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Bridging the Developer and Operations Divide

Practical advice for successfully starting and scaling DevOps in your enterprise

The Case for Building a DevOps Strategy

Software drives your business. But most employees and customers don't realize that a team of dedicated product managers, designers, developers, and IT operations staff are constantly working to improve customer and employee-facing applications in ways that make a significant difference in how your business runs, how it produces goods and services, and how its revenues grow—even in difficult times.

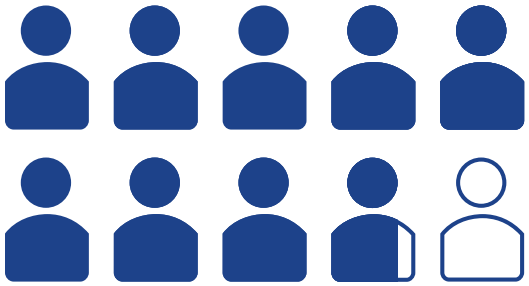
As your organization looks to speed service delivery, create new business models (and fix underperforming ones), process becomes paramount. Companies investing in DevOps have an advantage. As a set of technical, architectural, and cultural practices intended to improve interactions between development and IT operations, the goal of DevOps is to shorten the systems development lifecycle and provide continuous, quality delivery of software to the business. Successfully implementing a DevOps organization and culture is a critical component in your organization's transformation to digital business.

This executive brief explores how DevOps impacts customer experience, how IT and business must come together for a true DevOps culture to grow, and how to start and scale your own DevOps efforts while overcoming common obstacles.

Using DevOps to Deliver an Exceptional Customer Experience

Why concentrate on DevOps in the midst of digital transformation and marketplace uncertainty? Because today, customer experience across digital platforms matters more than ever. Applications may be the only way some people can connect with your organization—and DevOps directly contributes to that experience.

In a recent Forrester Consulting global study of more than 600 chief information officers (CIOs) and technology senior vice presidents (SVPs), almost all (88 percent) agreed that improving their application portfolios is key to improving customer experience. In addition, 82 percent reported that customer experience is directly tied to revenue growth. If customer experience drives bottom-line success, then the business clearly depends on how effective, easy, and meaningful the application experience is for customers.



88%

of executives agree improving their application portfolio would improve end customer experience.*

* A Forrester Consulting Thought Leadership Paper Commissioned By VMware. "Improving Customer Experience And Revenue Starts With The App Portfolio," March 2020.

But just because IT leaders understand the impact of applications on customer experience doesn't mean the business does. A first step for IT leaders is getting lines of business actively involved in identifying the end-to-end processes that define the customer experience. For example, take the mortgage application procedure at a bank. Because the necessary tasks involved to complete the application are complex and tedious for customers and employees alike the process provides, at heart, a DevOps opportunity. Only when business stakeholders and IT map out the entire customer journey from beginning to end—and put in place the right applications and on-premises and cloud infrastructure to support that journey—can organizations begin to close gaps in support of better user and customer experience.

IT leaders who have started improving their app portfolios see big business outcomes:*

increased revenue generation

increased customer satisfaction

success among peers within their roles

* A Forrester Consulting Thought Leadership Paper Commissioned By VMware. "Improving Customer Experience And Revenue Starts With The App Portfolio," March 2020.

Starting and Scaling DevOps

Considering that digital behemoths such as Amazon, Netflix, and Google deploy new code thousands of times per day, it's no surprise that DevOps is inextricably linked to automation and self-service. Yet even as DevOps teams depend heavily on automation and self-servicing to operate smoothly, these aren't the key goals. Rather, the overarching business outcome of DevOps is to improve software in a way that enhances the overall customer experience, and thus drives competitive differentiation and profitability for the business.

Leading DevOps organizations consistently apply three best practices:

1 Follow Agile-inspired small batch thinking

The Agile development methodology is a conceptual framework that promotes incremental, well-planned iterations throughout the development cycle. Organizations that pursue Agile and DevOps practices simultaneously experience better business and IT alignment, improved software quality, and faster time to business value. Specifically, in the cloud era, they're able to offer cutting-edge, innovative digital experiences by leveraging microservices, containers, and Kubernetes.

As the Agile philosophy has gradually grown in acceptance over the past twenty years, successful organizations are thriving by shipping small batches of software in short iterations and using the vastly truncated feedback loop to rapidly drive improvements to their code. These teams are continuously learning and changing their software to match the latest user needs—which themselves are always evolving. IT organizations that follow this process achieve a different type of outcome. Rather than implementing a set of requirements, they're able to adapt and change monthly, weekly, even daily, in response to shifting market demands. As a result, they're better positioned to drive business innovation.

In effect, these organizations are following the scientific method. They identify a (small) problem to solve and formulate a theory of how to solve it. They then create a hypothesis that can prove or disprove their theory. By doing the smallest amount of coding necessary (the "smallest batch") to test their hypothesis, they deploy the new code to production and observe how users interact with it. They then use those observations to improve the software. The cycle, of course, repeats itself ad infinitum. This discipline gives IT and the business a much richer, fact-based ability to drive decisions about features to add, remove, or modify. In turn, this creates much better software, and leads to much improved customer experiences.

Small Batches at The Home Depot

The Home Depot has a mature DevOps operation in place that also adheres to Agile principles. When starting out, the organization kept things small, scoping out projects that wouldn't impact the entire business if teams failed—such as managing late tool rental returns. By starting small and focusing on carefully-defined applications, The Home Depot gained experience with the new process that helped scale its larger digital transformation efforts.

2 Focus on user-centric design

DevOps highlights the importance of user-centric and design-thinking approaches to development and deployment. Good user-centric designs incorporate human-centered approaches to solving problems, conceived through a cycle of observations, interviews, brainstorming, and prototyping of ideas and concepts made possible by modern IT infrastructure and processes.

