Spotlight: DevOps Review

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DevOps review:

Why it's still all about the application

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The pace of change in IT gets faster with each year that passes. Only a short time ago, DevOps represented a brave new world of collaboration and co-creation that saw the previously siloed disciplines of Development and IT Systems Management and operations reaching out to join forces for faster, more efficient, more agile delivery of applications

Today, there are very few organisations that aren't at least some of the way along on their DevOps journey. What was once a mould-breaking, disruptive idea is now mainstream IT development practice. Like the mobile phone, we wonder how on earth we managed before it came along.

Certainly that's the impression we get at Fujitsu. From introducing customers to the concept of DevOps and helping them with their first tentative steps, we now find ourselves acting much more as partners in optimising and accelerating their existing DevOps function.

That can mean guiding them to all-in adoption of cloud native applications. Or it can mean moving at a slower pace that

fits their maturity, development timescales, resources and comfort zone.

Whatever form it takes, though, our DevOps services are focused on one simple end result: getting applications delivered quickly, securely, cost effectively and with zero errors.

Of those four objectives – speed, security, cost, and error free implementation – perhaps the most critical are the first two. After all there's little point in developing an application with impregnable security if the market has moved on by the time it's ready.

Vice-versa, there's nothing to be gained by rushing an application to market if it's going to be knocked down by the first cyber-attack that targets it.

So the DevOps sweet spot lies in a combination of both: rapid development of apps that respond to emerging customer needs, with absolutely no compromise on security – yours, or your customers'.

The speed side of that equation we deliver using the agile methods on which the original DevOps model is based.

The security we deliver through a combination of automation in the delivery of apps to thousands, sometimes millions of devices; our partnerships with gold standard security providers; and a strict adherence to DevSecOps (Secure DevOps) methods.

Automation for more effective applications.

So how does automation result in a more secure application?

To understand that, let's look at the old, manual practice of getting an application onto a PC or other device.

Applications were supplied on CD from which they were loaded onto a PC hard drive. The manual installation process was often complex, requiring users to download a series of files and directories in a particular order. At any point in the process, clicking the wrong file or directory could send you right back to the beginning, crash your PC or cause the application to load incorrectly or incompletely.

Sometimes, that meant there were gaps in the application code. Occasionally those

gaps were where the security measures should have been. The result was a hole in the application cyber-security fence through which hackers could enter the PC and steal any amount of data, or plant viruses.

Nowadays, of course, our applications load and update themselves automatically, and security standards are consequently much higher.

That's because the automated processes that install them over the internet on thousands, or even hundreds of thousands of devices follow a set of pre-coded instructions. They never miss a step, get the order wrong or otherwise fail to do what they're told. They do it night and day, millions of times over, with absolute precision.

If those apps are hosted in the cloud, they can be installed and updated by refreshing the code that makes them work, almost instantly. End users don't have to know about it or, unless it's a security sensitive issue, even give their permission. As far as they're concerned, their applications simply update themselves as and when they need to.

There's another big benefit to automating the delivery element of DevOps, too: it frees up your people to concentrate on higher value tasks that require real, human intelligence and intuition.

They could be coming up with new features to make apps more useful for your customers, or new user experiences that make them want to come back and use it again. Both are essential in building customer relationships through your digital channels and crucial for customer recruitment, retention and growth.

Partners in security

DevOps is all about collaboration and shared objectives between partners. Fujitsu collaborate with one of the world leaders in cloud environments for applications hosting, Microsoft Azure DevOps (MAD).

MAD provides the seamless automation processes to place applications in the cloud with all the efficiency and security benefits outlined above; it also helps maintain security standards in another way.

Every time Fujitsu works with Azure to build a new application, Microsoft's security engines examine it closely and give feedback on how it can be improved. This doesn't just happen at the development phase; once an application has been launched, MAD continues to scrutinize its security performance against emerging threats and provides recommendations for enhancing security levels.

The intelligence it uses to do this is so advanced that MAD is one of the few services to offer effective protection against so called 'Zero Day' attacks - those carried out by viruses that are so new, little or nothing is known about how they work or the specific threats they bring.

Even if a virus or a hacker does succeed in targeting an application hosted on Azure Cloud, its multi-site infrastructure means it can instantly be relocated to servers in a different country or even a different continent. Yet another advantage of building and hosting applications entirely in the cloud.

Introducing DevSecOps

The third important factor in secure applications delivery through DevOps is the discipline of Secure DevOps processes, or DevSecOps.

DevSecOps is the practice of incorporating the very highest standards of security during development, and maintaining them through the many iterations that today's applications undergo.

One of its key principles is 'immutable building' – the process of recreating an application from the ground up with each iteration.

Before cloud-hosted products appeared, applications lived on the hard drive of the PC running them. When they needed updating, or new security was required, 'patches' were issued on CD and, later, over the internet.

Crucially, these patches were quick fixes to address a fault or replace an outdated part of the application code, rather than wholly new versions of the same application.

Over time, a combination of multiple patches and aging hardware made applications slow and unstable and the security systems that once guarded them, would lose their ability to protect such a 'patchwork' environment.

The result was a widespread lack of security that cyber criminals would quickly exploit. As recently as 2017, the WannaCry ransomware attack targeted over 200,000 computers around the world, many of which hadn't implemented Windows operating system patches or were using Windows systems that were past their end of life.

Today, immutable building for cloud hosted applications eliminates that uncertainty.

Effectively, every new iteration of an application is now an entirely new piece of code, self-contained and created for the specific purpose of delivering these features in this version of that application.

As a result, security is bespoke, seamless and complete.

If a gap in security or a flaw becomes obvious when the application is delivered out to users, immutable building helps there as well. The new application can be quickly withdrawn and replaced with the previous version while developers get to work on a fresh iteration to fix the problem.

DevOps automation in action

For one client, a major international bank, Fujitsu drew on all the key principles and processes of DevOps to deliver a new application to users of its online and mobile banking services.

The product was a survey tool that was pushed to around 90,000 customers and would be used by them to offer feedback on new online banking products and services.

The survey app itself was developed using the classic agile processes: a specially assembled squad of people with skills in infrastructure coding, cloud, database management, applications, security and business; short, one or two week development sprints; frequent customer feedback; and rapidly bringing the finished product to market.

Once built, automated delivery processes ensured the survey app was swiftly and safely installed on thousands of customer devices. It incorporated smart forms for effortless comment and financial services standard security to protect both customers and the bank from attack.

The delivery and installation was flawless, thanks to Fujitsu's automated processes and gave the bank a cost effective, measurable system for gathering customer feedback.

By analysing that feedback, developers are able to enrich future iterations of its online banking services to improve the customer experience and build stronger, longer lasting customer relationships.

Fujitsu. Guiding you through the new DevOps landscape.

The world of DevOps, as we've seen, is changing fast. Leading edge automation, applications infrastructure, built and maintained exclusively in the cloud, and near bullet-proof security are all now part of a process that began as a cultural rethink of traditional 'waterfall' development practices.

The skills needed to deliver those services are still difficult to come by in-house.
Which is why customers such as international banks and large corporations still look for specialist help from outside to continue their DevOps journey.

Whatever stage you've reached in your transformation to a fully-formed DevOps culture, Fujitsu can help you develop and embed the necessary skills in your organisation, delivering benefits on every level.

Allowing you to be more responsive, agile and customer-focused; your staff, can move away from the mundane tasks that automation accomplishes much more efficiently, into higher functioning roles that stretch their skillset; and your customers can enjoy a richer experience and relationship with you through your suite of digital services.

Talk to us about how we can help you.

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