CASE STUDY

VTX1 Uses Tarana to Expand Coverage and Reduce Churn

VTX1 Challenges

As a rural ILEC in southern Texas, VTX1 is no stranger to challenges. These challenges include transitioning subscribers off an aging, expensive copper DSL network, unsustainable churn rates, and managing a vast regional footprint of 40,000 square miles of sparsely populated territory.

"Our network was a mix of DSL that delivered about 4 Mbps on average, legacy fixed wireless, and some fiber. We knew we needed to get our customers off this old technology, but we also knew it would be expensive to do it all with fiber," said Sebastian Ivanisky, Chief Technology Officer of VTX1.

Challenge: VTX1 needed to upgrade its aging DSL and legacy fixed wireless infrastructure to deliver fiber-class broadband to its customers quickly and cost-effectively while staying competitive.

Solution: Tarana's ngFWA platform delivered high-performance broadband at a fraction of the cost and time of an all-fiber approach.

Results: VTX1 reduced churn from up to 12% in some areas to less than 2%, while improving speed offerings by 100X and reducing deployment time and costs.

Speeds: Average speeds for all subscribers are 410 Mbps download and 97 Mbps upload.

Distance: Link distances range up to 15+ miles.

Visibility: LoS and nLoS links due to hills, trees, and other foliage.

Spectrum: Even mix of CBRS, 5 GHz, with some 6 GHz.

Legacy DSL Equipment: VDSL Zhone (DZS) MXK.

Cost and time to deploy fiber were paramount concerns for VTX1 as it evaluated its choices. "E-ACAM[1] offered us a chance to get funding to help with the upgrade, but it came with a lot of limitations," said Ivanisky. "With 40,000 square miles and households scattered across challenging terrain, fiber would have been not only prohibitively expensive; it was unlikely we could deploy it everywhere within E-ACAM's 5-year time limit."

Although VTX1 had previously deployed fixed wireless to some locations, it found the speeds it could deliver were simply not competitive. It was also challenged in some locations by excessive interference. This further exacerbated performance issues and contributed to churn, which was as high as 12% in some areas as measured over a 6-month period.

VTX1 knew it had to try something completely new.

G1: The Next-Generation of FWA

G1's innovative breakthroughs in radio performance create an entirely new paradigm for building and growing fixed wireless access networks. G1 features field-proven technology, such as interference and noise cancellation, fine-grain Tx and Rx digital beamforming, distributed massive MIMO at both ends of the link, perfect multipath integration for excellent non-line-of-sight (NLoS) and near-line-of-sight (nLoS) link performance, and k=1 spectrum reuse.

> "Once VTX1 deployed Tarana, it saw an immediate reduction in churn — to less than 2% for Tarana customers. Our customers love the service and what it enables them to do that was previously unimaginable."
>
> —Sebastian Ivanisky, CTO

G1's unique ability to cancel interference from other radios means high-performance speeds are possible even in busy RF environments, which leads to unprecedented link speeds and stability. Tarana's asynchronous burst interference cancellation (ABIC) technology also reduces the impact of bursty interference, such as from nearby Wi-Fi transmitters. Less interference creates more reliable, higher-speed connections. It also means greater capacity and the ability to support more subscribers per base-node radio.

"We had a customer to whom we had recently denied service because of all of the RF noise in their neighborhood," said Ivanisky. "With Tarana, not only were we able to connect them, but we were able to deliver 200 Mbps of service in an environment where we had previously said, 'We just can't connect you.' That's simply amazing."

1 E-ACAM is the FCC's Enhanced Alternative Connect America Cost Model program.

Tarana innovations, combined with the ease of deployment of fixed wireless, translated for VTX1 into fiber-class broadband that could be deployed anywhere and within the short timeframe required by the E-ACAM program.

Retire DSL Quickly and Cost-Effectively

Once VTX1 made the decision to use Tarana, transitioning their DSL subscribers was a simple process. “The hardest part of migrating DSL subscribers is building the tower,” said Ivanisky. “Once you have that, upgrading each subscriber is easy.”

Another positive benefit is the ability to serve DSL subscribers with faster broadband at far lower cost than a comparable fiber optic network. “With Tarana, we plan to cover all of our exchanges for a fraction of the cost to deploy fiber to our existing subscribers — less than 10%,” said Ivanisky. “And that fiber investment would only provide service to existing customers; it doesn’t include the cost to provide the total coverage required by E-ACAM.”

Reduce Churn

Another challenge for VTX1 was reducing churn. With their previous network built with copper and legacy FWA, churn rates were as high as 12%. Once VTX1 deployed Tarana, it saw an immediate reduction in churn — to less than 2% for Tarana customers. “In many cases,” said Ivanisky. “Churn for Tarana is lower than fiber. Our customers love the service and what it enables them to do that was previously unimaginable.”

Ivanisky also noted that, while ARPU trends down year-over-year, the ability to keep more customers and offer higher speeds keeps more revenue overall. Further, this avoids the substantial cost of a lost customer. “A fiber subscriber churned away is much more expensive than an FWA subscriber,” said Ivanisky.

Accelerate Deployments

A third component of the Tarana solution for VTX1 was the ease and speed of deployment. In particular, this was crucial for VTX1’s E-ACAM funding, which required 100% coverage within

5 years. Tarana's ngFWA platform is designed from the ground up to be simple to deploy and to operate in the toughest environments with no post-installation truck rolls. "Once deployed, Tarana just works," said Ivanisky. "Our Tarana customers are just as happy as our fiber customers. For them, there is no difference." All of this was achieved at a deployment cost and time that is a fraction of that required for fiber.

Summary

Given the success to date of serving 7,700 Tarana subscribers with 87 towers, VTX1 is rapidly deploying Tarana across its entire service area. "The ability to use E-ACAM funding was worth millions of dollars alone," said Ivanisky. "Taken together with rapidly reducing DSL numbers and happier customers, it was a no-brainer. Did I mention it was quick? It has been nothing but success when it comes to the effect this technology has had on our business."

"In the past, we have been sold on a lot of different products that promise X, Y, and Z and under-deliver," said Carlos Villareal, Wireless Network Operations for VTX1. "My expectation was this would be another one where so much is promised, and it will come in at half of that, and then there's an excuse for why that happened. I was one of the first people to doubt Tarana, and I'm not afraid to say I was 100% wrong. I am now convinced. I believe. The product — it absolutely, truly works."

About VTX1

VTX1 Companies provides broadband access to enable Internet and telephone applications for homes and businesses across South Texas. VTX1 Companies also provides carrier services for large enterprises. They continue to expand into new markets, while still providing the same quality service it's been delivering for over 65 years. Clients range from locally-owned businesses, remote farms and ranches, to state-of-the-art educational facilities, medical institutions, and world-renowned integrated communications providers. Learn more at vtx1.net.

Tarana's mission is to accelerate the deployment of fast, affordable internet access around the world. Through a decade of R&D and more than $400M of investment, the Tarana team has created a unique next-generation fixed wireless access (ngFWA) technology instantiated in its first commercial platform, Gigabit 1 (G1). It delivers a game-changing advance in broadband economics in both mainstream and underserved markets, using either licensed or unlicensed spectrum. G1 started production in mid-2021 and has been embraced by more than 250 operators in 24 countries and 47 states. Tarana is headquartered in Milpitas, California, with additional research and development in Pune, India.

 @taranawireless taranawireless.com TARANA