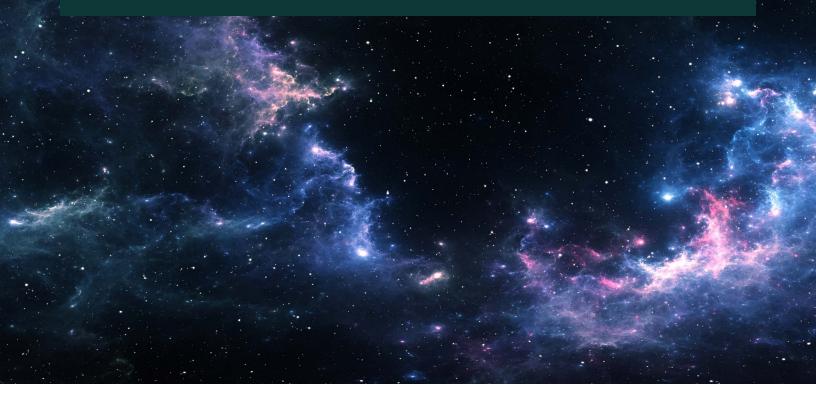


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SECTION ON

Introduction

Current market trends and conditions could impact your business and any potential transaction plans in the works, so it's important to stay abreast of ongoing activity and consider how to proceed as a result.

Market conditions in 2022 are volatile all around. In the 2010s and into the 2020s, M&A activity in the telecommunications sector remained steady if not exceptional but dipped in 2022 in apparent response to the erratic market.

Advances in managed services continue, with demand still increasing, which will likely revive M&A activity.

Conditions could be ripe for bargains, though. Dealmakers who kept their powder dry may be ready to pick up the pace once the market steadies. 5G is still growing, and the FCC decision to hold off cuts to the Universal Service Fund could remove some financial

pressure from rural broadband providers. The FCC is also weighing a definition change for broadband to 100 Mbps download speeds, even as providers offer 300 Mbps.

In addition to turbulence in the marketplace, private equity (PE) fund managers pass on communications and networking sector investments, which face compressed valuations, in favor of other opportunities. The industry has seen a run of consolidation that, paired with evolving regulation, made them more monolithic and less appealing for PE investment.

Venture capital (VC) activity is steady, focusing on bigger investments in fewer transactions, and more in wireless communications and Internet of things (IoT) and other connectivity products. Signs point to plentiful opportunities, but a need for more expertise on funding them.

Even if the market continues its uneven path, PE buyers could return as financial valuation metrics decline.

CLAY STURGIS

National Practice Leader Communications & Media Practice



Executive Summary

Throughout the 2010s, Dealmaking in the communications and networking space—especially broadband—remained strong. M&A tracked steady, with some banner years in which massive deals occurred, while PE players dialed up activity steadily. However, Dealmaking slowed at the start of 2022 due to market volatility.

"Fiber still leads the pack in terms of overall network capabilities and remains the technology of choice where it's not cost-prohibitive, but other technologies continue to evolve and provide competitive alternatives in many markets."

- Chad Duval, Partner, Communications & Media Practice

Longer-term factors in the industry, including the advances of managed services, plus overall demand for greater technical capacity, remain intact. This will likely help revive Dealmaking in the medium-term.

Deal sizes across venture, PE, and M&A remain on the upper end when they close, even in the subdued Dealmaking climate.

Venture funding remains most active in connectivity products and wireless communications equipment, especially regarding the IoT space.

Exits for private investors were strong in 2021, which, combined with abundant levels of dry powder, bodes well for Dealmaking to resume once general market jitters subside.

WHAT OUR PROFESSIONALS ARE SAYING

- "Upward pressure on interest rates and other costs affected by inflation creates the need for companies to revisit long-term financing arrangements and strategic planning around resources."
- Gregg Amend, Partner, Communications & Media Practice
- "Key client concerns still often revolve around the applicability of transaction taxes with regard to revenue streams, nexus, timing, and local sales and use tax exemptions on fixed assets, among others."
- Adam Cline, Partner, State & Local Tax Services



Industry Trends

The telecommunications sector often goes overlooked amid the allure of the latest blockbuster app, but quietly dynamic trends shape the space especially as 5G becomes commonplace.

