Hill Country Telephone Cooperative Ingram, Texas | United States

Innovative regional service provider prepares its ADSL2+ network for IPTV services using ASSIA Expresse Services.

CHALLENGES

- Validate network transport reach-rate estimates
- Achieve more performance from existing copper plant
- Assure high-quality service delivery to accelerate adoption and revenue

RESULTS

- Improved network configuration and performance database
- Reduced unstable lines by 75 percent, from 10.0 to 2.2 percent of the network
- Identified upsell opportunities for over 90 percent of current 512Kbps Internet customers

Challenges

Hill Country Telephone Cooperative, Inc. (HCTC) provides telecommunication services in 15 exchanges located in 14 counties spread over 2900 square miles of the rugged Texas Hill Country. With 5800 digital subscriber lines (DSLs), HCTC continuously maintains and improves its telephone and Internet service offerings. Today its broadband network can deliver Internet service to up to 80 percent of the homes in its coverage area, and HCTC enjoys a 50-percent subscription rate for its Internet services.

HCTC's vision for the future led it to upgrade its Internet plant in 2006 with Asymmetric Digital Subscriber Line 2+ (ADSL2+) technology. In addition to delivering high-speed, broadband services, HCTC plans to launch enhanced video and IPTV services, both of which introduce new challenges for the existing copper plant.

"As we anticipated delivering IPTV services, we needed to be sure that customers will be highly satisfied with the quality so that we can stimulate adoption," said Alan Link, plant manager for HCTC. "We wanted to ensure that our subscriber lines are as clean and stable as possible, so that our new services can get a fast start."

Most ADSL rate-reach (Mbps speed vs. kilo-feet) estimates available to regional providers are based on ideal simulations and usage in metropolitan networks using 26-gauge copper. The Hill Country's rugged terrain and rural coverage area present a much different environment than a typical urban coverage area, where thousands of houses are located in close proximity to each other. Instead, HCTC had to base its rate-reach estimates on more complex variables.

Prior to upgrading to ADSL2+ technology, Link and his team had estimated that HCTC's plant could achieve 17-20 Mbps at 5000 feet on 24-gauge copper or 7000 feet on 22-gauge copper. Although HCTC could infer service quality from digital subscriber line access multiplexer (DSLAM) statistics, the company never had a good way to qualify lines based on the customer's actual service experience. Hesitant to introduce IPTV service without better visibility into its transport network performance, HCTC turned to ASSIA and its Expresse® Services software as a service (SaaS) solution for help.

Solution

Expresse Services uses ASSIA's patented software tools and intellectual property licensing to automatically optimize DSL services, fault diagnosis, and service upgrade recommendations. The solution offers regional and independent service providers the same high-speed, equipment-vendor-independent, dynamic DSL management solutions that have previously been available only to the world's largest DSL service providers.

The Expresse Services Data Collection and Profile Change elements were installed in HCTC's network to automatically collect operational data twice a day and performance data once a day. The data captured produces complete diagnostics for every monitored line for an entire 24-hour period. Using this data, Expresse Services optimizes the operating profile of each line, a feature known as Profile Optimization, and produces detailed line-level and network-level diagnostics for both the copper plant and DSL service.

With in-depth information about network lines provisioned into Expresse Services, HCTC gains better insight into its upselling opportunities. The Service Recommender module analyzes the characteristics of the lines to identify those that can support a higher level of service than that for which they are currently provisioned. Management can easily view attributes such as Line Performance Analysis, Diagnostics Analysis, Historical Data Trends, and Lines in the DSLAM for viewing results for a single line, and Diagnostics Reports for viewing statistics for all lines.

HCTC currently has more than 3800 lines being monitored and optimized daily. A network-level view of problem lines is augmented by drill-down views that provide diagnostic information on a per-line basis.

"The ASSIA solution was a natural precursor to our video roll-out," said Link. "We now have information—not just statistics—for decision making and to proactively address opportunities for improvement."

HCTC is piloting an IPTV service offering over its optimized ADSL2+ copper plant.

