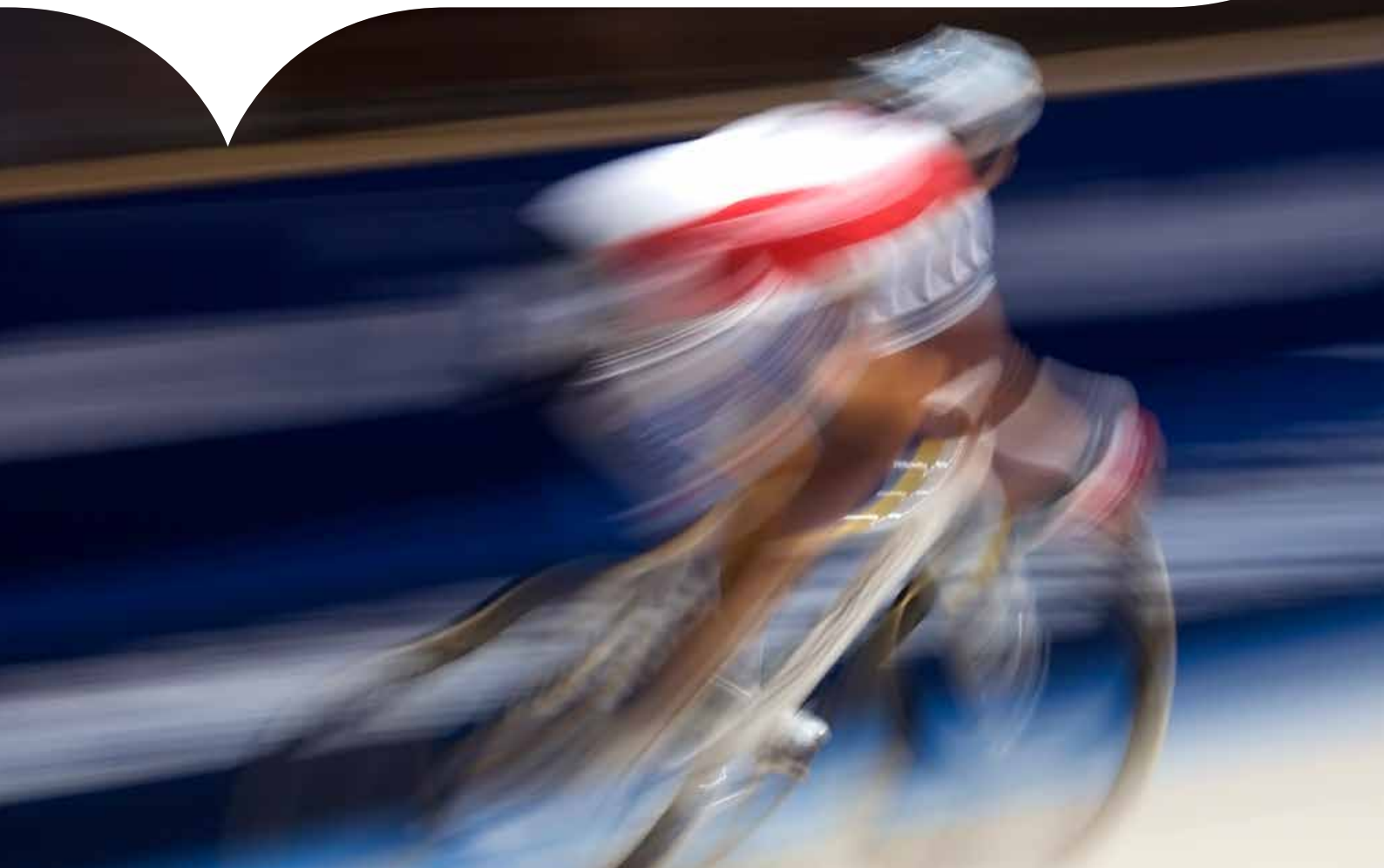


Solutions Brief: The Need for Speed

To remain competitive, businesses must move swiftly and respond to user demands. This means that IT has to be more agile in application development and delivery. Here's how DevOps and a cloud-native platform can help.





Overview

Businesses' need for speed has never been clearer. Agile, flexible organizations can quickly meet users' expectations for immediate and comprehensive experiences while being able to innovate and develop on the fly. These largely digital-built enterprises embrace the latest technologies to enable this agility. And their ability to quickly develop and migrate applications builds their competitiveness in an increasingly global marketplace. Unfortunately, traditional businesses are noticeably struggling to keep pace and are in danger of falling further behind.