Competition remains fierce, while the long-running ripple effects of deregulation continue to culminate in integrated companies disaggregating. At the same time, consolidation still contributes significantly to dealmaking, especially within nations.

5G GROWTH

<u>Gartner forecasts</u> that 5G network infrastructure revenue alone grew 39% to \$19.1 billion in 2021. It's expected revenue will exceed \$23 billion in 2022.

RURAL CONNECTION

The FCC <u>waived cuts</u> to Universal Service Fund supports, which should alleviate financial pressures for smaller telecom players, especially in rural areas.

Private Wireless

Private wireless remains a hotbed of competition, with infrastructure players competing against tech giants, incumbent network operators, and more to win business from a variety of clients. Tailoring solutions to enterprise needs and solving technical challenges, such as API features that allow complete control over network usage, remain challenging.

The proposed Rich Communications Services standard is still technically difficult; it still hasn't been adopted by Apple in iMessage. This highlights how the customization of communications solutions for specific industries across channels remains a hurdle.

BROADBAND UPDATES

The FCC may also raise the definition of broadband from 25/3 (download/upload) megabits per second (Mbps) to 100/20 Mbps. This would have significant repercussions, such as wider eligibility for federal grants to enable broadband access. However, major players in telecom already push far beyond that threshold, offering plans up to 300 Mbps, illustrating how regulatory bodies track behind broader industry advances.

Governments around the world remain firmly invested in broadening and fortifying telecom capabilities, especially broadband access, across their populations as a route to jump starting economic growth.

WHAT OUR PROFESSIONALS ARE SAYING

"Reporting of broadband availability is a major issue. The space is going through significant changes to ensure that regulators have the data to identify gaps to better target grant and loan programs, as well as the ability to access universal service funding to address those gaps."

- Chad Duval

"A key issue to monitor is any state and local tax expansions of the tax base, as well as the determination of economic nexus. States try to find creative ways to tax revenues from Internet access, as it's not typically subject to transaction taxes."

"Where regulatory changes may occur in one instance is regarding technology platforms, such as video conferencing, and under what circumstances they may breach being an information service and become a regulated telecommunications service, which could lead to FCC additional declaratory rulings that treat such services as telecommunications services for FCC purposes."

- Adam Cline

COMPLICATING FACTORS

Geopolitical tensions could exacerbate supply challenges as nations ban major providers of gear, such as Canada's recent ban of Huawei and ZTE from providing 5G services within its borders.

Additional complications from consumer perspectives include rising inflation levels, contributing to carriers hiking prices and thereby passing portions of their own inflated costs to consumers. **Verizon joined AT&T** in hiking wireless prices, the first time it did so in two years.



Global M&A activity rose somewhat in 2021, but dealmaking is off to a slower start within the communications and networking sector—with just 117 completed transactions for \$16.6 billion—thanks to the whirlwind of events that characterized 2022 to date.



The longer-running themes of attractive infrastructure investment opportunities amid network upgrades and a build out of advanced capacities—plus consolidation within the sector—should hold true once volatility subsides.



With over a trillion dollars in global dry powder, PE firms may dial up investing once market valuations prove too alluring a bargain. So far in 2022, they held back after a record year of dealmaking in 2021, which saw 300 completed deals totaling \$63.4 billion. Despite the 2022 slowdown, PE firms are still quite active in the space, notching a high proportion of overall M&A.



After record venture sums invested in 2021, a healthy \$1.7 billion in capital invested across the venture space within the sector. However, volume slumped in 2022, mirroring other dealmaking arenas.



