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# ServiceNow Enterprise DevOps Platform:

## Applying Automated Governance Principles to the World of DevOps

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**Overview:**
Today's business environment is growing increasingly competitive. And with the threat of a global recession combined with rising AI and machine learning technologies, competition is poised to intensify even further. To affect a digital transformation capable of competing in the next paradigm, organizations will need a powerful platform that extends automated governance principles to DevOps. Leveraging the speed, productivity and innovation it brings will become ever more important as organizations strive to mitigate disruption and take advantage of every opportunity.

**DevOps and digital transformation**
Enterprises today are well aware that speed, productivity and innovation are achieved by the implementation of agile practices and DevOps—they've been taking advantage of these methodologies for years. The challenge now is to scale them beyond pockets of innovation. They must be at the core of every business's digital transformation and become standard operating procedure across the enterprise.

The market agrees: IDC's *2018 Worldwide Semiannual Digital Transformation Spending Guide* predicts global spending on digital transformation will reach $2 trillion annually by 2022. Most understand the importance of DevOps in this process and, in fact, many view DevOps as the foundational element beneath a digital transformation.

The key to future success is enabling rapid change across the organization now. That can be achieved by addressing the spread of DevOps tools and process complexity while simultaneously reducing risk, automating ITIL, increasing productivity and reducing friction between IT operation and development organizations. It's a big order and the stakes are high. But companies that overcome the challenges will be the ones that drive us into the coming decade of automation, machine learning and AI.

**The challenges of scaling DevOps**
As with scaling virtually any technology across the enterprise, scaling DevOps has its challenges. The sooner these issues are recognized and dealt with, the faster and more powerful the digital transformation will be:

**Roadblocks diminishing release frequency**
Today's most talented development teams are translating innovative ideas into tangible value with unprecedented speed. Some teams are so adept at anticipating customer needs, they're actually driving the general market direction. Yet they're struggling to get ahead of the market in terms of actual delivery. Companies look to adopt DevOps initially to improve their end-to-end release cycle. Many current release cycles take 9+ months to get work from ideation to production. The initial goal of foundational DevOps is to increase the velocity of releases to production. What Forrester found from the initial companies who have attempted to adopt DevOps initiatives is – **While applications are being created at breakneck speed, 85% of companies that have incorporated DevOps have not experienced an increase in release frequency.**

**85% of companies that have attempted a DevOps transformation have seen no significant increase in release frequency.**

The holdup is roadblocks that exist down the value stream. The manual processes of change management, governance, risk and compliance (GRC), and audit are creating bottlenecks that prevent faster releases. And slow releases squander competitive advantage, lessen market impact, minimize revenue growth, and create unnecessary friction (and in some cases hostility) between development and operations teams.

**Lackluster productivity**

An Active State report (https://www.activestate.com/resources/white-papers/developer-survey-2019-open-source-runtime-pains/) found that over 60 percent of the developers interviewed spent less than four hours a day actually writing code. The rest of their time was spent in status meetings, tracking down information, and performing administrative functions associated with change management. A development team that spends half its working day on administrative functions is at best operating at 50 percent of its potential productivity. That's not a statistic worthy of scaling across the enterprise. Organizations should strive to minimize administrative functions in ways that allow developers to do what brings the most value to the organization—writing code.

**61% of developers interviewed spend less than 4 hours a day writing code.**

**70% of code that developers do write does not deliver value to the company. Developers spend less than 1 hour a day writing high-value code.**

**Misalignment with corporate initiatives**

In some organizations, DevOps appears broken. In fact, studies have shown that 70 percent of the code developers are writing is not delivering measurable value to the company. This indicates an obvious disconnect between company goals and the work being executed.

**Circumventing the critical role of ITIL**

Not surprisingly, frustrated developers are looking for easy solutions. That typically translates into sidestepping many ITIL processes. To keep the ball rolling and keep the business moving forward they're forgoing any kind of change process or getting change managers to classify application changes as standard/pre-authorized changes.

