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Full-stack observability: Leveraging 360-degree visibility as a competitive advantage

Four use cases offering new perspectives on hybrid IT environment monitoring

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For many businesses, it's hard to remember how we operated before cloud technologies. And the power of the cloud expands far beyond IT teams. Modern consumers—even those unaware of the cloud's significance—have become accustomed to rapid application and service delivery speeds, leaving many companies competing on application performance and customer experience alone.

However, despite the cloud's ever-expanding adoption in IT environments, few corporations have transitioned entirely to the cloud. As of 2021, 80% of corporations have combined cloud solutions with on-prem infrastructure, making IT teams responsible for monitoring and maintaining sprawling hybrid IT environments. A lack of visibility into this hybrid environment contributes to unnecessary downtime and performance issues, causing customer experience issues and revenue dips.

Businesses build robust tech stacks to provide exceptional digital experiences and maximize uptime. But with so many endpoints, systems, platforms and databases to oversee, IT and business leaders are confronted with a host of new challenges. While many tools come with built-in monitoring capabilities, these tools don't show the total impact an issue has throughout the entire IT environment. Limited visibility across siloed tools can make finding the root cause of an issue feel like searching for a needle in a haystack.

Innovative technology offers an opportunity to deliver truly exceptional application experiences and gain a significant competitive edge — but only if your IT environment is set up to enable its full potential. End-to-end visibility empowers your teams to collaborate effectively and leverage all the features within your tech stack, without spending extra time and resources on mitigating risk. AppDynamics has developed a unique approach to full-stack observability that empowers enterprises to support their growing IT operations. IT and business leaders can gain the leg up they need to quickly solve performance issues and provide the exceptional experience customers have come to expect.

The truth about full-stack observability

As hybrid IT environments grow and become increasingly unwieldy, the promise of full-stack observability seems like a godsend for overworked IT professionals. Yet, while full-stack observability has quickly become an industry buzzword, many solutions fall short of providing the end-to-end visibility teams hoped for.

Fostering collaboration across the enterprise offers a substantial edge over the competition. True full-stack observability enables various IT and business functions, including Cloud Operations, Application Operations, IT Operations, Security Operations and Infrastructure and Network Operations teams, to gain a clear picture into what happens across the entire tech stack. With the help of performance metrics, or business telemetry, businesses gain the context they need to prioritize work and recognize opportunities for innovation or improvement.

Without that visibility and collaboration across functional areas, teams independently monitoring their tools may solve symptoms of an issue, but fail to identify the root cause. What may look like a small technical glitch for one team can cause major customer experience or business performance impacts. These blind spots across teams often prolong mean time to resolution (MTTR) while perpetuating the blame game.

As more customers expect flawless digital experiences, enterprise teams can't afford to waste time pointing fingers. Today, 49% of customers will switch to a different application at the first sign of an issue and 63% expect reliable and consistent performance for every application they use. Application downtime and a longer MTTR are causing customers to abandon brands they once loved — and search for better service elsewhere.[1]

1 in 3

customers will abandon a brand after one bad experience.[1]

92%

of customers abandon a brand after two to three bad encounters.[1]

For modern customers, a poor digital experience is unforgivable. And IT teams are responsible for delivering on the digital experience customers demand. But to do this IT teams need full transparency across applications, legacy software and everything in between. With a full-stack observability platform, teams can quickly identify and rectify the root cause of an issue long before it reaches the end user.

Full-stack observability empowered AutoNation to transform the car buying experience into a digital-first journey for modern customers. AutoNation reduced severity 1 incidents by up to 90% with AppDynamics full-stack observability. 360-degree visibility across the application delivery chain helped the company address issues long before they reached customers.