Across the board, exits slumped due to market tumult and caution on the part of prospective buyers. It remains to be seen if subsiding volatility or greater clarity on economic growth forecasts could assuage investor concerns, but until public markets find calm, 2022 will likely prove a subdued year for exits.

WHAT OUR PROFESSIONALS ARE SAYING

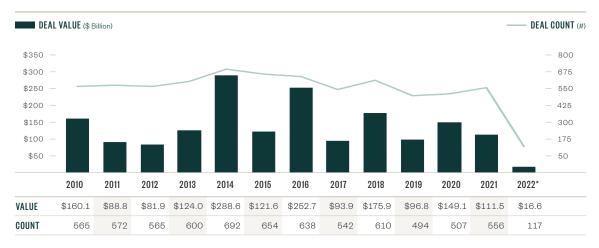
- "Broadband transitioned from a luxury to a necessity for both commercial and residential subscribers."
- "Providing advanced broadband services to rural, unserved, and under-served areas continues to be a focus point."
- Gregg Amend
- "Demand increased significantly for fixed broadband service as more people work remotely and conduct schooling from home. Broadband providers must focus on delivering faster speeds, both download and upload, to meet the growing need for bandwidth."
- Chad Duval



Market Landscape

M&A: CONSOLIDATION AND INCUMBENCY

FIGURE 1: M&A Deal Activity in Communications and Networking



^{*} As of May 5, 2022

FIGURE 2: M&A Deal Activity (#) by Sub-Sector in Communications and Networking



^{*} As of May 5, 2022

FIGURE 3: M&A Deal Activity (\$) by Sub-Sector in Communications and Networking



^{*} As of May 5, 2022

FIGURE 4: M&A Deal Activity (#) by Deal Type in Communications and Networking



^{*} As of May 5, 2022

FIGURE 5: M&A deal activity (\$) by deal type in communications and networking



^{*} As of May 5, 2022

FIGURE 6: M&A Deal Activity (#) by Region in Communications and Networking



^{*} As of May 5, 2022

NORTH AMERICA ASIA MIDDLE EAST REST OF WORLD **EUROPE** AFRICA OCEANIA 100% 90% 80% 70% 60% 40% 30% 20% 10% 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022* \$96.8 \$29.8 \$41.5 \$55.3 \$168.4 \$29.3 \$144.1 \$43.0 \$21.0 \$22.1 \$72.7 \$42.3 \$0.0 \$29.7 \$24.8 \$8.5 \$66.1 \$41.2 \$52.7 \$11.1 \$110.4 \$21.0 \$33.0 \$28.4 \$9.1 \$42.0 \$4.5 \$4.0 \$7.4 \$5.0 \$6.5 \$15.2 \$2.8 \$0.1 \$2.0 \$5.2 \$8.7 \$4.7 \$4.8 \$1.4 \$0.1 \$0 O \$0.3 \$11.0 \$0.0 \$0.2 \$10.1 \$3.9 \$0.6 \$0.7 \$0.3 \$1.0 \$0.1 \$1.3 \$0.1 \$0.0 \$0.1 \$0 O \$0.1 \$1.6 \$1.5 \$0.6 \$0.4 \$0 O \$1.6 \$0.5 \$0.1 \$1.2 \$0.3 \$0.5 \$3.1 \$3.8 \$0.1 \$0.3 \$2.6 \$1.0 \$4.8 \$0.0

FIGURE 7: M&A Deal Activity (\$) by Region in Communications and Networking

\$0.1

\$0.5

\$0.3

\$1.3

\$3.2

\$10.5

\$12.1

\$0.3

\$1.6

\$1.3

\$3.8

\$3.0

\$0.4

Across the 2010s and into the early 2020s, M&A deal volume within the communications and networking space remained somewhat steady. Aggregate annual deal values shifted more, given the impact of large mergers like T-Mobile and Sprint. 2014 saw the highest level of deal volume in the past 10 years, hitting nearly 700 completed transactions for an aggregate of \$288.6 billion.

