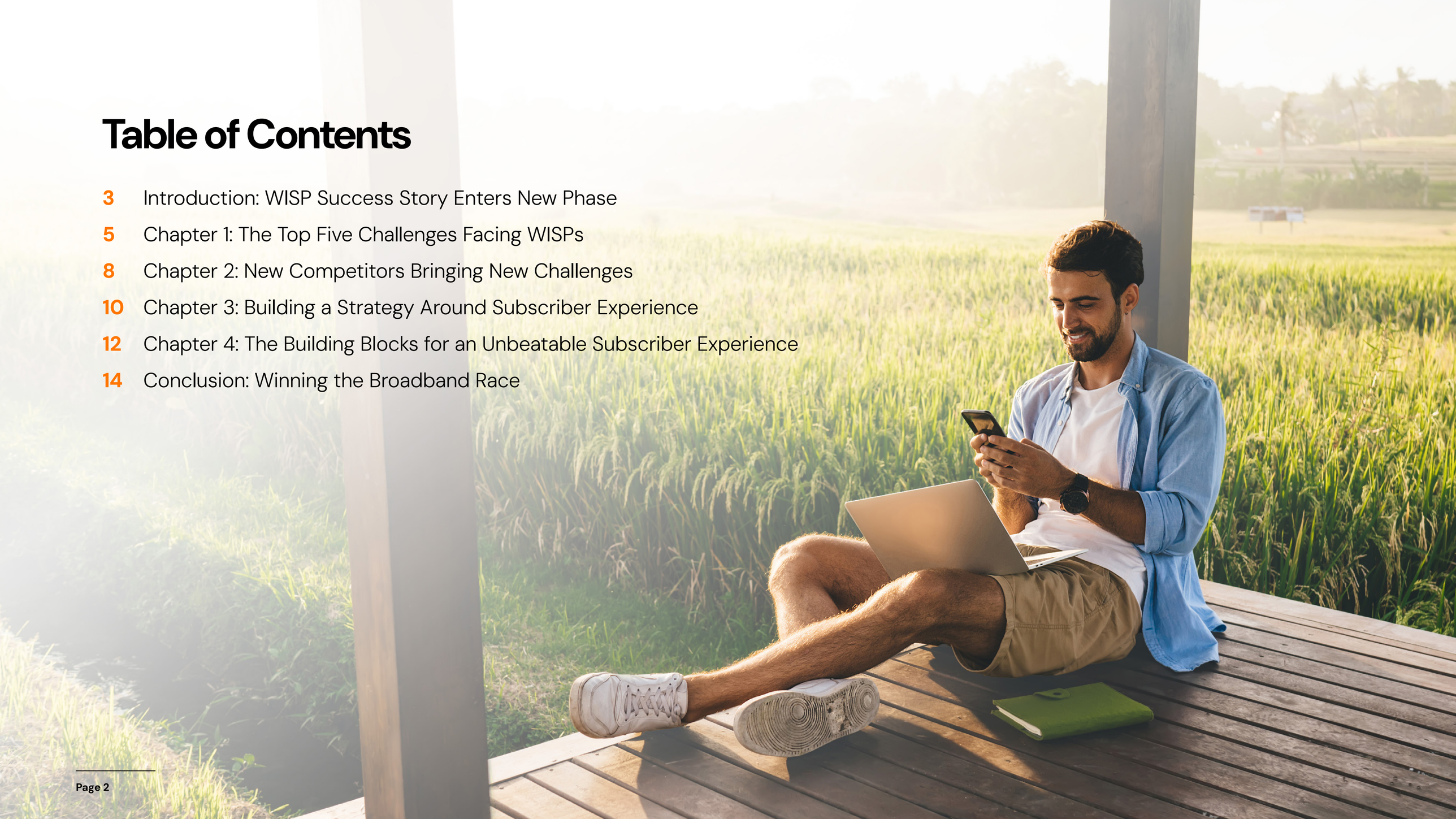
Calix

Winning the Broadband Race: Unlocking Success for WISPs Using Subscriber-Centric Strategies

How Focusing on Subscriber Experience Strategies Can Keep Wireless ISPs One Step Ahead in a New Era of Broadband Competition

