



## **Time-Sensitive, Actionable Intelligence Is Key to UC Service Assurance**

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**ZK Research**  
*A Division of Kerravala Consulting*

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## Introduction: Unified Communications Is Business Critical

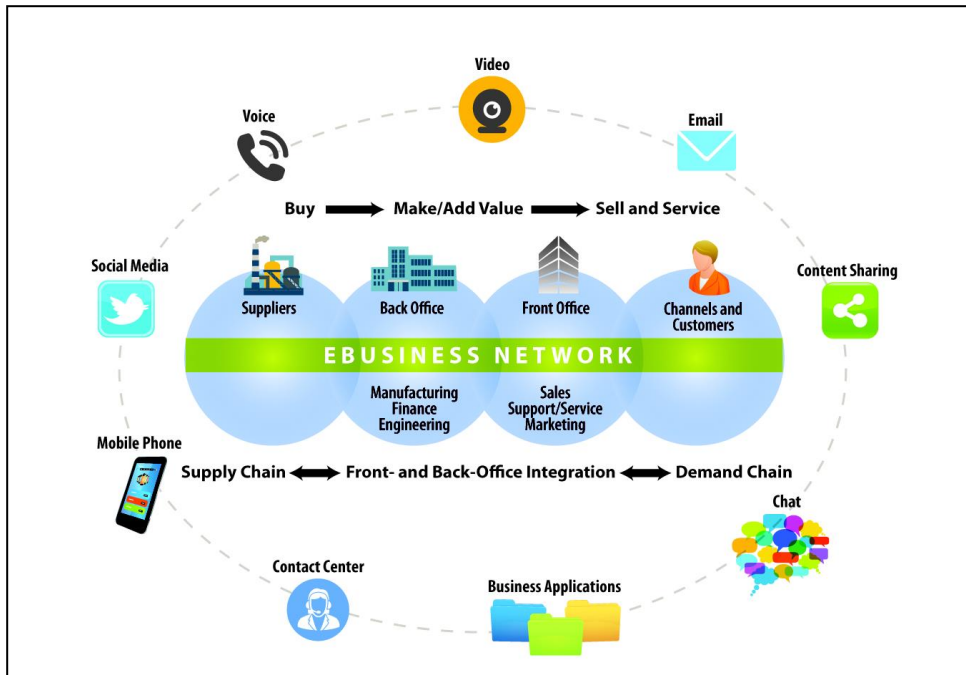
The nature of work has changed, and long-term competitive advantage is no longer about a business having a single core competency or even having the best product. Today, sustainable market leadership is based on making quick decisions involving the most qualified people both inside and outside the organization. Additionally, digital technology shifts such as mobility, social networks and cloud computing have created a highly connected world in which people can access and analyze massive amounts of information almost instantly.

However, for many businesses, a key challenge has arisen: How can employees have real-time access to information and people in order to perform their jobs at the speed required? This includes the ability to make fast decisions but also respond to co-workers, customers, business partners and other members of the extended enterprise using a wide variety of communication tools (Exhibit 1).

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### Exhibit 1: UC Addresses the Diverse Communication Needs of the Extended Enterprise



*Influence and insight through social media*

Source: ZK Research, 2016

To solve this challenge, businesses have turned to unified communications (UC). The ZK Research/Tech Target 2015 Unified Communications Purchase Intention Study reveals that 58% of organizations are now deploying UC to improve corporate collaboration, and 56% require UC to improve the time to access information (Exhibit 2). Consequently, ZK Research considers UC critical to the success of organizations in this digital era.

