



Canadian Service Provider TELUS Communications Leverages NETSCOUT nGeniusONE Service Assurance Platform to Gain Valuable Service Visibility

OVERVIEW

Region

Americas, Canada

Business Value

- Improved network visibility between network elements supports proactive service management and service triage.
- Improved problem detection, diagnosis and resolution.
- Improved service reliability and uptime resulting in markedly enhanced end-user experience.
- Upgraded operational effectiveness and network operations resulting in significantly reduced mean time to resolution/repair (MTTR).
- Enhanced short- and long-term return on investment (ROI) while reducing capital and operational expenditures (CAPEX and OPEX).

Full-Service Telecom Optimizes Its 4G/LTE Wireless Network Performance and Service Delivery with NETSCOUT Solutions

Customer Profile

Headquartered in Vancouver, British Columbia, Canada, TELUS is one of Canada's largest national telecommunications companies offering a wide array of telecommunications products and services including data, video and mobility. Its wireless division, TELUS Mobility, is Canada's second largest mobile phone provider with a subscriber base of 8.1 million.

TELUS Challenges

With annual revenues over \$12 billion, almost 8.1 million wireless subscribers, 1.5 million broadband Internet customers, 3.2 million wireless local network (WLN) access lines and almost a million IPTV patrons, it's easy to see why many in Canada refer to TELUS as "The AT&T of Canada" for its coast-to-coast telecommunications product and service offerings. If that weren't impressive enough, TELUS is also Canada's largest health care information technology provider, and developed the world's first Multi-Operator Core Network (MOCN) for mobile communications.

On the mobile services side of the house, TELUS has three different networks founded on four different technologies, its legacy Code Division Multiple Access (CDMA), High Speed Packet Access (HSPA+), 4G Long Term Evolution (LTE) network, and its Integrated Digital Enhanced Network (IDEN) MiKE push-to-talk network. (The IDEN MiKE business operations will cease on January 29, 2016.) It also has plans to implement a nationwide voice over LTE (VoLTE) service as well.

TELUS' stated mission is, "To unleash the power of the Internet to deliver the best solutions to Canadians at home, in the workplace and on the move." With the advent and mainstreaming of digital infrastructure, service providers like TELUS have been able to improve the quality and

reliability of their services, but keeping up with the exponential growth and consequent demands made upon their network has never been more problematic.

The demands upon network infrastructure are already significant and will only intensify as consumer technology evolves. There is an indisputable need for speed and agility with improving customer experience at the forefront. Customers have more choices than ever before and even the slightest degradation of service, such as with smartphone call latency, can result in loss of subscribers and revenue. Thus, service assurance in complex IP networks has never been more important to service providers like TELUS.

TELUS requires complete, end-to-end network visibility of all services to not just maintain but to enhance the end-user experience. A few of the specific challenges the company needed to resolve included:

- Oversee and monitor LTE signaling and user-plane traffic
- Monitor domain name system (DNS) and call tracing
- Proactively and transparently troubleshoot infrastructure issues
- Diminish mean time to knowledge (MTTK) and mean time to resolution (MTTR)
- Establish a proactive, early-warning network monitoring process and system

Essentially, the fundamental challenge for TELUS is that it must know how its services and network are performing 24/7/365; they needed cutting-edge – and holistic – IP network monitoring and diagnostic tools.

The NETSCOUT Solution

After researching service assurance solutions, TELUS chose the NETSCOUT nGeniusONE™ Service Assurance Performance platform a packet-based monitoring platform that provides a top-down, holistic approach to service assurance. This provides service providers like TELUS unmatched operational visibility into their network and service performance. Furthermore, the NETSCOUT nGeniusONE platform provides efficient service triage that reduces MTTK and MTTR by proactively recognizing service degradations in real-time through a consistent and contextual set of metadata, which is generated by NETSCOUT's Adaptive Service Intelligence™ (ASI) technology. This singular and patented [ASI technology](#) utilizes a traffic-flow data engine to generate metadata that is comprehensive; it provides an historic view of, application, service, server and network performance with the metadata itself based upon actual real-time session traffic as it crosses either physical or virtual links.

The NETSCOUT solution aggregates, correlates and contextually analyzes the complete combination of metadata gathered from defined data sources in the network's physical and virtual environment. It is able to do this by instrumenting strategic access points across the service-delivery infrastructure by using physical and virtual appliances.

