

Company:

Large US Telecom

US service provider delivering broadband, video, and wireless services to millions of homes and businesses.

Key Issues:

Company wanted video quality measurements between virtual set-top boxes and service area nodes during an NFV pilot.

- Getting quality and performance metrics when pilot customers were not watching television
- Anticipate and react quickly to configuration or scalability problems

Solutions: Ixia Hawkeye

Results:

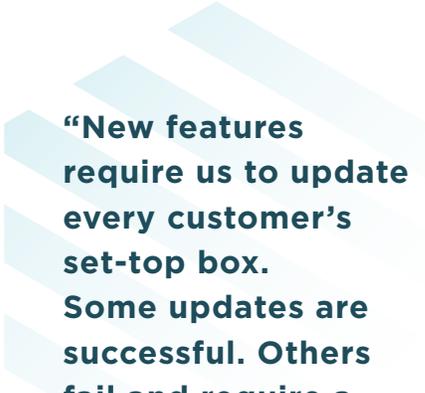
- Generated and measured video traffic streams at different intervals
- Overall quality scores improved considerably
- Service calls reduced moderately
- Premise visits drastically down

FIXING VIDEO DELIVERY DISRUPTIONS BEFORE THEY HAPPEN

SERVICE QUALITY IS UP. HOME VISITS ARE DOWN.

A large broadband internet, video, and telecommunications company has a long history of providing telephone, wireless, and video services to millions of homes and businesses throughout the United States. The company delivers broadcast and video-on-demand content over its fiber-to-the-premises service through a set-top box (STB).

The company's STBs are complex and cumbersome to update, making new features difficult and expensive to deliver. "New features require us to update every customer's set-top box," a company vice president told us. "Some updates are successful. Others fail and require a house call." As a result, the company is testing the use of a virtual STB that requires updates to the network, not the STB, to release new features.



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The company is rolling out network functions virtualization (NFV) across their infrastructure and piloting video services to a limited set of customers. Using a distributed virtualization architecture, almost all of the functions required for video service run on virtual machines on the company's network. The company engaged Ixia® to send and receive video traffic and measure quality and performance, whether or not its customers were watching television. "When you pilot a new service, you need something to measure and people are not always watching TV," said a vice president of the company.

MAINTAINING QUALITY WHILE SHIFTING COMPLEXITY

As the company rolls out virtual STBs to its subscribers, the company's network becomes the key functional area. "Virtual set-top boxes are simple devices that act as a gateway to the cloud where we host applications and video streams," a senior network engineer explained. "This relegates the virtual set-top box's responsibility to a limited set of functions."

Although the shift in complexity from the STB to the network provides greater flexibility for the company, it also introduces added risks of poor quality of service (QoS) and poor quality of experience (QoE) for customers. "Reliability and high performance are paramount," a senior director of network monitoring told us. "Our customers demand it, and it will cost us if they do not get it."

The company's passive monitoring solution only told the quality and reliability story in a rear-view mirror. They needed a way to simulate video traffic and measure quality at scheduled intervals, rather than waiting for customers to generate it. "It can be extremely difficult to predict the problems customers will have when they go from idle to active," a director of network monitoring explained. "Traffic can go from basically nothing to really high. If there is an issue, we may need to make adjustments on our end."

THE PROBLEMS THAT NEVER HAPPENED

To ensure high QoS and QoE at each customer's location, the company used Ixia's proactive monitoring solution, Hawkeye. They deployed Hawkeye software agents called endpoints in the

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cloud and on each STB to send and receive video traffic across the company's network. A network monitoring analyst at the company described the process, "We set thresholds for multiple pass/fail tests, and Hawkeye alerts us if something fails. Based on the Hawkeye reports, we can make modifications or scale up quickly before problems occur."

The results of the virtual STB pilot show higher overall quality scores, which in turn, leads to less customer churn. "When you can fix a problem before it happens, customers get consistent, dependable service," a company vice president said. "The pilot showed that we took fewer phone calls and made fewer house calls."

The company believes that having better quality translates, at a minimum, to a reduction in customer churn by 1% per month or the prevention of a loss of \$80 million in subscriber revenue. They credit a large part of improving quality in the pilot to the Hawkeye proactive monitoring solution. The company said it now plans to use Hawkeye in wider-scale rollout.

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ABOUT IXIA

Ixia provides testing, visibility, and security solutions, strengthening physical and virtual network elements for enterprises, governments, service providers, and network equipment manufacturers.

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