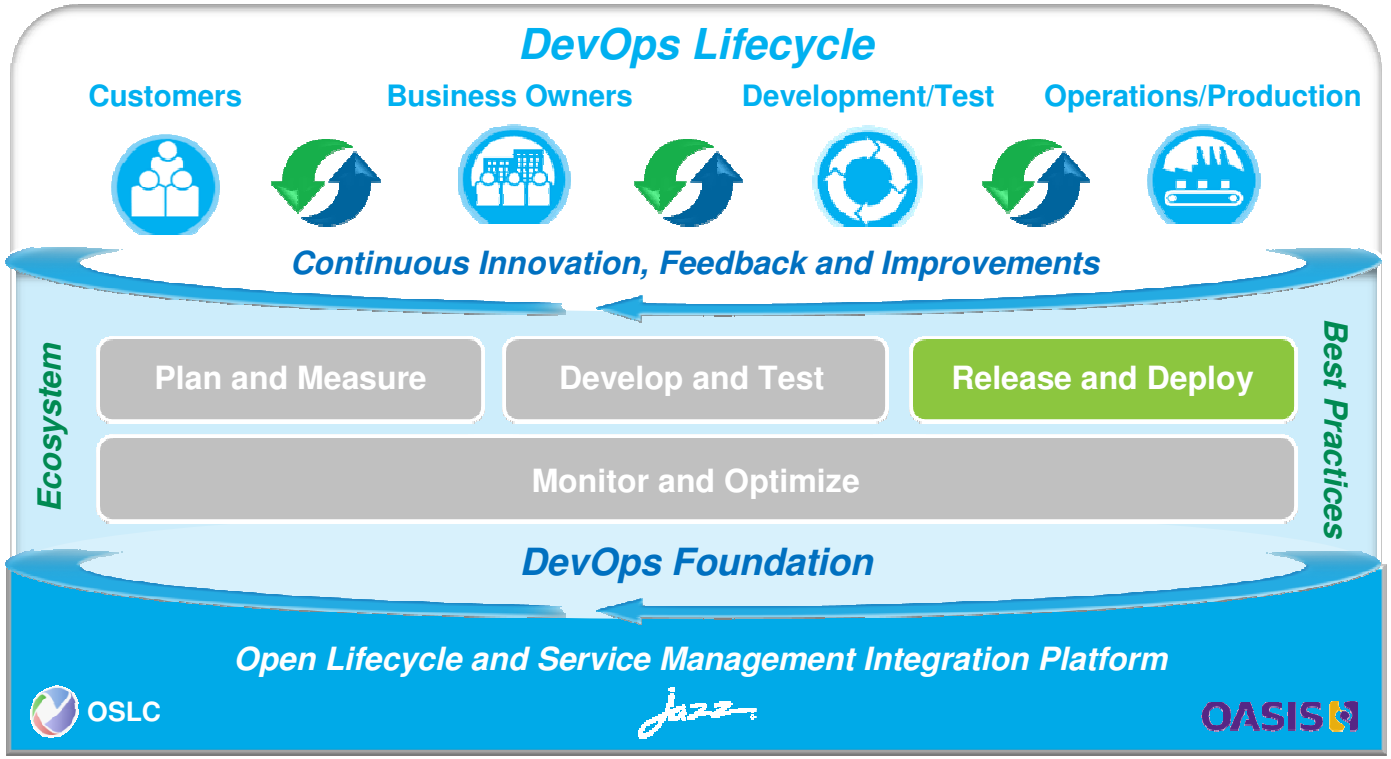
Capabilities to Release and Deploy



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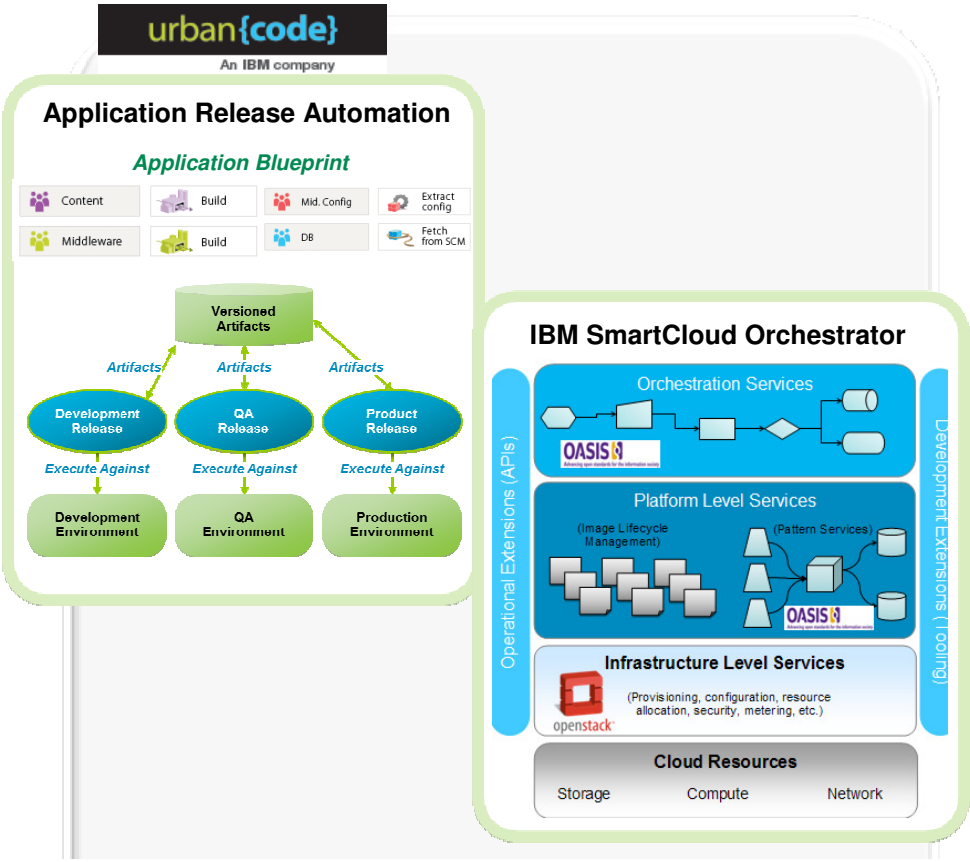
Accelerate continuous delivery with provisioning and application release automation

Release and Deploy

Continuous release and deployment provides a continuous delivery pipeline that automates deployments to test and production environments. It reduces the amount of manual labor, resource wait-time, and rework by means of push-button deployments that allow higher frequency of releases, reduced errors, and end-to-end transparency for compliance.