Benefits

Expresse Services validated HCTC's preliminary rate-reach estimates and found that the majority of HCTC's network was stable or very stable. Small portions of the network, however, consistently experienced unstable performance, and Expresse Services identified specific lines for optimization. Within four to six weeks of Expresse Services optimization, unstable lines decreased from 10 percent to 2.2 percent—a 75-percent improvement after profile optimization—effectively increasing stable lines from 90 to 98 percent of the network. HCTC's technicians were freed to focus their efforts on remediating physical connection issues at customer locations.

The powerful Expresse Services software integrates a number of capabilities into one, easy-to-use service. Now HCTC can test and optimize every DSL in the infrastructure every day, without human intervention and without service delivery impact.

"ASSIA has helped us improve the profitability of our DSL network," said Link. "We now have a way to categorize in-service lines for achieved bandwidth, identify the impact of shortening long loops, and predict rate-reach characteristics based on our specific copper plant. The tool gives us a better, easier-to-use way to evaluate video performance from the end-user's perspective."

The Service Recommender component also identified many new upsell opportunities for HCTC. For example, the HCTC 512Kbps service is used by 40 percent of HCTC customers. More than 90 percent of the lines used by these customers can support HCTC 1Mbps and 3Mbps service products, giving HCTC an opportunity to upgrade customers to higher-revenue service products. Because the Expresse Services solution identifies specific lines, HCTC can avoid marketing new offerings on customer lines that are not yet able to deliver superior service.

Data from Expresse Services is also used to compare provisioning data from DSLAMs with customer billing data. In addition to helping ensure billing accuracy, it enables HCTC to easily provide new service trial offers for limited time periods and either convert customers to higher-revenue services or remove the capabilities.

Link also likes the ability to provide more proactive customer service. For example, normal data traffic can mask issues that will become readily apparent once video content is added. Even if HCTC is not receiving trouble tickets from unstable lines, the company knows which lines need work and can add potentially troublesome lines to maintenance routines. HCTC can now proactively catch and remedy small impairments before they become service-affecting problems for multiple customers.

"ASSIA Expresse Services has given us a comfort level of knowing that our network is optimized for the best possible IPTV performance," said Link. "I don't have to host it, manage it, or dedicate resources to it, and it gives us visibility we never had before. It's a neat tool and just a better way to do business."
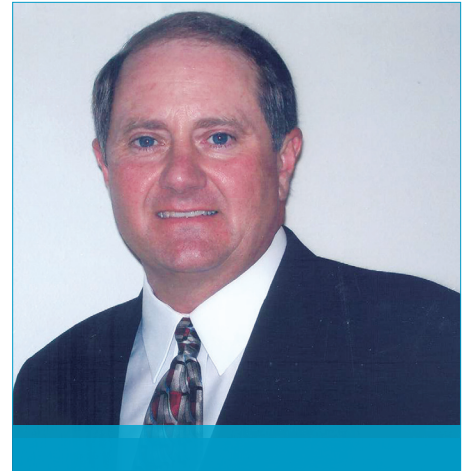
"At Hill Country, ASSIA has helped upgrade our DSL network operations and deliver a superior customer broadband experience."

Delbert Wilson
General Manager
Hill Country Telephone Cooperative

Next Steps

HCTC is piloting an IPTV service offering over its optimized ADSL2+ copper plant with plans to launch the new service in 2011.

ABOUT ASSIA

ASSIA Inc. is the leading provider of high-performance software tools for Dynamic Spectrum Management of DSL networks. ASSIA's products enable DSL service providers to realize dramatic speed and reach improvements, lowering operating and capital expenses, generating incremental revenue, and opening new business opportunities in the broadband-enabled home. ASSIA has more than 35 million lines under contract worldwide with top tier service providers and is backed by strategic investors, including AT&T, Mingly China Growth Fund, SFR Development, Sandalwood Partners, Sofinnova Partners, Stanford University, Swisscom Ventures, T-Ventures, and Telefonica. For more information, visit www.assia-inc.com.

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