A Growing Need for IT Agility

Although many organizations have attempted to integrate agile principles, too many find themselves stuck with “Fra-Agile” or “Scrum-Fall” environments instead. Although some development teams do a good job of working with the business to define, refine, and implement the front end of user stories, they often end up falling short when it comes time to integrate and test the rest of the ecosystem's downstream apps.

And often development teams complete sprints with no or only limited integration testing. Instead, they wait for the project to bunch up and then do more-complete system and integration testing. As a result, the development team is forced to deal with the ongoing issues of integration bugs and lengthening testing cycles. Understandably, this makes the process of debugging far more difficult. This same lack of agility often results in having to deal with outages while developing and migrating applications.

The Importance of the User Experience

Let's face it: Users have high expectations, thanks to the experience levels set by companies such as Amazon, Zappos, Uber and Airbnb. They want apps and engagement that are not only responsive but also intuitive.

To meet these expectations, there is an undeniable need for higher-quality development. Satisfying user expectations often requires continuous integration, testing and delivery—each of which is highly improbable when organizations utilize standard development tools and philosophies.

It would be wrong to ignore the importance and value of a positive customer experience. Both Uber and Airbnb have completely revitalized their industries, primarily by delivering unparalleled customer experiences. As a result, these companies are drastically capturing market share and boosting organizational profitability.

Bottom line: Apps no longer lurk in the back office. Instead, being able to effectively address the potential business benefit associated with app development is taking center stage.

Innovation Struggles Are Ever-Present

Timeliness is pivotal in delivering innovation. Unfortunately, most organizations tend to operate in silos, and as a result, development occurs in a sequential fashion, meaning that it can go only as fast as the slowest silo allows it to operate.

Even with the best of intentions, waiting for development environments to become available or until operational tasks are completed inhibits the development team's ability to innovate. Organizations cannot thrive when the development team is constantly waiting for other developers or the completion of other builds and struggles with low levels of

reusability and portability. At the same time, testing cannot afford to wait for all of the development to finish, because it would significantly complicate the debugging process.

Enterprises must find ways to get around the high degree of manual work involved in modifying configurations and operating environments. Innovation is no longer a luxury. Today's business environment requires organizations to embrace a model of constant innovation and operational improvement. No organization can afford to have its development team even inadvertently stand in the way of forward progress.

Solution Spotlight

As organizations continue their push into the cloud, they are recognizing the urgent need to become “cloud-native”—that is, to ensure that their software, services and applications integrate smoothly in the cloud and nicely work together. And, by moving in this direction, IT can finally address the need for IT agility, excellent user experiences and innovation.

