DevOps – Evolving with the Times

DevOps has brought in a fundamental change in the way the Development, Operations and Testing teams interact with each other to ensure faster, reliable and secure delivery of software. This has enabled enterprises to respond faster to changing customer needs and market requirements in the digital age. **Customer Experience has become the key guiding light in the DevOps journey. Increasingly, DevOps achievements are getting tied to business outcomes.**

Key trends impacting the DevOps world

AI and ML blend well with DevOps culture

Data is at the heart of DevOps. Organizations are increasingly collecting data on how people are interacting with applications and how the applications are being delivered. ML can analyze vast amounts of data to uncover hidden gaps or capacity issues that may be current or are likely to occur in the future. Thanks to their key capabilities of learning patterns, anticipating problems and recommending solutions, AI and ML blend well with the DevOps culture.

Automation cuts across the DevOps lifecycle

Automation is impacting all the 6 **Cs of DevOps lifecycle** – 1) Continuous business planning; 2) Continuous development; 3) Continuous testing; 4) Continuous release and deployment; 5) Continuous monitoring and 6) Collaborative customer feedback and optimization. Automation frees up team's bandwidth by eliminating manual work, enabling them to focus on other strategic activities such as new development, refactoring, design work and documentation.

Security sits at the core of DevOps pipeline

Security is taking center stage as enterprise security teams increasingly leverage next-gen security tools and platforms to embed security policies into an automated and integrated **DevSecOps** environment. Injecting security right at the application development stage and prioritizing it throughout the application lifecycle helps eliminate vulnerabilities, thus bringing security closer to IT and business objectives.

Continuous Delivery is the approach to delivery excellence

There is an increase in the usage of **Continuous Delivery** approach to software development across large enterprises. Leadership teams are increasingly recognizing that key technical practices that constitute continuous delivery are intrinsically linked to overall business performance and organizational engagement. Delivery of software can be improved via continuous delivery, which also reduces cost and risk of releases.

Microservices growth is turbocharged

IDC predicts that "By 2022, 90% of all apps will feature microservices architectures that improve the ability to design, debug, update, and leverage third-party code; 35% of all production apps will be cloud-native"[1]. Microservices helps organizations deliver the required features to customers in a rapid, secure and cost-effective manner as this approach enables a larger service/component to be divided into independent, smaller constituents that can be delivered and run using light weight, isolated containers.

Kubernetes is everywhere

Thanks to its user-friendliness, depth of features and ability to integrate with major cloud platforms, **Kubernetes** has emerged as the fastest growing container technology for developing and deploying software. Enterprises, large and small, are embracing it aggressively for running cloud-native apps. Kubernetes has also built a great Open Source community around it.

Microservices is driving Service Mesh popularity

Driven by the increasing adoption of microservices, Service Mesh is emerging as key communication layer to enable thousands of microservices constituting an application to communicate with each other. Service meshes are easy to deploy and run; and have a thriving vendor ecosystem poised for substantial growth.

NoOps is in

In keeping with the demand for self-service options and real-time request fulfilment, **NoOps (No Operations)** is gathering increased traction today. With NoOps and Infrastructure as a Code, the Ops team leverages intelligent automation to enable users to consume IT resources directly and seamlessly, without any intervention from the Ops team.

Testing is getting automated

Learning to code and write their own automated test scripts have become key requirements for testers in the DevOps environment. Automation in testing helps boost efficiency, while also accelerating the time to market.

Serverless architecture is simplifying DevOps

Enterprises have started to leverage **Serverless architecture,** which can save time, cut costs and ensure resilient workflow. With Serverless solutions, developers are freed up to focus on running code and adding functionality to their applications faster without worrying about scalability and availability, which is handled by the provider. With serverless architecture, there is no longer a demarcation between operations and developers, thus embodying the fundamental core of DevOps.

DevOps success is being linked to business outcomes

IT leaders are revisiting DevOps success metrics with more metrics emphasizing business value and customer satisfaction as opposed to release cadence. In addition to tracking metrics such as deployment frequency, mean time to restore (MTTR), defect escape rate, change failure rate etc., enterprises are adopting Value Stream Mapping (VSM) in which each metric is mapped to business values. For example, website responsiveness can be mapped to business outcomes like abandoned shopping carts or customer churn.

Observability is crucial to DevOps

Observability is becoming increasingly central to DevOps, especially as the focus on improving quality without compromising speed sharpens. The ability to actively observe what's happening at all points of the software development lifecycle will serve as a pivot to ensure success. Open Source observability stacks are leading the way.

Change approval process is getting redefined

Organizations are moving away from formal change approval process involving external reviewers or Change Approval Boards (CABs) because of the need for speed in the DevOps world. Instead, organizations are moving to peer review-based approvals during the development process. In addition, organizations are promoting automated application changes to production without the manual approval process. With automation in place, audit trails can be easily incorporated into the pipeline.

SRE has a close connect with DevOps

SRE (Site Reliability Engineering) that started with Google bringing software development practices into Operations will continue to gain traction and evolve as DevOps matures. For professionals in SRE roles, the main goal will be to create scalable and highly reliable software systems. **SRE teams enable implementation of the DevOps paradigm.**

Towards digital transformation with DevOps

DevOps is evolving with the times and is growing rapidly. MarketsandMarkets estimates the DevOps market to reach $10.23 Billion globally by 2023 growing at a CAGR of 24.7% (2018-23)[2]. Businesses that have adopted DevOps see significant benefits -- Shorter development cycles, increased release velocity, improved defect detection, reduced deployment failures and reduced time to recover from failure.

As businesses accelerate digital transformation, DevOps practices have become a key enabler in this journey.

About the author

Harish Krishnan,

General Manager, Cloud and Infrastructure services

Harish Krishnan leads the PaaS and DevOps practice and the Digital charter for Cloud and Infrastructure Services at Wipro.

You can reach Harish Krishnan at **harish.krishnan@wipro.com**

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Wipro Limited
Doddakannelli, Sarjapur Road,
Bangalore-560 035, India

Tel: +91 (80) 2844 0011
Fax: +91 (80) 2844 0256
wipro.com

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