

Quantifying the revenue impact of Quality of Experience, a High Leverage Network™ advantage

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The Quality of Experience (QoE) for broadband end users is a primary driver of their satisfaction, loyalty and adoption of new applications. The challenge for today's network provider is to measure and quantify the business opportunities and revenue impacts of personalized QoE, one of several high value network capabilities.

Increased internet access speeds created the breakthrough for end users to embrace online content. As broadband became ubiquitous, social media expanded beyond simple instant messaging and texting to music, gaming and YouTube downloads. Higher broadband speeds improved the quality of experience, which in turn, encouraged application and content providers to develop innovative new applications — for 'everything'. Higher broadband speeds have enabled 'free' or 'nearly free' consumption of online video and cloud computing services.

This success represents a double challenge to network providers: bandwidth demand is exploding, and end users expect higher quality intelligent applications and content for free. With advancements such as high definition video and 3D video streaming, the need for improved quality of service (QoS) will only increase. In this bandwidth explosion context, is there room to increase revenue and ensure a positive ROI for QoS improvements?

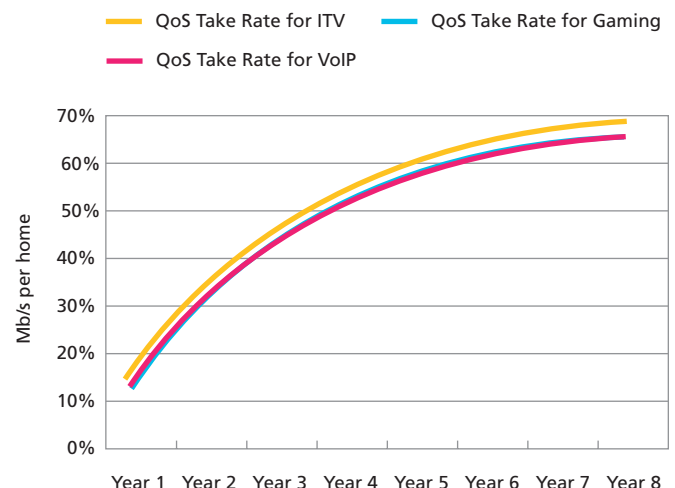
Need for Quality of Service

As end user expectations for a richer experience continue to grow, can we quantify the impact of QoS to an end user's QoE and understand the implications to a network provider's business model? For many applications, the most important QoS attributes include: jitter, latency, clarity, delivery, etc. A recent ALU End User Relevance testing confirmed that video clarity, immediate starting, and no

stuttering during playback are now table stakes, or basic end user expectations.

To measure the importance of QoS improvement to existing end users' applications, Alcatel-Lucent conducted primary research where end users were surveyed based on three categories of interest: on-line gaming, Internet video/TV (ITV) and voice over Internet (VoIP). End users expressed a consistent appeal, need (utility), and willingness to pay for incremental quality of service, almost equally across the three applications studied. A further examination showed over 60% of end users expressed significant interest in QoS options over the next few years (see Figure 1). This strong awareness of the value of QoS to their overall experience exists regardless of whether the end user pays for the underlying service or if it is free.

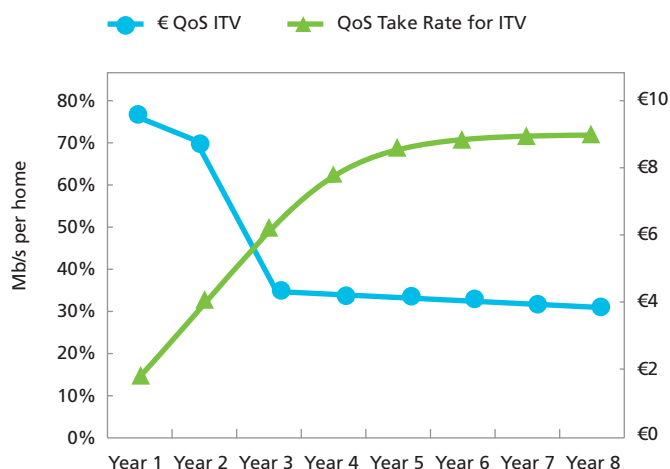
Figure 1. Projected end-user interest for QoS



Willingness to Pay

Understanding the value end users place on QoS helps define end users' willingness to pay and resulting potential revenue to network providers. To determine the optimal pricing range for incremental quality with existing applications, Alcatel-Lucent examined the willingness to pay for that QoS relative to 3 applications: online gaming, internet video, and VoIP services. For internet video (ITV), early adopters — specifically innovators and younger users — would initially pay around €9-€10 more per month for a quality enhanced subscription. But to capture a larger subscriber base, this initial price must decrease. Figure 2 shows the expected drop in ITV QoS pricing to €4 over time associated with end users willingness to pay relative to the increase in the ITV QoS take rate to 60%. A similar price-demand correlation exists on a per transaction basis, where initially early adopters may be willing to pay €4-5 for a one-time, high quality stream of a HD movie or an important soccer game. In time that price would drop below €2. Similar price-demand curves exist for the other two applications considered, online gaming and VoIP services.

Figure 2. Demand-price elasticity for improved quality of internet video



Adoption Rate

Quality of service improvements will broaden application subscriptions. For instance, when internet video is sharp and comparable to what is delivered via standard TV viewing (i.e., no freezing, audio in sync, high definition, rapid channel change, etc.), adoption will grow and revenue will increase.

To measure the impact QoS has on new end user adoption of quality-enhanced services, Alcatel-Lucent conducted further analysis of its end user surveys which showed QoS improvements resulted in the probability of a new end user subscribing to higher quality internet video to be 35% versus 8% for best effort service. When applied to the U.S. network providers, 10% more of their customer base will adopt quality-enhanced video by 2014. Revenues from these new adopters include both the incremental revenue for QoS and shared revenues associated with online media and entertainment content such as video and game downloads, rentals or subscriptions. The research also suggests that just 58% of the total new revenue will come from end-users, with the remaining 42% coming from advertisers¹.

QoS and Application Enablement

The question for network providers is not if QoS options should be offered, but when and how. New revenues can be generated from QoS-enhanced applications. This revenue comes from several sources: higher ARPU for QoS-enhancements (or upgrades to higher-level services), new adopters, and ad-supported media opportunities.

QoS advancements are integral aspects of application enablement (AE), an industry vision and network approach that addresses network provider issues of declining revenue and increasing service delivery costs. Application enablement seeks to create new sustainable business models that combine trusted network capabilities and the speed and innovation of the web to provide end users and enterprises a richer and more trusted web experience. Application enablement provides a means for network providers to offer high value network capabilities including QoS enhancements to generate additional revenue.

The Bell Labs Business Modeling study is based on Alcatel-Lucent primary research. Findings show direct correlations between quality of service improvements and increased revenue potential for a network provider.

For an in-depth discussion of the research findings and how you can apply them to your business model, contact your ALU representative.

To learn more about application enablement and how to improve the quality of service for your customers, visit www.alcatel-lucent.com/application_enablement.

¹ Strategy Analytics, Bell Labs Business Modeling.