This is a dangerous approach. In fact, the result of doing so may be far more detrimental to the business than a sluggish path to market. ITIL performs essential functions for organizations. It ensures reliability, compliance, and code quality. Even in

areas considered "low risk," ignoring IT can lead to many severe, unanticipated and unintended consequences, including:

- **Unplanned downtime**: The smallest change made without appropriate governance can impact code quality and result in downtime. Gartner estimates the cost of downtime due to unplanned outages averages $5,600 per minute and over $300,000 per hour. Even when they seem small, unmanaged changes can have a big impact.
- **Security issues:** Improper changes to code can also open the door for security breaches. According to a Puppet Labs Report, DevOps practices ensconced in the software lifecycle cut the time spent remediating security issues by 50 percent. A well-managed DevOps process essential for good security.
- **Lack of regulatory compliance:** It's not just healthcare companies awash in government regulations. Virtually every organization must adhere to some kind of government rule, specification, policy, or standard. When ITIL is circumvented, the possibility of non-compliance rises, which can lead to fines, and additional, more frequent audits in the future.
- **Inability to Progress to Modern Organizational Models:** SRE is a modern organizational model that leverages the ability to do "Dynamic Governance" to adapt to different levels of risk that a company can take during periods when they have high or low error budgets. By working around the Normal change process, you remove the ability to perform dynamic governance in the future.

**When it comes to ITIL, workarounds are not the answer.**

**Automated governance built into every step of the development process**

> ***"The ultimate goal is to make it easy for teams and developers to do the right thing – every time."***
> ~ Mike Wolf - KPMG

To prevent employees from circumventing company policies, some organizations implement new, stricter forms of governance. But making new rules about old rules is also not the answer. The better option is to automate the ITIL process in a way that's invisible to the developer.

That means embedding and automating all governance controls into all the necessary stages of development, testing and production. Doing so removes the need for gatekeepers at the end, where they're positioned to ensure all controls have been met. Without a gate, the potential for a bottleneck is eliminated.

**Invisible ITIL via an automated DevOps Platform**
The automation of ITIL controls can be achieved. In fact, through a dedicated DevOps platform, a variety of ITSM processes can be automated and governance can be achieved behind the scenes—without any effort by developers.

Such a platform would have several requirements, beginning with an extensible API structure that allows for communication and interaction with *any* DevOps tool in use throughout the organization. These APIs allow developers to continue using their preferred tools without any need for manual integration nor the costs associated with it.

The automated collection of data directly from the tools means all necessary information is captured without the interruptions developers currently experience when they stop to input information. Relevant data, once captured and stored in a centralized location, provides a strong analytics platform that enables traceability and visibility into every stage of the software development lifecycle.

**To remove roadblocks organizations need automated:**

- **Change Management**
- **Push-Button Auditing**
- **DevOps Insights**

**Speed DevOps delivery by automating away three common roadblocks**
On average, developers only spend an hour a day writing high-value code. The rest of their time is spent in status meetings, manually updating data and writing code that doesn't deliver value to the company. But as markets change, this is quickly becoming unsustainable. Businesses must begin leveraging developers for the expertise they were hired for—writing innovate code that impacts the organization. There are three areas ripe for automation:

**1. Change management:**
To automate change management, the DevOps platform communicates with and captures data from all development tools in use. Using that data, change requests for commits are then generated and sent through a change approval engine that leverages input triggers, decision trees, and predefined answers to determine whether or not each change can be approved. The entire process is automated, though additional manual safeguards may be implemented as needed to ensure change policies are adhered to and improper changes don't enter into production.

This automation allows the change management team to maintain control and governance without slowing down the process—even as the number of change requests increases. It minimizes unplanned outages due to poor code quality and allows developers to remain compliant with no action required and without ever leaving their development tools.

The platform enables data collection, standardization, and the ability to manage change at the speed of DevOps. Organizations that have already automated change

**Manual processes are the reason the vast majority of initiatives to scale DevOps fail.**

management have seen the time it requires reduced from days to a matter of minutes—*in a large majority of all instances.* Anecdotal evidence suggests a dramatic increase in release frequency and, as a result, a significant operational impact by removing the roadblocks associated with change management.

**2. Push-button audit**

Audits are another common practice where automation would have a strong impact on release frequency and significantly reduce the time and effort required of developers. Push-Button Audits can be accomplished by the same automated gathering of data from development tools, including the chain of custody throughout the lifecycle of a release. The data collected should be comprehensive and include:

- **Ideation**: Where the idea originated, the value that was being provided, the epics and stories that made up the release and post-production, and continuous feedback loops?
- **Development:** What commits were made and by whom and which were changed?
- **Release**: What jobs were run, what was in the build, what tests were run and what were the results, what automated change policies were applied?
- **Production**: When it was released to production, IT Operations Management (ITOM) Metrics, Dependency Mapping, Service 360, Performance Analytics.
- **Operations**: What change that caused an incident and how was it rolled back?

