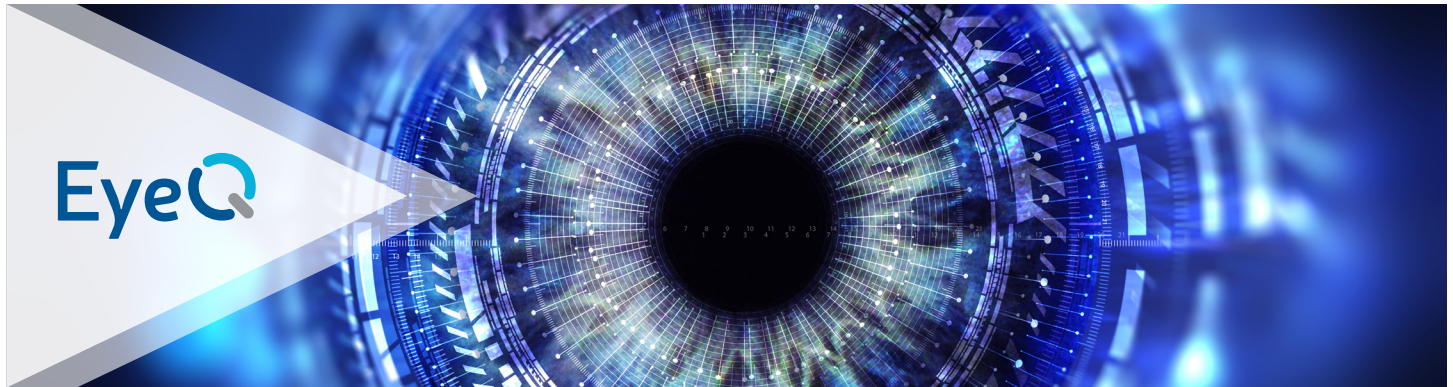


Leading Telco Operator Sets the Standard for OTT QoE With Harmonic

CASE STUDY



Beyond Improving Video Quality, Harmonic’s EyeQ Solution Reduces Bandwidth and CDN Costs by 50 Percent With a Fast ROI

The Challenge

Research shows that 86 percent of video streaming viewers say it is very or extremely important to get television-quality experience every time they watch content, and on every screen they use. Yet, delivery of high-quality video online, especially over unmanaged networks (i.e., ISP, mobile) presents a challenge for operators economically and commercially. To be successful in this environment, operators must deliver the highest video quality while minimizing network expenses.

This was the challenge facing a leading telco service provider in its country. The operator wanted to deliver a better quality of experience (QoE) for its ABR service over managed broadband and unmanaged (i.e., fixed and wireless broadband) networks to gain an edge in a fiercely competitive market. The operator owns distribution rights for popular European football content, which causes huge traffic load, network stress and extra CDN costs. A video compression solution that would ensure superior QoE, while providing bandwidth saving that had direct impact on interconnection fees and CDN costs was critical. It was important that the operator choose a solution that supports existing codecs (e.g., AVC) in order to avoid completely overhauling its network infrastructure and ensure an easy migration to HEVC. In addition, the solution needed to work with an already deployed ecosystem, including packager, ad insertion, CDN and clients.

EyeQ is bringing strong innovation to live compression technology by leveraging the mechanics of the human eye.

CHALLENGE:

A leading telco operator wanted to enhance the quality of experience provided to OTT subscribers across all networks, on all screens, including TVs. Key requirements in a video compression solution include superior video quality, bandwidth savings and support for its existing H.264 infrastructure.

SOLUTION:

The operator deployed Harmonic’s EyeQ real-time, content-aware video compression solution to provide superior quality HD live content to over 150,000 subscribers on a wide range of networks and connected devices. Harmonic’s EyeQ solution improves QoE and reduces bandwidth and CDN costs by up to 50 percent, enabling the operator to realize 100 percent ROI within a few months. Moreover, EyeQ perfectly integrates with the existing ecosystem, including packager, CDN, ad insertion system and a wide variety of ABR clients.

APPLICATIONS:

- Encoding with content-aware encoding
- Packaging and origin server for content-aware encoding

SOLUTION AT A GLANCE

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The Solution

The operator chose Harmonic's EyeQ™ real-time, content-aware video compression solution integrated with third-party teleport, playout and encoding services. Using Harmonic's solution, the operator can provide high-quality HD live content to over 150,000 subscribers on a wide range of connected devices, including set-top boxes, Apple TVs and Android™ applications on streaming media devices and LG TVs. Beyond enhancing subscribers' QoE, Harmonic's EyeQ solution significantly reduced the operator's bandwidth and CDN costs by up to 50 percent, helping them realize 100 percent ROI within a few months.

ANALYTICS DASHBOARD 4G



Figure 1. Analytics results comparing EyeQ vs. CBR on the operator's mobile network

Harmonic's EyeQ content-aware video compression solution optimizes the video quality, even over constrained OTT networks, reducing buffering by a factor of four and improving QoE for end-users. As more high-resolution profiles are selected, less toggling between profiles occurs with EyeQ. In particular, the EyeQ solution reduces the network load during peak streaming events, such as live sports.

