

## **MAKING THE SHIFT TO FIBER TO THE PREMISES FOR FIXED WIRELESS OPERATORS**

### **Introduction**

The global COVID-19 pandemic has heightened awareness around what ISPs have long witnessed. The demand for high quality broadband is on the rise, and significantly so. It's no longer just about access to broadband for better quality video streaming and gaming or for broadening ecommerce capabilities. Now broadband has proven to be a necessity for communities to stay connected and provide education, healthcare, and work from home applications to ensure a community's survival. High quality, low-latency broadband is truly needed everywhere, creating an opportunity for growth with ISPs of all sizes, as they aim to better serve communities everywhere.

Luckily, this heightened awareness of the need for high quality broadband coincides with an accelerated growth in broadband funding available through such mechanisms as the Rural Digital Opportunity Fund (RDOF) auction, as well as other state and federal funding sources. It creates a unique opportunity to obtain funding for the expansion of broadband capabilities to the communities that need those capabilities the most -- unserved and underserved markets. Fiber broadband networks provide the highest quality and lowest latency service, and in combination with these growing funding opportunities, can enable service providers of all types, including fixed wireless operators (FWOs), to expand and upgrade broadband service.

This whitepaper examines the case for expanding network operations with fiber to the premises (FTTP) in light of currently

available funding opportunities, customer demand, and the need to compete effectively in an aggressive and growing industry.

### **Now is the Time to Explore Fiber Broadband**

Building and expanding broadband infrastructure can be expensive and the need to control cost has historically limited where FWOs can focus their attention. More recently, capital has become available through a variety of funding sources, such as the RDOF auction, the ReConnect Program, the Connect America Fund (CAF), and more, at both the state and federal level, to encourage the build-out of wireless and fiber networks. This has created a great deal of excitement within the industry and the development and growth of fiber networks has seen a great shift forward.

For many FWOs, the impulse to turn to fixed wireless technology when evaluating expansion opportunities is strong. But these unique times should have FWOs considering all options for expansion, including fiber. In so doing, some operators may entertain a long-term approach to overbuild their existing network with FTTP, but the more immediate opportunity may lie with expanding into other territories with fiber. This FTTP expansion opportunity be more financially feasible with access to these expanding funding mechanisms, and may represent a better long-term return on investment.

### The strongest opportunities for fiber expansion fall into three categories:

**Defensive strategy:** Aggressive competitors looking to expand have access to the same funding programs already mentioned, which may allow them to serve nearby communities or even overbuild existing FWO territory with FTTP. FWOs that delay decision-making may find themselves too late to the table to make up for lost opportunities. To prevent losing territory that is currently in their hands or risk losing future opportunities to expand their networks, FWOs should consider seizing the current opportunity to ensure that they are the ones receiving funding to defend their competitive position and set the table for future growth.

**Necessary upgrades:** Periodic upgrades to technology are essential for maintaining and providing better and enhanced broadband to meet growing demand from customers. Instances where maintenance and upgrades are already required provide one of the most practical and cost-effective opportunities for transitioning to fiber broadband.

**Expansion:** The funding that's currently available provides the opportunity to subsidize broadband expansion into new areas with fiber. Oftentimes, there are additional communities and territories located near the unserved communities toward which funding is targeted. In addition to leveraging broadband funding to expand and build fiber to unserved communities, FWOs can lay the groundwork for additional expansion later to nearby established or growing pockets of density that can make fiber a very attractive option. Missing these opportunities now could

result in a heavy cost down the road when either funding is not so readily available or after competition has already been established in this area. These represent low-risk growth opportunities that should be aggressively pursued.

Further considerations, such as ever-increasing bandwidth requirements and the current financial climate that eases funding for FTTP, provide additional incentives for FWOs to take accelerated action.

### Ultimately More Fiber is Better

Current indicators suggest that the FWOs with more fiber in their networks will be in a better position to compete over the long term. Customer demand for bandwidth was accelerating before the pandemic, but now a 'new normal' may be emerging that puts this acceleration into overdrive. Consider trends revealed by OpenVault's 1Q 2020 Broadband Insights (OVBI) report. The OVBI tracks internet subscriber usage trends from millions of subscribers across the U.S. In 1Q 20, growth for gigabit-tier broadband speed increased 97% from 1Q 2019 and 34% from 4Q 19. Additionally, power users, or subscribers that consume more than 1TB per month of bandwidth increased 138% from 1Q 19, and even more -- 215% -- for those consuming 2 TB of data per month.<sup>1</sup>

These trends will subside a bit after the pandemic is over, but it's fair to assume they won't return to pre-pandemic levels. More people will work from home, more telehealth sessions will occur, and more students will be learning remotely after the pandemic subsides. Indeed, we're entering a new normal where increased broadband demand will tax networks that aren't engineered to meet these increasing demands.

