



Fiber-to-the-home: Missed connections?

Finding the perfect match for infrastructure investors

State of the market

The COVID-19 pandemic put a spotlight on the importance of digital infrastructure. It became increasingly evident that fiber optic cables, which were originally developed in the 1950s to allow doctors to view the inside of a patient, are now essential infrastructure everyone needs to access remote employment opportunities, as well as access to education, healthcare, entertainment and even socialization.

During the pandemic lockdowns, many people learned that their existing internet providers did not offer adequate latency or bandwidth to support their new digital lifestyles. This prompted a surge in investment for fiber optic networks. In particular, fiber-to-the-home (FTTH) saw tremendous growth as consumers demanded more options.

Just like many other capital-intensive sectors, however, overinvestment and competition from other FTTH players means some regions became oversupplied, especially as companies embraced a land-grab mentality to win customers.

Many of these new business plans were also developed on the basis of low inflation and interest rates. Investors assumed cheap debt would help them deploy new fiber connections quickly, allowing them to take market share away from incumbents. The subsequent higher inflation and interest rates derailed these plans, as growth became difficult at a time when competition only increased. Incumbent players are also not idle. Wireless players are introducing new services such as fixed wireless access (FWA) to connect homes with high-speed internet using 5G, while cable operators are introducing DOCSIS 4.0 technology, which improves the speed of existing coaxial cable (copper) networks.

Has negative sentiment peaked?

Sentiment around FTTH has, therefore, turned quite negative among infrastructure investors. Although this is valid, we also believe there are opportunities for investors who understand the underlying industry dynamics.

In addition, on the macro side, these FTTH business models have now been stress-tested by both the pandemic and high interest rates, and risks are now better understood with the market becoming more rational. We are starting to see a reset in expectations and an end to the previous land-grab mentality.

Inflation has also peaked, interest rates are potentially trending down, while the economy is holding up, which makes it easier for investors to design achievable business plans and underwrite new investments with reasonable assumptions. FTTH asset owners have also started tapping into the asset-backed security markets, a new development that could lower overall borrowing costs.

At the end of the day, many of the favorable dynamics that support FTTH still remain. The global economy continues to digitalize, while global demand for data continues to increase at a 30 percent compound annual growth rate (CAGR) per year. The supporting high-speed internet network, which includes FTTH, will need to keep up to support this growth.

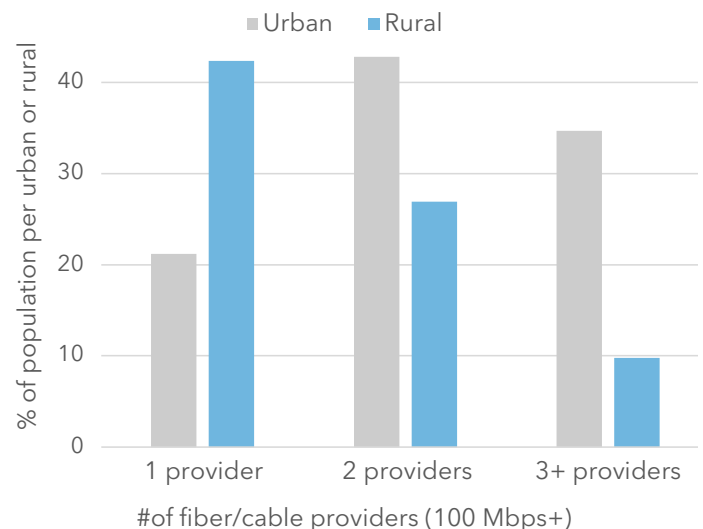
Location, location, location

Like many other industries, finding success in FTTH comes down to location. There are essentially two camps when it comes to an investment approach – either urban or rural.

Population density is a key variable when calculating the economics of a fiber rollout. Intuitively, it is more cost effective to deploy FTTH in urban areas, as there are more subscribers per mile of fiber compared with rural areas. Underlying macro factors also tend to be stronger in urban areas, with higher population growth, better wages and more robust economies, which translates to higher average revenue per user (ARPU) and more visibility to the overall market growth.

