Drive business growth with agile
processes through DevOps for SAP

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Executive summary

With the launch of SAP S/4 HANA across the globe, there is a higher risk for release defects and increased cost when migrating from legacy processes. To meet the need for robust and agile process innovation without business disruption, Infosys has designed a DevOps implementation methodology that reduces cycle time, accelerates time-to-market and lowers TCO. This paper explains the key elements in the solution approach to DevOps in SAP along with SAP tools and IPs that assure a risk-free and smooth DevOps transformation.

Introduction

In an increasingly technology-driven world, DevOps represents a third-generation process innovation framework that extends agile methodology to overcome the challenges of collaboration, culture and automation. As technology evolves, so do processes – from waterfall to agile and, subsequently, to DevOps.

DevOps signifies collaboration between development and operations teams for a cohesive and integrated environment. While DevOps has had successful mobile and cloud implementations, for SAP engagements DevOps is relatively new. This creates significant challenges as customers use several SAP products during implementation and maintenance phases.

This new DevOps process will reduce release cycle time, number of defects during maintenance, and total cost of ownership (TCO) while accelerating time to market. To facilitate a smooth transition from waterfall to DevOps, Infosys has designed an iDEV framework that aligns with the core metrics of DevOps. With this solution, organizations can accelerate execution with fewer defects in a collaborative and automated environment.

DevOps approach

While most standard implementations leverage the waterfall model of ASAP framework, there is a significant move to become proactive through agile. To enable this, Infosys has leveraged a hybrid agile approach for DevOps with a roadmap for the iDEV framework.

- Reduce TCO
- Lower defect injection rate through early collaboration

Key elements of the DevOps approach

1. Assessment using a maturity model

A detailed assessment kit assesses the current situation of process deployment. The kit gathers and evaluates inputs from existing SAP accounts such as the level of automation, code practice, release process, infrastructure management, culture, and key performance indicators (KPIs) of delivery.

The output is a doughnut chart that is represented as pictures with a guided roadmap. The roadmap highlights the priority of activities to be completed in wave-wise planning. It focuses on the important levers of industry solutions for DevOps such as continuous delivery/continuous integration (CD/CI), automation, workflow, and monitoring.

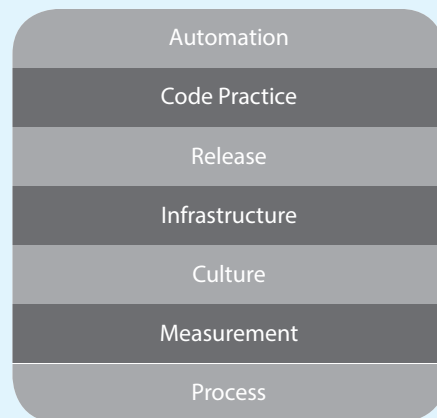The assessment findings are fed into the maturity framework as shown in the illustration.

Automation
Code Practice
Release
Infrastructure
Culture
Measurement
Process

Figure 1: Assessment Maturity Levers

	Process	Development/Test	Release/Deploy	Monitor/ Optimize
Sprint	Advanced Agile	Advanced Automation	Advanced CD/CI	Monitoring
Run	Agile	Automation	Release Calendar	Performance Monitoring
Walk	Waterfall and Agile	Manual and Automation	Sprint Execution	DB/UI Level
Crawl	Waterfall	Automation	Need Basis	SQL Trace

Figure 2: Maturity framework that begins at the 'crawl' stage and moves towards the mature state of 'DevOps'

2. Hybrid Agile

While several mature accounts continue to use the waterfall methodology through SAP ASAP, agile methodology is rapidly gaining popularity.

The Hybrid DevOps model can accelerate the journey towards DevOps by providing:

- Gap analysis as an input to product backlog
- Shift-left approach
- Collaboration with key business users on a weekly basis