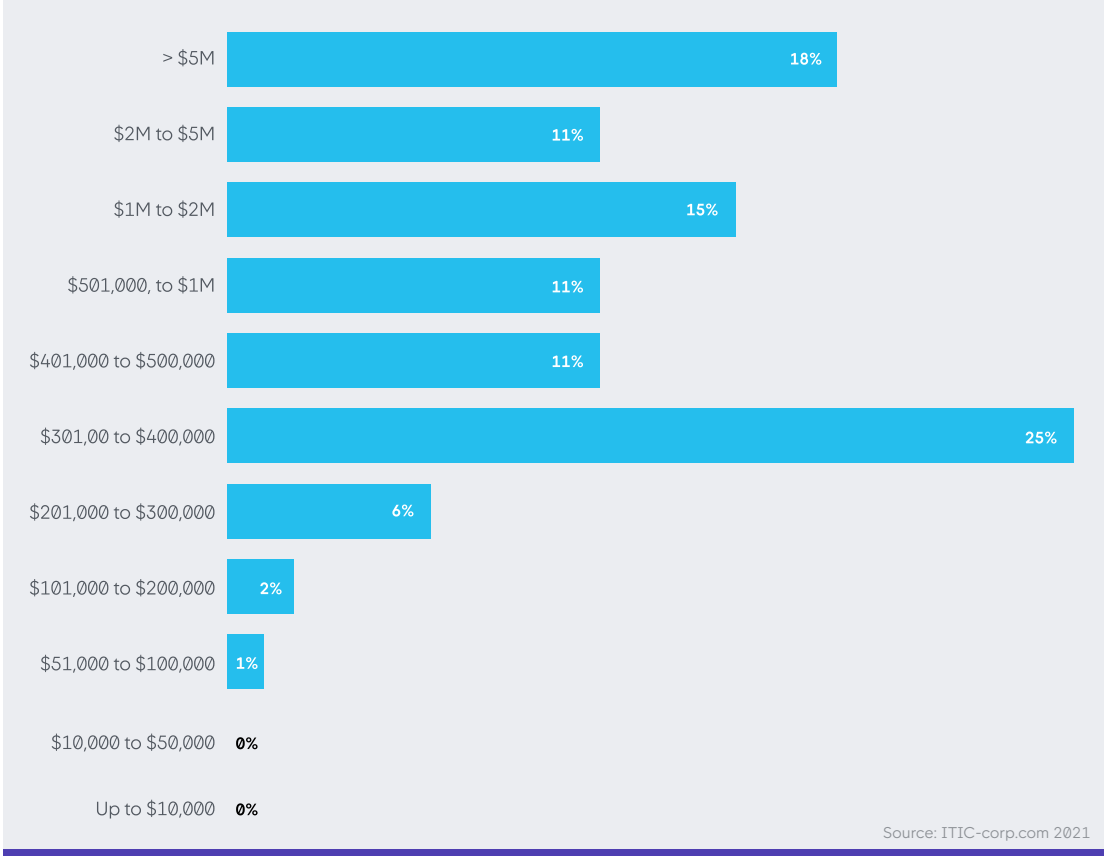
The growing complexity of modern applications

App modernization has allowed enterprises to innovate at an incredibly fast pace. However, modernization also presents new challenges. As applications become more complex, monitoring the performance of every element in the IT stack becomes more difficult.

Applications with independently deployable elements like microservices and containers have more components that can break and trigger a ripple effect, adding substantial complexity to maintaining application performance. While many application elements produce valuable data that could help troubleshoot performance issues, most teams only have access to bits and pieces of the application's relevant data. Since more teams and technologies are involved in each application, leveraging business telemetry and maintaining an open line of communication across teams is critical to solve issues quickly.

[1] Source: PWC.com 2018

Modern teams need rapid insight into how each element of an application is performing at all times, both on the back-end and the customer-facing front-end. Yet, many monitoring solutions only focus on troubleshooting problems from a back-end perspective. Without insight into what the customer is experiencing alongside how application performance is affecting business performance, teams may not prioritize the most pressing problems. This can lead to more downtime and customer retention issues, dramatically impacting the company's bottom line.