Table of Contents

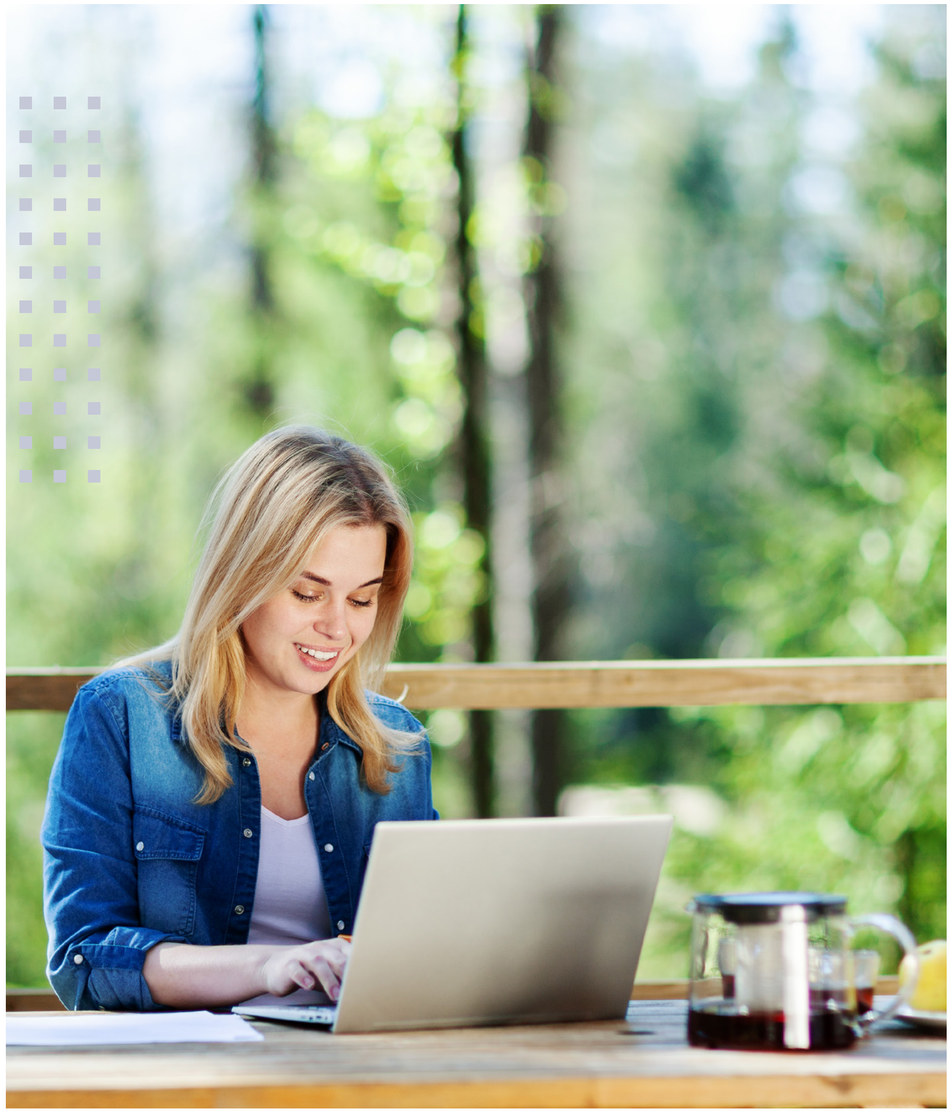


WISP Success Story Enters New Phase

Wireless internet service providers (WISPs) have surged in popularity in recent years. The emergence of faster wireless capabilities—next-generation Fixed Wireless Access (ngFWA)—has enabled WISPs to serve communities underserved by traditional fixed networks with high-capacity broadband speeds. While serving remote areas is often challenging or economically unviable for fixed-line operators, the same is not true for WISPs. By wirelessly connecting subscribers to a central base station using fixed-wireless access (FWA) technology, they eliminate the need for wired connections that typically use fiber-optic cables or traditional copper-based lines.

Approximately 30 percent of United States households in remote and rural communities still lack access to a high-speed broadband, and WISPs are best positioned to bridge this gap. More than 2,000 WISPs currently provide FWA broadband services to more than 4 million residences in small towns and rural communities across all 50 U.S. states. The majority of these WISPs are small providers, rooted in the communities that they serve.