What's the end result? Enterprises like TELUS receive real-time, end-to-end views of critical service performance, which are indispensable to ensuring end-user quality experience. They can also thus establish performance baselines and facilitate troubleshooting workflows for future triage events as well. The end benefit is vastly improved return on investment (ROI) due to the diminished time spent in the war room and with MTTK and MTTR.

NETSCOUT & TELUS

TELUS has used the NETSCOUT Service Assurance Performance platform for a number of years due to its pronounced service-based monitoring capabilities. Prior to using NETSCOUT, TELUS relied on a more traditional manual workflow process structure such as session trace, decode, and single subscriber view analysis. Such reactive approaches are ill suited for today's complex IP networks.

For example, with Voice over LTE (VoLTE) a number of common problems include one-way audio, dropped calls, call set-up failures, and poor audio quality – all of which can be very difficult to identify and troubleshoot due to the complexity of the VoLTE architecture. With the nGeniusONE platform, TELUS is able to see call hop-by-hop and quickly pinpoint problem areas in the network with packet-level details.

With a number of years of experience using NETSCOUT solutions, a [network administrator at TELUS says](#), "NETSCOUT allows us to increase service uptime, reliability, and customer sentiment. It's a great product with a great support team."

Some of the specific reasons TELUS chose NETSCOUT include:

- Its ability to oversee and triage a demanding and changing network infrastructure environment
- Its ability to dynamically monitor and alert on anomalous behavior without having to constantly tune thresholds
- Its ability to go back in time down to the packet level when an event occurs
- Its ability to dramatically expedite root-cause analysis
- Its ability to identify issues before they become service affecting
- It possesses a powerful real-time analytics and reporting engine

Indeed, since its deployment, according to one TELUS director, NETSCOUT has become integral with TELUS' Reliability Focus as it provides end-to-end performance management, it anticipates and prevents customer impact, and enhances collaboration within all TELUS technology strategy operations (TSO) groups.

Perhaps most importantly to its mobile subscriber business, TELUS uses NETSCOUT solutions to ensure high-service availability. Since its inception within TELUS, NETSCOUT has vastly improved LTE control-plane monitoring, user-plane visibility and session-tracing visibility – all of which are critical to ongoing service performance.

Tremendous Results Achieved by TELUS

TELUS is deriving substantial and specific results using the NETSCOUT nGeniusONE Service Assurance platform. One particular interesting use case involved the Winter Olympics in 2010 in Vancouver, British Columbia. Historically high peak traffic IP switch or packet overruns lead to an untimely signaling storm and degradation.

Due to NETSCOUT nGeniusONE's forensic diagnostic capability, it was discovered that it was an IP switch issue, which issue was subsequently remedied. During the World Cup event a few years later, the lesson learned from the IP packet overruns came into play with TELUS efficiently – and transparently – working behind the scenes to forestall another recurrence.

Besides anecdotal evidence as to NETSCOUT nGeniusONE's efficacy, here are some of the specific improvements derived by TELUS and validated by TechValidate, an independent third-party. They include:

- Improved service performance and enhanced end-user experience
- Slashed CAPEX by 10-24 percent
- Improved ROI saving the company an estimated six to seven figures
- Minimized service disruptions
- Reduced time spent in war room by 50 percent
- Substantially improved MTTR

Summary

The NETSCOUT nGeniusONE Service Assurance platform is deployed at more than 165 service providers in over 48 countries to great success. Service performance is the vital link that crests to supreme customer satisfaction and optimal end-user experience. The demands of a proliferation of smartphone devices and Internet traffic upon network infrastructure will only increase.

But service providers like TELUS rest easy knowing the NETSCOUT nGeniusONE platform solution stands as its sentry to enhanced triage forensics and performance management, both of which drive operational excellence and end-user satisfaction. Says, Garry Alter, a network design specialist at TELUS, "The NETSCOUT nGeniusONE Service Assurance system or solution provides great value and benefit for network monitoring, supports our operational effectiveness and significantly reduces our MTTR."

The challenge for the network operations team has become having visibility into the end-to-end service creation environment and to have that visibility in real-time. Service providers, perhaps more than any other industry, require solution capabilities that can scale to support millions of subscribers, and that can efficiently handle all IP services. They need an early warning, service-oriented triage "system" that provides predictive and proactive, end-to-end network visibility of all services. And with NETSCOUT solutions, they can.



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