



# Smoothing Out the Rough Edges

Remote Initiatives Expose Need for Visibility,  
Continual Monitoring of Edge Computing



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Even as countries begin to open borders long closed as a result of the global pandemic, enterprises around the world continue to grapple with massive changes the pandemic has had on their networks. In the rush to support remote and work-from-home (WFH) initiatives, 96% of business leaders say their digital transformation journeys were accelerated by an average of 5.3 years. Likewise, these business leaders increasingly acknowledge that the need to support remote workers won't end when the pandemic does.

In fact, 83 percent of employees who can work from home would like to do so at least one day a week after the pandemic, and 32 percent of employees would like to work remotely full time. Prior to pandemic, 21 percent of employees worked from home, whereas currently, 42 percent of employees are working from home for the foreseeable future. Going forward, 28 percent of employees expect to remain working from home indefinitely, and 38 percent of employers plan to support a hybrid workforce.

In order to support remote workers now and in the future, enterprises increasingly are moving resources to the edge — specifically, to client, service and server workload edges. Network traffic continually travels from one edge domain to the next – wireless to wired connections, LAN to WAN, ISP to colocation, colocation to cloud, cloud to server workload and more.

The challenge for enterprises is that as traffic moves between each domain, it's altered for the next domain. Each of those points of change creates a potential gap in visibility – opening enterprise networks to vulnerabilities and hobbling enterprise IT teams that already are dealing with similar issues resulting from digital transformation and cloud migration.

As a result, user experience is significantly impacted by the infinite paths that application traffic takes to complete a transaction, from the device to where the application lives over a complex multi-cloud environment. Traffic now crosses boundaries of both technologies and domains of control, and each boundary is now an edge where services can fail or degrade.

## The Challenges Created by Edges in the Enterprises

Indeed, many enterprise IT teams admit that workers moving to their homes has caused them to lose sight of employees as they work remotely. How the loss of visibility and control at edges impacts enterprise networks is more clearly understood in relation to three key imperatives for most enterprises.

### Unified Communications

The pandemic has intensified the need for unified communications and collaboration (UC&C) and unified communications as a service (UCaaS). Such solutions not only are vital for enterprises to conduct business with customers, they also significantly impact how employees work and interact with customers and with each other.

UC solutions integrate enterprise communication services like messaging, presence information, voice, mobility features, audio and video conferencing into a single platform with the goal of streamlining and enhancing business communications, collaboration and productivity. Such solutions give end users easy, immediate access to all relevant tools in a consistent environment from any physical location or digital device.

Not surprisingly, remote and WFH initiatives during the pandemic drove more users to adopt UC&C solutions. One study found that small businesses increased UC&C usage by 103 percent, while large businesses increased usage by 36 percent. But the complexity of today's systems – which often involve hosted, cloud-based components – makes it difficult to troubleshoot quality issues.

IT needs the ability to ascertain whether a drop in call quality is related to the quality of service (QoS) tag, network bandwidth, the virtual private network (VPN), the codec in use, the demarcation point to the service provider or something else altogether. As such, it's crucial to have visibility into and constantly monitor UC systems to determine precisely what device is responsible and who has ownership.

## XaaS

While the anything-as-a-service (XaaS) mentality was gaining traction before the pandemic, it has since experienced explosive growth that's expected to continue. XaaS is a wide-ranging term that encompasses tools, applications and services that are delivered to a device via the cloud rather than being obtained on-premises or in a physical format.

The XaaS space includes software, platforms, infrastructure, storage, databases, disaster recovery, communications, networks and data – all of which are accessed via the cloud. As such, it's not surprising that XaaS is expected to grow by more than 25 percent CAGR to \$74 billion in valuation by 2027.

Enterprises adopt XaaS to reduce costs, simplify IT deployments and streamline technology – and those benefits have driven up the number of XaaS applications astronomically. But the massive increase in XaaS offerings – alongside increases in the number of vendors involved and the increasing reliance of enterprises upon those offerings – makes it difficult for IT to isolate and rectify performance issues.

## Isolating Service Issues

Digital transformations have also made it more difficult for enterprise IT to isolate service issues. For instance, a large enterprise IT team recently was contacted by an executive who was having problems whenever he tried to join a weekly Webex meeting on Tuesdays.

He complained that every time he got on this call, the video was jittery, and he couldn't effectively communicate with his team. He was upset and frustrated when he contacted IT, insisting that Webex was to blame for the issues he was experiencing.

In this particular case, enterprise IT was utilizing a service assurance solution that constantly monitors what's happening with applications on the network to establish a baseline of normal behavior. When IT ran tests to isolate the issue, it was discovered that the executive's PC was scheduled for backups at the exact same time as the meeting – meaning the poor video quality was the result of tons of data being backed up vs. a problem with Webex or any other application.

This is just one example that illustrates the importance of continually monitoring the enterprise network to establish a baseline of normal application and user behavior. Without that baseline, IT teams quickly become overwhelmed by trying to isolate service issues without any way of knowing how the network should look vs. how the service issue is impacting the network.



Source: IDG – CIO Pandemic Business Impact Survey: Looking Forward, June 2021.

## Visibility for Remote CSAs Use Case

To better understand the intersection of edge computing with remote work initiatives and how it drives the need for service assurance, it helps to examine the use case of customer service agents (CSAs).