The EyeQ solution is an enhancement to Harmonic's widely deployed software-based PURE Compression Engine™ and sits at the heart of the company's acclaimed software-based Electra™ X media processing platform, which had previously been deployed by the operator.

Since the EyeQ solution is 100 percent H.264 compliant, no changes needed to be made to the operator's existing ecosystem. Relying on H.264 as opposed to HEVC reduces costs of deploying the technology (no additional license fees are required), risk and complexity involved with migrating to a new compression standard. Moreover, deploying EyeQ was quick and easy through a simple software license for the Harmonic PURE Compression Engine.

The operator chose Harmonic because of its video compression expertise and considerable OTT deployment experience. EyeQ is bringing strong innovation to live compression technology by leveraging the mechanics of the human eye. Traditional encoding methods, such as CBR and CVBR, are ineffective at measuring video quality according to the Human Visual System (HVS). These approaches often utilize too little or too much bandwidth to sustain satisfactory video quality. On the contrary, EyeQ includes a real-time Harmonic psychovisual metric to continuously assess video quality, according to the HVS, and focuses bits where and when they matter most for the viewer. Being able to measure and adjust video quality in real time allows the operator to achieve true constant quality. Unnecessary bits are eliminated to ensure video quality targets are met at the lowest possible bandwidth.

The Workflow

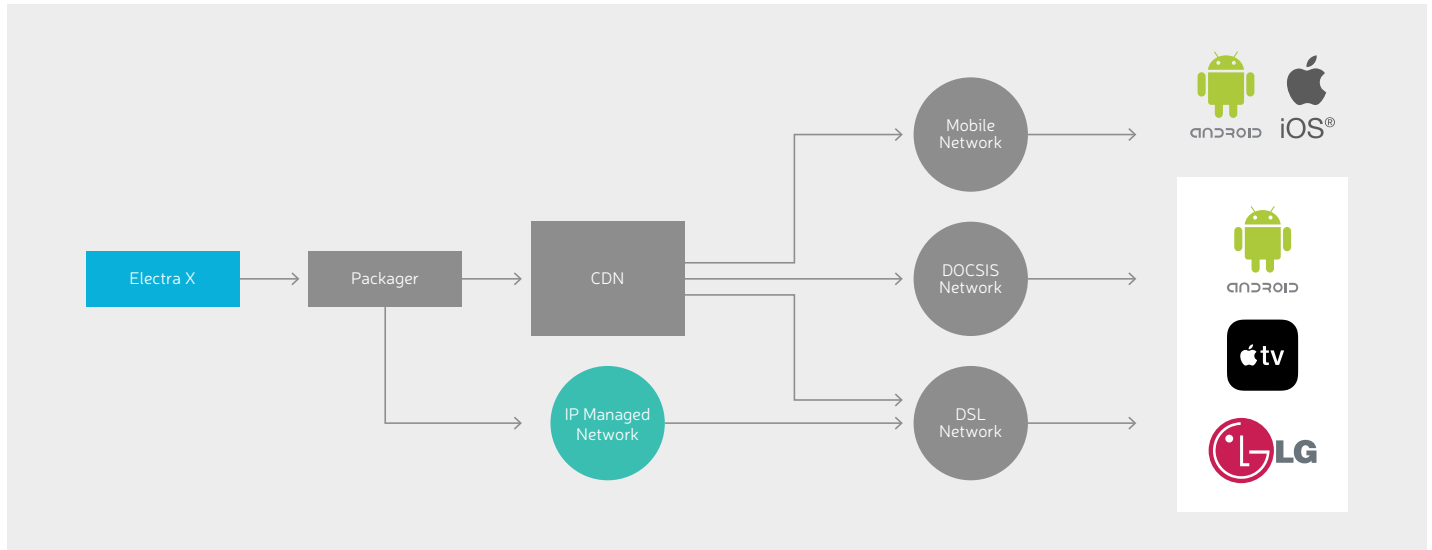


Figure 2. An illustration of the OTT workflow being used

The Result

By deploying Harmonic's EyeQ solution, the operator is able to deliver higher video quality for subscribers of its OTT multiscreen services, especially on non-managed networks (i.e., ISPs and mobile) and on TV screens. EyeQ reduces bandwidth consumption by an average of 50 percent, therefore lowering interconnect and CDN costs, enabling the operator to achieve ROI in a short amount of time – just several months.

The results were more noticeable on non-managed networks as network conditions are more adverse. Very often, on non-managed wired networks and mobile networks, Wi-Fi is used to connect OTT STBs and TVs. In these cases, the QoS cannot be guaranteed at peak traffic times. The result is less visible on managed services where the bandwidth to the user is under the control of the operator. A VLAN can be allocated with associated QoS, the connection from STB to gateway is wired and the client is generally controlled by the operator.

Integration with the operator's ecosystem, including the packager, CDN and clients, was fast and smooth.

Harmonic's EyeQ solution has helped the operator increase customer satisfaction with its OTT service and achieve longer viewing sessions.