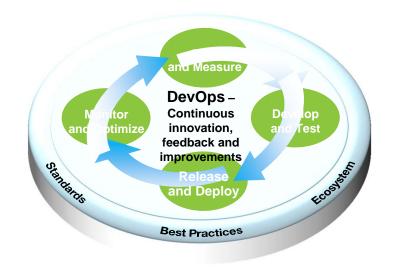
SATURN 2014 Software Car

Software Engineering Institute Carnegie Mellon University

The New Era of Integrated Software Delivery with DevOps

Sujatha (Suj) Perepa Software IT Architect IBM



Agenda

- What is DevOps?
- DevOps capabilities and its automation benefits
- DevOps adoption roadmaps
- DevOps influence on solution architectures
- DevOps Roles and responsibilities
- Implementing DevOps for Cloud, Mobile & Social technologies

What is DevOps

Collaborative Development

Foster productive collaboration with deeper lifecycle integrations

"No hassle" collaborative development capabilities on the cloud for continuous delivery

Continuous Testing

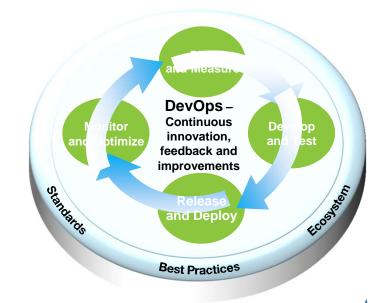
Enhanced integrations and capabilities to synchronize software testing with deployment and operations

Continuous Release and Deployment

Greater delivery speed and frequency for complex applications

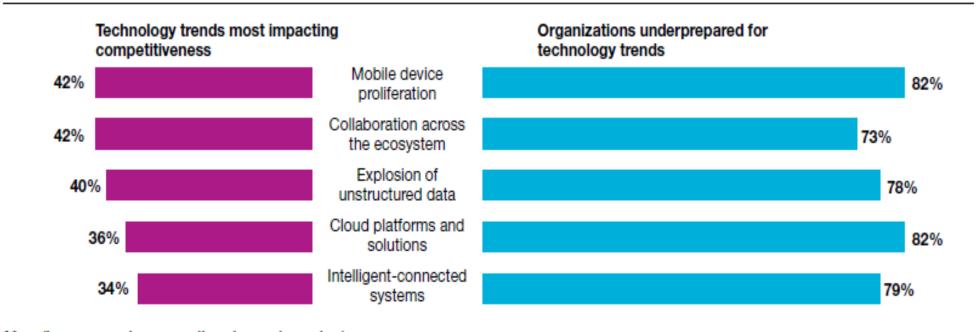
Continuous Monitoring

Capabilities to improve service quality by monitoring application performance



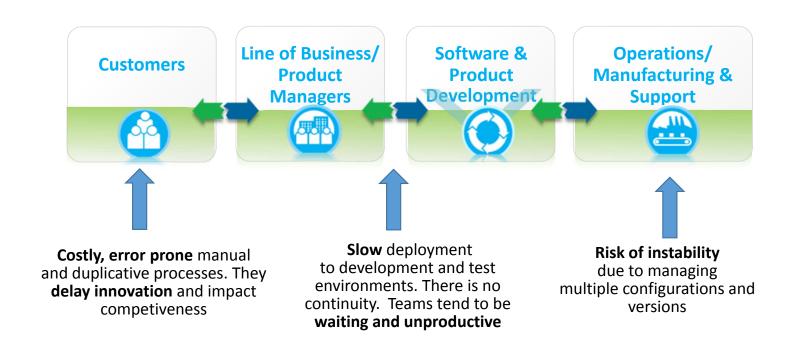
- Agile development approach
- It spans the entire lifecycle, includes business planning and creation to delivery and feedback.
- Enable continuous delivery of software-driven processes and innovation

Why do we need a DevOps? Top technology trends are impacting how organizations operate



Note: Survey respondents were allowed up to three selections. Source: IBM Institute for Business Value.

Traditional Lifecycle development - challenges



Emerging technologies need a new development lifecycle



Evolving Customer Expectations

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

Changing Business Environment

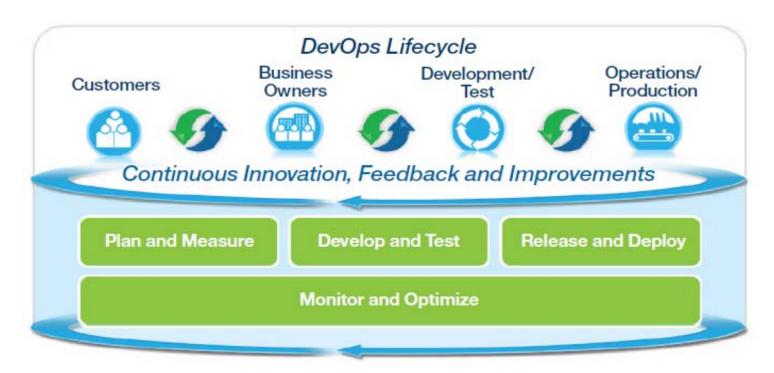
Increasingly volatile economic and regulatory environments drive the need to reduce risk

