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Many Avatars Later: Exploring the Maturity and Relevance of DevOps Today

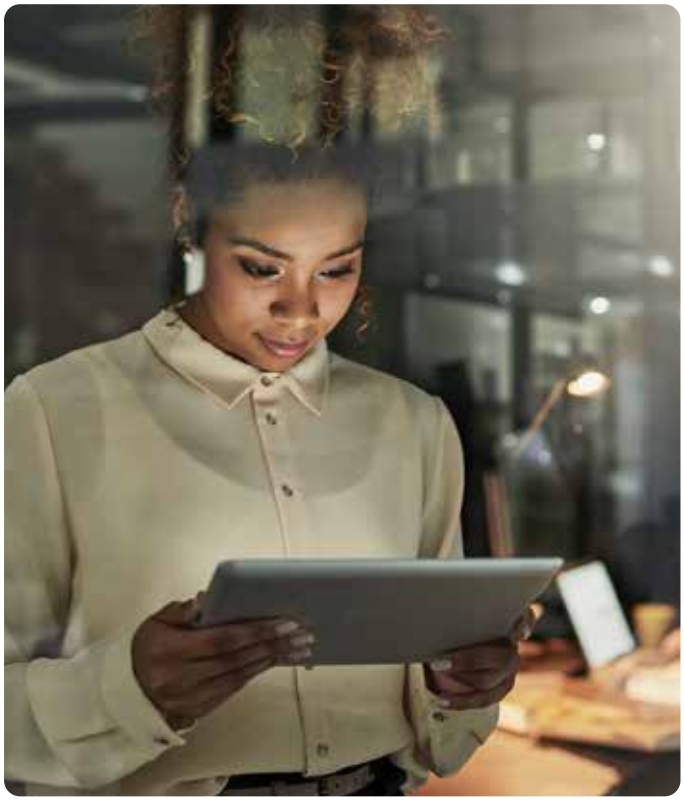
White Paper

Introduction

Initially, DevOps aimed to link the development and deployment stages in technology innovation, helping to get new releases to the market faster while ensuring seamless functionality for various features. The rise of cloud-based platforms is causing the old DevOps approach to become more mature. Now, a new DevOps methodology has emerged – one that is diversified into use case-specific tracks. The different tracks launched by this trend are DevSecOps, BizDevOps, AIOps, DataOps, and even NoOps. Future-focused enterprises must adapt to this highly matured, use-case specific vision with a DevOps mindset at its core.

The origin of DevOps

To trace the frequently-discussed "death of DevOps," it is essential to first look at its origins. DevOps was envisioned as a way to combine software development with information technology (IT) operations, enabling continuous delivery. Cloud-based platforms and their ready availability took this a step further. Ongoing development and deployment on the cloud made it possible to build applications and continually release, without the need to construct or configure complex infrastructure manually. As a result, IT embraced a new way of working where virtualized systems replaced legacy hardware and processes. Software developers, too, could now optimize the software development life cycle (SDLC) on their end, with increased flexibility and freedom from cumbersome system dependencies. As a result, DevOps took on a variety of definitions, depending on the nature of the business and context of implementation.



How DevOps has matured over the years

DevOps' maturity curve can be broken down into broad phases, eventually giving rise to the different use case-based DevOps methodologies we mentioned. First, enterprises created specific tools to manage the various configurations and versions involved in the SDLC journey. The DevOps team was tasked with building and maintaining these tools, and app developers could use them to bring consistency and flow to the deployment cycle. Over time, the tools became more reliable and were implemented across the enterprise, making DevOps a shared function.

Next came the scaling stage, at which point IT, DevOps, and application development worked in perfect tandem to push out releases on shorter timelines with minimal error. It is now that the enterprise considers expanding the underlying infrastructure, leveraging the cloud and other technologies.

Finally, several activities on the SDLC journey were able to be automated, including the management of system configurations, provisioning of resources, and security policies. DevOps gradually transitioned into business transformation, bringing the DevOps approach to various enterprise functionalities like security, business needs alignment, AI-led IT, analytics, and zero-touch IT.

Across this process of maturity, the importance of DevOps undergoes a radical change — from limited to comprehensive.

