

Digital Infrastructure

INDUSTRY UPDATE | Q1 2024



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Digital Infrastructure Industry Update—Q1 2024

Dear Clients and Friends,

Houlihan Lokey is pleased to present its Digital Infrastructure Industry Update for Q1 2024. We have included topical news stories, transaction announcements, public markets valuation data, and industry insights to help keep you abreast of this dynamic and constantly evolving industry.

Houlihan Lokey now has ~40 financial professionals between the U.S. and Europe covering the digital infrastructure sector.

This update also includes the latest from Houlihan Lokey’s Capital Markets team, one of the largest and most active non-balance-sheet placement agents on Wall Street. The Capital Markets Group brings real-time knowledge of and insight into what is achievable in today’s volatile markets based on recent and in-process financing transactions.

We hope you find this quarterly update to be informative and that it serves as a valuable resource to you. If there is additional content you would find useful for future updates, please do not hesitate to call or email us with your suggestions.

Regards,

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Industry Subsectors Covered

Broadband and Connectivity Providers 	Data Centers 	Wireless Infrastructure 
Wireless and Spectrum 	Communication Service Providers 	Telecom Services 













































Accomplishments—Q1 2024 in Review

Houlihan Lokey continued its position as a leading investment banking advisor to digital infrastructure and connectivity companies, having recently advised Focus Group on its sale to Hg; Colohouse on its acquisition of Hivelocity; Lit Fibre on its sale to CityFibre; Apogee on its sale to Boldyn Networks; INdigital on its sale to Novacap; Surf Internet on its debt raise from DigitalBridge, CPPIB, and Boundary Street; DigitalBridge-backed VX Fiber on its merger with Freedom Fibre; Charter Communications on the sale of its tower portfolio to Everest and TowerCo; and SwyftFiber on its equity investment from Macquarie.

The Digital Infrastructure team has earned a reputation for providing superior service and achieving outstanding results in M&A advisory, capital raising, restructuring, and financial and valuation advisory. A trusted advisor, the group combines extensive market capabilities with in-depth industry knowledge to help clients maximize shareholder value.

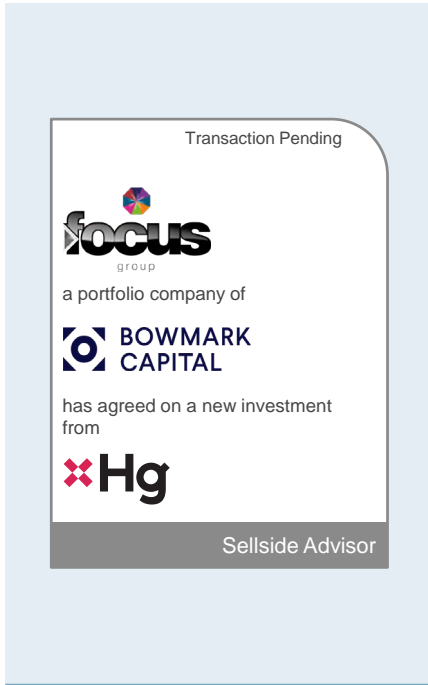
The Digital Infrastructure team is part of Houlihan Lokey's global Technology Group, with more than 160 finance professionals dedicated to delivering superior results and outstanding service in the technology sector.