- Focus on unit testing
- Automation
- Dashboards to monitor performance
- Workflow and notifications
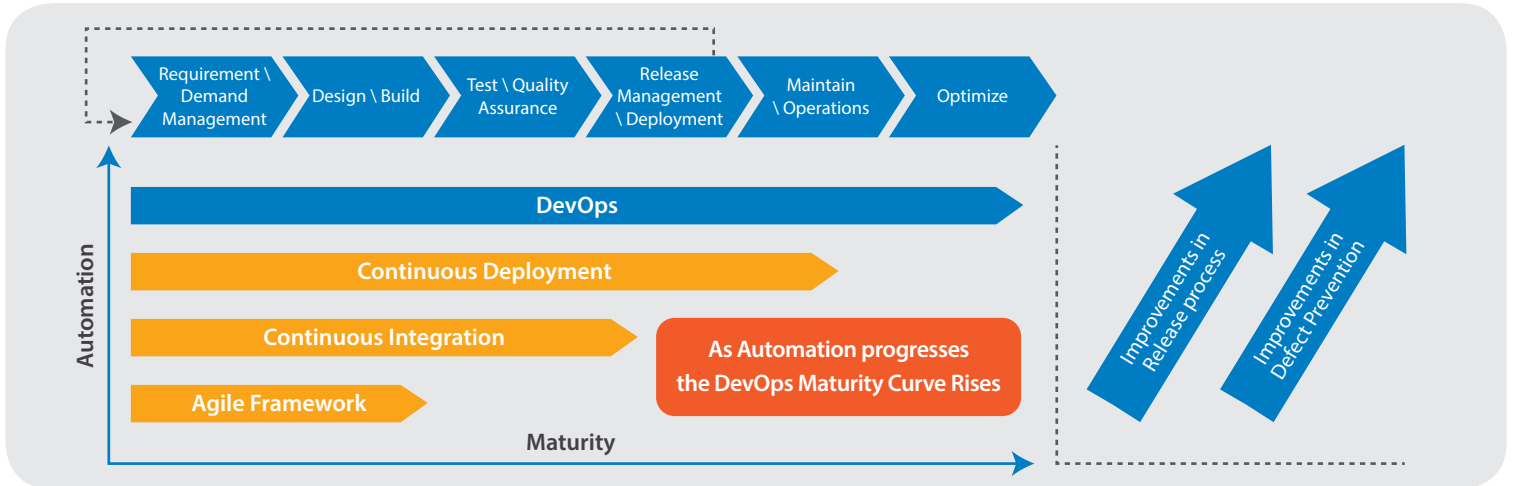- Increased focus on review with less rework

Figure 3: Hybrid agile methodology

3. iDEV Framework

The iDEV framework is a one-stop solution for SAP DevOps process. This proprietary framework is built exclusively for DevOps process with SAP and manages processes that target four stages:

- **Infrastructure** – This is emphasized on a pre-production server, which is an interim box between quality and production. It is a mirror image of production where all deployable solutions are available and enables continuous deployment.

- **Development** – This part of the framework handles CD/CI.
- **Evaluation** – This measures metrics to gauge DevOps progress in SAP. There are two types of metrics measured – development metrics and operation metrics. Detailed descriptions of these are available inside the framework process.
- **Value creation** – This refers to continuous improvement within the framework. It measures improvements and value creation after the process is deployed.

I – Infrastructure	• Establishment of pre-production server • Continuous deployment
D – Development	• Continuous integration • Continuous development • Build, release and test automation
E – Evaluation	• Development metrics • Operation metrics
V – Value creation	• CMMi Level 5 • Zero distance to client • Innovation and IP creation

Figure 4: iDEV framework

4. Tooling

Most of the features of DevOps are mapped to inherent transactions within SAP or SOLMAN. Advanced features can be developed using the ABAP workbench. A comprehensive definition of tooling is available within the iDEV framework with CD/CI combined.

DEV
- (A)
- (1) Develop
- (2) Unit Test
- (3) Quality

(B) (C)

QAS
- (4) Deploy
- (5) Notification
- (6) Impact Assess
- (7) Testing

(B) (C)

PRD
- (8) Deploy
- (9) Notification and dashboards

- • A - Requirement \ Scope Definition
- • 1 - Develop \ Configuration
- • 2 - Automated Unit Test
- • 3 - Code Inspection, Standards etc.
- • B - Approval for deployment
- • C - Automated sequencing of transports