On a global basis, it is estimated that there were 100 million FWA connections worldwide at the end of 2022, a figure forecast to triple in size by the end of 2028. FWA is more prominent in North America than any other region in the world, with almost all wireless-based service providers in the region offering some form of FWA, with 70 percent offering services over 5G (see chart 1). Data traffic over FWA networks accounted for 21 percent of global mobile data traffic at the end of 2022 and is projected to account for 30 percent by 2028.



But despite this growth, WISPs are entering stormy waters. In particular, smaller WISPs are facing stiff competition from large national wireless carriers and fixed-line operators, which are also looking to take advantage of the FWA opportunity. These new competitors have the ability to invest significant sums in deploying FWA networks and can quickly build market share through attractive pricing plans, bundles, and promotions.

This eBook outlines how these competitive pressures are disrupting traditional WISP business models and outlines what WISPs need to do to stay one step ahead.

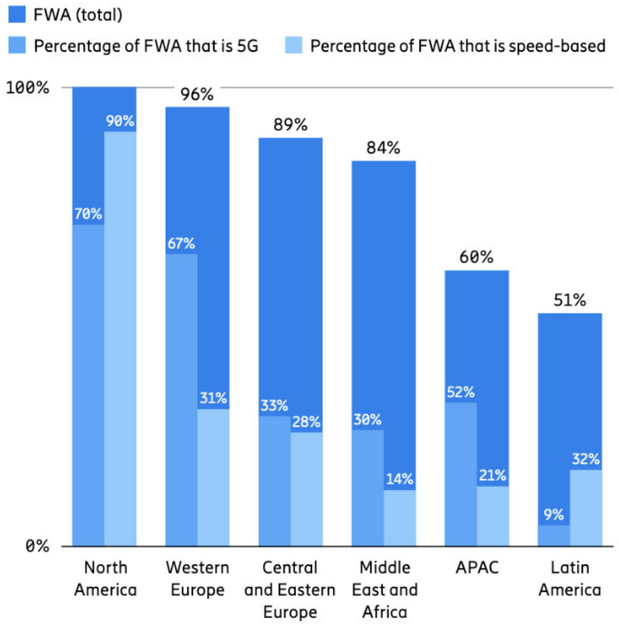


Chart 1: FWA service provider adoption by region, 2023
Source: Ericsson

CHAPTER 1

The Top Five Challenges Facing WISPs

1. The Trap of Speed-Based Marketing

The arrival of ngFWA allows WISPs to offer services with advertised speeds comparable to those of fiber-based service providers. Advertised speeds via FWA typically range from 25 Mbps to 1 Gbps, though actual speeds can vary depending on factors such as network infrastructure, signal strength, distance from the base station, and network congestion.

The speeds available via FWA today are sufficient to meet an average household's internet usage requirements. But in an era when subscribers are marketed services based primarily on speed, WISPs are often at a disadvantage compared to fixed-line rivals. According to consumer surveys, 82 percent of subscribers said they either don't need more speed or were indifferent about it. However, around 90 percent of FWA providers in North America continue to offer "speed-based" plans (see chart 1). It is therefore critical that WISPs develop value propositions that have greater resonance with subscribers, based on something other than speed.

2. Addressing the Spectrum Challenge

Operating an FWA network rests on having access to spectrum in the right quantities and in the right spectrum bands. Acquiring licenses to use this spectrum can be hugely expensive. For example, in the 2021 auction for midband 5G spectrum in the U.S., the nation's large wireless carriers—AT&T, T-Mobile, and Verizon—paid a combined $81 billion for licenses, fees far beyond the reach of most WISPs.

As a result, WISPs rely on unlicensed spectrum being made available by regulatory authorities. A key event in the development in the U.S. WISP ecosystem occurred in 2020 when the Federal Communications Commission (FCC) freed up the Citizens Broadband Radio Service (CBRS) band used by the U.S. Navy for shared use by private companies. Spectrum has also been made available for WISPs in the valuable 900MHz, 2.4GHz, and 5GHz bands.

WISPs operating in the CBRS bands have one major advantage: This spectrum is "licensed by rule," therefore considered "licensed" and identified as reliable in the eyes of the FCC.