## Section II: Understanding Unified Communications Architecture

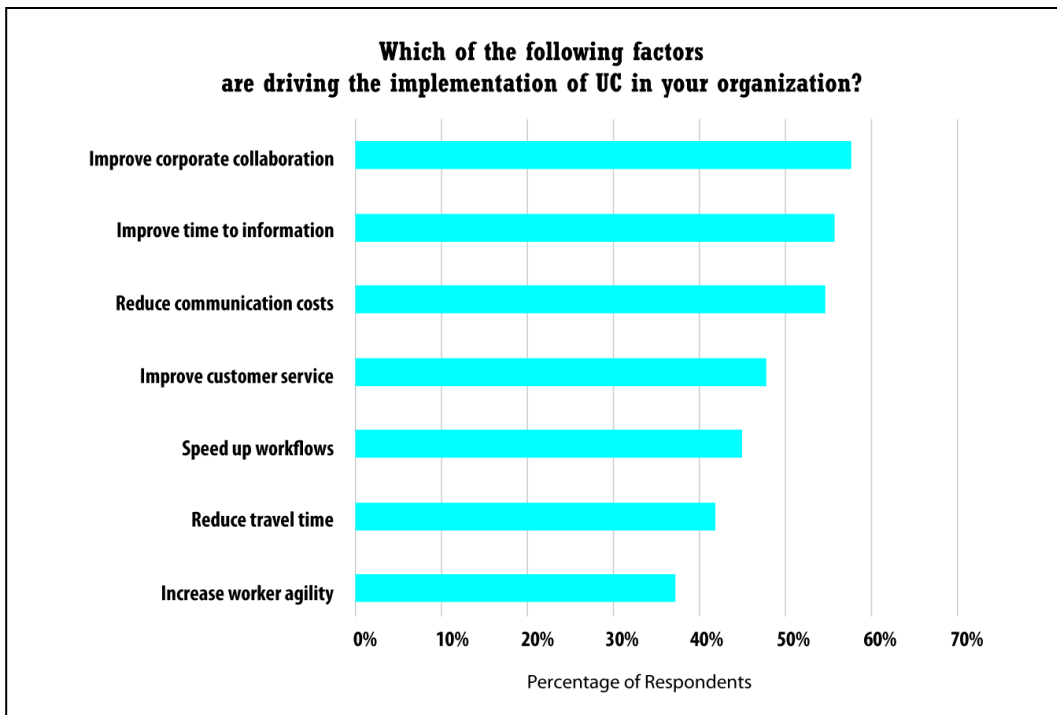
Legacy communications technologies were built on monolithic platforms that were optimized for performance but were highly inefficient. For example, a traditional PBX was a fully integrated hardware platform that provided voice capabilities for a single location. There was no ability to share resources between locations, and upgrades were slow and resource intensive because each PBX had to be managed independently. Also, organizations

needed to deploy multiple platforms on parallel networks for added functionality. For example, with legacy communications, it was common to have voice on its own network and video on an entirely separate network with its own infrastructure.

Unified communications brings all forms of collaboration together and includes the following services:

- Voice
- Room-based video
- Desktop video
- Audio and web conferencing
- Chat
- Presence
- Call center
- Mobile or desktop applications with UC functions integrated into them

**Exhibit 2: The Value Proposition of UC Is Multidimensional**



Source: ZK Research/Tech Target 2015 Unified Communications Purchase Intention Study

Also, the quality of performance of the above UC applications is highly dependent on the infrastructure that they run on, which can include, but is not limited to, the following:

- Routers
- Switches
- Physical or virtual servers
- Desktop or mobile endpoints
- Soft phones
- Call control software
- Video CODEC
- Wireless LAN
- Cellular connectivity
- Cloud resources
- Storage
- IP service enablers such as DNS and DHCP
- SIP trunks
- Local area network connections
- Wide area network connectivity

The deployment and management process is far more complicated for UC than for traditional communications. One might wonder why companies deploy UC if it just makes the environment more complex. The answer is that the only way businesses can compete in the digital era is by having a rich set of collaboration tools that enable workers to accomplish any task and collaborate with anyone, no matter where they are located—and UC can deliver on that promise.

The key to a successful UC deployment is to ensure that management of the environment is done “top down.” Most management tools operate “bottom up,” focusing on the management of the individual elements. Top-down management looks at the infrastructure elements through the lens of the UC applications and understands the relationships among all the elements. If something goes wrong somewhere along the UC delivery path, a top-down approach can quickly identify exactly where the problem is. However, implementing a top-down solution requires IT to shift its management strategy and focus on UC service assurance.

### Section III: The Challenges with UC Management

ZK Research believes that a lifecycle approach to UC management is the best approach (Exhibit 3).

