Accelerate speed of delivery through digital workflows

Technology teams are adopting cloud-native architectures and embracing DevOps to accelerate software innovation. However, there's a problem. While DevOps is intended to break down barriers between development and operations, the reality is that complexity is increasing, and organizations struggle with lack of visibility and siloed data across development and production environments. This puts the brakes on innovation and impacts software quality and reliability.

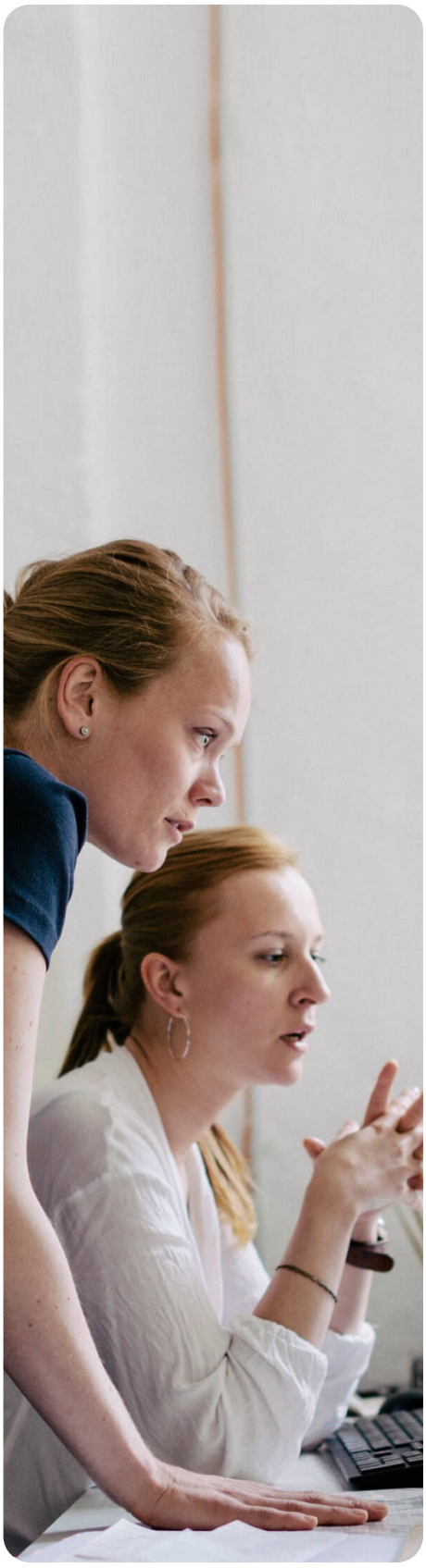
Lack of observability is a major challenge. To pinpoint service issues, teams need a fine-grained view of how transactions perform as they flow across microservices. Traditional static monitoring approaches don't deliver this transactional view, nor can they keep pace as microservices spin up and down in response to rapidly shifting workloads.

The frequency of software changes magnifies the observability challenge. Multiple distributed development teams make minute-by-minute changes, making it very hard to ensure appropriate governance and then identify which changes are responsible for service issues if they do occur.

Shared cloud infrastructure is often managed by separate technology operations teams. This makes it difficult to know if an infrastructure issue is affecting a cloud-native application, particularly since SRE and technology operations teams typically use different monitoring systems. Even mapping microservices to underlying cloud infrastructure can be a major challenge.

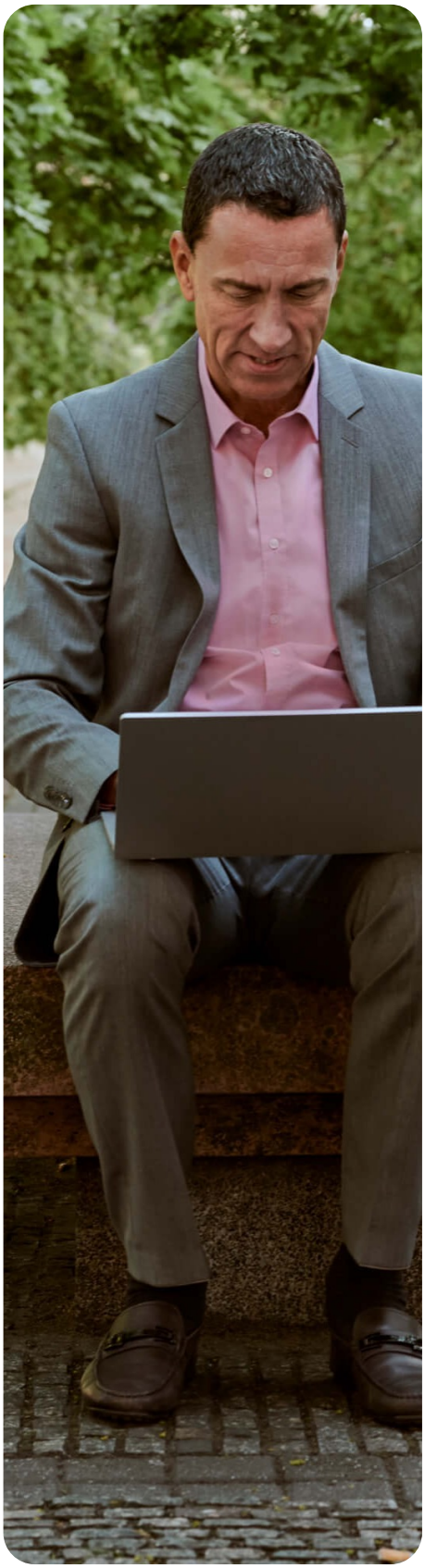
Fragmented CI/CD pipeline tools make it hard to analyze the root cause of service issues. To restore service quickly, SRE teams often roll back software to a previous known state. However, to actually fix the issue, development needs to identify the configuration update or code change that caused the problem. Fragmented use of pipeline tools across different teams makes this difficult because there is no end-to-end view of changes as they flow. This lack of end-to-end visibility also makes it hard to identify and fix bottlenecks, creating a drag on pipeline velocity that impacts the overall value stream.

