

Quality at its core: the future broadband experience defined

By Geoff Burke, Chief Marketing Officer of Broadband Forum



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Prior to joining the Broadband Forum team, Burke held various senior leadership roles at Calix for 14 years, including most recently Senior Director, Corporate Marketing. He also played a key role in pioneering the IPTV market as Marketing Director at Next Level Communications, led strategy consulting engagements at The McKenna Group and KPMG, and held various management roles at Oracle Corporation.

For more than twenty years, speed has been the top consideration when it comes to defining the best broadband experience. From the days of buffering and hours wasted waiting for downloads to complete, when progress was measured in kilobits per second, speed has been the marker of success. Now however, in 2019, with the number of fixed line broadband installations in excess of one billion and

bit rates increasingly measured in gigabits per second, consumers are still seeking more than just a fast connection from their broadband service provider. While speed still matters, it is certainly not the only means to define success when it comes to broadband and a more holistic view is necessary in our quest to define the best broadband experience.

At the heart of this transformation is the maturation of the broadband ecosystem and innovations built upon an increasingly powerful platform – both areas that I'm proud to say that Broadband Forum has played a critical role in advancing. Nearly ubiquitous high-speed broadband connectivity has paved the way for device proliferation and the Internet of Things (IoT), Augmented and Virtual Reality (AR/VR), and for a rich array of Over-the-Top Services (OTT) such as Netflix and Amazon TV.

Interestingly, when it comes to addressing the demands of these new services, although speed may still play a significant role in enabling them, characteristics like reliability, low latency and predictability are taking center stage. The fact is that as applications and their interactions increase in complexity more attention must be paid towards more granular characteristics. As the world awaits the ultimate broadband experience of the future, these granular metrics will become fundamental – and Broadband Forum's latest project Broadband Quality Experience Delivered (Broadband QED) will provide operators with the tools required to measure and improve them.

Speeding towards 'invisibility'

Although it seemed unimaginable just a few years ago, more than half the homes on the planet have access to broadband. While this is something to be celebrated, it also places immense pressure on operators to handle users' expectations while monetizing their own services. This is not something that can be simply done by offering the fastest service.

For end-users, a seamless approach to broadband connectivity is expected, where the network is almost “invisible” so that applications can work optimally, together. The challenge for operators looking to monetize such a network is that if a customer is accustomed to paying a regular price for basic broadband connectivity, how can they be persuaded that they should pay a higher price for a service that may rely on the same data delivery rate, but require significant network resources to deliver a high quality user experience (think low latency gaming, or uninterrupted streaming)? In addition to this, service providers understandably have little incentive to invest in network upgrades where there is no obvious return.

Simplicity is the ultimate form of sophistication

Service providers can no longer focus simply on speed; they must work to find the most effective ways to make the network invisible and deliver an experience to the customer where everything “just works”.

In terms of the mechanics of the networks, there is limited interaction between applications and the network. Even though applications are becoming increasingly sophisticated in the amazing experiences they are enabling for consumers, they are still relatively simplistic from a networking perspective. Applications in their purist form are really just mechanisms to transfer packets across a network. Insight into NETWORK performance is predominantly based on whether the said network is successful in being able to move packets to their intended location, on time or at all. A user’s experience is based on the combination of these principles, and this is where it becomes essential to monitor and manage interactions based upon delay and loss characteristics of the network.

It is becoming vital that service providers start looking into how these applications work to identify the main factors which facilitate effective use of application outcomes. Quality is now crucial to ensure that the best outcomes are delivered to both consumers and operators, as they shift their focus away from simply speed. To this end, Broadband Forum has launched a unique series of projects focused on analyzing the greater depths of the broadband experience.

Layers of visibility

Over the years, the broadband industry has rated and marketed the quality of the residential network by measuring and touting its data rates. In order to delve a little deeper, Broadband Forum’s Broadband QED project is using Quality Attenuation methods to provide insights into quality of experience and application outcomes more comprehensively than ever before.

Broadband QED will establish a framework capable of capturing, measuring, managing and manipulating the performance aspects of networks and the services they enable. The QED project acts as a platform for those in the delivery chain to improve the broadband experience

by enhancing the management of network latency, predictability, reliability and consistency.

The timing of the project is extremely timely as new and emerging applications put increased pressure on the networks to deliver an amazing experience. The application of Quality Attenuation adds an extra dimension to systems performance analysis, providing more complex insight than previous methods, based solely on bandwidth evaluation.

Quality Attenuation provides service providers with an extra layer of visibility into their networks, giving them not only the ammunition they need to prevent and solve issues before their customers even know about it, but also to deliver a greater Quality of Experience (QoE) than before.

Application Layer Testing assurance

As good as this sounds, however, the delivery of better QoE doesn’t only rely on the quality of network performance, but rather each individual application’s relationship to certain network performance characteristics. To address this, Broadband Forum is also pursuing an initiative in Application Layer Testing (ALT) to outline the structure for optimum measurement of the broadband experience.

Complementary to Broadband QED, Broadband Forum’s ALT initiative is identifying a set of generation techniques, test methodologies and performance metrics that focus specifically on the traffic generated by applications using the network.

An example of this can be seen in video streaming. If a subscriber streams a video over a device within the home and the video freezes, the viewers QoE is significantly reduced. This unfortunate scenario can be avoided if service providers channel their focus toward the application layer, rather than the network.

Seeking perfection

Until now, a major portion of the broadband industry’s emphasis has been placed on achieving ever-higher speeds. However, with the average consumer’s ‘always on’, ultra-connected lifestyle now demanding so much more, QoE can no longer be ignored. Consumers expect impeccable QoE – in all applications, all the time.

The Broadband Forum’s two QoE initiatives, Broadband QED and ALT, will positively affect every player in the broadband service delivery ecosystem, from access equipment vendors and consumer electronics manufacturers right through to leading media service provider giants such as Netflix.

As the evolution continues, speed will no longer be primary measure of a network’s value, but rather one of the many necessary contributors to superior QoE and a more holistic, ‘invisible’ network.

For more information: www.broadband-forum.org