Benefit

Drive down costs and errors with automation and standardized lifecycle management of cloud services.



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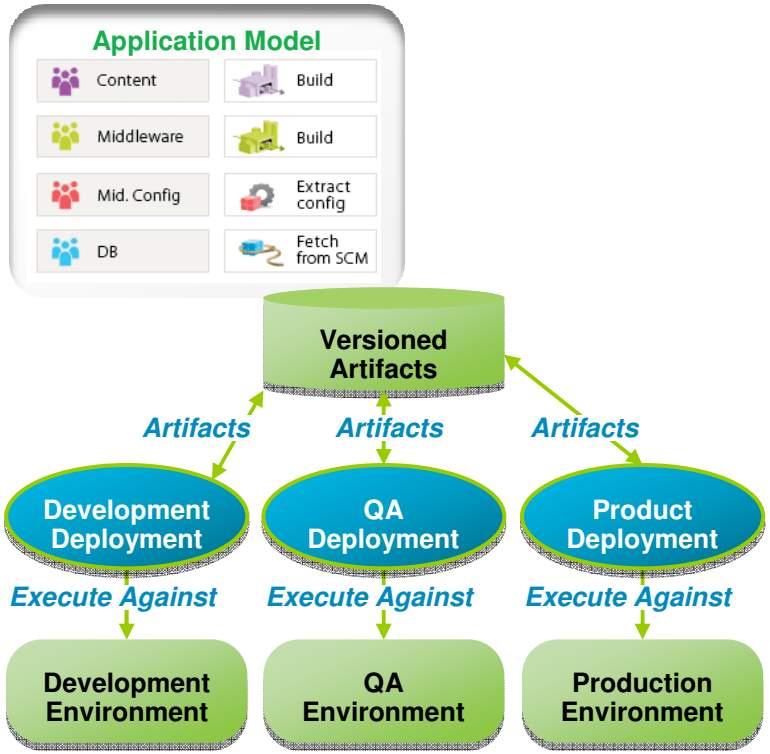
UrbanCode complements IBM's DevOps solution by enabling continuous software release and deployment via application release automation (ARA)

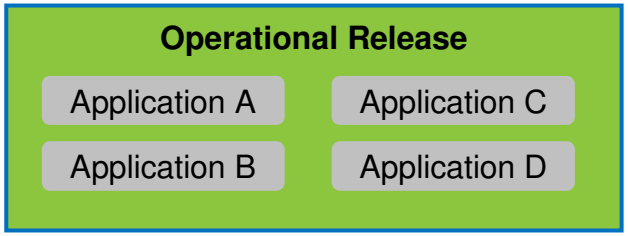
- **uDeploy** orchestrates and automates the deployment of applications, databases and configurations into development, test and production environments, helping to drive down cost, speed time to market with reduced risk.