Multi-sourcing/ Supply Chain

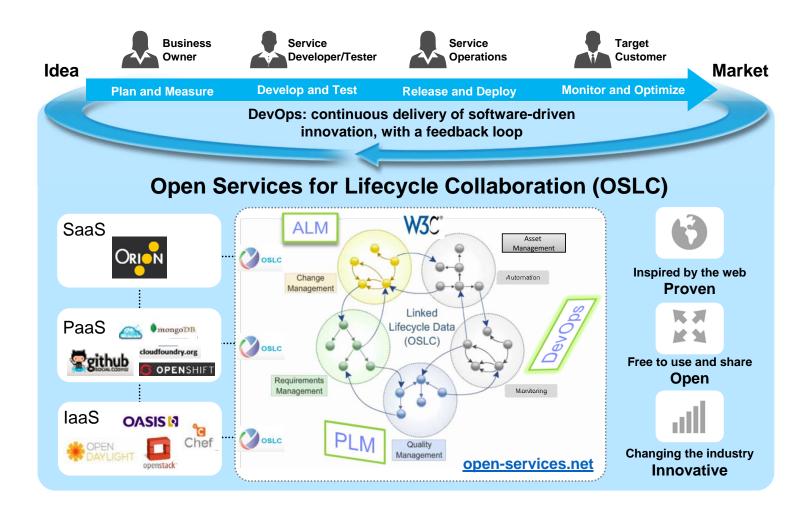
Increased outsourcing drives the need for governance

DevOps Lifecycle delivers ...

Accelerate software delivery Reduce time to customer feedback Balance speed, cost, quality and risk