On the flip side, urban areas tend to have more competition, including other FTTH players, as well as incumbent providers, such as cable and wireless broadband. By contrast, rural areas tend to have fewer service providers, which means market structure is more oligopolistic (see Figure 1).

Figure 1: Broadband availability (rural vs. urban)



Note: Only includes providers that can supply 100/10Mbps speeds
Source: FCC, June 2021

In the past few years, infrastructure investors have shifted away from the large tier 1 cities into smaller tier 2 and tier 3 markets to avoid the competitive dynamics. Even more rural areas have gained attention in recent years, especially given increased government subsidies (more on this later).

Every investment is different, however. Investors should not just assume a tier 3 or rural opportunity is immediately superior to a tier 1 opportunity, or vice versa. There are multiple ways to succeed in the FTTH business, regardless of location.

Government support for FTTH

The U.S. government has long recognized there is a severe “digital divide,” where broadband internet availability, reliability and speed tend to be much superior in urban areas than in rural areas.

The Federal Communications Commission (FCC) estimates more than 40 million people in the United States do not have access to high-speed internet. Microsoft estimates the population without access to high-speed internet may be as high as 160 million.

The issue was explicitly tackled in the Bipartisan Infrastructure and Jobs Act passed in November 2021. The Act includes funding for broadband and other programs aimed at providing access to faster, more reliable and more affordable internet connectivity – with a particular focus on rural and underserved communities.

The Broadband Equity, Access and Deployment Program (BEAD), which is a bulk of this initiative, aims to provide \$42.45 billion of funding. Not surprisingly, states with larger rural populations tend to receive the most BEAD funding allocations on a per capita basis (see Figure 2). The BEAD funding will encourage deployment by FTTH providers, who would have otherwise found it uneconomical to roll out fiber in these regions.

Figure 2: BEAD funding per capita (top 15 states)

State	BEAD funding per capita (\$)
Alaska	\$1,387
West Virginia	\$675
Wyoming	\$603
Montana	\$580
Mississippi	\$406
Vermont	\$356
Arkansas	\$340
New Mexico	\$319
Idaho	\$317
Louisiana	\$291
Missouri	\$282
Alabama	\$279
Kentucky	\$241
South Dakota	\$234
Nebraska	\$207

Note: Excludes U.S. territories

Source: FCC, internetforall.gov, May 2023

This presents an opportunity to leverage subsidies and penetrate relatively untapped markets. With this opportunity, infrastructure investors are also beginning to think about different structures that better fit their investment objectives.

Open-access fiber networks

One business model that has been gaining some attention is “open access,” which is more commonplace in Europe and Australia. This is essentially a regulated structure where a single developer builds a fiber grid to service an area, with multiple internet service providers (ISPs) accessing the network at equivalent pricing.

Fiber ownership under this structure has proven to be attractive to infrastructure investors as they own the asset, have minimal concern about a competing network and avoid the need to service residences. The latter is particularly attractive to infrastructure investors, as large-scale exposure to retail customers tends to shift the focus away from the fiber network (the infrastructure) and toward the customers (the service).

Although this model is still not prominent in the United States due to the level of deregulation and the monopolistic nature of incumbents, it has started to gain some momentum. Large telecom companies such as AT&T and T-Mobile are partnering with third parties to build out fiber networks through joint venture-type structures.

They still differ from the typical European open access models, as the large telcos usually act as an “anchor” tenant with some exclusivity rights, making it less “open access” in the conventional sense. This is at least a sign, however, that the FTTH sector is actively seeking ways to make itself more attractive to infrastructure investors.

Summary

The FTTH sector may have faced some headwinds that have left infrastructure investors wary. But recent developments, such as the stabilization of the macro environment (i.e., slowing inflation while the economy is holding up), improved financing markets (i.e., potentially lower rates and a new FTTH ABS market), government subsidies (i.e., BEAD), and new business models (i.e., open access), are all coming at a time when expectations have been reset, which unlocks new opportunities for infrastructure investors.



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* Assets under management stated on gross asset values basis and includes CS, reflecting values as of Dec. 31, 2023, where available.)

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