- • 4 - Deploy changes to quality
- • 5 - Notification for testing
- • 6 - Impact Assessment
- • 7 - Automated Testing
- • 9 - Scheduled deployment
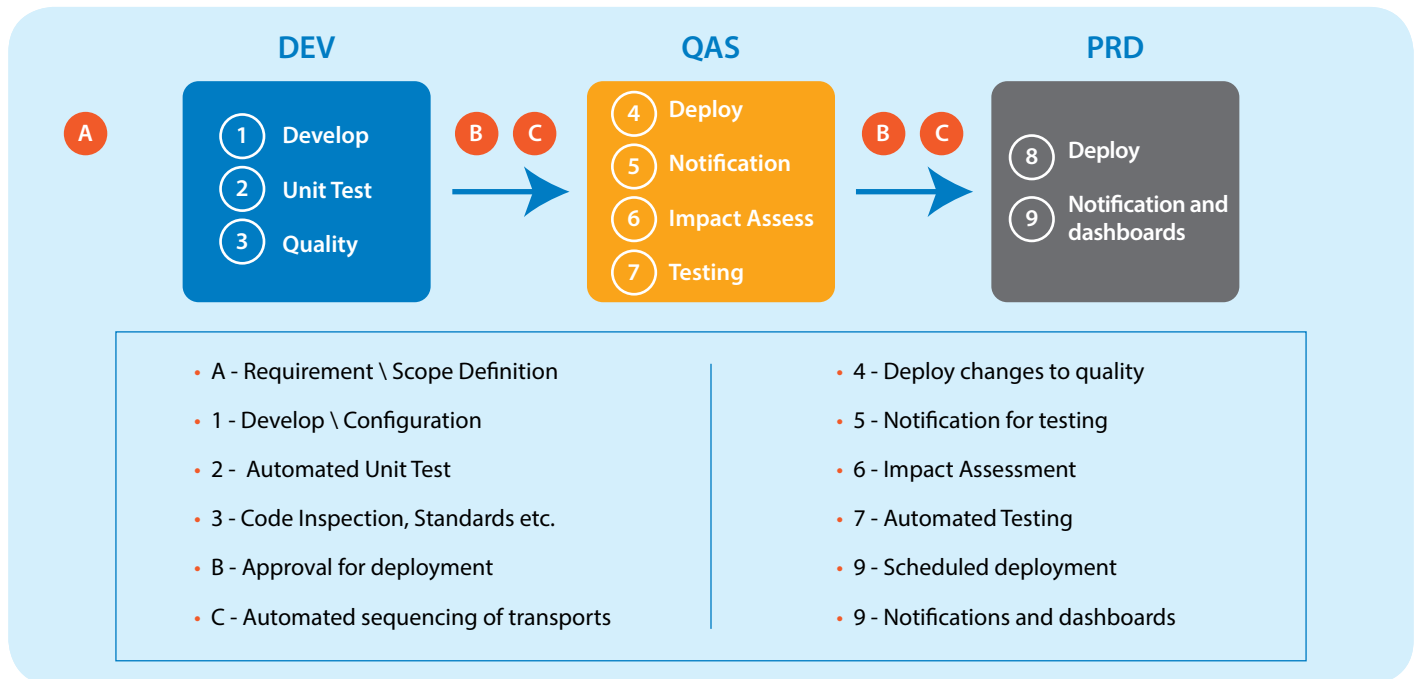- • 9 - Notifications and dashboards

Figure 5: Tooling map

Today, Infosys' SAP practice is engaged in DevOps assessments for several retail, manufacturing, energy, and pharmaceutical clients. Program success can be tracked through the lead-and-lag indicator. During the DevOps transition, the lead indicator displays continuous success through lesser rework effort, increase in objects per release, etc. The lag indicator displays results such as improved cycle time and decrease in defects during user acceptance testing (UAT) and maintenance phases. By leveraging such tools, Infosys SAP is helping clients gain visibility into the DevOps transition to track progress, measure outcomes and achieve early wins through their DevOps engagement.

Conclusion

Enterprises seeking lean processes are increasingly looking to transition from waterfall to agile methodologies. DevOps represents the next step in process innovation. To help customers with their DevOps journey, Infosys is making significant investments through IPs, tools and frameworks. For instance, the iDEV methodology helps companies transition smoothly from waterfall to DevOps while the proprietary assessment kit helps clients plan their DevOps transformation. With these capabilities and more, SAP's existing customers can be assured of a risk-free and smooth transition to DevOps.

Pravas Ranjan Rout is a Principal - Quality Programs with Infosys. Pravas has nearly 20 years of experience in SAP projects including quality management for DevOps, agile, process enrichment, and productivity improvement initiatives.

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