DevOps ecosystem and standards



How do we DevOps? ☺

- Adoption roadmaps
- Maturity models

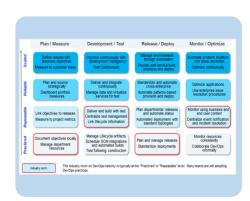
Prescription for DevOps adoption

Identify key pain points in the delivery process



Assess current capabilities using

the DevOps maturity model



Produce heat maps

of capability gaps and areas of improvement to determine priority



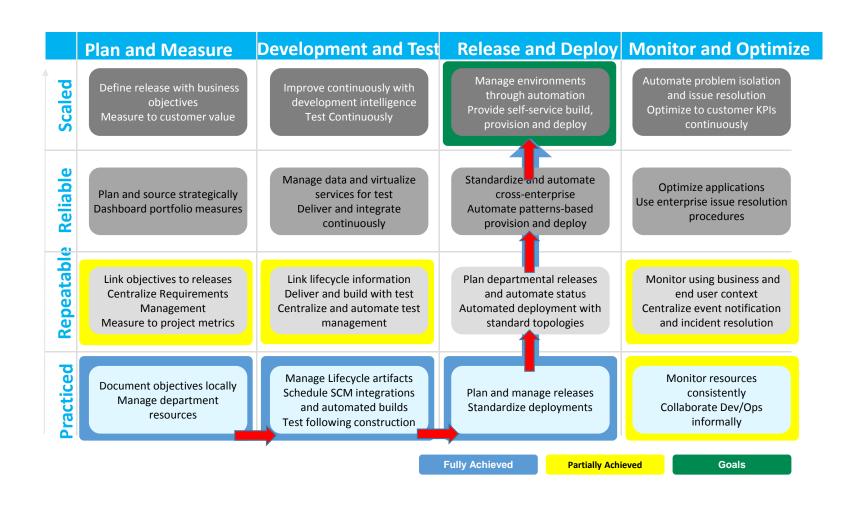
Establish a roadmap

with milestones and execution timelines



A maturity model approach

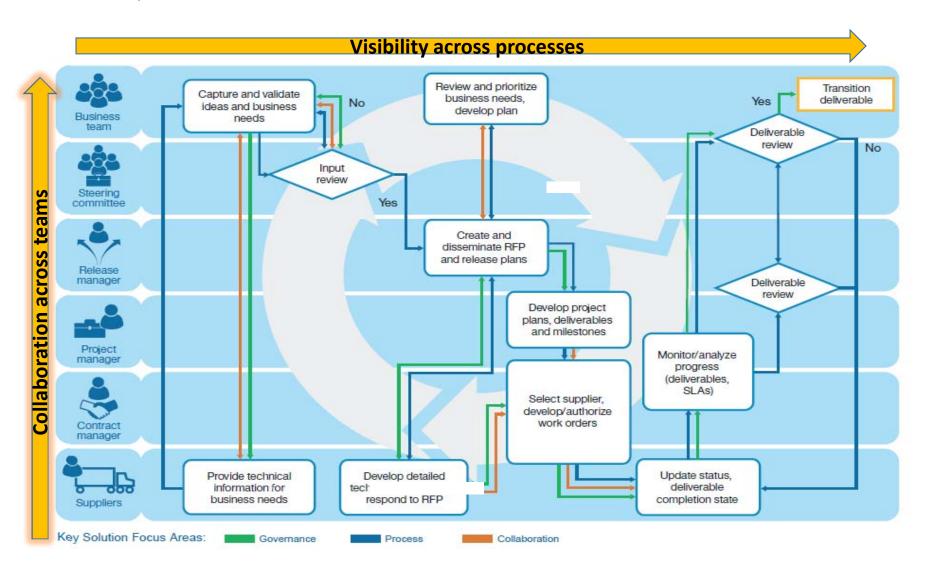
DevOps maturity model: sample



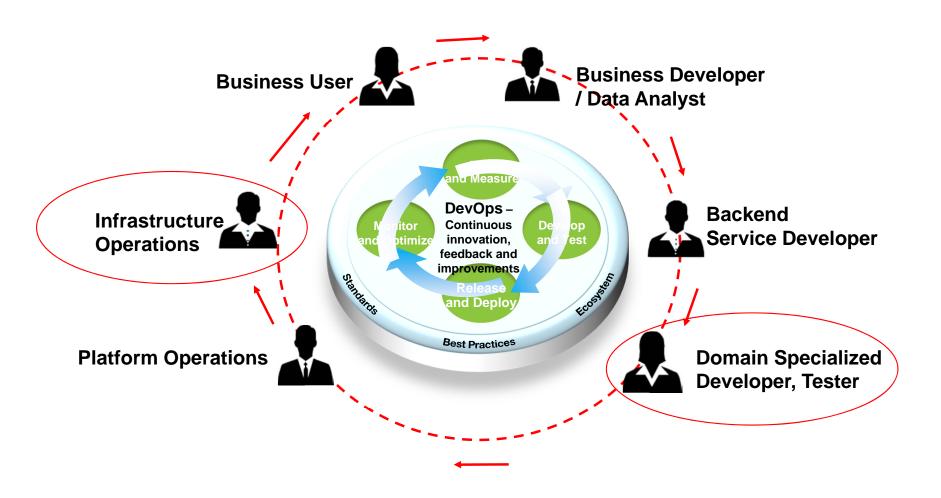
How is DevOps influences software engineering & architect roles

- Manage projects effectively through open, standards-based platforms
- Address requirements for the organizations, vendors and teams (not just for components)
- Increase project visibility through traceability,
- Common reporting and analytics across the lifecycle
- Improve quality and reduce development costs with collaboration
- Establish asset reuse across organizations, vendors and teams

DevOps influences software engineering & architect roles



DevOps – other Roles and responsibilities



Implementing DevOps for the new millennium (Cloud, Mobile & Social technologies etc.)

DevOps solutions for Cloud

Reduce cost and speed delivery with an integrated Cloud solution

- Integrated IaaS, PaaS, Application Lifecycle Management tooling, Service Management and Monitoring provide an instant platform for DevOps
- Control operating costs with Token licensing

- Streamline software delivery process and reduce time to value
 - Rapid provisioning of virtual private/hybrid clouds environments with Patterns
 - Continuous deployment and release across environments and SDLC stages
 - High-quality achieved with early and continuous testing
 - Collaboration across the enterprise (SoE, SoR teams)

An integrated set of DevOps services in the cloud

Shrink development/test/deploy/learn cycle time, but consistently deliver software with speed, quality, accuracy with progressive rollouts

DevOps solutions for Mobile systems

→ Quality Management for Systems of Engagement

- Automate testing for native & hybrid mobile apps
- Virtualize middle-tier and back-end services and systems
- Assess and manage quality, Extend application with automated testing

→ Continuous Delivery for Mobile Applications

- Reduce response time to feedback
- Continuously build, test and deploy, align to overall DevOps
- Adopt agile practices
- Collaborate across the organization

→ Extend Enterprise Apps to Mobile

- Collaborate across front-end & back-end teams
- Leverage service virtualization during development and test
- Drive service optimization

DevOps is for your Enterprise

- DevOps solution addresses culture, process and tools integration across the software delivery lifecycle,
- spanning distributed and mainframe environments.
- Develop and test mainframe applications faster with higher quality
 - Automated, traceable code review, and code coverage for COBOL and PL/I
- Collaboration and governance across lifecycle

reduces risk and cost

unifies process

Common tools across end to end lifecycle

Thank you!