Featured Recent Transactions

<p>Transaction Pending</p>  <p>a portfolio company of</p>  <p>Macquarie Capital Principal Finance has agreed to combine with</p>  <p>Buyside Advisor</p>	<p>Transaction Pending</p>  <p>a portfolio company of</p>  <p>has agreed on a new investment from</p>  <p>Sellside Advisor</p>	 <p>a portfolio company of</p>  <p>has acquired</p>  <p>Buyside Advisor</p>	<p>Transaction Pending</p>  <p>a portfolio company of</p>  <p>has agreed to be acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	<p>Transaction Pending</p>  <p>has agreed to be acquired by</p>  <p>Sellside Advisor</p>
 <p>a portfolio company of</p>  <p>Upsized Senior Secured Credit Facility</p> <p>Growth Financing</p> <p>\$200,000,000</p> <p>Exclusive Placement Agent</p>	 <p>a portfolio company of</p>  <p>has been acquired by</p>  <p>a portfolio company of</p> <p>Sellside Advisor</p>	 <p>has sold a portfolio of wireless towers to</p>  <p>TowerCo</p> <p>Exclusive Financial Advisor</p>	 <p>has received an equity investment from</p>  <p>Exclusive Financial Advisor</p>	 <p>a portfolio company of</p>  <p>has been acquired by</p>  <p>Financial Advisor</p>	 <p>has received an equity investment from</p>  <p>Exclusive Financial Advisor</p>
 <p>has acquired</p>  <p>from</p>  <p>Buyside & Financing Advisor</p>	 <p>has been acquired by</p>  <p>a portfolio company of</p>  <p>Sellside Advisor</p>	<p>Transaction Pending</p>  <p>has agreed to purchase select assets from</p>  <p>Exclusive Buyside Advisor</p>	 <p>has sold its telecom tower portfolio to</p>  <p>Sellside Advisor</p>	 <p>has been acquired by Vauban Infrastructure Partners</p> <p>Creditor Advisor</p>	 <p>has been acquired by</p>  <p>a portfolio company of</p>  <p>Exclusive Financial Advisor</p>

Case Study: Focus Group

Digital Infrastructure



Client Profile

- Founded in Brighton and Hove, U.K., in 2003, Focus Group is one of the U.K.'s leading providers of essential business technology to SMEs.
- The company offers a single point of contact for its customers' business IT needs, providing communications and software solutions, connectivity, and value-added IT services.

Our Role

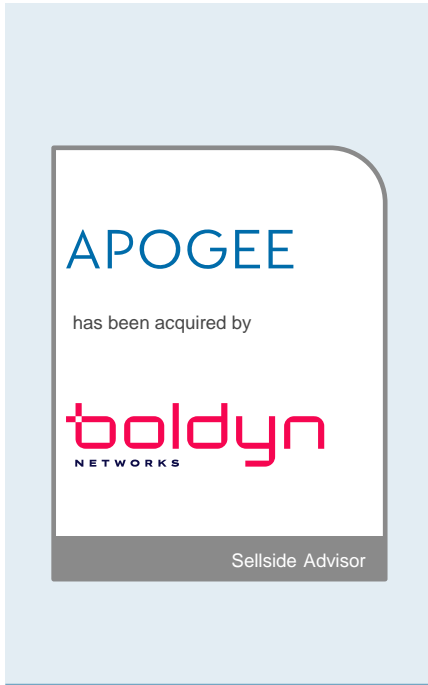
- Houlihan Lokey served as the exclusive financial advisor to Focus Group, marketing and negotiating the transaction on its behalf, and also ran a lender education process with global debt providers.
- Houlihan Lokey drove a thorough business preparation exercise, which, alongside heavy buyer pre-qualification, enabled an efficient execution process with a limited number of highly motivated, top-tier global private equity funds. This was the second time Houlihan Lokey had worked with Focus Group, having previously advised the co-founders on their 2020 minority private equity transaction with Bowmark Capital.

Transaction Snapshot

- Focus Group, a portfolio company of Bowmark Capital, has received a significant investment from Hg, a leading investor in European and transatlantic software and services businesses.
- Hg's investment will support Focus Group's organic growth plan, M&A ambitions, and product development initiatives, enhancing its ability to deliver innovative solutions for the U.K. SME market. Hg has made more than a dozen investments in SME tech services over two decades, and this depth of expertise will support a valuable partnership for future growth.

Case Study: Apogee Telecom

Digital Infrastructure



Client Profile

- For more than two decades, Apogee Telecom has been recognized as the leading provider of on-campus connectivity infrastructure in the U.S. higher education industry.
- The company offers wireless residential campus networks for students, faculty, and staff, as well as managed campus network and technology solutions, fiber infrastructure as a service, and video services. It serves more than 350 customers, representing the vast majority of U.S. outsourced on-campus residential infrastructure connectivity.

