



November 2021

Major Forces Will Shape the Communications Industry for Years to Come



Jeff Johnston
*Lead Economist,
Communications*



Key Points:

- The communications industry is expected to evolve significantly over the next several years as our work and lives grow increasingly digitized.
- The amount of government funding expected to hit the market is unprecedented, and it will have a profound impact on bridging the digital divide.
- Investor interest in the market is expected to remain very high, driven by infrastructure investment funds and private equity sponsors, who seek to gain exposure to the rapid digitization of the economy.
- 5G and private wireless networks will allow small rural towns and co-ops to build their own high-speed, carrier-grade networks. They will also enable new business models and applications that will transform the way we work and live.
- Large telecommunications companies and investors are making significant investments in fiber, which will increase the competition for cable operators who are running hybrid fiber-coaxial networks. The overall impact will re-shape the communications market.

Inside...

Introduction 1

Government Funding and Contribution Reform 2

5G and Private Networks 3

Mergers and Acquisitions 4

Fiber Investments 4

Conclusion 5

References 6

Introduction

The communications industry will undergo major changes over the next several years as society as a whole accelerates its adoption of digital services. Supporting this trend is an unprecedented amount of public and private capital finding its way into the market. Major infrastructure funds and private equity sponsors have an insatiable appetite for communications assets, and lawmakers in Washington know they must do more. 5G and private wireless networks will transform the way we work and live and they will also enable small rural towns and co-ops to build their own carrier-grade, high-speed wireless networks. And lastly, fiber is “the new black.” We expect to see major investments in this area from a wide range of players including large telcos, which are shifting their business away from the media industry and back to connectivity.

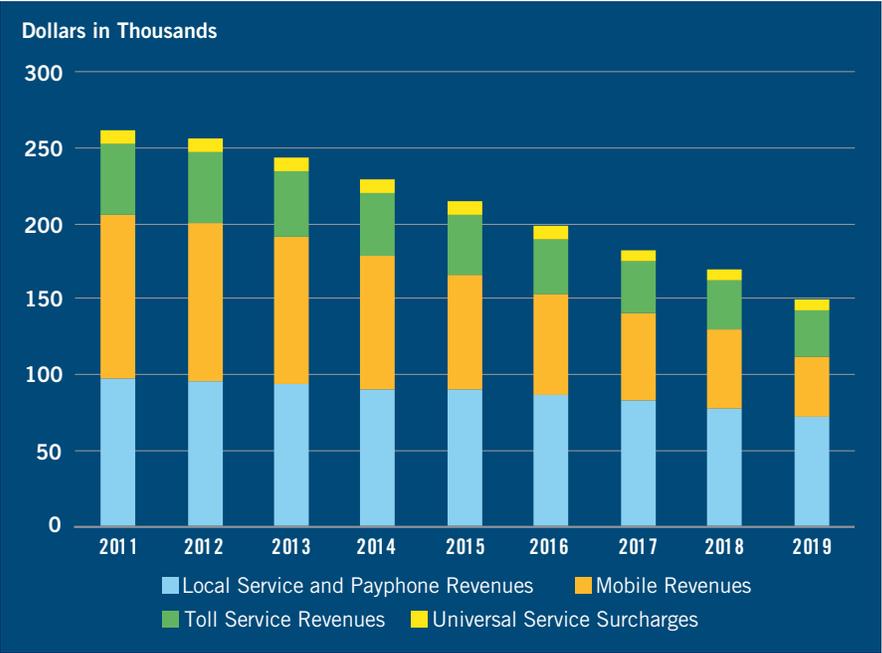
Government Funding and Contribution Reform

The amount of public capital finding its way into the rural communications market is unprecedented, and it has the potential to significantly accelerate the digitization of rural economies. Estimates to bridge the digital divide range from \$80 billion to \$150 billion. The newly-passed Infrastructure Investment and Jobs Act helps fund the cost to connect the underserved and unserved by providing \$65 billion in broadband funding, of which \$42.5 billion would be doled out at the state level.

In addition to funding from Congress, the FCC has programs to help subsidize the cost of building broadband networks in high-cost areas. The largest one of these programs is the Rural Digital Opportunity Fund (RDOF) which earmarks over \$20 billion for rural America. FCC broadband programs are funded via the Universal Service Fund (USF). Critics argue that the current USF structure is unsustainable, and we may be reaching a point where USF reform could become a reality.