This strategy encompasses a plan, design, implementation and operation process. It is not enough for network managers to focus on Voice over IP (VoIP) alone; they must subscribe to the network lifecycle and develop a strategy that enables them to manage the availability and performance of all UC applications including voice, video, messaging and collaboration.

In addition to implementing a lifecycle approach, several other challenges add to the complexity of UC management, including the following:

- **Interoperability across technology silos:** There is no single, correct way to deploy UC. Businesses have a wide variety of deployment choices including single platform, best of breed, multivendor solutions, legacy interoperability and integration with data applications.
- **Multiplatform solutions:** Legacy communications tools were deployed with a single hardware platform. With UC, a single server does not exist. Call control, conferencing servers, presence, email, messaging and other UC functions are often deployed on independent servers.
- **Infrastructure, signaling and media:** UC success is highly dependent on the underlying network, which includes network infrastructure, signaling servers and other media platforms.
- **Virtualization of UC:** IT organizations may choose to deploy the UC functions on physical servers, on virtual servers in the cloud, or in a hybrid deployment model.
- **Multiple deployment options:** Businesses can choose to deploy UC with premises-based solutions, using a cloud service or in a hybrid environment where both cloud and on-premises solutions are deployed together. There is no right deployment option; each has its own set of challenges.

In addition to the technical challenges with managing UC, there are also domain ownership issues. The telecom group typically manages traditional communication platforms, the applications team runs the software platforms, and the network operations professionals are responsible for the network. Also, each team has its own tools and management platforms, which gives only a partial view of the UC environment.

With UC, no single group is responsible for all of the components that constitute the service; and when

### Exhibit 3: UC Management Requires a Lifecycle Approach



Source: ZK Research, 2016

degradations occur, finger-pointing within the IT organization ensues. Without common situational awareness, it takes longer to discover the root cause of problems and resolve them. Consequently, UC end users within the extended enterprise pay the penalty for this, as service availability and performance are compromised.

Legacy communication systems were simpler to troubleshoot because the whole solution was composed of just a few components: phones, cables and a PBX. If a problem arose, the process of identifying the issue and fixing it was quick.

Like other enterprise applications, UC is made up of several building blocks. The disaggregation of the vertically integrated system is what gives UC the tremendous flexibility it has today, but this feature does open the door to a number of potential challenges. Issues can occur with any of the infrastructure components including load balancers, routers, switches, security appliances, call servers, databases, gateways, IP phones and soft phones.

Also, bandwidth congestion or network outages can lead to inconsistent service performance. Lastly, UC is highly dependent on network service enablers such as DHCP, DNS and directory services. If these become unavailable, many of the UC services also could become unavailable.

UC is a network-centric solution, meaning any network issue can degrade the quality of a call. QoS DSCP mismatches, duplex settings, packet loss, jitter and other factors need to be dealt with quickly. Although today's infrastructure is built with redundancy, network issues still cause situations in which a service is working but not at an optimal level.

The following are some examples of UC service degradation:

- **Employees are unable to connect with UC services.** This could be caused by a problem with a UC service enabler such as DNS lookup failure or Active Directory not being configured correctly.

- **Employees cannot dial out.** This might be caused by an issue with the call signaling server. For example, there could be errors between the call server and the session border controller over a SIP trunk.
- **Employees are experiencing poor voice quality.** The user experience with multimedia applications can be poor for several reasons. Too many dropped packets, QoS issues or competition with other high-bandwidth applications can all cause network issues that degrade the performance of voice and video.

There are many possible ways that UC quality degradation can be experienced and many possible causes of these issues. The key is being able to identify the root cause of the problem quickly to achieve faster resolution. To accomplish this, a new approach to UC management is required.