- **uRelease** is an intelligent collaboration release management solution that replaces error-prone manual spreadsheets and streamlines release activities for application and infrastructure changes.



UrbanCode helps clients:

- **Reduce errors:** Automated software release and deployment
- **Improve productivity**: Push-button deployments for developer and operations
- **Faster time-to-market:** Automated release and deployment with built-in best practices provides
- **Compliance and auditability:** Enforced Security and traceability



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UrbanCode solutions deliver measureable business results

International Investment Firm
Driving Down Costs

Release process required considerable effort and delayed by manually-introduced errors

- Solution: Automated release process
- Results: Cost avoidance of over $2.3M/year, reduced release time from 2-3 days to 1-2 hours and virtually eliminated test team down-time

Online Retailer
Speeding Time-to-Market

Significant delays getting application changes to production

- Solution: Scaled up continuous deployment
- Results: Deployment time reduced by over 95% with easy scale and deploying to over 250 servers within 2 months of implementation

Higher Education
Speeding Time-to-Market

Agile development teams constrained by slow deployment to dev and test environments

- Solution: Accelerate deployment by enabling development teams to self deploy with automation
- Results: Deployments cut from hours to minutes and a greater number of servers with fewer resources

SaaS Software Provider
Reducing Risk

Difficulty managing multiple customer configurations and versions of software deployed across servers

- Solution: Automate managing configuration and version deployment
- Results: Execute customer specific releases, reduced deployment outages by over 90%

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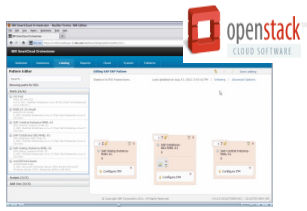
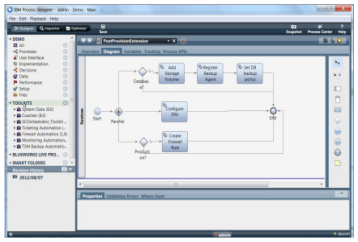
SmartCloud Orchestrator