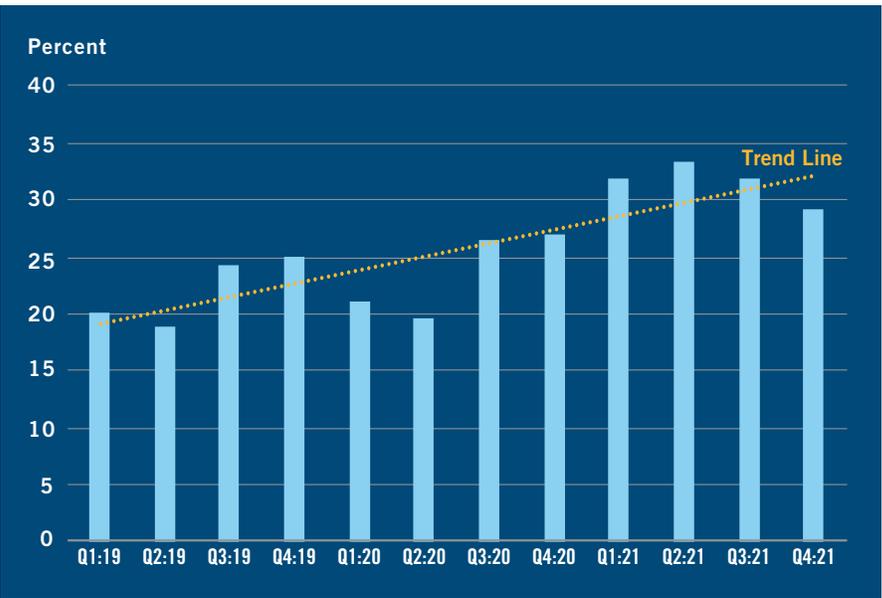
The USF receives its funding from fees applied to telecom bills, and these revenues are in a secular decline (Exhibit 1). As a result, the contribution factor applied to these revenues has been climbing and now sits at 29.1% (Exhibit 2) - the contribution factor is the percentage fee that's applied

EXHIBIT 1: USF Revenue Analysis



Source: Universal Service Administrative Company (USAC), Universal Service Monitoring Report (2020)

EXHIBIT 2: USF Contribution Factor



Source: usac.org



to telecom bills. And it's projected to reach a whopping 43% by 2026, according to the NTCA. Based on consumers' shift away from traditional landline telephony service, and the significant decline in mobile revenues, it's highly unlikely this trend will reverse. This makes the current USF funding mechanism unsustainable.

Proponents of USF reform argue that edge users such as Facebook, Google, and Amazon should pay into the USF as they benefit from Americans having greater access to high-speed broadband networks. Some in Congress and the FCC are now proposing such a reform, and it's likely that additional lawmakers could follow suit. There is a bipartisan assault underway against big tech in light of reporting that their platforms are being used to spread false information and contribute to mental health issues with young adults. Therefore, the political risk in support of contribution reform appears to be small.

5G and Private Networks

Private networks are emerging across a wide range of organizations and use case scenarios, thanks to the FCC's decision to make a large swath of spectrum available in the Citizens Broadband Radio Service (CBRS) band.

In previous spectrum auctions, the FCC offered large blocks of spectrum. This limited the auction participants to the national carriers as they were the only ones that

could afford to acquire and deploy such a large amount of spectrum. The CBRS auction changed these dynamics with the FCC offering much smaller blocks of spectrum, which significantly reduced the per-license cost, and opened the door for a whole new set of participants. In addition to the licensed spectrum, the FCC also made available unlicensed spectrum for anyone to use.

The result of these policy changes has enabled small rural cities, homeowners' associations, manufacturers, universities, etc. to build their own carrier-grade wireless networks. Prior to the advent of private networks, these organizations had to beg the big national wireless carriers to build/improve coverage where they needed it. This is expected to have a profound impact on the wireless market. The North American private wireless market is expected to grow at a 10.1% CAGR over the next seven years and become a \$2 billion market.