#### Section IV: Continuous Real-Time Monitoring Is Required for UC Service Assurance

Unified communications is significantly different from traditional communications and requires a new service assurance approach to keep services always running at the highest quality. Continuous, real-time monitoring is required for IT teams to assure the delivery of UC in the most demanding and complex networks. The following are the key requirements for a UC service assurance solution:

- **Top-down holistic view:** As described above, a UC solution has many different IT elements and is composed of several silo-specific tools. A top-down management approach provides a holistic view of all the IT elements that are used to deliver UC and understands the relationships and interdependencies between the components and the traffic flows. Top-down management sees the entire environment and is the only way to effectively manage real-time communications. This approach also enables IT to set baselines of traffic flows, and any deviation from the baseline could indicate a problem. With top-down management, IT teams can proactively detect service degradations before they escalate and fix the issue before users complain.
- **Leverages traffic-based intelligence:** Traffic-based intelligence from a continuous real-time service assurance solution provides a complete understanding of the UC experience and can quickly identify where the problem is. Network

traffic can be used to build a “map” of all the components that constitute the UC environment and set baselines for the normal operating environment. Traffic-based intelligence can be used to quickly identify network congestion, infrastructure issues, call server problems or incorrect configuration settings. It can also be used to reduce the mean time to problem identification, break down operational silos, foster better collaboration between IT groups, and enable IT to shift to a proactive management model.

#### Section V: NETSCOUT Provides a Robust UC Management Solution

NETSCOUT is a market leader in service assurance and cybersecurity solutions. The company’s flagship solution, the nGeniusONE Service Assurance platform, provides real-time and continuous monitoring of unified communications and uses NETSCOUT-patented Adaptive Service Intelligence™ (ASI) technology to be a single source of information for IT teams.

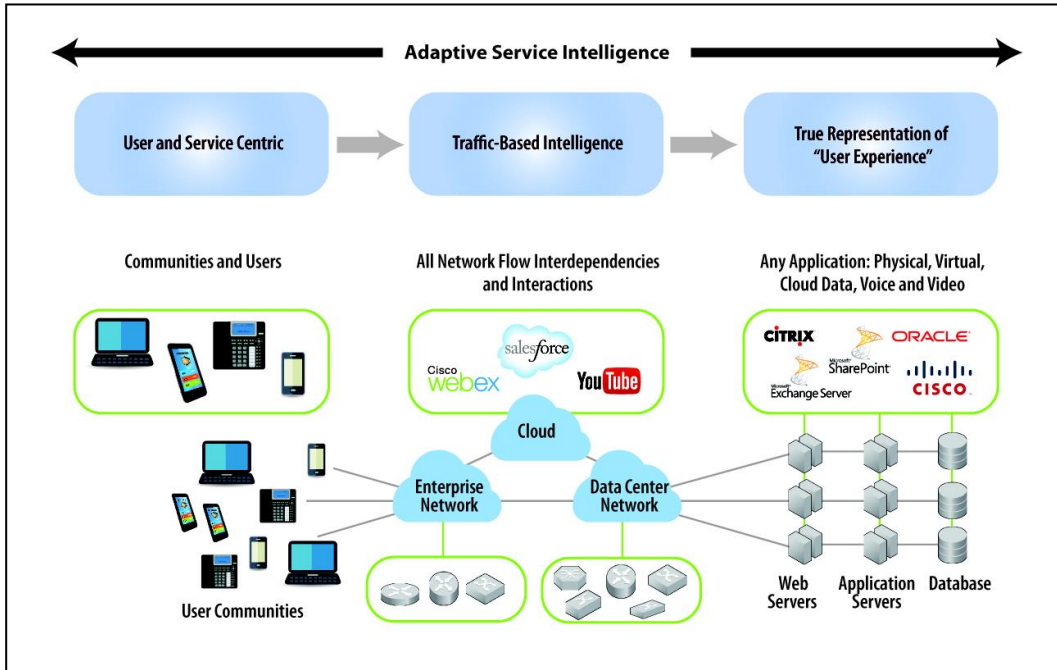
NETSCOUT can significantly reduce mean time to knowledge (MTTK) to help IT departments understand when UC problems occur, what the root cause of the issue is and how to quickly fix the problem.

Reducing the MTTK is critical to ensuring a high-quality user experience. The ZK Research 2015 Network Purchase Intention Study found that 90% of the time taken to solve problems is related to finding the problem. Therefore, the best way to reduce mean time to repair (MTTR) is to reduce the MTTK of a problem.

Traditional approaches to UC management lack the necessary insight into the UC application and infrastructure components, and they have no view of the interdependencies and relationships between them. Legacy solutions are designed to manage specific elements, have disparate datasets and have many blind spots when it comes to understanding the root cause of UC issues.