There is no unified visibility across production and development pipelines. But this unified visibility is critical. For example, dev teams need to know about production issues so they can diagnose and remediate the underlying cause, manage error budgets, and prevent similar issues from recurring. SRE and dev teams are left knitting data together manually, slowing down both service restoration and pipeline velocity.



ServiceNow delivers end-to-end visibility across your value stream

Radically improve your software quality and reliability while accelerating pipeline velocity, delivering major value for IT, development, and SRE teams.



Restore service faster and improve customer experiences

Equip your SRE teams with fine-grained, real-time visibility of microservice performance issues. ServiceNow Cloud Observability automatically tracks and analyzes transactions as they flow across your microservices, even if transaction paths change or pass through ephemeral microservices. Cloud Observability automatically baselines normal transaction behavior and identifies anomalies. You can instantly pinpoint transaction delays before they become failures, and rapidly identify how to resolve failures if they still occur.

The result? You spend less time investigating, restore service faster, consume less of your error budgets, and free up resources to accelerate innovation.

Quickly diagnose and fix underlying cloud infrastructure issues with integrated, full-stack visibility

Whether your SRE team manages your cloud resources or you have a dedicated shared infrastructure team such as IT Operations, full-stack visibility is critical to understand interactions between cloud-native apps and cloud infrastructure—for example, to see whether an application issue is actually due to an underlying cloud problem.

With ServiceNow, you create this visibility. ServiceNow Predictive AIOps automatically discovers your production microservices as well as your entire cloud infrastructure, building full-stack, real-time service maps in ServiceNow CMDB. These show how your microservices and cloud infrastructure are related.

Predictive AIOps ingests aggregated microservice alerts from Cloud Observability and correlates these with cloud infrastructure alerts, revealing which cloud issues are responsible for specific cloud-native service impairments. And Predictive AIOps is also widely adopted by IT Operations teams to support non-cloud-native services, providing a single platform to manage hybrid services and resolve issues that occur at the cloud-native/non-native boundary.

Easily diagnose and remediate failed changes, optimize pipeline performance, and reduce risk

ServiceNow IT Service Management Professional provides connectivity to your DevOps platforms through two applications- DevOps Change Velocity and DevOps Config. These provide unified visibility across your DevOps toolchains by integrating with your existing CI/CD tools and other tools in the pipeline. This includes tracking application and configuration changes as they flow across your pipelines, adding key organizational context such as the associated user story and developer, and providing critical technical details (for example, lines of code or configuration pairs touched and any tests and security scans that were run). It also monitors flow metrics—for instance, how long stories take to make it into production—as well as other technology, performance, and culture KPIs.

These integrated insights let you diagnose and remediate service issues faster, as well as identify and address gaps in your testing strategy. They also help you increase pipeline velocity by pinpointing the root causes of pipeline performance issues and highlighting skills gaps. You can also reduce risk by implementing non-intrusive guardrails using built-in policy-based change management—for example, by requiring change approvals when there is a policy exception while instantly auto-approving in-policy changes based on information gathered from pipeline tools and operational data like currently open incidents.

Effectively manage your entire application lifecycle across development and production

Because they run on the NOW Platform®, DevOps Change Velocity and DevOps Config have full access to information from other ServiceNow apps such as Predictive AIOps and IT Service Management— including discovered microservices and cloud infrastructure, associated service maps, alerts ingested from Cloud Observability and other sources, and operational data such as incidents.

This end-to-end visibility provides a form of value stream management that breaks down remaining barriers between development and production:

- Developers can now quickly get to the bottom of issues by drilling into a failed production microservice. They instantly see what code or configuration changes were made, test and security scan results, corresponding user story, related microservices, and whether rolling back the change fixed the issue.
- Automatically track SLOs and error budgets and tie automated change approval policies to operational data, such as whether an app has open incidents or a development team has a high change failure rate.
- Drive continuous pipeline improvement by analyzing operational history. For example, identify systemic testing issues—not just individual testing gaps—by analyzing recent outages.
- Understand total cost of ownership for services by tracking development activities and cloud resource costs.

The bottom line

By harnessing the power of ServiceNow, you break down DevOps barriers and sweep aside cloud-native visibility challenges:

- **Restore service faster and improve customer experiences** by equipping SRE teams with fine-grained, real-time visibility of microservice performance issues.
- **Quickly diagnose and fix underlying cloud infrastructure issues** with integrated, full-stack visibility across cloud-native apps and underlying cloud resources.
- **Easily diagnose and remediate failed changes, optimize pipeline performance, reduce risk, and lower costs** by breaking down data and process silos in your CI/CD pipeline.
- **Effectively manage your entire application lifecycle value stream** with a unified view of your development and production environments.

servicenow.