Understanding DevOps in its new form

Today, DevOps can be defined as a cross-disciplinary, highly-collaborative framework that makes continuous development and improvement possible at scale. Instead of a single innovator, it values the contribution of multiple teams and functions, drawing from the original link between software development and IT operations, which was the initial aim of DevOps. This broad definition, which varies across contexts, can be applied to five critical aspects shaping the modern enterprise.

How DevOps is shaping the modern enterprise

Security

With digital transformation gaining momentum, stringent security has become the most urgent requirement, given the need to protect enterprise assets from digital threats and ensure that regulatory compliance parameters are met. DevSecOps integrates security tests with the software development process, ensuring that between development and production, there is the all-important layer of security. DevSecOps was a $1.5 billion market in 2018, expected to reach $5.9 billion by 2023 at a Compound Annual Growth Rate (CAGR) of 31.2%.

Application of DevSecOps for UK-based roadside assistance company:
We implemented DevOps tooling during development to discover and secure vulnerabilities for our customer. We ensured that the software and tooling are taken and upgraded from a known source, sanitized, tested, and then used further. Acceptance testing for installations, patches, and upgrades ensures their safe use in production environments.

Business Alignment

BizDevOps brings business teams into the software development loop. The involvement of business teams ensures that the enterprise targets, non-functional requirements, and user behavior are kept in mind when developing software. BizDevOps is also called DevOps 2.0, which makes sense given that the number of agile teams investing in behavior-driven development increased by 78% between 2009 and 2016.

Mindset

In many ways, AIOps is the natural evolution of traditional IT, applying the power of artificial intelligence to streamline processes. Enterprises can process vast amounts of application data to generate insights. These insights are auto-actionable, dramatically reducing the workload for IT teams

Transformation

DataOps is a highly specialized branch of digital transformation, applying DevOps principles to data analytics. It aims to improve the quality of data while reducing cycle times by utilizing advanced statistical process control. DataOps is essential for modern enterprises looking to use data to meet business goals. In a world where new data streams are generated every second, DataOps can help ensure that enterprises act on the latest and most relevant information sets. DataOps has quickly matured from a set of best practices for enterprise analytics teams into ready-to-use DataOps platforms on the cloud, like DataKitchen or StreamSets. In 2018, Gartner named DataOps as a new “innovation trigger” in its Hype Cycle for Data Management.

Zero Touch IT

We have the possibility of zero-touch IT operations with NoOps, removing the need to manage any part of the IT side of production manually. NoOps is still a work in progress, with challenges around hybrid environments, skills shortage, and potential new dependencies. However, the increasing automation of the DevOps process indicates a promising future for NoOps.

Application of NoOps for South Africa-based insurance provider:
We introduced business planning and development measures that ensured that defect-free code was deployed and released, as a step toward NoOps. Our five-day workshop resulted in a collection of architectural changes and quick fixes. We identified the right tooling for deployment and release automation, reduced the number of image hops, and reduced their main application image from 800 MB to 150 MB, creating a reduction in meantime deployment from 12 to 15 hours to 2 to 3 hours.

DevOps is still at the core of new methodologies

Despite all the buzz around the death of DevOps, it continues to be a staple for agile enterprises. Research by Google Cloud and DevOps Research and Assessment (DORA) found that enterprises leveraging DevOps for superior performance are increasing in number, comprising 20% of all teams. As mentioned, different companies have opted for their own, unique definition and approach. For example, 50% of enterprises have opted for public cloud as part of their DevOps journey, while 44% continue to operate without any cloud capabilities.

These metrics highlight two clear trends: first, DevOps as a methodology is very much alive, with enterprises looking to adapt its principles to their business paradigm. Second, the definition of DevOps gains fresh momentum, targeting specific business opportunities and problem areas.

The findings of the 2019 State of DevOps Report by Puppet, CircleCI, and Splunk reaffirm the state of DevOps maturity and its use case-based diversification. Security (or SecDevOps) is a critical area of concern for mature enterprises, with 22% of those at the highest level of security integration placed at an advanced stage of the DevOps evolution. The five aspects we discussed extend the relevance of DevOps like never before, and DevOps continues to be a determining force for enterprise IT and digital transformation.