NETSCOUT’s nGeniusONE platform with ASI technology significantly reduces MTTK by proactively collecting, organizing and contextually analyzing traffic data in real time (Exhibit 4). IT teams benefit from rapid service triage by identifying the root cause of UC service degradations and resolving issues before they become problems that impact users.



**Exhibit 4: NETSCOUT's nGeniusONE Platform and ASI Technology in Action**

Source: ZK Research and NETSCOUT

Through the use of the nGeniusONE platform and its intuitive and contextual workflows, the IT organization can make faster decisions, successfully resolve performance issues and assure a high-quality UC user experience.

A May 2015 survey of NETSCOUT customers conducted by TechValidate revealed that four out of five customers reduced MTTK by at least 80% and reduced operational expenses (Exhibit 5).

In addition, the TechValidate survey revealed that NETSCOUT provides a fast return on investment and facilitates operational excellence (Exhibit 6).

Customers that use NETSCOUT will optimize UC service delivery across any vendor environment and realize the following benefits:

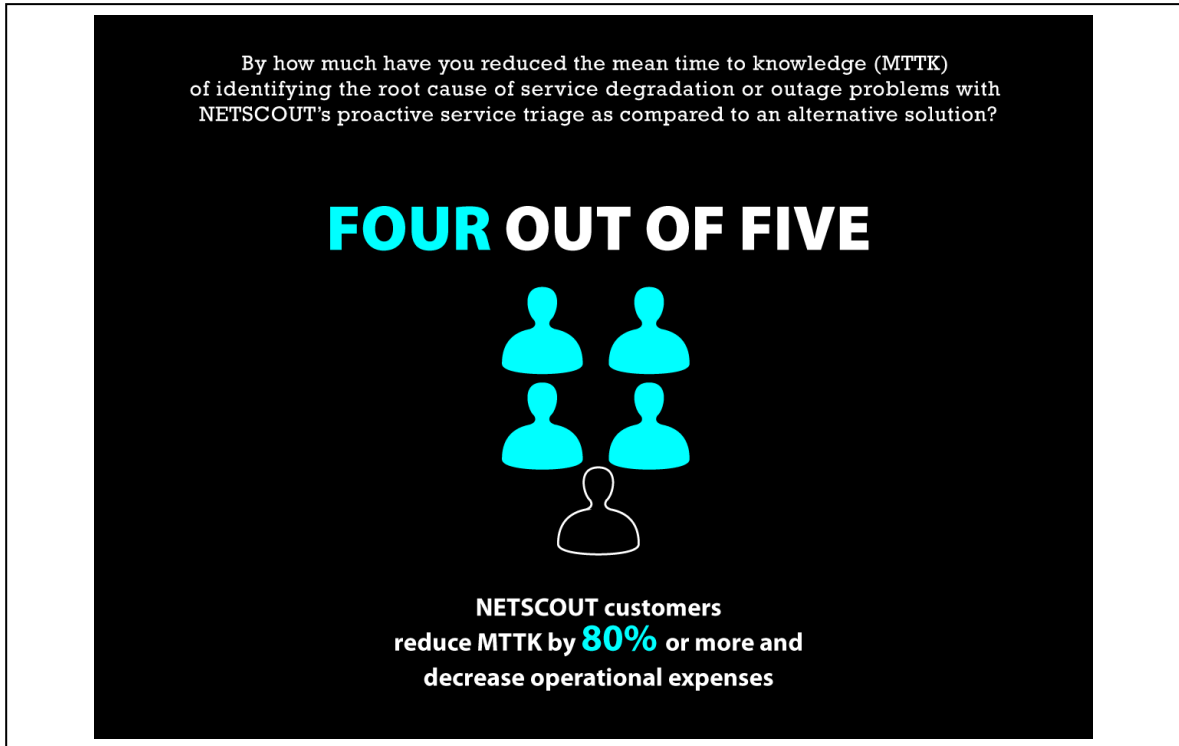
- Increase the efficiency and utilization of existing service delivery infrastructure.
- Accurately monitor traffic data across the IT infrastructure with deep granularity to identify capacity, network and/or service shortfalls as well as better understand how resources are being consumed enterprise wide.
- Accurately assess the impact of new services through the IT infrastructure.