Since then, deal volume largely trended downward, though not by much. As of mid-2022, deal making is the slowest in quite some time, likely due to the same pressures that roil markets and complicate economic forecasts. Although themes that characterized dealmaking in the past few years were expected to hold true in 2022, they may not fully kick into gear as much as industry participants anticipated until market uncertainty resolves.

With that said, in-country consolidation and companies divesting under performing assets to focus on more alluring opportunities, such as infrastructure, continues. Trying to stay abreast of the latest infrastructure plays will encourage acquisitive growth strategies, especially as 5G capacity continues to build out and government bodies invest in encouraging innovation in communications to improve offerings for citizens.

Rising interest rates could cast an intriguing shade on infrastructure M&A that benefited from declining to stable interest rates for some time.

However, the push for consolidation in fiber and alternate networks is unlikely to be dampened by pure financing conditions; capital invested in this space remains abundant, especially on the private side. This can be seen in the concentration of both deal value and volume in telecommunications service providers, along with the gradual rise in the proportion of buyouts in overall M&A figures.

WHAT OUR PROFESSIONALS ARE SAYING

"The need to expand and create economies of scale drives many in the telecommunications industry to pursue M&A. Clients seek assistance in analyzing market opportunities and the impacts on their long-term financial picture."

- Chad Duval

"Private capital is quite active in the tech space with regards to mobile-and tablet-based applications that make workplace and customer collaboration and voice services more seamless across online networks."

- Adam Cline

^{*} As of May 5, 2022

At the start of 2022, executives continued to justify high valuations, but with bearish sentiment in the market, time taken to close deals, especially by PE buyers, will likely lengthen as acquirers closely assess potential avenues to revenue growth and implied synergies.

"The tightening of the labor market for network or technical team members and corporate or operational employees made attracting and retaining talent more difficult than ever."

- Gregg Amend

Interestingly, joint venture transactions will likely continue at a decent clip as consolidation won't be allowed to reach too high a pitch by nations' regulatory bodies. In the most mature telecom markets, increasingly aggressive and active regulators will likely eye incumbency with greater urgency given the degree of consolidation that occurred in the last decade.

Other key trends that will likely intensify in the 2020s may include increased emphasis on and support for cybersecurity concerns across national networks worldwide.

For example in the US, the FCC made three further additions to the so-called covered list of communications equipment and services determined to be unacceptable risks.

Such geopolitically shaded moves may continue to intensify as nations get retaliatory. Thus, as cross-country M&A may decline, domestic cross-sector acquisitions of key cybersecurity players, or even start-ups, may accelerate.

WHAT OUR PROFESSIONALS ARE SAYING

"Federal and state legislators and regulators focus on bridging the digital divide, and there's growing funding available for the deployment of broadband-capable networks, including both grants and low-cost loans."

"Current federal universal service funding mechanisms are due to sunset at various points and by the end of 2028, so a need to establish longer-term solutions exists. We work with clients and their industry associations to help educate Congress and regulators on the importance of these funding mechanisms."

