What you can get from modern software engineering – and how to get it

Doing DevOps right unlocks the benefits of digital transformation.

Executive Summary

Companies know that modern software engineering practices such as DevOps and agile can help them respond more quickly and effectively to rapidly changing markets and customers. But they don't always know the range of benefits to expect from DevOps nor how best to implement DevOps to achieve them. This Avanade Point of View looks at how DevOps supports digital transformation and how factors such as app development, trust and culture matter to the success of a DevOps implementation.

Revenues up 14% and costs down 13%

A growing number of businesses are changing the traditional software engineering approaches they've used for years. They're adopting DevOps, agile and other modern software engineering practices to gain business, not just technology, benefits. They're using the leaner, more agile and more innovative processes that result to respond more quickly and effectively to rapidly changing markets and customers.

Listen to global executives and IT decision-makers tell it. In a recent Avanade survey, they said that DevOps and agile have the potential to boost their revenues by 14% and reduce their operating costs by 13%. Most (80%) said that not adopting these practices isn't an option, because it will stifle long-term business growth.

Modern engineering practices can be this powerful because the enterprise can use them to speed the delivery of higher-quality products and services to customers. This drives topline benefits around improved customer experience and broader revenue opportunities.

These practices break with tradition by using self-organizational approaches to break down operational hierarchies or silos designed for slower, simpler times. They also break down the walls between business and IT, creating better alignment and keeping business needs front and center in the minds of technology-oriented staff.

It's a cliché but it's true: DevOps enables the business

It's a bit of a cliché these days but, when people say DevOps is about enabling the business, they are (still) correct. That's because DevOps is a key ingredient in an even more profound trend sweeping across the business landscape and affecting virtually every industry: digital transformation.

Digital transformation changes your company from within and without, driving new efficiencies in operations while making possible connections among employees, customers, suppliers and others. These connections spur new, digital ways of doing business; creating new, digital products and services; and satisfying customers with new, digital forms of customer service.

Digital transformation in the wealth management industry is a powerful example. In the 1990s, online trading drastically increased the speed of service and drove down transaction costs. Today companies like WealthFront and Betterment have led the robo-advice charge with digital self-service capabilities that replace the bricks, mortar, people and handshakes required to handle a wide range of portfolio management functions. Cheaper, faster and, most importantly for many, better.

DevOps' contribution is a foundational element of successful digital transformation because it is essential to delivering digital services at speed and with quality. A company that uses DevOps in this way gains the agility to operate like a small, nimble company while delivering large-company results.

Williams drives digital transformation

Situation: Formula 1 racing organization Williams Group wanted to gain competitive advantage by giving its drivers and engineers the information they need to make better, real-time, data-driven decisions.

Solution: Avanade used agile and DevOps to create a predictive analytics solution that trackside staff use to peer into the future of races while they're running – answering questions such as how likely it is for one car to overtake another, and whether and when to call pit stops.

Results: With modern engineering techniques, Avanade created the solution five times faster than the time it took competitors to create their solutions.

Get better – and faster – at what you do

There are at least two benefits to "delivering digital services at speed." The first is faster time to production. When you use DevOps and agile methodologies, IT delivers exactly what your business users need – nothing more and nothing less. It's a result of putting business and IT people together and aligning IT with business needs. So projects get finished and move into production faster than before.

Those projects might be new workflows that enrich collaboration among teams that span continents. They might be applications for knowledge sourcing, predictive analytics or meeting regulatory requirements. Whatever they are, they make your company better at what it does – and it's never too soon for that.

The second benefit of delivering digital services at speed is bringing new, revenue-generating products and services to market. The failure to do so leaves potential revenues unrealized and gives competitors an opening they otherwise wouldn't have. Faster time to market is so important to DevOps professionals that it is a running theme in their product reviews of new tools for application performance management, build automation, configuration management, release automation, service virtualization and other tools.

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An investment that pays off in operational efficiency and innovation

Situation: One of the top investment platforms for UK financial advisers and institutions wanted to modernize and build a foundation for continued growth.

Solution: Avanade used a combination of robotic process automation, DevOps and agile, and its flexible and scalable delivery team to optimize efficiency and compliance of the current platform while also enabling long-term innovation and digital transformation.

Results: The company now achieves regulatory compliance more easily and at lower cost. Application Lifecycle Management is more efficient. And the IT team is freed to innovate for the business with, for example, a radical new user experience across all devices and screen sizes.

It's all about the apps and services

Certainly, your technology platform needs to be part of the digital transformation made possible in part by DevOps. But the crucial focus must be on the apps and services that run on that platform. Secure, modern apps and services are what drive the highest levels of innovation in operations, products and services, and customer service – which produce the greatest gains in profitability, market share and productivity.