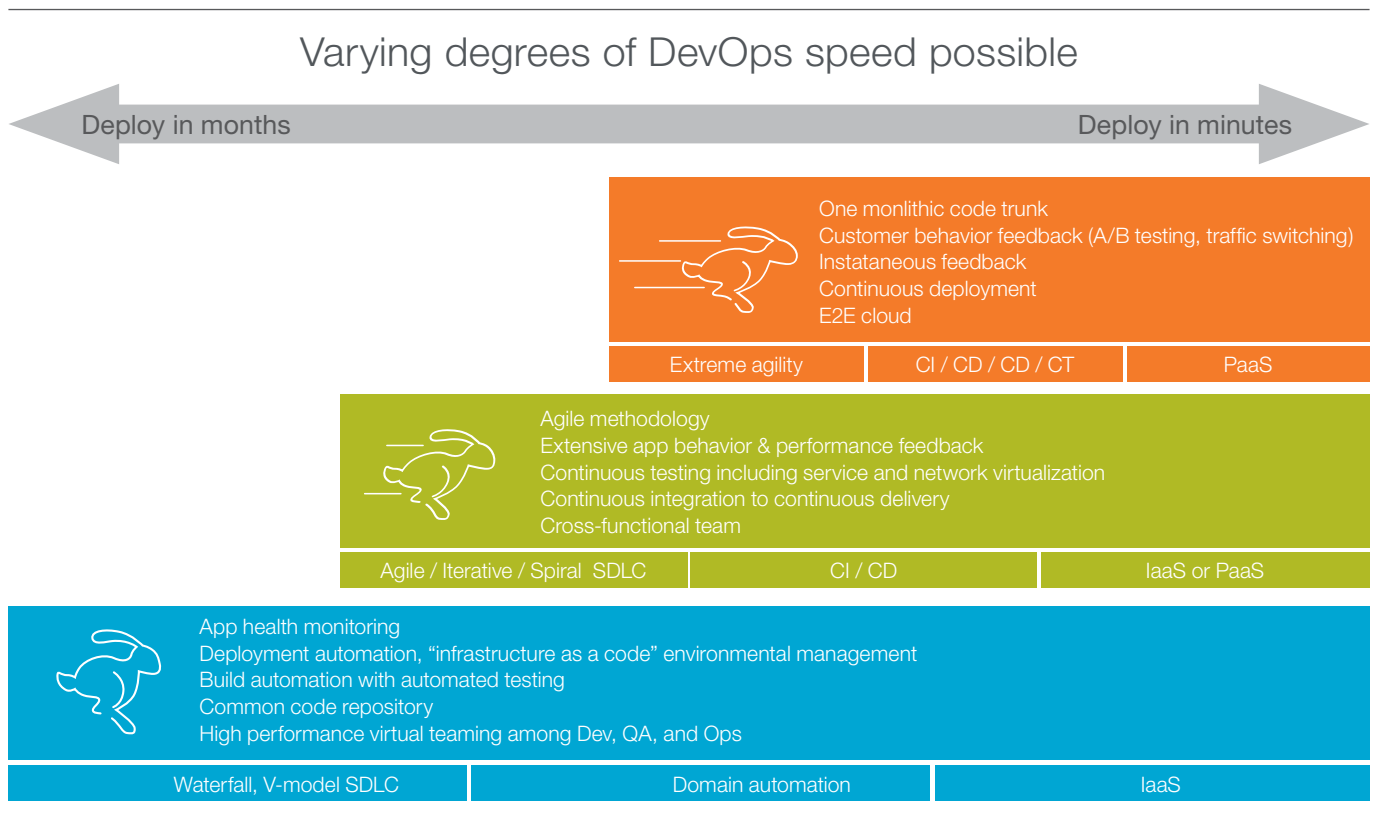
But how do you do it? The most logical avenue is to combine a DevOps development approach with a dynamic cloud-native platform based on microservices and platform as a service (PaaS). This combination provides DevOps, web scale, and cloud native capabilities out of the box.

Let's Start with DevOps

Effectively meeting today's customer experience expectations means being able to consistently deliver custom-written software into production more frequently—often weekly, if not daily—than traditional development methodologies allow. That process and being able to support the operational needs require DevOps thinking.

By definition, DevOps is a philosophy and practice of collaboration and integration intended to continuously deliver fast development results that enable business goals. More a journey than a destination, DevOps helps the business effectively combine people (culture), process (methodology) and technology (automation) components. It delivers high-performance teaming and execution among developers, QA, IT operations, project management, release and change management and the business.

It means that businesses have to take formative steps to eliminate the brick wall that often exists between the development and operations teams—no more silos!—with the goal of delivering applications faster, with higher quality and reduced costs and risks.



And Now, a Cloud-Native Platform

To support this level of continuous delivery, organizations need a cloud-native platform. And it also should have the following:

- Support for microservices-enabled, fine-grained, decoupled development of applications
- All the infrastructure management in place to manage the server, storage and networking layer
- Application frameworks, languages and middleware that developers use for their applications
- All the runtime management in place that does the workload placement, monitoring and management needed to keep the applications up and running
- The ability to deploy standardized buy vs build services to be consumed as needed by developers
- Allow developers to be innovative but within a bounded sandbox which is controlled, automated, and governed

Pivotal Cloud Foundry (PCF), from Pivotal Software, provides this cloud platform, supporting numerous languages and DevOps operation modes. PCF enables IT to develop, deploy, scale and manage software delivery more quickly and reliably. It provides developers an abstraction of the technology and infrastructure stack supporting an application and its data.

The alternative is to build it yourself, but then you have two problems: You now have to build, maintain and enhance your platform and still work on the original application. Taking a DIY approach ultimately monopolizes valuable resources

you could otherwise devote to application development. And doesn't IT best serve the business when it focuses on the enterprise's core technology, not on supporting technology? Devoting itself to core business strategies is where the business can differentiate itself from its competition.

A Combination Filled with Benefits

When an organization embraces a cloud-native approach to development while leveraging DevOps principles, it facilitates and enables a transformation of the entire process by effectively breaking down silos. This approach essentially forces the creation of a true team environment in which it's significantly easier to collaborate and seamlessly integrate cross-functionality to achieve business and IT goals.

It also allows for the easier adoption of more-fine-grained, decoupled application architectures and development through microservices, which further accelerates the organization's ability to deliver increasing reusability and app portability. Taking a cloud-native approach to DevOps also enables high quality and quicker velocity from left to right via automation.