1Q 2020 OpenVault Broadband Insights Report, <https://www.telecompetitor.com/clients/openvault/2020/Q1/LP/index.html>

In most cases, fiber is the best solution to meet this demand, not only for today, but for the next 25 years or more.

Perhaps the most important questions many FWOs face isn't whether adding more fiber to their networks is the correct choice, but ensuring they're making the best design choices when they do. Frequently, implementation decisions are made based on short-term cost projections that result in sub-optimal deployments. All fiber designs are not created equal and cutting corners to limit the amount of fiber needed upfront may prove to be an expensive mistake in the long run. The short-term cost benefits associated with choosing a distributed split architecture, for instance, will result in a design that limits future network growth and service potential.

A simple maxim to keep in mind when designing FTTP architecture is: *No one has ever complained that they have too much fiber capacity in their network.*

### Don't Forget the Starlink Threat

Soon, Starlink by SpaceX and other emerging low-earth orbit (LEO) satellite technologies are expected to start delivering broadband to the continental U.S. The services provided by Starlink and others represent a strong competitive threat to FWOs by improving bandwidth capabilities at potentially reduced price points. Services from these LEO technologies are expected to begin in late 2020, with widespread availability taking hold by 2023. The challenge that satellite broadband poses to conventional fixed wireless broadband is significant and should not be dismissed lightly.

FTTP constitutes the strongest competitive answer to Starlink's threat. Whereas fixed wireless networks will be challenged to match the speed and service benefits

constituted by LEO technologies, there is no evidence to suggest that satellite broadband will ever outperform fiber in either speed of data transmission or in maintaining the integrity of the signal being delivered.

The challenges for FWOs exist as they always have and always will. This moment presents a unique opportunity to upgrade and expand existing infrastructure that, if acted upon, can provide a solid foundation for growth in the upcoming decades.

### Conclusion

With the demand for reliable broadband service on the rise and the growth opportunities that exist, particularly in rural unserved and underserved areas, now is the time for FWOs to consider shifting their operations in the direction of fiber broadband in ways that are strategically feasible.

Plentiful and accessible funding sources for FWOs, such as the RDOF auction and ReConnect program, as well as other state and federal programs, make this an opportune time to invest in growing fiber footprints for a variety of strategic reasons, including; 1) the adoption of a defensive posture against potential competitors; 2) the relatively low cost of upgrading to fiber as a part of necessary maintenance and regular equipment upgrades; and 3) locking in nearby territory that provides the necessary density to support the move to fiber.

Recognizing that moving to fiber is ultimately a way to help future-proof their business for the foreseeable future, many FWOs also see fiber expansion as the best option to protect their business from satellite broadband companies, such as Starlink and others with LEO satellite technology, who appear ready to step into the broadband arena.

**For more information on this topic and other services, contact Finley Engineering at 800-225-9716 and ask for Mark Mrla or Andy Heins, or visit [FinleyUSA.com](http://FinleyUSA.com).**



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Andy leads strategic discussions and planning with clients across multiple markets and initiatives, from broadband planning, feasibility and implementation to energy integration and planning. He is a veteran of the telecommunications industry and began his career at Finley in early 2009. Prior to joining Finley, Andy was the General Manager of Alma Communications Company in Missouri. While with Alma, Andy assumed various management and operations roles, and in 2006 deployed the first 100% Fiber-to-the-Home (FTTH) network in the State of Missouri.

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Mark has served as a Business Unit Manager designing, budgeting, scheduling and implementing power, telecommunications and technology projects as well as focusing on tier 1 and 2 carriers, government entities, and national accounts. In addition, he coordinates teams and processes for client loan and grant applications for various government programs. Prior to joining Finley, Mark served in various management and technical positions at MidAmerican Energy Company, Gateway, Inc., and owned and operated a private technology consulting company. Mark has served in numerous leadership positions on various community and professional boards of directors and committees. Mark is a certified Project Management Professional (PMP) and is a registered Professional Engineer (PE) in several states.