While this approach means WISPs can launch services without the costs associated with acquiring exclusive licenses, it comes with downsides. Interference and congestion are commonplace, range can be limited, and usage is at the mercy of regulatory rules that can change at any time. These factors place significant restraints on growth for WISPs at a time of heightening competition.

3. High Traffic Pushing Networks to the Limit

A consequence of WISPs relying on limited bands of unlicensed spectrum is network congestion, an issue exacerbated by rising broadband traffic trends. Ensuring consistent and reliable quality of service (QoS) can be challenging in unlicensed spectrum due to the shared nature of the frequency bands. If the various parties using this spectrum are unable to agree to spectrum co-existence arrangements, it can result in slower speeds and reduced quality, especially in more densely populated urban or suburban areas that experience high network traffic.

Accessing more spectrum—either licensed or unlicensed—to alleviate the problem is usually not a viable option for WISPs. Instead, they are reliant on regulators opening up more unlicensed spectrum for use, but they can do little to influence or accelerate this process.

4. The Network Technology Race

The cost of deploying FWA infrastructure is significantly lower than conventional fixed networks as the wireless capability eliminates the need for much of the physical infrastructure such as underground cables or utility poles. But these economic advantages are often offset by the higher cost of extending services to remote or rural areas due to challenging terrain, power availability, and longer distances between users.

WISPs are also required to continually invest in upgrading their networks to support the latest standards and technologies—such as ngFWA—to remain competitive. Care must be taken to ensure maximum return on investment (ROI) while deploying next-generation network technology. This includes considerations around operational efficiency, customer expectations, competition, hybrid fiber networks and planning for future growth.

5. Rural Broadband Competition is Intensifying

The WISPs' business model was established on serving communities that had little or no existing high-speed broadband provision. In many cases, WISPs faced no competition, and their targeted footprints meant they rarely competed with each other.

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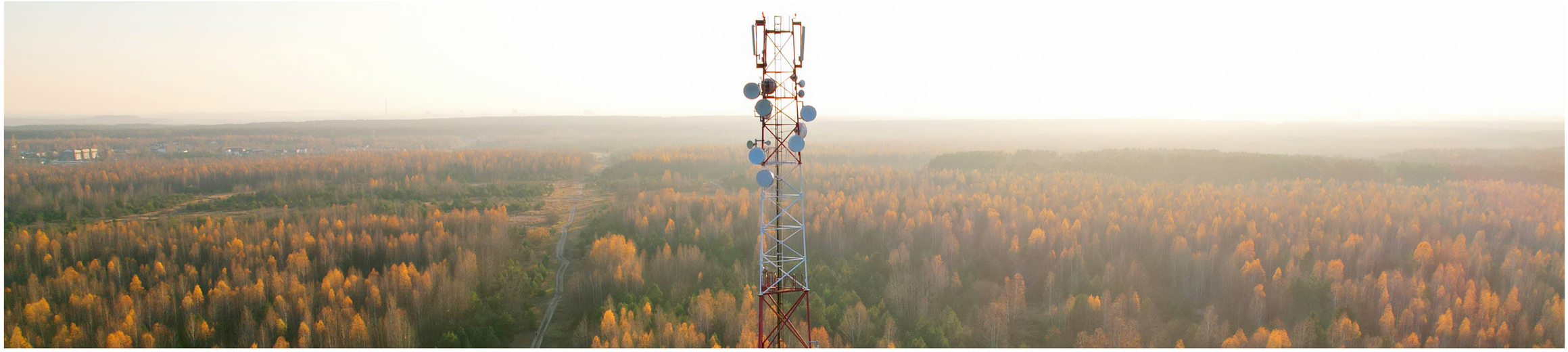


New Competitors Bringing New Challenges

WISPs have flourished in recent years due to rising consumer demand for broadband, greater technology choices (including 5G, ngFWA and fiber), and increased funding from both private and public sources. Arguably, the most important factor fueling their growth has been the relative lack of competition in the often hard-to-reach areas they serve. Because WISPs serve targeted footprints, they can avoid competing, often coordinating so networks do not overlap. But this situation is rapidly changing as new players seek to capitalize on the opportunities presented by cost and speed to market of FWA. Competition is emerging from several areas:

• **Large wireless carriers:** The two leading proponents of 5G-based FWA in the U.S.—T-Mobile and Verizon—launched their 5G fixed-wireless services in 2021 and have seen significant growth since. It is forecast that the pair will jointly account for around 12 million FWA customers by 2025. AT&T launched its own FWA service("Internet Air") in a dozen U.S. markets in August 2023, in a bid to keep pace. For these carriers, FWA has been a cost-effective entry point into the home broadband market, and a strategy to recoup their investments in expensively acquired 5G licenses.