This approach to development has three primary outcomes:

Get developers refocused on development

This includes adopting more-loosely-coupled, fine-grained architectures, which ultimately enables smaller, more frequent releases. With improved productivity, the builds and



development become self-service and there is a significantly higher degree of reuse and portability, reducing developers' need to write code. It is also easier to debug applications and enhance them with code traceability and app feedback.

Plus, when developers are more productive, they are free to develop and can focus on completing more-business-centric projects, which ultimately improves the productivity level across the enterprise.

Elimination of operational roadblocks

This starts with the automation of build, deploy and environment management. Autoprovisioning, with quick restarts and refreshes, becomes second-nature. Organizations enjoy dynamic horizontal and vertical scaling with minimal environmental disruption for patches or maintenance.

Self-healing resilience also becomes a reality. Costly downtime to find and debug essential applications is a thing of the past. Without having to constantly navigate obstacles, including departmental silos, development teams can more frequently engage with lines of business and act on opportunities to innovate.

Revolutionizing delivery

As businesses embrace 12-factor app development principles and practice agile excellence, continuous integration, testing, delivery and deployment become the new norm. Faster app delivery means that organizations can better meet user demands. At the same time, achieving cleaner apps through continuous integration and testing means higher levels of customer satisfaction.

Why Capgemini and Pivotal?

Now, just saying your organization is going to start following DevOps methodology isn't sufficient. Many organizations struggle to pull ahead because they fail to realize that DevOps success goes well beyond reaching levels of automation and using tools such as Git, Jenkins or Puppet. Although these technologies certainly have benefits, they are still just tools.

The top two obstacles to DevOps implementation are people-centric, including operational complexity as well as the alignment of roles and responsibilities within a new culture. Achieving DevOps success requires an ongoing commitment and strong sponsorship from executive leadership focused on breaking down team silos.

A Cohesive Methodology

Capgemini and Pivotal offer enterprises a unified approach aiming to effect transformation and enable IT agility.

Capgemini has the experience and expertise needed to help organizations reach DevOps success. At Capgemini we understand that DevOps is a journey that starts with a few

workloads focused on building a solid foundation capable of scaling and extending to handle additional workloads quickly and efficiently. It's this approach that ultimately facilitates non-confining standardization. DevOps thrives on its ability to continuously improve and encourage learning, sharing and adapting throughout the organization.

Capgemini brings end-to-end capabilities to help clients with their IT agility journey, from assessment, strategy, proof-of-concept, cloud-native architecting and DevOps implementation expertise to help in designing, implementing and running a transformed operating model.

Pivotal's powerful cloud-native platform, Pivotal Cloud Foundry, continues and supports the DevOps transformation. It has a host of agile development experts in Pivotal Labs who regularly integrate into existing environments to serve as mentors to your IT team throughout the product design process.

Start Slow

Capgemini can guide you through the process of refining desired business goals and outcomes while also determining the most appropriate workload type for implementation. Capgemini can also play an instrumental role in identifying key speed and quality blockers.

Consider the example of the IT organization of a major financial institution that realized that it had to step up its app delivery process. It embarked on an initiative that included the adoption of PCF, which enabled increased developer productivity and self-service. Also, in parallel, it initiated a work stream to build DevOps capabilities, continuous integration and continuous delivery.

Capgemini initially helped the organization build out and industrialize its PCF platform so more and more applications could integrate seamlessly into it. As part of this process, Capgemini helped define an operating model that also integrated its DevOps direction. Today the company is well positioned to continuously and consistently migrate and develop innovative cloud-native applications that meet or exceed user expectations.

What's Next?

There is a reason Fortune 1,000 organizations turn to Capgemini when they need assistance in implementing and fully capitalizing on the latest technologies and business philosophies. Capgemini has helped hundreds of organizations across industries effectively blend the culture, technologies and methodologies needed to sustainably capitalize on the real benefits of a DevOps deployment.

Now is the time to advance your journey toward the digital transformation.

Contact us at:

infra.global@capgemini.com



About Capgemini

With 180,000 people in over 40 countries, Capgemini is one of the world's foremost providers of consulting, technology and outsourcing services. The Group reported 2014 global revenues of EUR 10.573 billion. Together with its clients, Capgemini creates and delivers business, technology and digital solutions that fit their needs, enabling them to achieve innovation and competitiveness. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business ExperienceTM, and draws on Rightshore[®], its worldwide delivery model.

Learn more about us at

www.capgemini.com