Our Role

- Houlihan Lokey served as the exclusive financial advisor to Apogee, marketing and negotiating the transaction on its behalf.

Transaction Snapshot

- On March 6, 2024, it was announced that Apogee Telecom had signed an agreement to be acquired by Boldyn Networks, one of the largest shared-network infrastructure providers in the U.S. and globally and an expert in smart city innovations, private 5G LTE networks, fiber deployment and management, and large venue, arena, and transit connectivity.
- The planned acquisition will combine Apogee's expertise in higher-education managed networks with Boldyn's full portfolio of small cells, fiber, DAS, macro sites, smart cities, and private networks for larger and scalable wireless infrastructure projects and the financial backing to support the higher education sector's growth.
- With this acquisition, Boldyn Networks in the U.S. reinforces its increasingly critical role in improving people's lives with enhanced connectivity in the top verticals and the nation's largest cities.
- The transaction closed in the second quarter of 2024.

Houlihan Lokey in Capital Markets

Houlihan Lokey’s Capital Markets team is the largest of its kind on Wall Street, with over 100 professionals raising and advising on more than ~\$14 billion in capital across approximately 100 transactions with ~65 different financial sponsors during 2023. A dedicated group of individuals within the team are experienced in financing all aspects of the digital infrastructure sector. Please contact Gregg Newman at GNewman@HL.com or Mario Manna at Mario.Manna@HL.com to discuss this in more detail.





Unrated or Below-Investment-Grade Capital

For issuers with growth stories or higher cash flow volatility, Houlihan Lokey generally focuses on private credit investors. Term loans are the most common execution format for this group. Private credit investors offer quicker execution and more flexibility than syndicated leveraged finance markets. Term loans can be tranching into different classes of seniority: first-out/second-out and OpCo/HoldCo structures. As leverage and risk increase, payment-in-kind features and equity upside (including warrants and conversion options) can be added to the structure. Private capital solutions can also include structured equity in the form of convertible or redeemable minority and common equity investments. In the current market, private capital sources are aggressively competing with the syndicated markets to provide attractive senior secured capital and can provide junior capital in an equity-like form to support growth initiatives or as an alternative to a sale.

Investment-Grade Capital

For issuers with sufficient cash flow stability or contracted revenue, Houlihan Lokey can structure a transaction to achieve investment-grade credit ratings. Houlihan Lokey accomplishes this using project finance or asset-backed security (ABS) techniques to isolate cash flows in a nonrecourse special-purpose vehicle (SPV). This enables us to privately place the transaction with insurance companies at a significantly lower cost than other sources of capital and more quickly than public ABS. Investment-grade solutions typically provide longer-dated liabilities and lower principal amortization requirements than term loans. Like term loans, securitizations can be divided into senior and junior tranches to optimize the capital structure. If done privately, this type of financing is available to greenfield assets with the appropriate contracts.

Recent Houlihan Lokey Digital Infrastructure Capital Markets Transactions

<p>Project 1</p> <p>Residential FTTH Provider Growth Capital</p> <p>In Market</p> <p>Exclusive Placement Agent</p>	<p>Project 2</p> <p>Residential FTTH Provider Growth Capital</p> <p>In Market</p> <p>Exclusive Placement Agent</p>	<p>Project 3</p> <p>Fiber Network Refinancing</p> <p>In Market</p> <p>Exclusive Placement Agent</p>	<p> a portfolio company of VALTERRA PARTNERS has acquired  HIVELOCITY Credit Facility & Equity Financing Acquisition Financing</p> <p>Buy-side Advisor & Exclusive Placement Agent</p>	<p> has received an equity investment from </p> <p>Exclusive Financial Advisor</p>	<p>QScale has received a growth equity investment from </p> <p>Lead Financial Advisor and Placement Agent</p>
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Please let us know if you’d like to speak with our Capital Markets team about the current financing environment and opportunities in this market.