Source: ITIC-corp.com 2021

End-to-end visibility provides clarity on which issues directly impact the customer experience so that you can retain more happy customers. By combining visibility with business telemetry, operations teams can efficiently prioritize and resolve the right problems, reducing downtime and enhancing the customer experience.

$300k

the average cost for a single hour of downtime for 91% of companies[2]

44%

the percentage of companies that average $1M to $5M losses for each hour of downtime[2]

With AppDynamics full-stack observability, clothing retailer Carhartt did just that. Full-stack observability saved the retailer millions of dollars on service outages, while also reducing overhead and operating expenses by over $500,000. With real-time insights and seamless application performance, Carhartt has grown its customer base by providing an exceptional customer experience time after time.

[2] Source: ITIC-corp.com 2021

Bridging the gap between legacy software and modern applications

Despite the rapid adoption of cloud-based infrastructure, most businesses still operate some legacy technology. In a hybrid IT environment, gaining visibility across cloud and on-prem legacy systems presents a unique challenge. Whether due to security, cost or convenience, shifting to an all-cloud infrastructure isn't always possible or practical for enterprise teams.

Many enterprises maintain legacy systems to protect their data. But since these systems aren't designed to combat the latest cybersecurity threats, they often present ongoing security risks that can't always be directly addressed with modern security solutions. Since many operations and applications depend on legacy system performance, companies need the same level of insight into what's happening with legacy software as they do with cloud-based applications.

To achieve true full-stack observability, legacy systems need robust monitoring and significantly better visibility so teams can prevent downtime, reduce security vulnerabilities and maintain continuous performance.

Monitoring vs. Visibility vs. Full-stack Observability: What's the difference?

- Monitoring is the process of using tools to track the ongoing performance and health of elements within your IT environment. Monitoring helps alert teams to performance problems as they occur.
- Visibility gives teams further insight into an IT environment to recognize dependencies and find potential performance concerns before they become a problem. End-to-end visibility offers insight into how every element of an application operates to deliver an end user the intended experience.
- Full-stack observability gives teams a holistic view across all of an application's components, dependencies and performance metrics.

While some legacy technologies contain built-in monitoring tools, others need a third-party monitoring solution. Both scenarios create data silos with limited transparency and visibility. Unless legacy tools are equally prioritized in a full-stack observability platform, identifying the root cause of an issue or mapping a system-wide impact are still challenging for enterprises.

Four use cases to apply AppDynamics full-stack observability to your enterprise

Application modernization

Support evolving applications with monitoring and visibility for every component.

How it works

As the expectations for modern applications grow, companies need end-to-end visibility into the performance of every component within an app. Teams need equal visibility into every part of their infrastructure, including microservices and containers that are spun up for various applications. AppDynamics monitors a team's full range of applications on both the back end and front end to detect, isolate and diagnose the root cause of any issue.

How to apply it

When you're looking at the entire tech stack, cutting through the noise is essential to isolate the most pressing issues. A single application can contain hundreds of microservices, and they all need to operate flawlessly to deliver a stellar digital experience. However, that also means that one microservice's performance issue can impact key elements of the customer experience. AppDynamics's full-stack observability solution helps your team pinpoint the root cause of the issue quickly, decreasing MTTR and reducing customer-facing problems.

AppDynamics Cognition Engine leverages artificial intelligence (AI) and machine learning (ML) to help you isolate and identify which elements of a particular application need attention to work effectively. Fault domain isolation (FDI) and root cause analysis take monitoring capabilities to the next level and make diagnosing the root cause easier than ever. With a comprehensive view of dependencies across operations teams, teams can collaborate to address issues without playing the blame game.

Cloud and hybrid monitoring

Gain full visibility into multiple cloud and on-prem technologies.