• **Satellite providers:** Satellite-based connectivity is well-suited for providing internet access in remote and rural areas where terrestrial infrastructure may be limited or cost-prohibitive. This has led to satellite providers such as Starlink by SpaceX potentially providing further competition for WISPs. The satellite operators are still defining their business cases and go-to-market strategies. They are likely to initially focus on collaborating with wireless carriers, using satellite to complement terrestrial networks.

• **Fiber broadband providers:** In recent years, fiber providers have been able to extend their networks and bring high-speed internet access to underserved communities by taking advantage of government funding such as the Rural Digital Opportunity Fund (RDOF). Funding has also flowed in from private sources, such as private equity groups. These factors have made deploying high-speed fiber into sparsely populated areas more economically viable. Many electric cooperatives and other community-based utility firms are also deploying fiber across their footprints.

How WISPs Can Win Against the Competition

WISPs can deploy several strategies to ensure they can compete strongly against large wireless carriers, satellite providers, and fiber broadband providers.

Avoiding a "race to the bottom" on price

An influx of new players frequently translates into consumer price competition. WISPs can deploy networks at significantly lower cost than service providers using other access technologies, but they may still struggle to compete with larger players in the event of a price war. Larger carriers with massive marketing budgets may seek to quickly capture market share by offering competitive pricing plans and discounts to attract subscribers. If this happens, WISPs would be forced to implement comparable pricing strategies, risking a race to the bottom on price, which could impact profitability.

Keeping pace with new service offerings

As well as mitigating price competition, WISPs must also ensure they can match the service offerings of new rivals, which means expanding services beyond basic connectivity. Large carriers have greater ability to diversify their service offerings. This could include leveraging existing partnerships with content providers to provide specialized streaming services or introducing bundled solutions like TV, internet, and phone.

Ensuring the network remains competitive

Networks in rural areas are more likely to suffer from variable quality and coverage issues, and these can be come important factors in a subscriber choosing one provider over another. A WISP's FWA network may draw unfavorable comparisons with rivals running fiber networks based on prior perceptions of wireless as unreliable. FWA has come a long way in reliability from its early years of deployment. Fiber-based networks are likely to tout faster speeds and a more reliable connection. As such, WISPs must take advantage of technological innovations to ensure their networks remain competitive. This could include constructing hybrid networks that combine FWA and fiber where needed, for example by using fiber-based back haul in high-traffic areas or implementing Fiber-to-the-Home (FTTH) in concentrated residential areas.