Capital Markets Conditions in Q1 2024

SOFR remained at 5.3% throughout the quarter while longer-dated interest rates retraced ~30bps of their fourth-quarter drop. Both 5- & 10-year U.S. Treasury yields are currently around 4.3%. Ever since the Fed signaled an end to rate hikes, the market's day-to-day focus has been on the odds and timing of rate cuts. Equities continue to rally, with the S&P 500 up 10% in Q1 following a 25% annual gain in 2023. Q1 investment-grade bond sales (including ABS) broke records, while high-yield and syndicated loan volumes were the highest in three years. Sentiment remains strong in private credit variants, and an increased allocation to private credit has led to record amounts of dry powder as investors are eager to deploy this capital.

Digital Infrastructure in Q1 2024

Fiber

- Greenfield fiber-to-the-home (FTTH) networks continue to borrow from private credit markets using nontraditional underwriting metrics comparing the loan balance to cost, passings, or other measurements of value.
- The ABS market is open to FTTH networks with mature customer penetration. In Q1 2024, two FTTH ABS transactions totaling ~\$2 billion were issued.
 - Repeat issuer Metronet priced \$488 million at significantly tighter credit spreads than prior deals. For example, the Class A2 tranche was 105bp tighter than a similar tranche issued in April 2023. Demand was strong: the order book was 10x oversubscribed in less than two hours, and final pricing was 30bps inside the tight end of price talk, which is unusual. Since its latest offering in October, its subscriber base has grown by 47,000 to 480,000. The company has cumulatively borrowed \$3.2 billion from the ABS market.
 - Following Metronet, inaugural issuer Ziply issued \$1.6 billion at comparable pricing levels.

Data Centers

- In Q1, ~\$2.4 billion of ABS closed for portfolios of mature data centers, including three colocation transactions. Additionally, ~\$5 billion of greenfield project finance loans closed for build-to-suit hyperscale data centers.
- Project finance bank syndicates committed ~\$14 billion to greenfield data centers in the past six months, triple the volume of the previous six quarters combined. Most of this capital was priced in the SOFR + mid-200s range. Banks have not yet run out of capacity for top-tier operators like Stack, Vantage, and QTS. However, we believe conditions are tightening for smaller operators.
- Going forward, Houlihan Lokey expects infrastructure debt funds and other institutional investors to play a greater role in greenfield data center financing. A \$600 million transaction by Aligned for an 80MW data center in Salt Lake City was the first greenfield project financing to be provided by insurance companies (in this case, affiliates of Blackstone).

Wireless Infrastructure

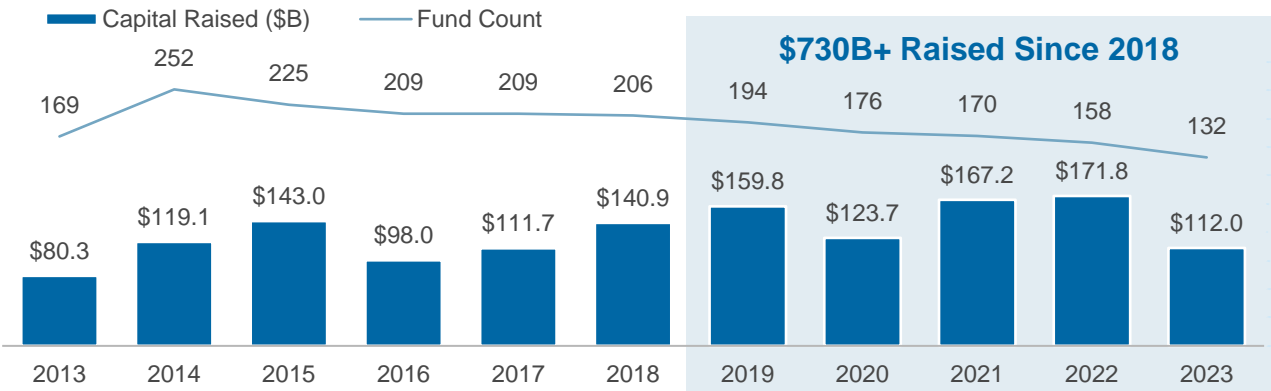
- Credit markets were quieter for Tower and DAS owners, but Houlihan Lokey's investor dialogue indicates that the scarcity has created a backlog in demand for wireless infrastructure.

