

TELCO CUSTOMER EXPERIENCE: Adding Context to the Connected Home

Solving a subscriber's internet problems has evolved from determining if there's a connection to providing tailored solutions to unique problems.

By Amir Kotler / Veego

The internet is a powerful tool that has revolutionized communication, work and play. However, as it continues to evolve, so do its associated problems.

As subscriber behaviors become more diverse and connected homes more complex, communication and internet service providers must increasingly do more to improve customer experience. Solving internet problems is a more complicated matter than whether end users have a connection. It's about providing solutions tailored to their individual needs.

ONE SIZE DOESN'T FIT ALL

There is no such thing as a one-size-fits-all solution for internet use. Users have their own needs, which vary even within the same household. This means understanding what activities users engage in to satisfy their needs is essential.

The same goes for applications. Streaming services such as Netflix and YouTube require a lot of bandwidth to accommodate 4K and soon 8K content. At the same time, the rise of remote work has caused a surge in the use of Zoom and other online meeting platforms, necessitating a stable connection with minimal delays. Gamers want to be reassured they won't encounter glitches during a boss battle, and streamers demand high bandwidth to ensure that content never noticeably buffers.

That is precisely why subscribers can't be considered a single group. Every home has different needs that can change throughout the day. Of course, that makes knowing what to

measure harder. Paying attention to stability will make remote workers happy, but that might mean metrics that matter to streamers are overlooked. An increase in latency might not affect someone watching a movie, but it could ruin a game of FIFA. Therefore, the first step is to examine network behavior and figure out what activity users are engaged in, all within context.

ADDING CONTEXT TO THE CONNECTED HOME

AI technology has enabled people to look past hard thresholds. With AI, it's possible to look further and gain contextual insight and understand the connected home without using personal data or compromising a subscriber's privacy. To achieve this understanding, visibility is essential. By assigning a unique identifier to all devices and applications, service providers can better understand what happens both inside and outside a subscriber's home, such as last-mile delivery, wide area network (WAN), cloud service and more.

By combining an understanding of Wi-Fi metrics and the specific needs of each application with network analysis, it is possible to create a quality of experience (QoE) score that accurately reflects how users perceive their internet experience. Each app and session can be evaluated individually by comparing what an app needs to run optimally with what it is receiving.

The contextual QoE score allows service providers to identify what increases or decreases users' experience with

AI technology makes gaining more insight about the connected home without using personal data or compromising a subscriber's privacy possible.



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certainty, allowing them to make informed decisions to enhance service in real time. In other words, if the QoE score is low, it is time to take action without hesitation.

QOE CHALLENGES

Most problems don't originate from the router itself, so it's critical to look at the whole service delivery chain to identify the cause of an issue. Once the actual cause is determined, the problem can be classified to help with a faster resolution.

These are the four main areas where problems can occur:

- **Server:** Problems may arise on the server side for various reasons. Performance can suffer if too many customers are trying to access the server simultaneously or if there is a significant lag.
- **WAN:** A potential issue with the WAN could include difficulty in last-mile delivery, a problem with the core network, or slowness coming directly from the internet service provider, possibly caused by the provider's internal issues.

- **LAN/Wi-Fi:** Too many devices accessing the same channel can lead to interference and overload, resulting in saturation. In addition, if coverage is inadequate, it can cause a decrease in performance.
- **Device:** Legacy standards or outdated devices can impede an entire network's performance, requiring more resources to support a device. In addition, there could be a problem with the Wi-Fi connection or an outdated protocol causing the machine to run slower.

Understanding context is crucial for both monitoring and scoring internet sessions and for resolving problems. Making any changes to a device or an

application can have a ripple effect on the rest of the network, so it is essential to ensure that there aren't any sensitive processes happening on the subscriber side before starting mitigation.

VISIBILITY AND CONTEXTUAL INTELLIGENCE

To provide a positive internet experience to each user, it's crucial to have visibility into the connected home topology and its current internet metrics.

This visibility and dynamic contextual intelligence offer an accurate understanding of subscribers' internet QoE. They can help service providers provide personalized internet experiences and holistic customer care. 🙌



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