How it works

With a hybrid IT environment, monitoring end-to-end performance comes with new challenges. Even once you've isolated an issue, identifying where the issue is happening across distributed infrastructure and determining the business impact of the issue demands additional context. The AppDynamics full-stack observability solution makes it easier to gain deep insights across the entire IT landscape to diagnose the root cause of an issue and identify dependencies.

How to apply it

With full-stack observability from end user to application, teams can clearly see how legacy and cloud technologies work together to deliver an exceptional application experience. For example, a cloud-based application is integrated with SAP on-prem, but the application starts experiencing performance issues. With hybrid monitoring, your teams have full visibility across on-prem technology and cloud technology, so it's as easy to pinpoint the root cause of the application issue in legacy software as it is in modern applications.

Performance and cost optimization

Provide flawless application experience regardless of demand with efficient resource management.

How it works

As customers rely more and more on applications in their daily lives, delivering a flawless application experience is essential. Even though 83% of people have encountered problems with applications and digital services in the last year, 72% believe it is a brand's responsibility to always ensure that a digital service or application works perfectly. End-to-end visibility and business telemetry across the tech stack are essential to maintain peak performance and meet customer expectations, regardless of demand.

Capacity planning is challenging without meaningful insight into application demand. Not allocating enough resources can be disastrous, causing incidents that damage customer relationships and put revenue at risk. But allocating too many resources is a huge financial drain. Managing costs and optimizing performance is essential to know how applications are being used — and to effectively allocate resources and workloads.

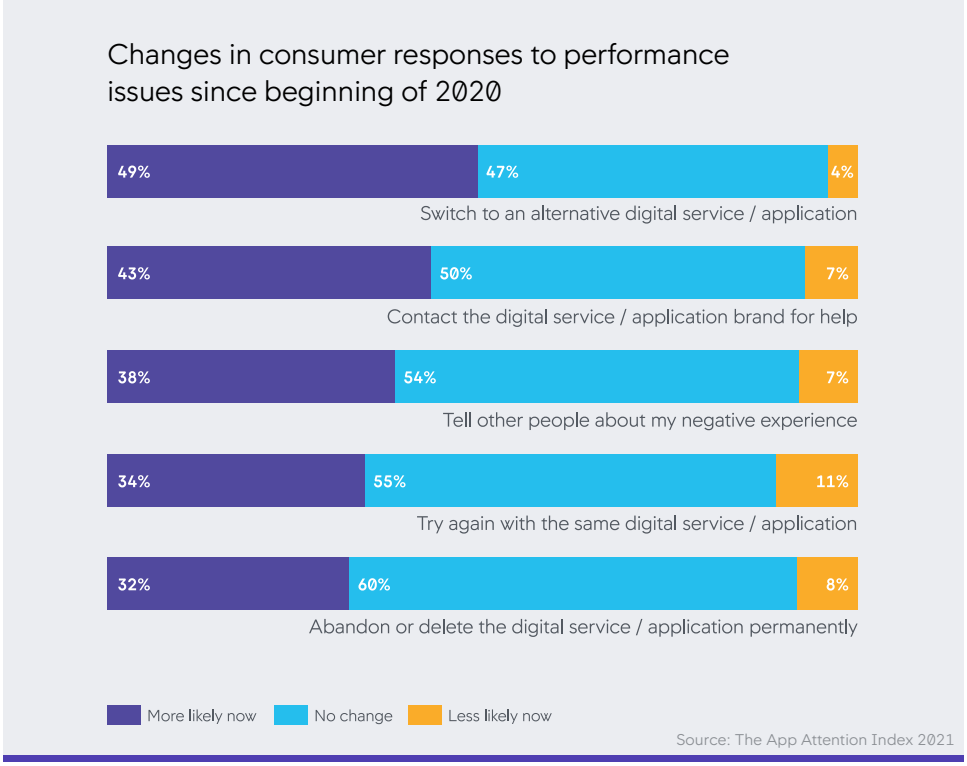
How to apply it

Even the slightest dip in performance can lead to disappointed users abandoning your brand. Full visibility is essential to recognize the root cause of performance issues, which can originate from a variety of sources.