Infrastructure Fundraising






Digital Infrastructure

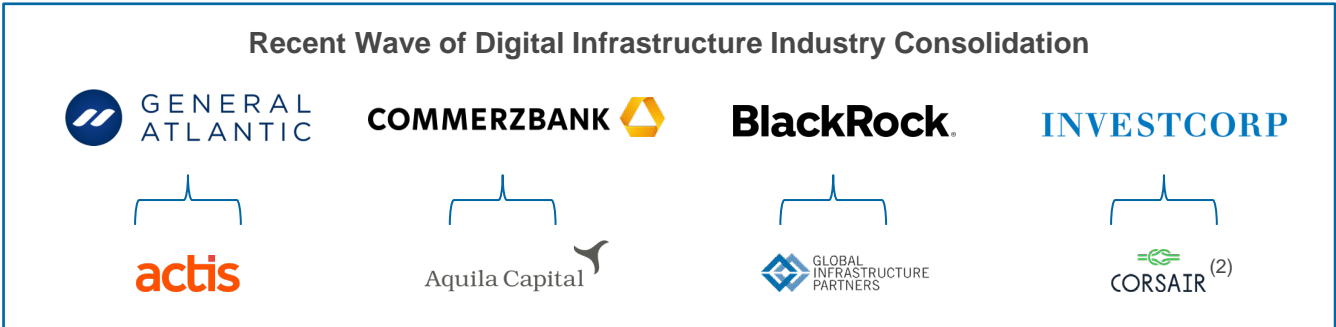
Overview of Historic Infrastructure Investor Fundraising⁽¹⁾

2023 saw the weakest fundraising performance in the infrastructure space since 2016, accumulating a total of \$112 billion—a 35% decline from 2022’s record high. The top 10 funds dominated, capturing approximately \$67 billion, or 60% of the year’s funds. Brookfield’s cumulative \$36 billion haul underscored the year’s skewed distribution of capital. Debt funds defied convention in 2023 as three of the top 10 funds. 2024 shows a lot of promise, with an impressive \$420 billion in active fundraises, headlined by mega-funds such as GIP, EQT, Brookfield, and Stonepeak. The big players are expected to push growth, with the top 10 funds aiming to raise \$140 billion alone. The increased interest in the space is also evidenced by active consolidation, with multi-strategy funds acquiring independent infrastructure managers.



Recent Notable Fundraises Covering Infrastructure Sectors in Q1 2024

				
Arcus Infrastructure Fund 3	Stonepeak Asia Infrastructure Fund	DIF Infrastructure VII	Ancala Infrastructure Fund III	Macquarie European Infra. Fund 7
Fund Size: €1.6B	Fund Size: \$3.3B	Fund Size: €4.4B	Fund Size: €1.4B	Fund Size: €3.0B
Vintage: 2024	Vintage: 2024	Vintage: 2024	Vintage: 2024	Vintage: 2024



Source: Infrastructure Investor, press releases.
(1) Data as of January 2024.
(2) The transaction only includes Corsair’s infrastructure portfolio.

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Key Industry Trends by Sector

United States Broadband

FTTH Saw Record Growth in 2023

- The Fiber Broadband Association reports that 2023 set a new record for the highest annual growth of FTTH deployments, with 9 million homes newly passed by network operators this year alone. Other findings are as follows:
 - FTTH passings being marketed to consumers in the U.S. grew 13% in 2023 to 78 million non-unique homes. Fiber broadband now passes nearly 69 million unique U.S. homes.
 - Fiber broadband has now officially passed the halfway point in the quest to provide fiber to all U.S. homes, now passing 51.5% of primary homes in the U.S.
 - The report estimates the total available market remaining for FTTH may be more than 100 million homes, including second and third passings in many areas, and there is likely a decade of deployment runway at or above the current momentum.

