Success story:
Gaining visibility of VoLTE quality with Ericsson Expert Analytics

In collaboration with T-Mobile

July 2018
Making voices heard

Needling to deliver on the promise of vital but highly complex new services, T-Mobile partnered with Ericsson to improve voice over LTE (VoLTE), mobile broadband and other advanced services.

Finding the true source

In 2014, T-Mobile was the first operator in the US to roll out VoLTE after gaining low-band spectrum that would increase its national footprint. T-Mobile wanted to not only expand its LTE presence but also provide the best-quality voice experience to those new areas.

To ensure optimum voice and data service quality, great performance is needed on the LTE network. But the traditional approach to measuring network performance has been node-centric. While data from the nodes informs T-Mobile of how the network itself is performing, issues like muting, garbled voice and other audio problems are difficult to identify and solve. A common problem was customers experiencing a period of muting; they would hang up, assuming the call had dropped. In reality, the network had not dropped the call and it would be recorded as a normal termination. This disconnect between actual customer experiences and engineering KPIs was a problem.

To fully understand VoLTE and mobile broadband experiences from a customer’s point of view, network performance must be tied back to the individual subscriber and their device. Furthermore, no single data source provides a complete picture of quality. New metrics based on a holistic view of the service are needed to detect many types of customer-impacting incidents. In addition, the inability to rapidly identify and prioritize service quality incidents leads to a reactive approach. An accumulation of trouble tickets and alarms typically creates long delays until problems can be detected and solved.

T-Mobile needed to gain in-depth insight into customer experience, linking it in near real-time with network behavior and service incidents so they could find and solve customer issues before customers called and complained.

“The challenge we had was that we were able to address VoLTE drop calls, but some customers still had voice quality issues. We knew we had to raise the bar to make every customer happy.”

Grant Castle, VP of Engineering Services and Quality Assurance, T-Mobile

About the customer

Known as America's Un-carrier, T-Mobile US, Inc. delivers outstanding wireless experiences to more than 78 million customers through its advanced nationwide 4G LTE network. T-Mobile US is based in Bellevue, Washington, providing a wide range of services, devices and accessories to its postpaid, prepaid and wholesale markets, and is rapidly preparing for the next generation of 5G services.

www.t-mobile.com

The challenge

- Vital new services, such as VoLTE, are harder to assure
- Traditional quality metrics are not sufficient for new services
- Resolution of end-user complaints is reactive and too slow

The solution

- Ericsson Expert Analytics deployed across a nationwide LTE network
- Cross-domain, real-time analytics enabled at scale
- New service quality insights from advanced algorithms

The result

- New mobile broadband and VoLTE-specific metrics for unprecedented customer experience visibility
- Unique, actionable insights reveal symptoms and causes of incidents
- Dramatically faster response times for trouble resolution
Big data, big insights

Following a successful proof of concept, T-Mobile partnered with Ericsson to drive customer experience to an entirely new level — by deploying Ericsson Expert Analytics across their network nationwide.

Ericsson’s solution provides a powerful correlation engine and proprietary analysis capabilities that let T-Mobile capture not only big data, but also real insights — about customer issues, probable causes and recommended actions — that help assure the services which drive retention and growth.

This platform ingests data from thousands of multi-vendor sources and processes every nationwide VoLTE call and data session, producing 8 billion records daily.

Just as impressive are Ericsson’s unique algorithms, which help identify VoLTE and other service issues faster and with greater granularity than traditional tools. End-to-end service quality is measured and diagnosed in real time, identifying opportunities missed by traditional solutions.

“Ericsson Expert Analytics is extremely unique. It builds a matrix that shines a light on things that previously could not be seen and have not been seen, giving an operator a new perspective of what performance really is.”

Martin Donnelly,
Head of Sales for T-Mobile, Ericsson North America

Proactive not reactive

Ericsson Expert Analytics enables T-Mobile to use this wealth of data to identify unique insights for a variety of advanced services. As such, it becomes possible to react to issues that were previously invisible. In addition to identifying difficult-to-detect quality issues for VoLTE, Ericsson Expert Analytics is helping T-Mobile identify and diagnose experience issues with mobile broadband services, including over-the-top applications (such as video streaming and social media).

The close cooperation between Ericsson and T-Mobile on the development of the solution gives T-Mobile a comprehensive view of performance across the Radio, Core and IP Multimedia Subsystem (IMS) domains. This enables T-Mobile to proactively identify and resolve customer-impacting issues in their multi-vendor network, which improves the overall experience.

The initial deployment serves hundreds of engineering users for VoLTE and mobile broadband services. T-Mobile also has plans to extend the solution across the organization, with support for real-time and offline analytics use cases for customer care, operations and marketing. The solution calls for extensions to all mobile services, including rich communication services, video calling over LTE (ViLTE), voice over Wi-Fi (VoWiFi), and Narrowband Internet of Things (NB-IoT) applications.

“Ericsson’s Expert Analytics helped us improve our voice over LTE performance by allowing us visibility of voice quality like we have never had before. We have absolutely met our objective of driving VoLTE to be the best service it can be.”

Grant Castle,
VP of Engineering Services and Quality Assurance, T-Mobile

“More than 80 percent of our voice traffic today is carried on our LTE network on VoLTE, and the Expert Analytics program and platform is helping us drive the performance and capability of VoLTE to new heights, so we can keep delivering the awesome experience our customers have come to expect.”

Neville Ray,
Chief Technology Officer, T-Mobile
Ericsson enables communications service providers to capture the full value of connectivity. The company’s portfolio spans Networks, Digital Services, Managed Services, and Emerging Business and is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson’s investments in innovation have delivered the benefits of telephony and mobile broadband to billions of people around the world. The Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.

www.ericsson.com