

Success Story

Real-World Success for OTT Service Monitoring

Background

The Quality of experience (QoE) is the most important criterion of a video service provider's success. Television viewers expect the same QoE on connected devices like smartphones and tablets as they are used to getting on the main screen TV. Recently, the second largest pay-TV provider of direct broadcast satellite services in the United States embarked on a mission to improve the overall quality of video sent to subscribers and reduce time to market for new features in its video offerings. By deploying an advanced video monitoring solution, the service provider effectively monitors the quality of the feeds sent to OTT packagers and catches quality issues sooner, increasing subscriber satisfaction with the service. This case study will explore the advantages of monitoring OTT QoE and the key monitoring system practices a major pay-TV provider in the U.S. adopted to ensure superior quality for subscribers on every screen.

Importance of OTT Monitoring

As broadcasters and MSOs navigate the complicated world of OTT streaming, it is apparent that there is a need for a comprehensive set of tools that allow them to analyze, debug, and monitor OTT content. Recent research from Akamai and Sensum found that when low-quality streaming experiences occur, negative emotions of viewers increase 16 percent and engagement decreases nearly 20 percent. The survey also found that 76 percent of participants say they would stop using a service if issues such as buffering occurred several times.

Based upon this research, it's clear that consumer demand for a high-quality viewing experience has extended beyond the main screen TV in the living room. Today's television viewers expect superior QoE on all devices, including smartphones and tablets. This is what led the operator in our scenario to look into improving QoE for its OTT service. Deploying a high-performance and reliable monitoring solution would ensure the operator could gain insight into the level of video and audio quality being delivered to end customers and troubleshoot any issues that might arise.

Key Requirements for Monitoring OTT Services

When it came time to choose a monitoring solution, the operator had several key requirements and best practices it wanted to implement.

Workflow

From a workflow standpoint, the quality of OTT feeds is monitored during the distribution stage, just prior to being sent to OTT packagers. Thus, the operator needed to select a monitoring system that offered seamless integration with third-party equipment, including packagers as well as alarm platforms that alert the operator about any video or audio errors.

QoS & QoE

During the monitoring phase, the operator wanted to observe a variety of quality of service (QoS) metrics, such as content availability, quality of experience (QoE) measurements of presence, discontinuity, audio levels, video artifacts, and quality issues. The monitoring system must deliver error alerts for each stream in real time and support multiple DRMs for content protection. Otherwise the operator wouldn't be able to extract valuable QoE information and will be limited to only QoS statistics.

Reporting

The solution must also have the capability to deliver reports to different teams within the operator's organization. Having access to monitoring reports allows the operator to fix issues in a timely manner. The result is improved QoS and QoE for viewers.

HEVC 4K Support

Currently, the operator is delivering HD streams, but with 4K video growing in popularity, it wanted to be prepared to deliver higher-resolution content in the future. Selecting a monitoring system with HEVC 4K support would allow the operator to address the increased consumer demand for 4K content.

Closed Caption & Loudness Checks

The operator also needed a monitoring system that would ensure the integrity of closed captions and quality of streams, as well as guarantee audio loudness compliance with regulations (i.e., ITU BS.1770-2, EBU R128, and the U.S. CALM Act). Checking audio quality parameters such as loudness, silence, and audio levels, the operator can deliver a superior audio experience for live OTT content.

Software-based Solution

Choosing a Software-based Solution was another requirement of the operator. Given that the OTT environment is still evolving, the idea of deploying an inflexible, high CAPEX, and non-customizable hardware infrastructure did not make sense. Software-based monitoring gives the operator much more freedom in terms of supporting new formats and standards, as well as keeping costs low.

Centralized Monitoring

Creating and delivering OTT content is much more complex than traditional cable and satellite services. For instance, with different technologies and standards used, OTT delivery is via the unmanaged internet, and operators need to create multiple versions of each piece of video content, called variants, which adds up to a lot more content to manage. Given the added complexity of creating and distributing OTT services, the operator wanted to ensure that the monitoring system was easy to use, with a web interface that allows remote monitoring and lets users drill down to the source of errors. Selecting an enterprise-level IT-based solution with centralized monitoring capabilities would ensure easy deployment and expansion, as well as access for all the engineering staff whether they are onsite or remote. The operator wanted a monitoring system that supports Windows operating system, which is commonly used in the business world and is familiar to operations staff.

Live ABR Workflow

Furthermore, the operator wanted the capability to monitor live OTT streams. While many operators today offer on-demand OTT content, the operator is using live streaming for major events like sports. Choosing a monitoring system that is easily incorporated into the live ABR workflow helps the operator detect problems in the transport stream, such as network jitter, macroblocking, and audio loudness, and correct them quickly.

Scalability

While planning for its monitoring infrastructure, the operator took into consideration its near term and long term monitoring needs. As more and more customers switch to streaming video, the operator expects to significantly increase OTT video services. Having a scalable monitoring platform ensures that the operator is poised to accommodate future growth, scaling monitoring probes up and down as needed.

End-to-End Monitoring Solution

The pay-TV provider deployed Interra Systems' ORION, which is a software-based, end-to-end monitoring solution for its OTT services that address all of the above key requirements for a monitoring OTT service. As a result, it has improved the overall quality of video and audio sent to subscribers, gaining an edge on the competition. (See Figure 1 for an overview of the operator's monitoring workflow.)



Figure 1. Monitoring workflow for major U.S.pay-TV provider

Conclusion

Having a monitoring solution that is flexible, scalable, and capable of performing various QoS and QoE checks enables the operator to handle the complexities of the OTT environment and ensure flawless video quality for both live and on-demand content on any screen, in the most efficient and cost-effective manner possible.



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