Fidelity Investments is a great example of a customer using unified communications that has realized tremendous value with NETSCOUT. The giant financial services organization uses NETSCOUT to optimize the performance of its global network and IT services, and it has seen the following benefits:

- Holistic view of its enterprise network as well as interrelationships and service dependencies
- Reduced war room incident time from an average of 10 to 20 hours down to a maximum of five hours
- Reduced MTTR by 80% with NETSCOUT service triage
- Replaced several network and application performance tools with NETSCOUT's nGeniusONE platform, which resulted in lower operational and capital costs
- Improved all key performance indicators of service management from 50% to 75%

A more detailed case study can be found at [www.netscout.com/techvalidate-the-voice-of-the-customer/techvalidate-case-studies/](http://www.netscout.com/techvalidate-the-voice-of-the-customer/techvalidate-case-studies/).

### Exhibit 5: NETSCOUT Dramatically Reduces MTTK



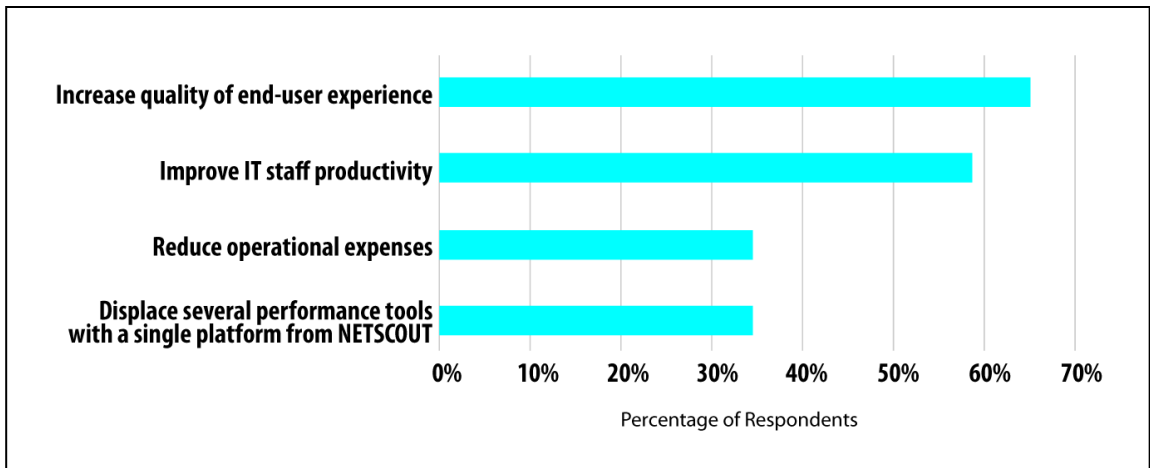
Source: TechValidate and NETSCOUT

### Section VI: Conclusion and Recommendations

The UC market is evolving, and the industry is on the precipice of mass adoption. As UC becomes

more widely deployed, it is essential that IT leaders use a robust service assurance solution before scaling UC enterprise wide. This will ensure the organization realizes the benefits of UC without the associated business risk of lost productivity due to poor service quality and performance degradation.

### Exhibit 6: NETSCOUT's ASI Technology = Fast ROI



Source: TechValidate and NETSCOUT



There are currently many UC management solutions on the market. To help IT leaders choose the right vendors, ZK Research makes the following recommendations:

- **Consolidate and unify your communications service assurance management.** The industry is still emerging, but the value of moving to UC is the integration of communications and collaborative applications. You will not realize any benefits unless the management is also unified. Do not purchase management software in a vacuum; it should be a critical component of your overall communications strategy.
- **Ensure the UC service assurance management solution is holistic.** The management platform must have a view of all the physical and virtual infrastructure components including network devices, servers, applications, network services, service enablers and session border controllers. This will ensure that any problem can be discovered and remediated quickly.
- **Make service assurance management a core part of all critical applications deployed in the production environment.** Service management and rapid triage capabilities extend beyond UC. IT leaders should build a service assurance strategy in which the necessary solution is in place before deploying any important business service.