T-Mobile/EQT Joint Venture

- T-Mobile recently announced that it has entered into a joint venture (JV) with EQT's Infrastructure VI fund.
 - The JV will leverage T-Mobile's retail, marketing, brand, and customer experience alongside EQT's fiber infrastructure investment expertise to acquire Lumos' scalable fiber network build capabilities.
 - After the transaction closes, Lumos will transition to a wholesale model with T-Mobile as the anchor tenant owning customer relationships and leveraging its brand to attract new subscribers.
- The announcement marks the second significant joint venture among fiber providers.
 - AT&T already made waves with its Gigapower joint venture with the private equity firm BlackRock.

European Broadband

U.K. Fiber Altnet Consolidation

- Consolidation remains the industry's hot topic and will increasingly be explored as a logical next step by altnets aiming to establish greater scale and rationalize costs via newly combined businesses.
 - CityFibre acquiring Lit Fibre, a portfolio company of Newlight Partners, in a share-based transaction where Newlight will become a minority shareholder in CityFibre, sets a strong precedent and will spark further consolidation conversations in the market in the coming quarters.
- From an operational perspective, altnets have also shifted focus to commercializing their networks and driving customer take-up, while reducing or stopping new network builds, driven by the more constrained availability of fresh capital in the fiber market.
- Despite these headwinds, there are signs of "green shoots" in the market, with the positive news of some successful debt processes, such as Netomnia securing a further £148 million in its accordion facility. Houlihan Lokey expects there will be more announced over the next quarter, which could arguably provide more comfort to equity investors to enter the market over the coming year.

Broadband Services Update

- With altnets in the U.K. slowing builds due to the availability of funding, while many European geographies are reaching a critical mass of fiber roll-out (e.g., France, Portugal, Spain), the infrastructure service providers focused on network design and roll-out have been adversely impacted or have had to shift focus to supporting connections.

Key Industry Trends by Sector (cont.)

United States Data Centers

Hyperscale Build Trends

- According to earnings calls, each hyperscale cloud provider is projecting substantial increases in capex in 2024, primarily driven by the expansion of data center footprints due to demand from AI growth.
- As hyperscale capex increases, the TAM for the data center space across colocation and adjacent models, such as powered shells, build-to-suits, and master-planned sites, continues to grow.
- Hyperscalers are continuing to seek out third-party colocation providers to accelerate time to market and alleviate various obstacles around site selection, power procurement, and regulatory hurdles.

Data Center Land Development

- Master-planned data center parks have become an increasingly utilized strategy to solve land and power supply constraints as companies look for new markets with the large quantity of land, power, and renewables required for new developments.
 - Tract, 1547 CSR, TA Realty, PowerHouse Data Centers, and Chirisa Technology Parks entered U.S. markets, securing resources and financing.
- Tailwinds in the data center sector have left lenders more willing to take on exposure during land acquisitions and pre-development constructions.
 - While the pool of lenders is still relatively concentrated, the mix of lenders with conviction in the industry is growing.

Deployment of GPU-Based Infrastructure

- As a result of AI adoption, cloud providers continue to push forward with deployments of GPU-based services. These GPU cloud infrastructure providers are focused on capacity as they look for expansion runway while using colocation providers to support existing demand.
 - Many providers, including Cloudflare, DigitalOcean, Vultr, and OVHcloud, deployed GPU-based services to meet the growing AI workloads.
- Meta confirmed it expects to reach a GPU supply of 600k H100 equivalents by the end of the year, expressing confidence that this supply will support upcoming expansion plans.

European Data Centers

Recent Trends

- EMEA has experienced a surge in demand and data center investments in both primary and secondary markets. Despite challenges in power availability and sustainability regulations, top European markets like London, Amsterdam, Frankfurt, Dublin, and Paris show capacity growth. This has spurred data center operators' interest in emerging secondary markets, including Brussels, Madrid, Milan, Stockholm, Copenhagen, Oslo, and Warsaw.
- The EMEA market is poised to experience substantial data center growth, driven by an increasing reliance on digital services, cloud computing, and data-heavy applications, resulting in a growing demand for data center infrastructure.
- In addition, ESG and sustainability remain key themes in relation to improvements in energy efficiency. The EU passed its Energy Efficiency Directive, which will require mandatory energy efficiency reporting for data centers above 500kw by May 2024, and individual states have begun passing legislation, including Germany's Increase of Energy Efficiency Act, which implements PUE targets for new and existing data centers.

