

IT leaders using a single modern monitoring platform to deliver IT services are reducing business risks and enabling improved efficiencies of their chosen organizational strategy.

# *A Blueprint for Modern Monitoring*

November 2020

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## *Increasing Technology and Organizational Complexity Is Driving the Need for Modern Monitoring*

IDC's research shows that 97% of enterprises currently rely on hybrid and/or multicloud strategies to run their business. Infrastructure and operations (I&O), site reliability engineers (SREs), DevOps, and cloud centers of excellence are also managing the complexity of classic and modern application (containers, microservices, serverless, etc.) and infrastructure architectures by using Agile and DevOps operating principles to organize around products and business outcomes. Modern software-defined infrastructure and applications consist of a labyrinth of dynamic (and often temporary) virtual machines (VMs) and containers that move invisibly across private and hybrid environments. The rate and volume of changes, along with the vast number of tools, teams, processes, and clouds, are causing massive complexity — and too often, there is a lack of visibility for successfully managing service reliability and performance.

For example, developers and infrastructure platform teams can provision cloud resources and containers on demand, often with little to no manual intervention. The individual components of modern applications are often ephemeral. Cloud services such as autoscaling allow infrastructure to scale up or down, matching business demands. Over the past several years, the organizational constructs, technologies, and operating model of IT have changed dramatically to take advantage of the flexibility and scale from public and private cloud environments. For many new applications, teams have decided to architect them for the cloud, building microservices-based architectures while considering application modernization strategies for traditional, classic application environments. The massive scalability and on-demand, self-service production capabilities of cloud services are transforming IT's ability to innovate with new customer engagement models that deliver a more trusted and dynamic customer experience. Additionally, the use of multicloud has driven a dramatic change across development and I&O teams.

These trends and capabilities are still maturing across most IT organizations; they are both opportunities and challenges for IT teams and executives in the future. To harness the value of these trends and capabilities and drive business outcomes that reduce business risks, contain and reduce costs, and improve service reliability, IT organizations need new methods and modern monitoring tools.

We have entered an era of dynamic, constantly changing infrastructure and modern organizational constructs (i.e., Agile, DevOps, cloud, site reliability engineering) and processes that require new monitoring tools and new operating methods. Collaboration across teams is no longer optional. Collecting data is relatively cheap, but not having the right data or analytics when there is a problem results in operational risk and can become quite expensive. Companies that embrace the challenge stand to create sustainable competitive advantages brought forth from the ability to move faster, drive intelligence across business and IT teams, and deliver more reliable services that increase revenue and improve customer relationships.

## Achieving a Modern Monitoring Approach: What's Required?

Monitoring is part of any successful business operations to identify and resolve service performance issues before they impact the customer experience. It enables developer, site reliability engineering, and I&O teams to build observability and visibility into their systems and application services. Now more than ever, with the adoption of complex cloud-native solutions, monitoring is a must-have, not a nice-to-have investment. Business executives want to ensure performance and availability at scale to deliver world-class customer experiences, reduce costs and consolidate tools for efficient operations, and drive successful digital transformation strategies and initiatives to edge out the competition. To meet these initiatives, organizations need a modern monitoring strategy, but what is required to achieve modern monitoring? The core elements of speed, scale, and analytics will drive a successful monitoring strategy in today's modern environments:

- » **Speed.** Organizations need the ability to deliver fast time to value, agility, and visibility in a single platform. The use of cloud-native technologies such as containers and serverless functions is instantiated in seconds; teams must use solutions with out-of-the-box support and real-time analytic capabilities to support the explosion of data before performance issues arise. IT requires real-time visibility across the entire IT stack coupled with the agility to quickly analyze high volumes and any variety of data, allowing teams to find and fix problems in seconds with the following capabilities, freeing up time to focus on infrastructure modernization and service innovation:
  - Monitor and manage hybrid and multcloud environments as well as existing datacenter infrastructure with one enterprisewide solution
  - Realize fast time to value with out-of-the-box best practices, visualizations and workflows, prebuilt integrations, and automatic service discovery to manage the entire IT environment
  - Identify and act on issues in seconds, especially when infrastructure lives only for minutes, to avoid service performance degradations and deliver on increasingly high customer expectations
- » **Scale.** Organizations need a comprehensive solution to monitor and troubleshoot performance issues across every stage of cloud adoption and across any environment with confidence. As organizations scale to adopt new technologies and initiatives, their monitoring solution should not only provide critical insights to enable cloud adoption but also scale to support even the most complex and dynamic cloud-native environments. For a future-proof investment, modern monitoring should include:
  - Visibility and control across the entire IT landscape with a single solution — holistic monitoring for on-premises, hybrid, and multcloud, leveraging all log, metric, and trace data from any source, at any scale
  - Improved operational effectiveness, efficiency, and scale across the organization with integrated workflows, centralized management, templated best practices, and usage controls
  - The ability to reduce cost and complexity by consolidating tooling and standardizing on a single data platform
  - A future-proof investment with a comprehensive, scalable, and flexible data-driven solution that grows with the organization and enables seamless growth into additional ITOps, AIOps, DevOps, and security use cases
  - Speedy innovation through the adoption of cloud-native technologies such as containers, Kubernetes, and serverless at scale and with confidence

- » **Analytics.** Organizations need to proactively detect, alert about, and resolve problems in seconds, but the high volumes of data generated from systems make it impossible to find "needle in the haystack" or unknown failure issues and correlate between infrastructure and service layers. Site reliability engineering and I&O teams need to leverage artificial intelligence/machine learning (AI/ML)–driven analytics to catch every problem, enable accurate alerts, and automate remediation for the shortest mean time to clue (MTTC).