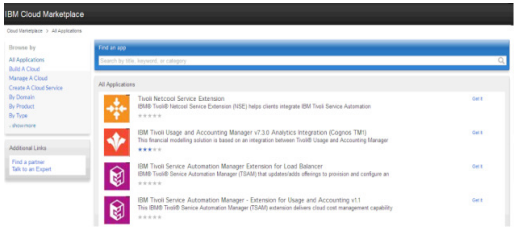
An open and scalable cloud platform



An easy to use orchestrator for **cloud service automation**



A marketplace for content sharing and re-use



A ready to use automation library

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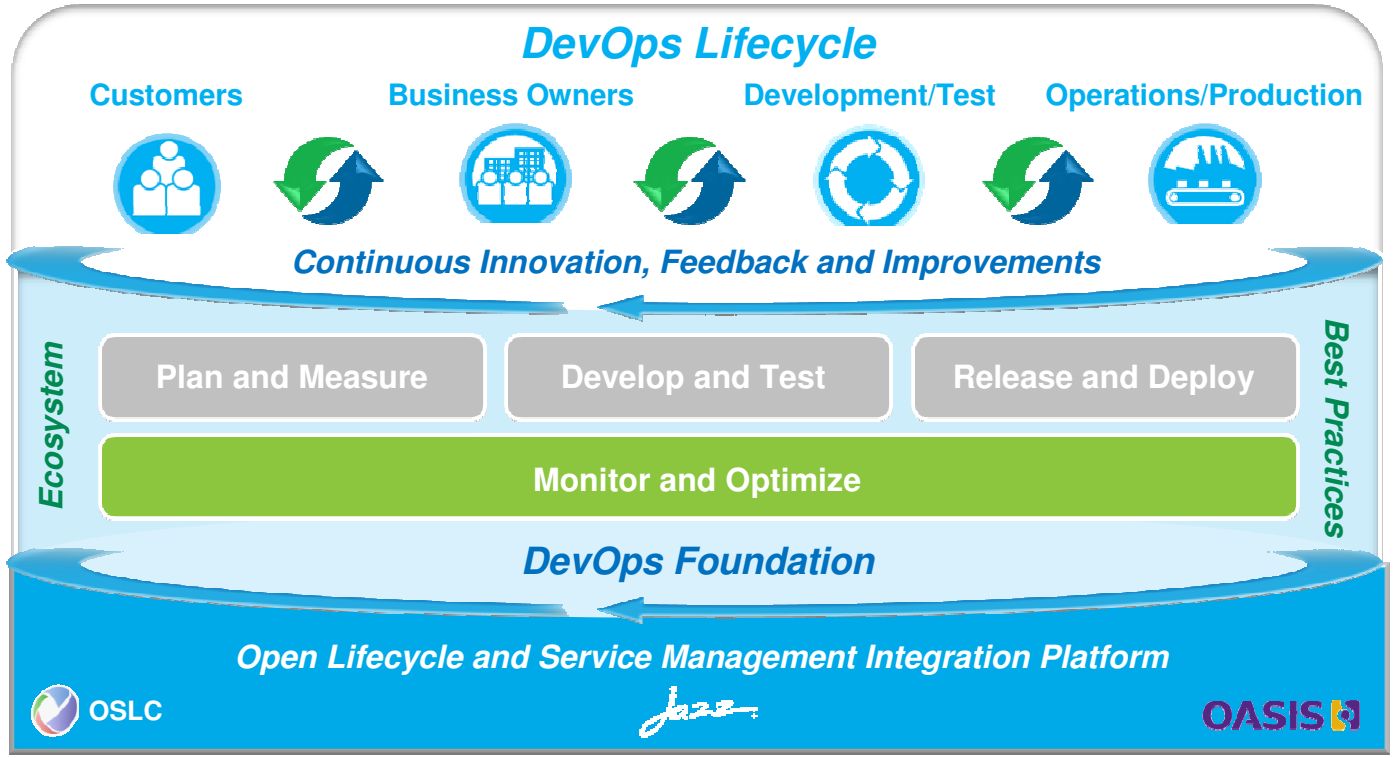
Capabilities to Monitor and Optimize



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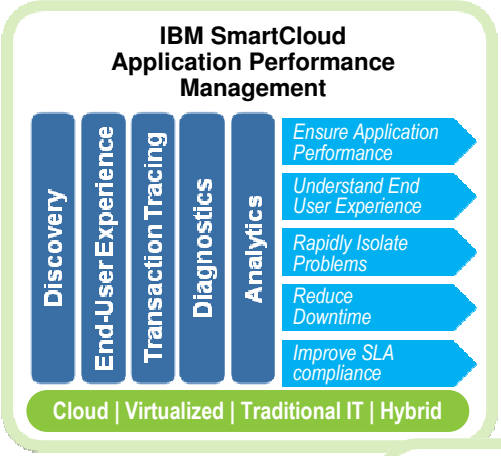
Continuous monitoring accelerates problem and defect isolation and resolution

Monitor and Optimize

Continuous monitoring offers enterprise-class, easy-to-use reporting that helps developers and testers understand the performance and availability of their application, even before it is deployed to production. The early feedback provided by continuous monitoring is vital for lowering the cost of errors and change, and for steering projects toward successful completion.

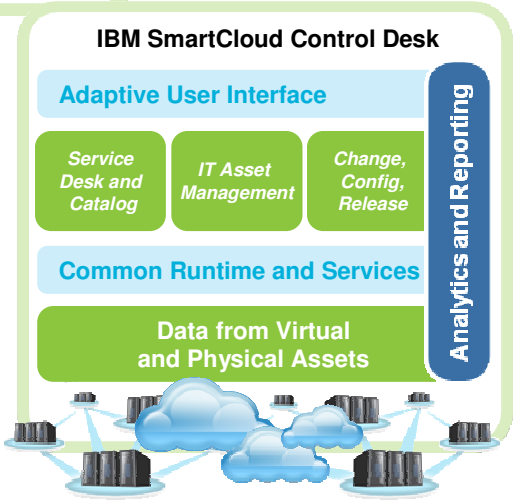
Benefit

Intelligently manage performance, availability, and capacity for complex application infrastructures and quickly identify and fix issues.



IBM SmartCloud Analytics

IBM SmartCloud Monitoring, Application Insight



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Optimize a customer's online experience for marketers, e-commerce, and customer service professionals

Monitor and Optimize

Continuous customer feedback provides the visual evidence and full context for analyzing customer behavior and pinpointing customer pain points. Feedback can be applied during both pre- and post-production phases to maximize the value of every customer visit and ensure that more transactions are completed successfully. This allows immediate visibility into the sources of customer struggles that affect their behavior and impact business.