- Chad Duval



PE: AFTER RECORD YEAR, PE FIRMS PULL BACK SOMEWHAT

FIGURE 8: PE Deal Activity in Communications and Networking



^{*} As of May 5, 2022

FIGURE 9: PE Deal Activity (#) by Size in Communications and Networking



^{*} As of May 5, 2022

FIGURE 10: PE Deal Activity (\$) by Size in Communications and Networking



^{*} As of May 5, 2022

FIGURE 11: PE Deal Activity (#) by Subsector in Communications and Networking



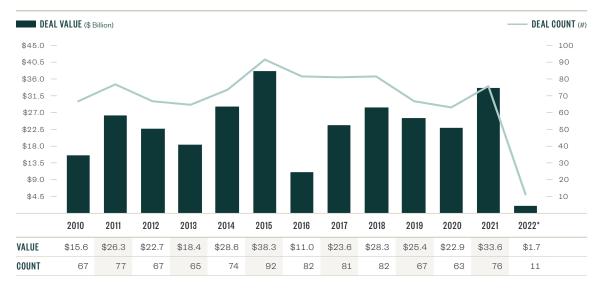
^{*} As of May 5, 2022

FIGURE 12: PE Deal Activity (\$) by Subsector in Communications and Networking



^{*} As of May 5, 2022

FIGURE 13: PE Exit Activity in Communications and Networking



^{*} As of May 5, 2022

FIGURE 14: PE Exit Activity (#) by Type in Communications and Networking



^{*} As of May 5, 2022

FIGURE 15: PE Exit Activity (\$) by Type in Communications and Networking



^{*} As of May 5, 2022

FIGURE 16: PE Exit Activity (#) by Subsector in Communications and Networking



^{*} As of May 5, 2022

WIRELESS COMMUNICATIONS INTERNET SERVICE PROVIDERS OTHER COMMUNICATIONS CABLE SERVICE PROVIDERS EQUIPMENT AND NETWORKING **TELECOMMUNICATIONS** CONNECTIVITY PRODUCTS FIBEROPTIC EQUIPMENT SERVICE PROVIDERS 100% 90% 80% 70% 50% 40% 30% 20% 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022* \$0.41 \$2.28 \$1.35 \$0.55 \$1.31 \$0.25 \$1.89 \$9.29 \$1.50 \$1.08 \$0.04 \$13.99 \$0.00 \$6.38 \$15.72 \$3.03 \$7.14 \$14.99 \$14 49 \$4 11 \$744 \$7.41 \$18.99 \$9.93 \$13.73 \$1.74 \$0.00 \$1.33 \$0.44 \$1.07 \$2.60 \$6.68 \$2.08 \$0.54 \$0.57 \$3.55 \$1.74 \$5.84 \$3.89

\$1.62

\$0.73

\$1.90

\$0.17

\$1.27

\$0.58

\$0.53

\$3.90

\$2.05

\$4.78

\$0.00

\$9.02

\$0.02

\$2.06

\$0.28

\$1.25

\$1.36

\$0.87

\$0.14

\$4.68

FIGURE 17: PE Exit Activity (\$) by Subsector in Communications and Networking

\$0.78

\$1.38

\$0.00

\$5.27

\$0.85

\$1.48

\$1.18

\$4.36 \$16.88

\$0.29

\$0.10

\$0.00

\$4.64

\$3.38

\$0.04

\$0.00

\$0.00

\$3.32

\$0.29

\$2.01 \$11.11

\$0.05

\$10.19

\$0.10

Entering 2022, PE players were fresh off a year of historic dealmaking. Worldwide, buyers closed nearly 300 transactions across a record sum of deal value exceeding \$63 billion, both highs since 2010.

While sample sizes for transaction sizes are non-normative for certain periods, by and large, breaking out deal volume and value by size ranges demonstrates how deals tilted larger due to competition and abundance of capital.

Even given the slower start in dealmaking that characterized the year thus far, the abundance of capital remains one of the more significant factors for any analysis of PE dealmaking trends.

Worldwide, the PE industry still has well over a trillion dollars of committed capital ready to be called down, per PitchBook data as of the end of 2021. Market turbulence and volatile valuations may give deal makers some pause, hence the pullback in activity across the communications and networking sector.

However, PE fund managers have ample resources to capitalize on suddenly more attractive opportunities given that formerly high-flying businesses may now face compressed valuations.

It remains to be seen when activity may revive, but there could be bargains on the market in future months. Much like in general M&A, PE firms primarily focused on the telecommunications space, with 2022 seeing opportunistic roll-ups of divested assets from major telecoms across various regions.

WHAT OUR PROFESSIONALS ARE SAYING

"PE is everywhere in the broadband space and continues to expand. Most deals come to market with multiple bidders, including a variety of PE bidders, which significantly drives up market valuations up."