Offering exceptional customer service

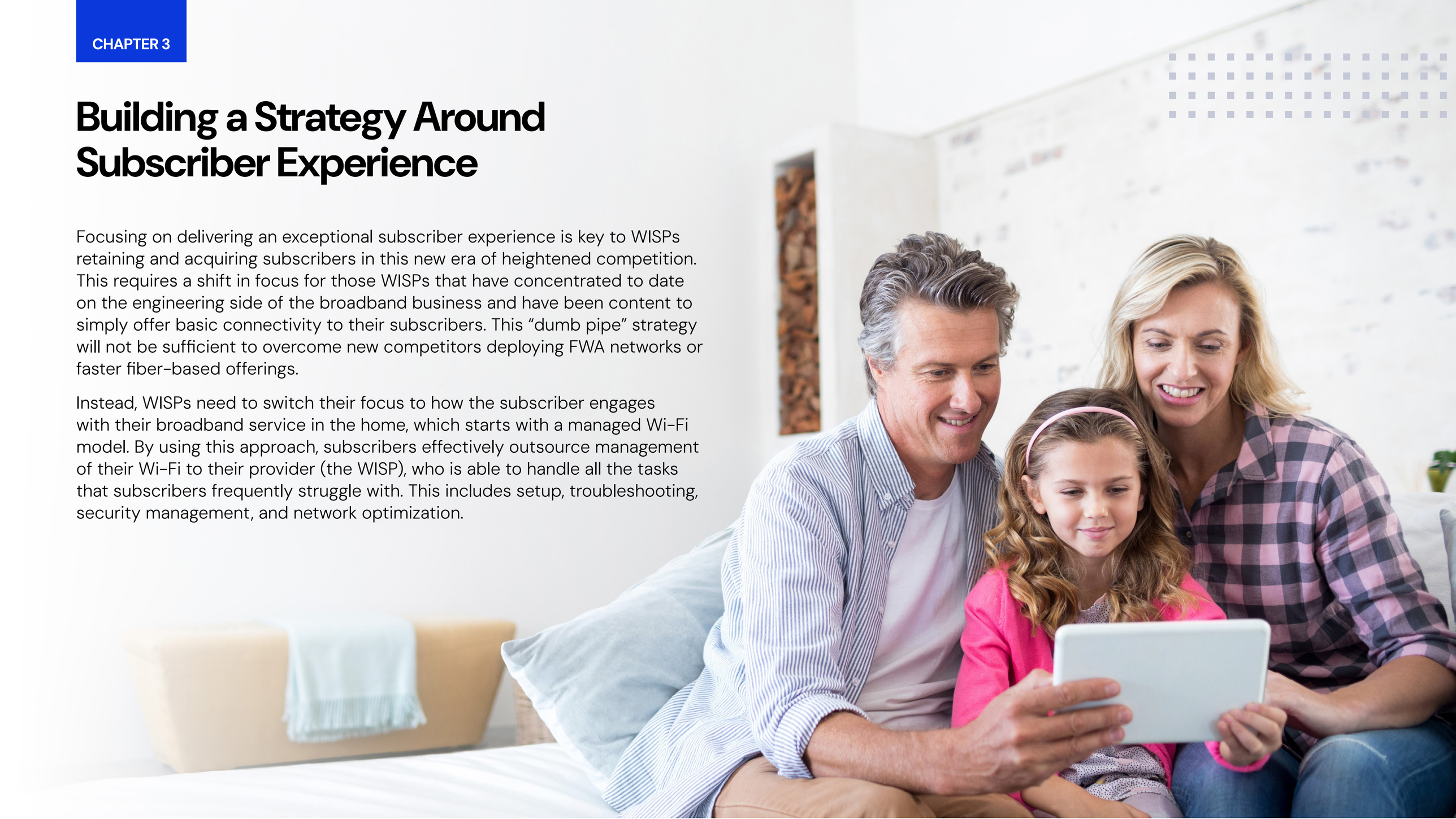
Effective, dare say exceptional, customer service can be a crucial competitive differentiator. Unlike larger rivals that lack local connections and can be viewed as faceless corporations, WISPs can draw on strong relationships with the communities that they serve. This enables them to provide personalized, responsive, and reliable customer service that enhances the overall subscriber experience. This contributes to subscriber loyalty, retention, and positive word-of-mouth recommendations.

CHAPTER 3

Building a Strategy Around Subscriber Experience

Focusing on delivering an exceptional subscriber experience is key to WISPs retaining and acquiring subscribers in this new era of heightened competition. This requires a shift in focus for those WISPs that have concentrated to date on the engineering side of the broadband business and have been content to simply offer basic connectivity to their subscribers. This “dumb pipe” strategy will not be sufficient to overcome new competitors deploying FWA networks or faster fiber-based offerings.

Instead, WISPs need to switch their focus to how the subscriber engages with their broadband service in the home, which starts with a managed Wi-Fi model. By using this approach, subscribers effectively outsource management of their Wi-Fi to their provider (the WISP), who is able to handle all the tasks that subscribers frequently struggle with. This includes setup, troubleshooting, security management, and network optimization.