M&A Activity

- Deal activity has continued in 2024. Starwood Capital Group invested \$850 million for a 50% stake in Ireland-based, large-scale data center developer, Echelon Data Centres. Echelon currently has six facilities in Ireland and the U.K.—either online or under development—with a combined potential capacity of around 800MW. The investment values Echelon at an enterprise value of circa €2.5 billion, including debt.

Key Industry Trends by Sector (cont.)

United States Wireless Infrastructure

M&A and Capital Raising Activity

- CTI Towers, backed by Palistar, closed on the acquisition of Uniti Group's remaining tower assets as a part of a broader transaction where Uniti Group sold off its remaining investment interests in Bluebird Network, as well as fiber and other network assets previously leased to CableSouth.
- Shenandoah Telecommunications announced the sale of its 226-tower site portfolio and operations to Vertical Bridge for \$310.3 million, representing a multiple of ~33x tower cash flow.
- Phoenix Tower International (PTI) closed an investment from Grain Management and BlackRock, joining Blackstone as investors behind PTI to support the company's future global growth.

Recent Developments

- In Q1 2024, the public tower companies reported Q4 2023 and full year 2023 earnings.
 - American Tower reported strong 2023 results with record colocation and amendment growth in the U.S. and Canada.
 - Despite a slight decline in 2023 revenue compared to the previous year, Crown Castle reported slight EBITDA growth alongside further optimism for 2024.
 - SBA reported a strong finish to 2023 with upticks in most key KPIs, including leasing revenue, AFFO per share, and net income, providing a positive outlook for 2024.
- Amid its cooperation agreement with Elliott Investment Management, Crown Castle has begun amending provisions, including but not limited to the following:
 - Elimination of size limitations for the Board, the fiber review committee, and the CEO search committee.
 - Elliot shares will vote pro-rate with other stockholders instead of being required to vote in favor of the Board's recommendations.
- American Tower and IBM announce a new collaboration to address the evolving requirements of their customers and the expectations around digital transformation by enabling technologies such as IoT, 5G, AI, and network automation.

European Wireless Infrastructure

Recent Trends

- Mobile Network Operators (MNOs) in Europe continue to explore the divestment of owned infrastructure as a route to unlock capital to fund competition and new technology deployments (e.g. 5G). This increasingly includes considerations for divestment of active and passive infrastructure.
- Cellnex continues to execute its strategy to reach an investment-grade status in 2024, reiterating key points during its latest earnings call. The strategy involves a combination of asset disposals, ranging from minority stake sales to full disposals of entire countries, alongside an increase in cash flow. These measures aim to secure the necessary funds to meet the 2025 debt maturities. The strategic plan has already been set in motion, evident in the asset disposals in H2 2023, including the sale of a 49% stake in its Nordics business to Stonepeak, the disposal of assets in France, and the sale of the Nordic private network business Edzcom to Boldyn.
- Furthermore, Cellnex also divested its portfolio in Ireland and is rumored to be currently exploring the sale of its portfolio in Austria.

M&A Activity

- PTI has agreed to acquire 100% of Cellnex's business in Ireland for approximately EUR 971 million, equivalent to a multiple of circa 24x EBITDA-AL. Cellnex has been operating in Ireland since 2019, when it acquired tower operator Signal, subsequently increasing its footprint in 2020 as a result of the agreement with CK Hutchison to acquire its infrastructure portfolio in six European countries, including Ireland. Cellnex currently manages approximately 1,900 sites in the country.
- Telekom Srbija has finalized an agreement to carve out approximately 1,800 macro towers located in the CEE region across Serbia, Bosnia and Herzegovina, and Montenegro to a consortium led by Actis. A new independent TowerCo has been established, fully controlled by Actis, which has entered into a long-term MSA with Telekom Srbija as the tower company's anchor tenant and important partner for future growth; the MSA contemplates build-to-suit commitments to further expand the platform.