3 Move from functional teams to product teams

This is a big one. Many businesses are still organized by function: Developers sit apart from designers, who sit apart from QA professionals—and all are distant from the business units they're developing software to support. Functional organizations encourage silos and local optimization. Each group is focused on doing its part instead of ensuring that the overall outcome is exceptional. To address these challenges, IT leaders need to rearrange organizational charts to favor product teams consisting of designers, developers and product managers who work in tandem to ensure the organization builds software that users will like, based on the needs of today.

The product manager is a new role within DevOps, and it's quickly becoming a very important one. Fundamentally, the product manager is the owner of the team's software, which is the product. The most important aspect of the product owner role is its breadth. These individuals must understand the technical capabilities of the software, the targeted end user (who may be the customer or employee), and the business. This broad knowledge helps product managers make the right prioritization decisions and set the vision for the DevOps team from week to week. The product manager role also serves as a barrier between the all-too-fragile new teams and the existing legacy teams. The product owner becomes the gatekeeper of incoming suggestions and requests so that teams can focus on their work.

Duke Energy Aligns with Workers

Duke Energy wanted to improve how it scheduled field workers. A senior manager asked IT for a map that would show each worker's location, figuring this kind of visibility would help him coordinate schedules and truck rolls. After the product manager of the DevOps team interviewed the field and realized that the ability to self-select job assignments was their biggest need, the DevOps organization redefined the app's scope to allow line workers to locate and elect peers to partner on larger jobs, and avoid showing up at the same job. All this happened as a result of having a business-savvy product manager on the DevOps team.

What Successful DevOps Teams Do Differently

A number of challenges face enterprises beginning—or attempting to scale—their DevOps efforts. After all, DevOps changes the way teams collaborate and how infrastructure resources are consumed, which requires organizations to re-evaluate both development and operations priorities. IT operations teams need to become more app-centric, while developers need to consume infrastructure resources easily and programmatically.

Here are some tips to help you succeed with DevOps:

Fine-tune your IT culture

The most successful IT teams have replaced cultures of fear and blame with cultures of experimentation, curiosity, and constant learning. They build and foster relationships built on trust. DevOps requires developers and operations staff to collaborate extensively and continuously, essentially becoming one team. But collaboration doesn't stop there. It extends to actively including other teams, such as security or line-of-business personnel, at different points during the application lifecycle.

Adopt modern, software-defined infrastructure

DevOps challenges legacy infrastructure. Ensure your infrastructure platform is dynamic enough to accommodate the needs of your developers and the applications your developers are trying to build. A software-defined architecture enables a fully automated, zero-downtime infrastructure for any application, and any hardware, today and tomorrow. It can seamlessly extend to private, public, and multi-clouds for maximum flexibility and choice—supporting change as it happens.

Mercedes DevOps Teams Collaborate to Boost Sales

Mercedes sought to get drivers browsing its website to move more quickly toward vehicle purchase. When the DevOps team looked at the website search logs, however, it noticed a large number of searches for the Mercedes Sprinter van that didn't result in sales. That was because Sprinter vans were in a different business unit than luxury passenger cars, so they didn't show up in search results on the website. The DevOps team met with the Sprinter business unit with a project proposal: it would design, code, and manage a project enabling Sprinter vans to show up in search results across all Mercedes web properties, fueling greater sales. This was collaborative culture in action.

Leverage modern IT operations

DevOps teams need more infrastructure as code, self-provisioning capabilities, and highly automated cloud-native environments. ADP recently explained how when it reoriented to think of infrastructure as code and focus on the business outcomes, it took a 100-day process down to 11 minutes, delivering benefits back to the organization. Consistent infrastructure and consistent operations become critical, too, as organizations manage exponential growth in the volume and diversity of application styles and architectures. Self-driving IT operations reduce downtime with continuous performance optimization; lower costs with efficient capacity management; speed time to value with intelligent remediation; and mitigate risk with integrated compliance.

Automate your infrastructure

Remove waste and inefficiency through automation. Automate all aspects of the delivery pipeline process, leveraging continuous integration/continuous delivery (CI/CD) to the greatest extent possible so that building, testing, and releasing software can happen rapidly, frequently, and reliably.

Scale slowly to achieve production momentum

Choose your first project wisely, because it's very important that it be successful. Think small, at first. Few things will ruin the introduction of a new way of operating into a large organization than an initial big failure.

DevOps Delivers If Done Right

DevOps doesn't happen in a vacuum. It's a flexible practice that, in its truest form, is a shared culture and mindset around software development and IT or infrastructure implementation that expands to business functions. It's critical to remember that DevOps is more than just Dev plus Ops. It's also about the business—and educating and collaborating with the business to make IT infinitely more meaningful.

DevOps is especially geared to remove bottlenecks across the entire value chain, from design and development to operations and deployment. Use a roadmap to build your business case for DevOps, redesigning IT processes, redefining IT roles for business-savvy technologists, and automating all the things that can be automated. To forge a path forward, partner with your organization to determine the best path for your existing applications (e.g., lift and shift, refactoring, or replatforming) and your strategy for developing new cloud-native applications—all of which can be taking advantage of cloud-native architectures, processes, and services, including Kubernetes, containers, and DevOps. With the right leadership, culture, and solutions, your business can become an elite DevOps-driven organization, too.

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About the Intel and VMware Alliance

VMware and Intel provide IT organizations a path to digital transformation, delivering consistent infrastructure and consistent operations across data centers and public clouds to accelerate application speed and agility for business innovation and growth.

Lead Forward

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