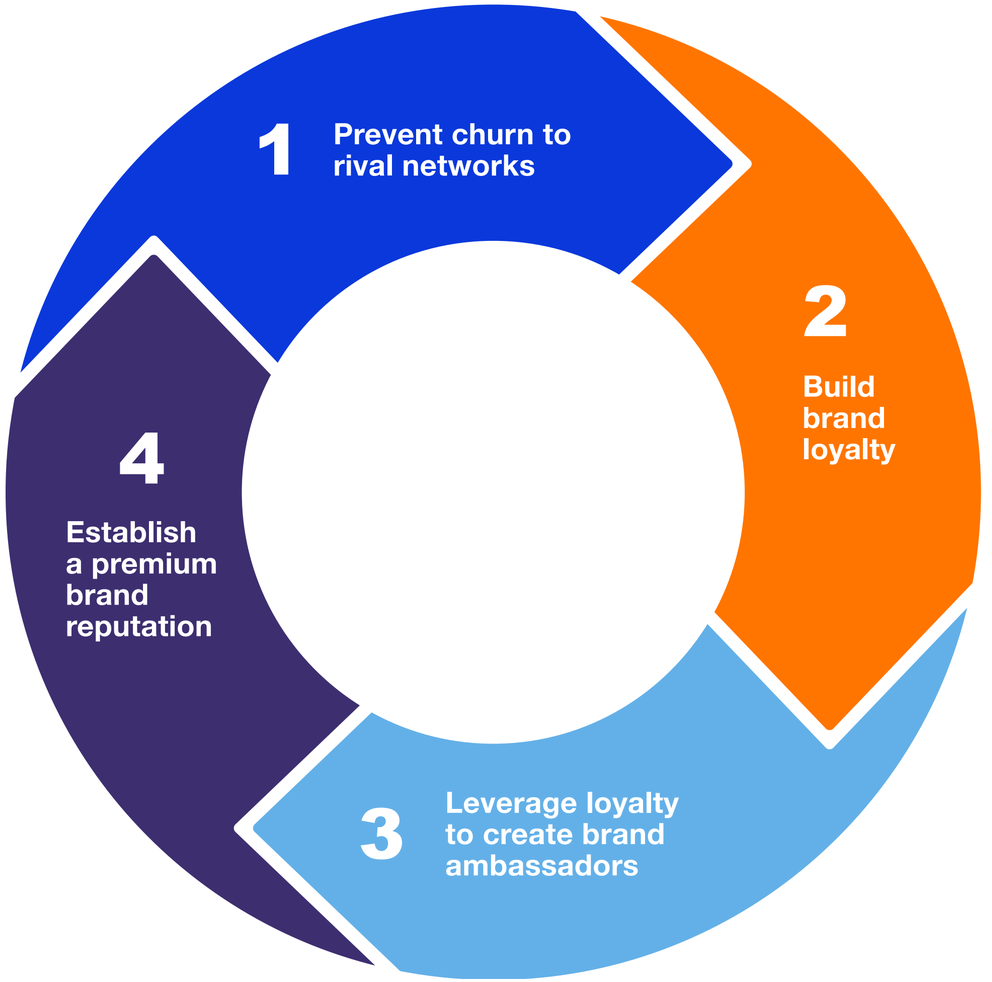
Providing a Subscriber Experience that is Superior to Competing Offerings Delivers a Virtuous Circle of Benefits

1. Prevent churn to rival networks
Satisfied subscribers are less likely to look elsewhere, making subscriber retention key to long-term growth.

2. Build brand loyalty
Satisfied subscribers are not only less likely to churn, they're likely to develop deep attachments to the brand.

3. Leverage loyalty to create brand ambassadors
Loyal customers will be the source of positive online reviews and referrals.

4. Establish a premium brand reputation
Brand ambassadors help WISPs build reputations based on service excellence that will give them the edge over the competition.



CHAPTER 4

The Building Blocks for an Unbeatable Subscriber Experience

A managed Wi-Fi model gives WISPs the platform to implement a range of strategic measures that directly enhance the subscriber experience and help lower your operational expenses (OPEX). These include:

Differentiated service offerings

WISPs can offer a range of service plans to accommodate different needs and budgets, tailoring plans to support home working, online gaming, and more. They can also facilitate upgrades or downgrades based on changing subscriber requirements.

Ongoing service evolution

WISPs can ensure a framework is in place to frequently review how the network and services are performing and capture subscriber feedback—identifying areas for improvement and implementing necessary changes.