Increasingly, organizations are implementing DevOps across a range of applications. According to Forrester research, 62% of DevOps professionals say they are using DevOps for internal applications, 65% for IoT-enabled smart products, 68% for mobile apps and 56% for eCommerce websites.

App developers need their paths cleared of obstacles that hinder productivity and delay time to market. DevOps, thoughtfully implemented, accomplishes this. Continuous delivery practices are a key tool in smoothing the way for rapid development and fast time to market. Such practices automate build, test and deploy activities so a company's products and services are always in a release-ready state.

Here's an example. A company that incorporates performance throughout the application lifecycle, rather than just the testing phase, can prevent bugs from getting deeply baked into products, where they're harder to fix. As a result, the company avoids costly rework and users get more satisfying and engaging experiences from better apps. And that, in turn, boosts profitability and competitiveness.

Centrica bets on better growth

Situation: Centrica, the integrated international energy company, needed to boost the scalability and stability of its Energy, Marketing and Trading platform to support continued growth.

Solution: Avanade applied DevOps principles as part of a major upgrade of the trading platform.

Results: Centrica realized significant benefits, including:
- **33%** increase in supported trades
- **95%** increase in speed of deal processing
- **60%** reduction in production incident rates

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Trust me

Another crucial component in securing the benefits of DevOps is perhaps unexpected: trust. Everyone who contributes to the continuous delivery chain must be trusted – and trustworthy – to build applications that work as expected. All participants must be accountable for this because running at the high speeds of DevOps doesn't leave time for finger-pointing.

Organizations see major gains when they achieve this culture of trust. It empowers and motivates employees and their teams to produce better, more timely output. It gives those teams confidence to move forward quickly.

With DevOps, you replace the loosely coupled and error-prone handoffs used in traditional waterfall processes with a continuous pipeline from development to operations. This way, your teams learn they can move faster, deploy small changes more often, detect issues and opportunities in near real-time, and react to the unexpected by rolling forward rather than reverting to past practice.

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A roadmap to savings

Situation: A global high-tech company wanted to boost the return on cost-cutting measures and increase quality through sourcing, engineering and operational maturity improvements.

Solution: Avanade worked with the company's business units to understand current – and desired – maturity levels.
It developed a roadmap and business case to explain how the company could achieve its goals and the financial benefits of each step along the way.

Results: Avanade identified savings of 20% to 45% and we committed contractually to deliver that savings.

Have you got what it takes? Culture is key

The benefits of DevOps and agile are real, substantial and within your grasp. But they require attention to the aspects mentioned above.

One of the crucial factors in making these technology approaches successful is decidedly non-technological: culture. Both the business and IT sides of your company need to embrace a cultural change around how they originate and use technology – and around how each side of the company relates to the other. Forrester notes that "regardless of DevOps maturity, culture must transition from individual ownership of a tech silo approach to one of collaboration and communication across the complete ecosystem."

The idea of "one team with one mission" isn't unknown in corporate environments but, for DevOps and agile to work, it needs to be far more than an idea; it needs to be common practice.

Nor should you think of the new way of working associated with modern engineering as limited to development. DevOps and agile technologies and approaches need to be embedded into your organization through continuous improvement cycles of inspection and adaptation.

DevOps has a seven-stage lifecycle that spans develop, test, provision, configure, deploy, monitor and feedback. To gain the full benefit of DevOps, you need to embed tooling within your technology stack that optimizes each stage with minimal manual intervention and maximum automation.

Here's an example. In this story, Microsoft's Visual Studio product team shares insights from the company's own journey to DevOps, including observations on team location, tenure, autonomy and role structures, and their impact on morale.

Where you go depends on where you are

To adopt DevOps or expand an existing DevOps process you need to know where to begin and which low-hanging fruit to reach for. The answers depend, of course, on your company's current state of DevOps implementation.

Avanade created the Modern Engineering Maturity Model to help you answer these questions. You can use it both to determine the current DevOps status of your teams and to kickstart continuous improvement cycles that move the teams further along the path of DevOps maturity.

The model rates the maturity of teams along three dimensions (technology, team setup and working practices) and 15 topic areas (such as test automation, security and compliance, continuous integration and performance management). You can use the maturity model to set targets, assess gaps and decide on improvements.

Implementing change on this scale can be hard, but it doesn't have to be. Avanade has guided many companies through adoption and enhancement of DevOps in particular and modern engineering more broadly.

Learn more about how Avanade Advisory Services can help you unlock the benefits of digital transformation through modern software engineering.