From an application standpoint, 5G networks will enable new low-latency applications such as augmented reality and virtual reality (AR/VR) that will require speeds of up to 5,000Mbps. This will lead to growth in edge computing and a surge in network traffic. For example, Facebook just renamed itself Meta, which is a play off the term Metaverse – a virtual reality space in which users can interact with a computer-generated environment and with other users. The social media giant has pledged to spend over \$10 billion per year for the next several years to develop the technology and build the market.

5G also introduces opportunities in fixed wireless as an alternative to fixed-line broadband, or a lower-cost option to provide coverage in high-cost, low-population rural markets. National wireless operators Verizon and T-Mobile are big believers in fixed wireless with T-Mobile putting a major emphasis on rural coverage, while Verizon focuses on tier two and tier three markets where it has excess network capacity. Looking ahead, Verizon plans to expand its fixed wireless coverage in rural America with the recently announced partnership with Amazon's Kuiper LEO satellite business.

EXHIBIT 3: M&A Analysis - Competitive Fiber vs. Cable

Rank EBITDA Multiple	Revenue Growth	Buyers	Price (\$MM)	EBITDA (\$MM)	EBITDA Multiple (Pre Synergy)	EBITDA Multiple (Post Synergy)
Cable M&A						
Top ~33%	10%	Cable	1,470	84.3	19.4x	13.4x
Mean	5%	Mixed	1,373	115.3	13.4x	11.0x
Low ~33%	2%	Cable	196	19.9	9.7x	9.1x
Competitive Fiber						
Top ~33%	26%	PE/Infra Fund	1,242	52.1	22.8x	22.8x
Mean	16%	Mixed	544	26.2	15.6x	15.1x
Low ~33%	3%	FTTP/Cable	61	5.4	10.9x	9.6x

Competitive Fiber: Eight recorded transactions since 2019 with sufficient detail

Cable: Ten recorded transactions since 2019 with sufficient detail

Source: CoBank Analysis

Mergers and Acquisitions

The communications industry is expected to continue consolidating, driven by two forces: infrastructure investment funds and private equity (PE) sponsors hunting for new opportunities, and by strategic buyers looking for scale and new markets. In the competitive fiber market, we expect that PE sponsors and infrastructure investment funds will continue to be the most active. They will likely continue paying premium prices for these assets (*Exhibit 3*) in part because overbuilders have very attractive growth profiles as well as less exposure to the struggling video market than the legacy cable operators. These factors positively impact margins given the shift to connected TV and the costly infrastructure needed to support a traditional linear cable TV business.

In the cable market, we see strategic buyers being the primary acquirers of these assets as they look for scale with like-minded companies. However, the one interesting development that could portend a shift in this strategy was Atlantic Broadband's acquisition of WOW's Ohio assets. A multiple system operator (MSO) buying an overbuilder is not something the market is used to seeing. If this is a sign of things to come, bidding activity for overbuilders could heat up.

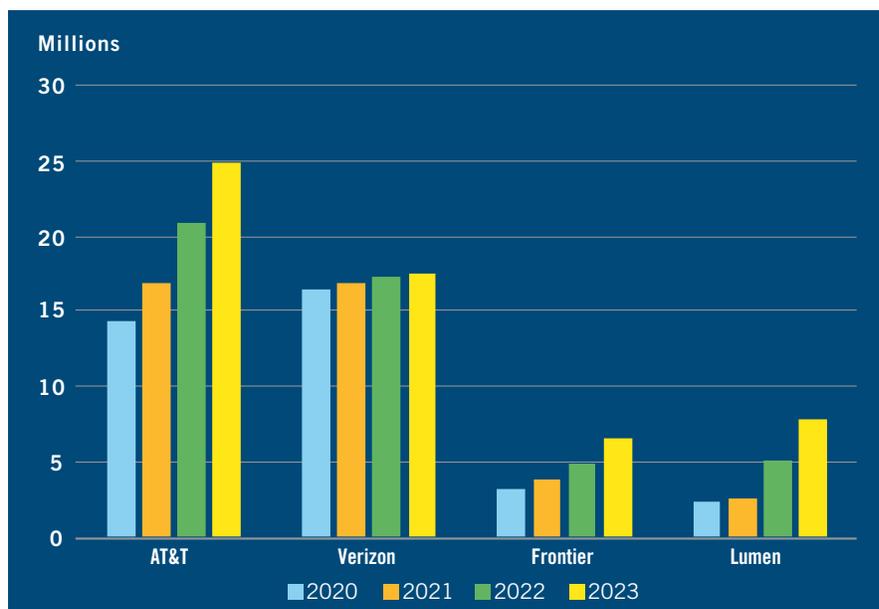
Infrastructure investment funds will continue shopping for communication-related assets for the next several years. We see two reasons for this: 1) the future of traditional infrastructure assets (e.g., toll roads, airports, etc.) are not as attractive as they once were given the uncertainty around business travel and remote work, and 2) the rapid shift to a digital world is making communication-related assets more valuable.