Responsive customer support

Effective customer support can turn a potentially negative subscriber situation into a positive one.
By leveraging the latest broadband software to get full visibility of the subscriber network, customer support teams can resolve issues swiftly, reducing support call time, improving first call resolution, reducing support calls, and reducing truck rolls for activities that can be handled remotely.

Clear and transparent billing

As broadband services grow in complexity, so can billing and account management. WISPs can supply the tools for subscribers to easily monitor usage, pay bills, and make changes to their plans.

A secure online experience

Subscribers are increasingly worried about cybersecurity and look to their service provider to keep them safe online. WISPs can implement robust security measures to protect subscriber's data and provide additional tools such as parental controls or social media monitoring services.

Technical education and support

WISPs can provide tools and resources—such as self-care apps—that help subscribers understand their broadband service, troubleshoot common issues, and make the most of their plans.

Proactive network management

Advanced, software-based broadband platforms allow WISPs to proactively monitor and manage their networks. By identifying and addressing issues before they impact subscribers, WISPs can enhance network reliability, minimize downtime, and provide a more reliable service. Proactively managing your network means fewer issues for subscribers, which equates to higher customer satisfaction and customer loyalty.

Intelligent traffic management

By understanding the traffic on their networks, WISPs can take advantage of QoS tools to prioritize certain types of traffic and ensure a consistent user experience, especially during peak usage times.

CONCLUSION

Winning the Broadband Race

The growth of small, community-focused WISPs over the last half decade in markets such as the U.S. has been one of the broadband industry's success stories. The number of subscribers to these networks in the U.S. is forecast to rise from 6.9 million at the end of 2020 to 12.7 million by the end of 2025. Much of this growth has come from connecting subscribers in rural areas, helping to close the "broadband gap" that exists across the country. This expansion has been fueled by government support, favorable regulatory conditions, technology maturation, and strong consumer demand.

This growth is also reflected in revenue. Core industry revenues for U.S. WISPs are projected to grow from an estimated $4.4 billion annually at the end of 2020 to $10.9 billion by the end of 2025. The WISPs have become an attractive target for outside investment (including private equity) and are themselves looking at both organic and acquisition-based growth strategies.

But fresh competition is emerging on several fronts. Many of these new players have deeper pockets or more advanced networks (or both) and WISPs must respond to prevent losing market share. At the network level, WISPs must decide whether to continue to pursue an exclusive FWA model or consider a hybrid approach that integrates fast and reliable fiber technology.

On the subscriber side, where consumers face a widening range of broadband options, the situation is even more critical. WISPs must find ways to differentiate themselves and focus on the key things subscribers value in their broadband service. This strategy rests on deploying a managed Wi-Fi model that can become a platform for service innovation, network optimization, and advanced customer care.

WISPs are smaller with significantly less financial might and spectrum assets than many incoming competitors. Delivering a positive subscriber experience is the only realistic strategy for WISPs to differentiate themselves in the marketplace, nurture subscriber satisfaction and loyalty, lower operational costs, and ensure future growth.

Learn how Calix is helping WISPs gain the competitive advantage while lowering OPEX—schedule a consultation today.

References

https://www.fiercewireless.com/regulatory/wisps-catch-a-break-cbrs-transition

https://www.reportlinker.com/p06484015/Fixed-Wireless-Access-Market-Size-Share-Analysis-Growth-Trends-Forecasts.html?utm_source=GNW

https://www.ericsson.com/49dd9d/assets/local/reports-papers/mobility-report/documents/2023/ericsson-mobility-report-june-2023.pdf

https://www.calix.com/blog/2022/11-november/speed-alone--10g---is-not-a-winning-strategy-innovative-experien.html

https://www.spglobal.com/marketintelligence/en/news-insights/research/us-c-band-auction-becomes-worlds-costliest-mid-band-5g-auction-yet

https://www.t-mobile.com/news/_admin/uploads/2022/12/2945098_CCD_State-of-Fixed-Wireless-Access_Infographic-Report_REVW_v18_RGB-2.pdf

https://www.telecoms.com/5g-6g/at-t-treads-carefully-with-ramped-up-fwa-rollout

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