- Chad Duval

\$0.00

\$0.00

\$0.00

\$0.00

\$0.08

\$0.74

\$1.18

\$0.00

"PE firms have access to significant additional equity infusions or long-term credit facilities based on their financial strength, which plays a key role in the upward pressure on valuations and transaction multiples."

- Gregg Amend

^{*} As of May 5, 2022

"At this time, this market is flush with cash from PE, including infrastructure funds, and so many companies struggle to find acquisition opportunities that fit their business model."

- Chad Duval

Although general M&A is expected to be concentrated within fiber, one of the contributing factors to why PE firms mainly play within that subsegment of the communications space is that attractive dealmaking opportunities in other subsegments declined as consolidation increased within them.

In addition, as regulations evolved, some subsegments saw the emergence of practically utility-like monoliths that rarely hold allure for PE investment models.

PE firms dialed back exit rates after seizing the opportune market environment in 2021 to notch the second-highest annual exit value tally since 2010, at \$33.6 billion. Although the vast bulk of all PE-backed exits remain via acquisition by strategic players in the sector, 2021 saw eight public listings total.

Thus far in 2022, major PE shops acquired PE-backed portfolio businesses, primarily in roll-ups. Even more so than the dealmaking side, the rate of exits is unlikely to resume to historical averages until greater clarity on market volatility and the health of economies worldwide prevails.

WHAT OUR PROFESSIONALS ARE SAYING

"PE seems to primarily focus on fiber as the favored technology, both in terms of existing networks and network upgrades. Existing fiber and opportunities to deploy fiber in incumbent and competitive markets generates significant premiums in the market."

- Chad Duval

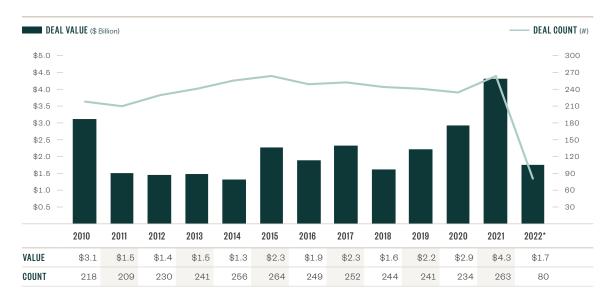
"The diversity in transaction structure in deals involving PE firms allows existing ownership and, in many cases, management teams to remain involved as key players in the business post-transaction. In addition, PE firms use equity incentive plans, many of which vest on future change of control, as incentives to retain key employees and drive short- and long-term performance."

- Gregg Amend



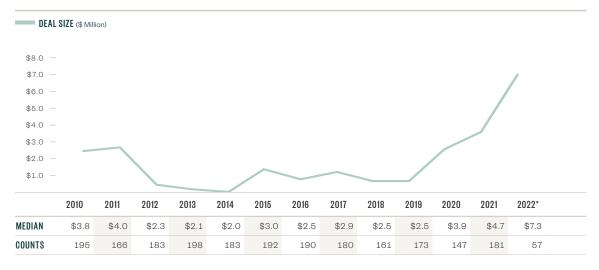
VC: WHAT ROLE SHOULD VENTURE PLAY WITHIN THE SECTOR?

FIGURE 18: VC Deal Activity in Communications and Networking



^{*} As of May 5, 2022

FIGURE 19: Median VC Deal Size (\$M) in Communications and Networking



^{*} As of May 5, 2022

FIGURE 20: VC Deal Activity (#) by Stage in Communications and Networking



^{*} As of May 5, 2022

FIGURE 21: VC Deal Activity (\$) by Stage in Communications and Networking



^{*} As of May 5, 2022

FIGURE 22: VC Deal Activity (#) by Subsector in Communications and Networking



^{*} As of May 5, 2022

FIGURE 23: VC Deal Activity (\$) by Subsector in Communications and Networking



^{*} As of May 5, 2022

FIGURE 24: VC Exit Activity in Communications and Networking



^{*} As of May 5, 2022

FIGURE 25: VC Exit Activity (#) by Type in Communications and Networking



^{*} As of May 5, 2022

FIGURE 26: VC Exit Activity (\$) by Type in Communications and Networking



^{*} As of May 5, 2022

Within the communications and networking space, VC activity is remarkably steady, with more than 200 completed transactions every year since and including 2010.