If the end user is experiencing performance issues, AppDynamics Business iQ can identify if they are impacting business KPIs. Business iQ uses business funnels to break down customer actions into business operations. This allows you to gain a new perspective on your business activities and quickly identify any issues impacting the user experience. By using experience journey mapping with real-time end user monitoring, you can identify when and where customers are experiencing issues that are preventing them from completing their intended tasks.

Sometimes, unexpected demand can create performance issues for end users. Tools like Cisco Intersight Workload Optimizer automatically recognize workload performance issues across your tech stack, shifting resources and workloads as applications experience higher demand. This enables flawless runtime — without the bloated costs.

Other times, third-party or external factors can impact performance, like network bottlenecks. ThousandEyes Intelligence offers unlimited vantage points for monitoring third-party and external factors that impact your application performance. By monitoring real-time internet and data center performance alongside your infrastructure, you can continuously deliver exceptional digital experiences for your customers.



Application security

Protect your full tech stack from bad agents and costly vulnerabilities.

How it works

Without end-to-end visibility, identifying increasingly prevalent attacks and security risks can be impossible. By the time your team detects a vulnerability, containing a breach requires the team's full attention, allowing other important work to slide. AppDynamics with Cisco Secure Application fully protects applications at runtime and blocks attacks in real-time.

How to apply it

Security breaches used to demand hours for prevention and detection. Now, detecting and blocking attacks takes minutes and works automatically in the background, allowing your team to spend more time on revenue-generating projects.

The exceptional visibility of AppDynamics with Cisco Secure Application can identify vulnerabilities quickly by detecting and blocking real-time attacks, automatically protecting your full IT environment. By leveraging AI to identify abnormalities quickly and recognize the first sign of vulnerabilities, your team can prioritize the most pressing security threats — and let the platform handle the rest.

How AppDynamics full-stack observability delivers unmatched application experiences

Companies need maximum transparency and visibility across the full stack to achieve peak performance and uptime. And only AppDynamics full-stack observability provides the observability businesses need to deliver exceptional customer experiences.

A cross-architecture solution featuring AppDynamics, Cisco Secure App, Cisco Intersight Workload Optimizer and ThousandEyes allows enterprises to centralize and correlate application performance analytics across their IT architecture. With this innovative solution, operations teams can collaborate more efficiently to isolate and identify issues and impacted dependencies, prioritize the most pressing issues based on business needs and optimize application experience.

Seamless performance across platforms, apps and architecture allow industry leaders to accomplish their objectives. Yet, today's IT teams have an evolving list of things to monitor, leaving little room for innovation and developing new solutions. But with AppDynamics full-stack observability, enterprises can accelerate their digital transformation with actionable observability. Enabling teams to easily identify opportunities to improve customer experience and drive revenue, organizations can gain a substantial competitive advantage.

Now, it's easier than ever to add critical business context to your IT performance and security efforts. By prioritizing essential issues and quantifying performance, these tools offer clear insight into how IT performance impacts your enterprise's bottom line.

Gaining a competitive edge with full-stack observability

Customer expectations are evolving as quickly as the solutions designed to serve them. Many modern organizations are competing on customer experience alone, so flawless application performance is a must to retain customers.

To meet growing customer demand, IT teams need support to take full advantage of their tech stack's capabilities. 360-degree full-stack observability offers the visibility and monitoring businesses need to stay one step ahead of the competition.

Full-stack observability is the ace up your sleeve to gain a competitive advantage. With AppDynamics' integrated solution, your team has unrivaled end-to-end visibility, valuable context and a clear roadmap to operational excellence and business success.

Take your IT operations to the next level. Schedule a demo today to see how the AppDynamics full-stack observability solution will help your business excel.

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