Cable broadband valuations could begin to cool if the public equity markets are any indication. The stock prices for Comcast, Charter, and Cable One have been under pressure of late. This is likely the result of slowing subscriber growth after quarters of the COVID-related boom, and the competitive threats from the telcos.

Fiber Investments

After years of dabbling in the media business, the major telcos are getting back to their roots. They have jettisoned non-core assets (AT&T in particular) and are investing these proceeds into their networks, with a major focus on fiber (*Exhibit 4*). For example, by 2025 AT&T expects to pass (i.e., have the capability to connect) 30 million customer locations, which is up from 15 million before it announced the Time Warner sale. And as Frontier Communications emerges from bankruptcy, it too is

EXHIBIT 4: Telco Fiber Passings



Source: S&P Global

ramping up its fiber investments and is expected to pass 4.5 million locations by 2025. Additionally, Lumen, which is in the process of selling its operations in 20 states to Apollo, is expected to increase its fiber investments. And given that the vast majority of the assets Apollo is acquiring are copper based, major fiber upgrades are expected in those markets over the next several years.

These investments represent a headwind for the incumbent cable operators, although it will take time before they materialize in a meaningful way. Historically, taking share from the telcos, which were operating legacy copper DSL markets, was easy pickings. Cable operators were able to grow their market share north of 80% in these markets and enjoyed very high gross margins. Now that the telcos have woken up and realized the media business isn't for them, fiber is "the new black." And it's not just for the last mile of connectivity, more fiber

is needed to support 5G. Wireless networks are getting denser because signals from mid-band spectrum (which is ideal for 5G) do not travel as far as the signals used in 4G networks. This means more cell sites that need to be connected with fiber to ensure backhaul speeds are fast enough to support bandwidth-demanding 5G applications.

Conclusion

The shift to digitize how we work and live is moving at a pace never seen before. COVID-19 accelerated this transition by several years - lawmakers in Washington and investors around the world are taking

notice. This has driven an unprecedented amount of capital into the communications market, enabling new technologies and services that will have a profound impact across the board. Lawmakers and the FCC appear to be warming up to the idea of USF contribution reform, which is desperately needed given the flaws in the current funding mechanism. Competition is expected to heat up for incumbent cable operators as massive investments in fiber are made by the telcos and investors. Private networks and 5G will drive enterprise efficiencies through AI and smart applications, and enable small organizations and rural towns to build their own high-speed, carrier-grade wireless networks. And consolidation should continue to be a major theme as investors and strategic buyers look to quench their insatiable appetite for communication assets. ■

References

<https://www.fiercetelecom.com/operators/lumen-inks-7-5-deal-to-sell-ilec-assets-to-apollo>

<https://optics.fiberbroadband.org/Full-Article/a-deep-dive-on-the-lumenapollo-deal-who-came-out-on-top-1>

<https://www.openpr.com/news/2321286/north-america-private-lte-market-2021-is-booming-across-the-globe>

<https://www.qualcomm.com/media/documents/files/vr-and-ar-pushing-connectivity-limits.pdf>

**CoBank's Knowledge Exchange Division welcomes readers' comments and suggestions.
Please send them to KEDRESEARCH@cobank.com.**

Disclaimer: *The information provided in this report is not intended to be investment, tax, or legal advice and should not be relied upon by recipients for such purposes. The information contained in this report has been compiled from what CoBank regards as reliable sources. However, CoBank does not make any representation or warranty regarding the content, and disclaims any responsibility for the information, materials, third-party opinions, and data included in this report. In no event will CoBank be liable for any decision made or actions taken by any person or persons relying on the information contained in this report.*