Deal values in aggregate also fluctuate to some degree but remain lower even with the surge in venture financing activity in the 2010s that culminated in record-breaking tallies in 2021. Across the sector, VC investments reached a high of \$4.3 billion in 2021, and moreover, a healthy total invested to date continues in 2022 even as financing volume slowed.

"Venture funding is driving the expansion of fiber deployment to markets not previously served by fiber, or pushing fiber-based competition into markets previously served by a single fiber-based provider."

- Chad Duval

The median VC deal size, thanks to the combination of an abundance of capital across the venture ecosystem and the decline in the number of transactions, surged to a new high of \$7.3 million in 2022 to date.

Financing volume tilted toward the late stage as well. Interestingly, as opposed to M&A and PE trends, venture activity concentrated within the wireless communications equipment subsegment, as well as connectivity products, particularly in IoT.

Considering broader industry consolidation, especially in telecommunications, such a trend makes sense, as there are more opportunities for innovation within those subsectors that align with venture investment models, such as microsatellites designed to augment broadband capabilities.

In part, narrower and more focused areas of opportunity for VC models within this space reflected in exit tallies, as volume subsided for some time. With that said, some hefty exits occurred, as evidenced by a high of \$7.5 billion in exit value derived in 2020 across just 35 transactions.

This indicates that the industry doesn't suffer from a dearth of opportunities but rather a need for industry expertise by VC players in the sector.

WHAT OUR PROFESSIONALS ARE SAYING

"Venture funding is also moving into wireless and satellite technologies. A prime example is Starlink, Elon Musk's low-earth orbit satellite broadband start-up, which is rapidly deploying satellites to provide a fully meshed global satellite broadband network. 100 Mbps broadband is currently available for around \$100 per month."

- Chad Duval

"New technology providers now enter the market to try to help automate transaction tax compliance for telecommunications providers, which comes with a lot of complications and challenges."

- Adam Cline



Looking Ahead

In any time of turmoil, it's difficult to provide forecasts of market activity. However, in the communications and networking space, specifically broadband, the longer-term trends that emerged in the 2010s are still intact and only slowed by the onset of volatility in 2022 to date.

Consolidation within nations will likely continue, as will divestiture of underperforming assets or divisions by incumbents given shifting priorities and a more intense focus on upgrading infrastructure to meet end-user demands for better broadband experiences.

Technical innovation will likely continue in arenas such as cybersecurity, mobile capacity across any location, network control and monitoring, and more

Regulations will and must continue to evolve, given the expiration of current policies and funding, such as the end of federal universal service funding in the United States in 2028.

"It's important to monitor how taxation at the state or local level for streaming services will evolve."

- Adam Cline

As current market volatility is the primary cause of the slowdown in activity, dealmaking across the board will likely resume if whipsaws in market valuations can calm. Even if volatility remains high, PE buyers may resume activity sooner than others as companies become relatively more attractive due to a decline in transaction multiples.

WHAT OUR PROFESSIONALS ARE SAYING

"As critical infrastructure providers, cybersecurity risks and investments in technology and internal controls to prevent cyberattacks elevated in importance and require significant resources and planning to mitigate risks."

- Gregg Amend

"For those in acquisition mode, consolidation, expansion of markets, and creating economies of scale are ever present now and require the bundling of services and service providers. This will likely persist in the foreseeable future."

- Chad Duval



SECTION SIX

Methodology

PitchBook's dedicated industry code of communications and networking served as a primary industry code filter to identify all relevant companies, including broadband. Otherwise, PitchBook's standard methodologies for report datasets covering M&A, PE, and venture were used.

Explore full details here.

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