How Zensar can help enterprises

At Zensar, we firmly believe that the core principles of DevOps – speed, agility, and adaptability – are extremely relevant for enterprises today. A DevOps culture must influence technology decisions, even as the actual execution and on-ground digital transformation are aided by next-gen models such as DevSecOps, BizDevOps, AIOps, DataOps, and NoOps. By realigning enterprise modernization according to this approach, it is possible to avoid sunk costs and realize maximum value from digital transformation investments.

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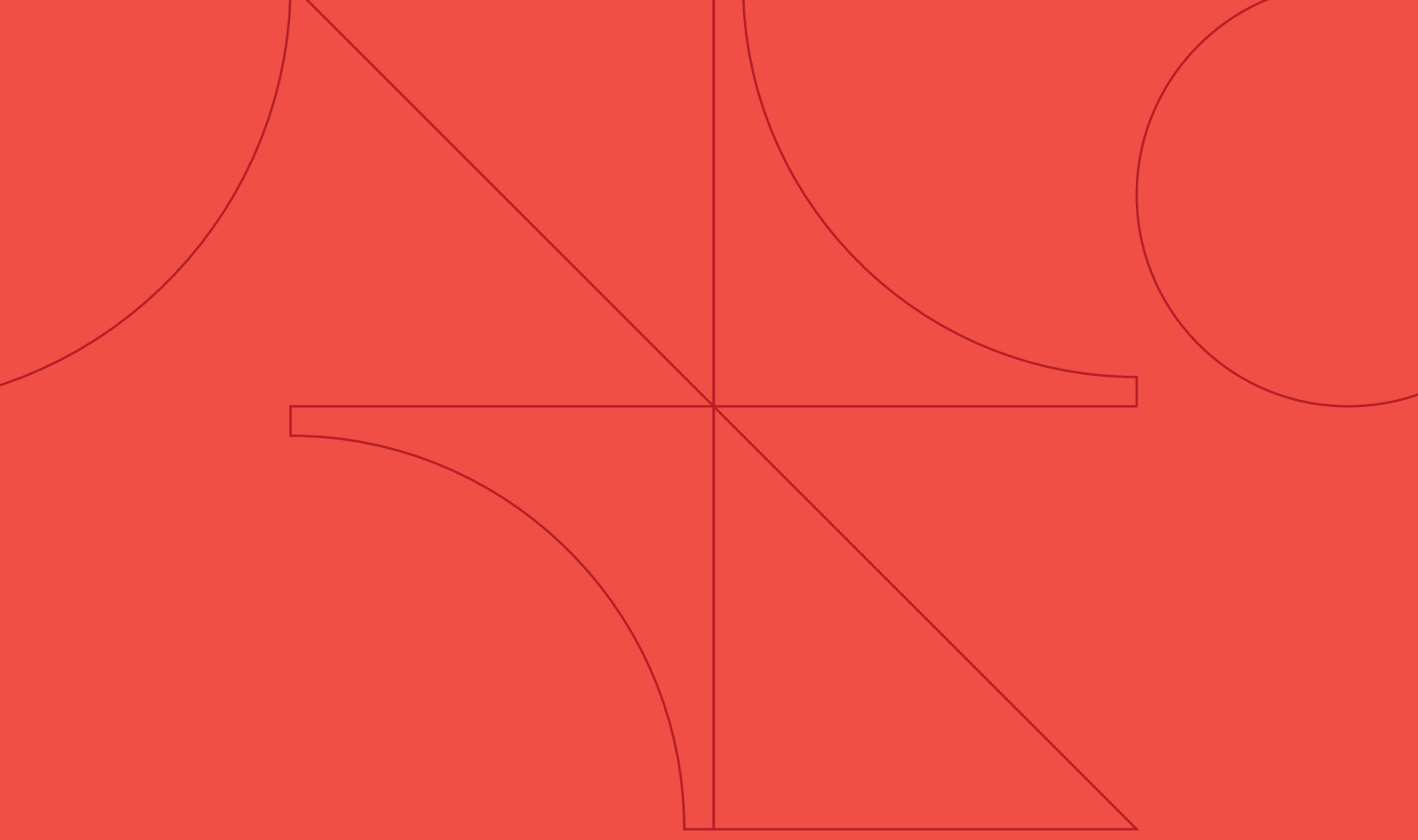

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