By capturing the data above from tools across the development pipeline, auditing procedures that currently take weeks to complete can be done in minutes. It's as easy as running a report. Even the audit process itself runs more smoothly because the automated population of near real-time data reduces the possibility of error.

**3. Pipeline Visualization**

Visibility across the pipeline is essential. But today, no single system has the ability to aggregate all the data across the disparate DevOps toolchain, much less provide a basis for analytics. This means that without significant effort by DevOps teams, leaders have no insight into status, can't easily identify past and current progress, and have limited visibility into approaching roadblocks.

Here, the same data being gathered by a DevOps platform can be used to provide visibility and traceability into every stage of the software development lifecycle. Real-time access to analytics helps to ensure data integrity, and gives leaders deep insight into projects, including status, roadblocks, and other detailed information, all of which acts as a basis for effective decision making.

This visibility also provides internal auditors with a comprehensive picture of everything that occurred and what errors were made, allowing them to take actions that will prevent similar missteps in the future. And it does this while also freeing developers from continuously tracking, collecting and presenting data. By making the information easily accessible for all stakeholders, developers can remain focused on their projects.

**Organizations that have automated change management have seen the time it requires reduced from days to a matter of minutes in a large majority of all instances.**

The traceability provided allows individuals and teams to see projects from inception to current status, with visibility into every action along the way. Moreover, it helps them see how the work they're doing fits—*or does not fit*—into key corporate initiatives that are actually impacting the business. This helps teams to remain focused on the right projects and helps to boost higher-value productivity.

**ServiceNow DevOps: The Power of the ServiceNow platform atop a DevOps pipeline**

The ServiceNow vision for the future of DevOps can be expressed as "fast, not furious." Our goal is to enable companies to achieve their Agile goals while maintaining quality code, remaining in compliance with regulations and without experiencing production outages. With a correctly architected environment, this can be achieved.

***"ServiceNow gives us the insights we need to drive continuous improvements across our production operations stack. The results speak for themselves–quicker delivery, better code quality, and far less downtime. We can now accurately profile the performance of our toolchain and processes–and we can drill into the details to understand the reasons for that performance."***

~Tameem Hourani – Director of Production Operations, Wayfair

ServiceNow DevOps is the first DevOps platform designed to automatically combine the intelligence scattered across a disjoined chain of planning, coding, pipeline and execution tools. This single enterprise cloud platform then acts as a sole source of truth for IT, enabling organizations to streamline DevOps so that innovation is maximized, productivity is improved, business priorities are aligned and speed to market is increased.

The actionable insights provided by ServiceNow DevOps allow organizations to:

- Maximize collaboration and operational productivity
- Make smarter decisions with real time analytics across the entire IT value chain

- Focus on innovating rather than spending time working with legacy and point tools
- Optimize IT investments with a single view of project and service performance data
- Resolve critical issues faster by prioritizing and assigning teams based on business impact
- Harness the velocity of DevOps while maintaining control with intelligent change management

Organizations are quickly learning that ITSM and ITIL are an integral part of a comprehensive DevOps strategy, and ServiceNow DevOps is the first solution to define and deliver on that strategy. Early results are impressive: One large European reinsurer that's automated change management across a limited number of teams has estimated the organization will save an estimated $7 million USD a year in time recovered by development teams alone.

Beyond the cost savings, the teams are pleased with the solution's ability to simplify their jobs and allow them to place focus where it's most meaningful. And happy Dev teams translate into improved loyalty, minimized attrition, increased employee referrals and a much easier ability to attract top-line talent. For more information, please visit ServiceNow DevOps (https://www.servicenow.com/products/devops.html).

**ServiceNow DevOps drives release velocity at DNB**
Norway's largest financial services group, DNB was having trouble increasing the velocity of DevOps delivery. Traditional change management activities were slowing the process. Approvals were taking too long, and too much time was spent on manual activities, especially in the areas of governance.

Developers cut and pasted the changes they'd made in the code. Change requests often resulted in multiple interactions between the change manager and developer. The overhead for one team was estimated at over 790 hours per year.

Recently, the company has acted as an early tester of ServiceNow DevOps to determine the impact of replacing the manual process of creating change requests with an automatic system that creates them based on data collected from the DevOps toolchain. The anticipated result will be automated change requests that can be filled almost instantaneously. Governance processes will become largely invisible.

As a result, the number of Change Advisory Board meetings will decrease, productivity will improve, more insights will allow managers to find the root causes for problems more easily, and new capabilities will reach the market faster, helping to increase competitiveness.