The pandemic had an immediate and lasting impact on how enterprise IT utilizes and supports CSAs, whose expertise has grown in importance as customers have increasingly turned to digital channels. In fact, 60 percent of customer interactions in 2021 took place online, up from 42 percent in 2019.

Interestingly, however, 59 percent of enterprise decision makers say the pandemic exposed technology gaps to a great or moderate extent, while 58 percent say it exposed service channel gaps in the same fashion. And 74 percent say the pandemic made them more reliant upon data.

Those gaps are especially concerning to enterprises that now support CSAs in remote locations. In many cases, CSAs have been moved home with more substantial workstations that can take calls, handle customer interactions and communicate with the data center for customer information. Meanwhile, IT has been under increasing pressure to keep productivity and quality high because customers are on the line – which is where the need for data is especially salient.

Enterprises are recognizing that visibility varies drastically for CSAs that are in a contact center vs. working from a remote location. In the contact center, it's easy to see what CSAs are doing and whether a break in productivity indicates that the CSA is out to lunch vs. the network having an issue. But remote work environments don't provide that same visibility.

Instead, managers have to rely on technology to operate and switch calls. Additional complexity also is created because calls are connected across the public switch network, and they have to ensure that it's done correctly.

## How to Ensure Borderless Monitoring & Visibility

As these examples illustrate, service delivery involves an ecosystem of different environments that include the client edge, network edge and data center/cloud service edge. As traffic moves between each edge, it can be altered to accommodate the next domain. For example, traffic might be moving from wireless to wired connections, LAN to WAN, Internet service provider (ISP) to colocation, colocation to cloud, or cloud to server.

These edges can become roadblocks that impede a user's productivity and create service issues that IT has to address. With so many potential edges involved in any given application service, it is imperative for IT to have vendor-agnostic visibility in order to rapidly pinpoint issues. To obtain that visibility, enterprise IT needs a solution that:

- **Leverages synthetic testing:** This includes business transaction testing, a highly effective means for simulating the typical interactions an end-user has with applications across an enterprise environment. Such testing can be conducted on a scheduled, consistent basis, providing IT with detailed performance and availability analysis of specific applications, as well as of the network. Tests can be configured for data center-based traditional applications in server farms, SaaS applications, UCaaS solutions. Tests can be performed over Wi-Fi or local Ethernet networks at remote locations to determine cause for performance differences. Business transaction testing can detect an emerging problem and alert IT teams so they can utilize a packet monitoring solution to determine where and why the slowdown is occurring.
- **Combines packet data and synthetic test technologies:** IT needs to rethink monitoring strategies, identifying key instrumentation vantage points to more effectively troubleshoot end-user experience and application performance issues. Combining both packet data and synthetic test technologies for monitoring at these different edges is key for complex, multi-cloud environments.
- **Provides borderless visibility for isolating problems:** Visibility needs to extend from the home across every edge of the multi-cloud environment in order for IT to be able to solve performance issues that are affecting users – regardless of technology or organizational boundaries. Borderless visibility across multiple domains also enables IT teams to analyze application and network performance, while also troubleshooting throughout complex multi-cloud environments.
- **Extends visibility and analysis into any infrastructure environment:** Borderless visibility also gives IT teams the ability to see and analyze network traffic across the data center, private and public clouds, and colocations regardless of where the service is deployed or accessed.
- **Assures outstanding end-user experience:** The solution should support end-user experience regardless of network, location, or service for any user, regardless of where they perform their jobs. It should include service monitoring before, during and after deployment to assure quality user experience.
- **Improves IT troubleshooting:** Comprehensive visibility into service edges and end-user experience monitoring improves mean time to know (MTTK) and reduces mean time to repair (MTTR).
- **Implements monitoring visibility:** This is used to fill gaps and voids caused by migrations to complex, hybrid-cloud environments in key network, data center and cloud service edges.

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### Use Case ...continued.

Visibility into CSA transactions are beneficial for things like staffing. Managers need the ability to measure the number of calls a CSA can take in an hour, because they need to staff appropriately. That requires them to be able to identify busy times, as well as track how long customers are willing to stay on hold while waiting to be assigned to an agent.

A 360-degree view of the customer from a single platform helps enterprises deliver more personalized support, resolve cases faster and make smarter business decisions. When imagining all of the potential problems that can occur with CSAs that work remotely, visibility is especially compelling.

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## Resources

[Digital transformation at work | IBM](#)

[pwc-return-to-work-survey.pdf](#)

[www.idg.com/tools-for-marketers/cio-pandemic-business-impact-survey-2020/](http://www.idg.com/tools-for-marketers/cio-pandemic-business-impact-survey-2020/)

[The Rise of Unified Communications And Collaboration Tools In The Covid-19 Era | Ribbon Communications](#)

[Anything-as-a-Service Market Size & XaaS Industry Growth, 2020-2027 - \(reportsanddata.com\)](#)

[Inside the Fourth Edition of the "State of Service" Report - Salesforce.com](#)

[Why Service Leaders Must Close Technology Gaps from COVID-19 - Salesforce EMEA Blog](#)

[www.idg.com/tools-for-marketers/research-cio-pandemic-business-impact-survey/](http://www.idg.com/tools-for-marketers/research-cio-pandemic-business-impact-survey/)



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