Benefits of analytics include the following:

- Proactively detect problems and issue alerts as well as directly investigate problems by analyzing all the data — logs, metrics, and traces
- Streamline workflows and provide context-rich investigation and monitoring by seamlessly analyzing and correlating all types of data
- Achieve faster mean time to detect (MTTD) and mean time to repair (MTTR) with AI-driven, actionable insights and alerts that reduce event noise and predict future degradation
- Keep up with and react instantly to dynamic, ephemeral, and cloud-scale problems using programmable analytics and automated remediation for Agile, DevOps, site reliability engineering, and observability practices

## *Drivers for Modern Monitoring*

In addition to the previously mentioned technology requirements, achieving a modern monitoring approach involves certain aspects of cultural change. From a cultural perspective, IT executives have made important strides across their organizations and culture over the past 10 years. IDC research indicates that most enterprise IT organizations typically use Agile development practices to increase code quality and developer productivity while extending those practices using DevOps cultural principles that transcend development and I&O teams. DevOps provides executives with a strong layer of business focus on outcomes using metrics, communication, repeatability, automation, continuous improvement, and alignment with product owners to ensure that software is tested, deployed, and managed efficiently and reliably.

Continuous delivery is another important aspect of DevOps. DevOps teams that use continuous delivery push small, incremental code changes quickly and often. This simplifies the automated testing of code and enables development teams to release bug fixes and new features much faster while enabling the easy rollback of changes that cause production problems.

A more recent trend includes site reliability engineers, who are playing an increasingly important role in modern IT operations and redefining the role of operations in IT organizations by using aspects of software development and applying them to infrastructure and operations tasks. SREs are an implementation of the DevOps paradigm and its related principles; they implement practices with a focus on service reliability using automation and modern monitoring, detailing a user's journey, and taking a pragmatic approach to outcomes focused on the customer experience.

Site reliability engineering practices extend DevOps practices and provide a direct path toward improving service reliability, staff productivity, and cost optimization. In addition, there is a direct focus on users who use the service to drive revenue for the business. From a cultural perspective, SREs have also helped CIOs migrate their culture toward a more data-driven, fact-based decision-making environment with metrics serving as the foundation for creating service-level indicators (SLIs) and service-level objectives (SLOs). Without the proper metrics, applied analytics, and collaboration, an SRE's job becomes almost impossible.

For all three models (Agile, DevOps, and site reliability engineering), a modern monitoring solution is critical for delivering and improving service reliability while containing and reducing costs and improving the customer experience. Metrics and advanced analytics have become foundational requirements for effective and modern operations as well as on-ramps to driving organizational and cultural change across all tiers of staff and management.

In addition, the practice of observability, which stems from control theory, is another extension to monitoring and DevOps. It allows organizations to provide end-to-end visibility across every single layer of their stack using analytics and automation, collecting all data, and reporting on metrics and availability across the entire service. The data can be shared, accessed, and reported on from a single platform, where typically cross-silo staff from site reliability engineering, DevOps, development, and I&O can reconstruct the system's performance. It is a data-driven cultural shift that focuses on driving teamwork, a blameless culture, and the use of a high-performing, highly scalable, analytics-enabled, and data-driven platform.

## Conclusion

IT executives who use a modern monitoring platform are reducing business risks and future proofing their investment. As the foundation for modern IT operations, modern monitoring takes advantage of analytics and automation, enabling multiple teams to access critical performance data in real time and insulating customers from poorly performing services.

Most customers now use (and often depend on) digital services that are highly complex and that utilize multiple infrastructure types to deliver a positive experience. Service reliability and deep customer relationships are fast becoming indicators of revenue growth, customer renewal rates, and business reputation. Modern monitoring has become a critical, foundational ingredient in today's IT organization.

## About the Analyst



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Stephen Elliot manages multiple programs spanning IT Operations, Enterprise Management, ITSM, Agile and DevOps, Application Performance, Virtualization, Multicloud Management and Automation, Log Analytics, Container Management, DaaS, and Software-Defined Compute. Mr. Elliot advises senior IT, business, and investment executives globally in the creation of strategy and operational tactics that drive the execution of digital transformation and business growth.

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Splunk's infrastructure monitoring and troubleshooting solution eliminates fragmented operational data trapped in siloed tools and enables IT teams to deliver on ever-increasing customer expectations by avoiding even seconds of downtime. To learn more about how Splunk can accelerate your hybrid and multicloud journey, please visit <https://www.splunk.com/>.



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