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Moving from Traditional to Agile DevOps

A hot trend these days is the move towards Agile DevOps. DevOps is the term used to describe the process flow from software development through testing to deployment, and ongoing support. Called “development operations”, this is usually shortened to “DevOps”. The promise of Agile DevOps is to speed up the DevOps processes and make them more responsive to change. However, trying to implement Agile DevOps in a Traditional DevOps environment is a huge challenge without first changing underlying governance practices. In this article I’ll explain why and identify some success factors.

Traditionally, software developers, testers, and the people running the IT infrastructure don’t work together very effectively. While there are cultural differences between these groups, many organizations also impose strict process separation between these groups. Agile approaches encourage cross-role collaboration, which often runs into difficulty when facing an organization with strictly-separated functions. Let’s take a moment to understand the roots of the problem before we discuss the solution.

Reasons for Separating Roles

I’m going to start with a true story. (Names have been changed to protect the identities of the people and organizations involved.)

In the late 1980s, Megabank had a set of development processes whereby a programmer would create some software, hand it over to a tester to

make sure it worked properly, and when the quality level was acceptable, the tester would forward the software to a systems administrator who would install the software in the bank’s production environment. This had been the process for years. The tester as an intermediary between the developer and the systems administrator was established to prevent developers from pushing poor quality code (or even malicious code) into production.

One day, they found that software in production was skimming small amounts of money from accounts, disguised as “transaction fees” on the customers’ statements, and depositing that money into a central account that would be regularly “swept” by wiring the balance to an overseas bank. Upon investigating, it was found that the developer and tester sat in adjacent desks and were the best of friends. The two had conspired together in this fraudulent venture.

In response to this situation, Megabank instituted a new rule: developers and testers could not report into the same management chain (to avoid management pressure to promote poor quality code to meet a deadline), nor could they even sit in the same area (to reduce the risk of further conspiracies). This started Megabank's separation of duties within IT and the creation of further functional silos – all done in the name of risk management.

The Situation Today

Today, the situation at Megabank is more stable: the various groups involved in software development rarely collaborate directly, communicate primarily through documentation, and don't begin their work until they receive all of the appropriate sign-offs on the prior group's work. Processes (and tools) have been put in to place to streamline this process as best as possible, while still maintaining the separation of duties.

Known as DevOps, supporting tools include software for source code management, build management, defect management, deployment, monitoring, and much more. An entire industry has grown up providing these tools to IT professionals. The problem is, however, that the traditional approach to DevOps – even with excellent tool support – can be slow and inefficient.

In many cases, companies with traditional DevOps processes and tools cannot provide adequate support for teams using agile software development approaches who need daily builds, access to test environments throughout the entire project, and code promotion to various environments every few weeks. Agile practices such as these push the limits of how quickly people can execute the required steps in their processes in a traditional DevOps environment. Quickly, they find that the DevOps processes become very limiting, reducing many of the benefits attainable from agile approaches.

The Solution: Agile DevOps

To address these concerns, companies have changed their processes and tools to better support agile practices. Agile DevOps tools promote automated builds, automated deployment to test environments, and automated testing – all measured in minutes, with no human involvement. Taken all the way,

such tools allow code to be automatically promoted to a production environment once automated testing passes without any high-severity defects, removing many delays caused by waiting for sign-offs. These tools remove the inefficiencies and delays seen in traditional DevOps practices.

The scope of Agile DevOps includes not only the required tooling, but also the supporting processes including changes to project governance policies and structures. Risk management, gating, security, support readiness and other governance reviews need to be revised to better support agile DevOps. Development teams that think just adopting some new tooling, without thinking through these governance processes, will not achieve all the benefits from Agile DevOps as it requires collaboration across all of the roles in the software development-operations lifecycle.

Some companies providing tools to the development community have tried to bridge between functional silos with a suite of integrated tools forming an “agile lifecycle management” (ALM) solution. While these tools are very helpful and do help move a company towards a true Agile DevOps state, they still require significant changes to a company's governance policies to achieve the full benefits. Failure to tailor the governance structure when incorporating these tools may lead to a failure to properly support enterprise standards or initiatives, audit and/or regulatory exposures, and significantly increased risk of project failure. Agile DevOps requires a different mindset – one focused on collaboration across all development, testing, operations and governance roles to help achieve these benefits.

The benefits touted by promoters of Agile DevOps are achievable for many organizations – but only if they take significant steps towards revising the policies and processes affecting the development through to operations lifecycle. All affected parties need to come to agreement on the appropriate levels of oversight and control needed to minimize risk to the enterprise while still achieving the efficiencies and speed needed to support an Agile DevOps approach.

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