Benefit

Improved online experience through both web and mobile channels by blending the most relevant content/offer with the easiest ways to visualize and interact with the data

Tealeaf and Digital Analytics

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IBM delivers first class DevOps solution, enabling organizations to seize new market opportunities and gain competitive advantage

Differentiated and engaging customer experiences

Build customer loyalty and increase market share by continuously obtaining and responding to customer feedback

Quicker time to value

Obtain fast-mover advantage and capture markets with software-driven innovation, with improved predictability and success

Increased capacity to innovate

Reduced waste and rework in software delivery and enables a shift of resources to higher value activities

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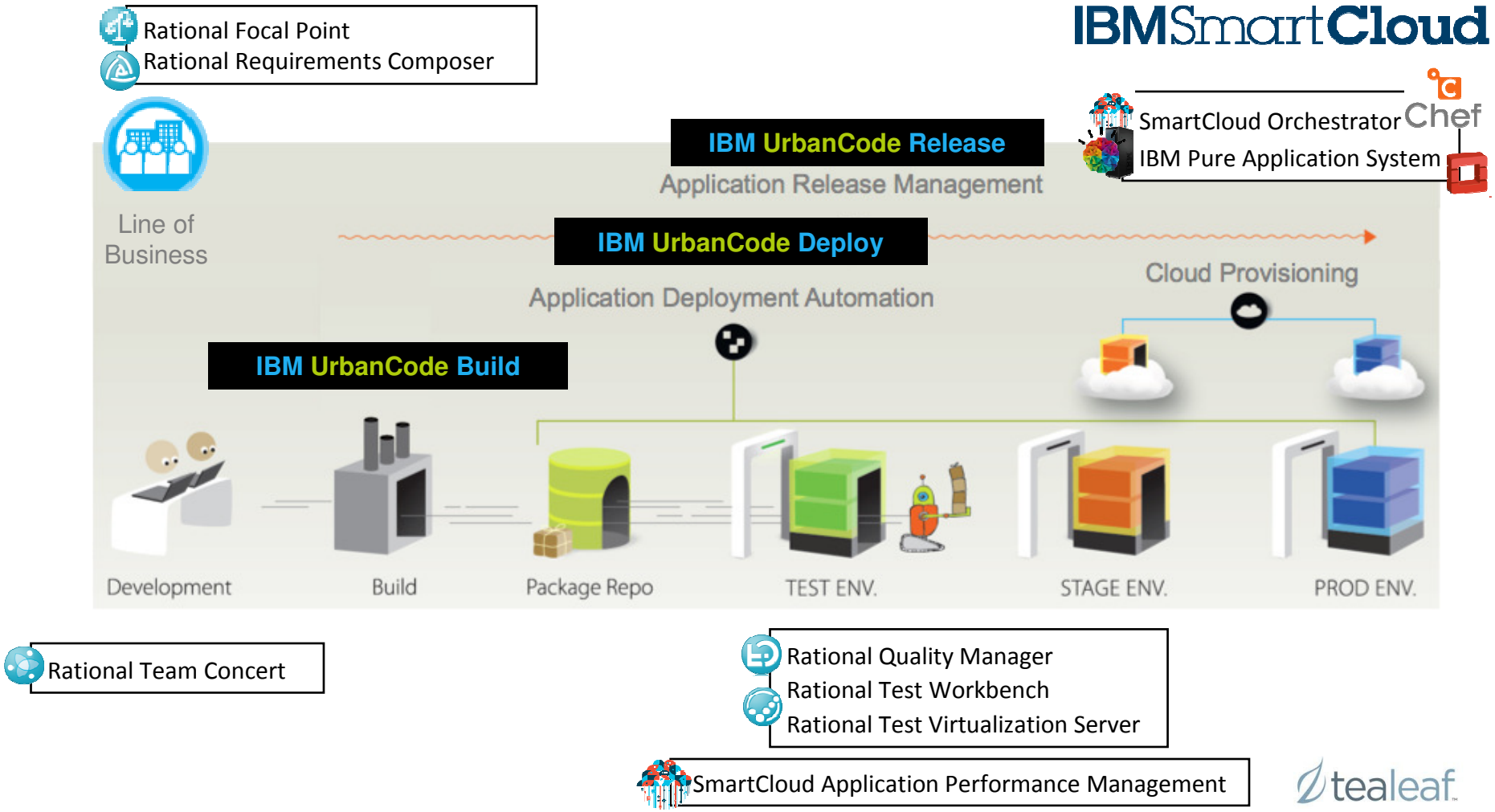
An example tool. Adopt incrementally, as needed



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Q&A

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