Key Industry Trends by Sector (cont.)

United States Wireless and Spectrum

FCC Spectrum Auction Authority

- Congress allowed the FCC's auction authority to lapse on March 9, 2023. Since then, discussions in both chambers proposing an extension of the authority have stalled.
 - Congress passed a limited bill in December 2023 granting temporary authority to the FCC to issue licenses granted through a previous spectrum auction for the 2.5GHz band. Still, no comprehensive framework has advanced through either chamber.
- To try to get vacant spectrum in the hands of entities that can use it, the FCC issued a public notice on March 7, 2024.
 - The notice seeks comment on how the FCC can meet its obligation to provide access to its Inventory Spectrum.

T-Mobile's 800MHz Spectrum

- Dish Network's parent company, EchoStar, announced its inability to secure financing for the \$3.59 billion purchase of T-Mobile's 800MHz spectrum licenses by the April 1 deadline.
- With the passing of the April 1 deadline, T-Mobile is required to auction the spectrum, with a floor price set at slightly under \$3.6 billion.
 - The deadline for the auction is this fall, and any restrictions on who is eligible to bid on the spectrum will be up to the FCC.
- Despite its adjacency to existing AT&T and Verizon licenses, the government agreement prevents T-Mobile from selling it to national operators without approval.
 - According to Fierce Wireless, other interested parties may include Burns & McDonnell and Anterix.

Asset-Light/Cloud Communications

Convergence of UCaaS and CCaaS

- 2023 saw the continued convergence of unified communications-as-a-service (UCaaS) and contact-center-as-a-service (CCaaS) driven by:
 - Growing customer preference to purchase UCaaS and CCaaS together from one vendor.
 - Increased competition driving a need for vendors to differentiate them through enhanced features and capabilities.
- In August 2023, Ring Central launched its native CCaaS platform, Ring CX, joining the likes of 8x8, Cisco Webex, Zoom, and Dialpad to offer both UCaaS and CCaaS offerings.

Emphasis on Customization and Flexibility Leading to Growth in CPaaS Sector

- Businesses are seeking more customizable and flexible solutions as the "API Economy" has grown, resulting in increased interest in communications-platform-as-a-service (CPaaS) offerings that enable on-staff developers to integrate communication features directly into their most used applications.
 - This has resulted in traditional UCaaS and CCaaS providers expanding their offerings to include CPaaS as a differentiator and to tap into newly developed, high-growth markets

AI and Automation

- Integration of artificial intelligence and automation to enhance meeting experiences, communication methods, transcription services, and virtual assistant capabilities has continued.
- Machine learning and advanced analytics are contributing towards enhanced user experiences for employees and businesses.

Key Industry Trends by Sector (cont.)

United States Telecom Services

2024 Outlook on Wireless Carrier Spending

- Carrier spending declined in the second half of 2023 and has yet to rebound. The outlook on carrier spending in 2024 is beginning to trend positively as the industry expects increased spending in the second half of 2024.
- According to company reports, wireless carriers are expected to deploy ~\$27 billion in wireless capex in 2024. Compared to previous “G” cycles, this will be the lowest spending since 5G deployment began and is lower than the average wireless spend of \$29 billion during the decade-long 4G deployment cycle.

BEADs Impact on Wireline Services

- Demand for wireline services is expected to continue to increase over the next several years as \$42.25 billion of BEAD spending is deployed.
- Despite these positive expectations, concerns arise around a potential labor shortage in the space, and a lack of fiber technicians could lead to delays.
 - According to the Fiber Broadband Association (FBA), the fiber industry needs approximately 205,000 new skilled technicians to plan, build, install, and maintain the current networks and expected builds over the next five years in the U.S.
 - The high average age of workers in the industry, as well as the relatively few new workers entering the space, has created significant concerns around the availability of future labor. It is estimated that for every five workers leaving the industry, only one enters.
- In addition to labor concerns, BEAD requires all construction materials for projects, not just the portion funded by BEAD, to be made in the U.S., including fiber and related components, potentially resulting in shortages and higher costs for fiber projects.
 - In February, the National Telecommunications and Information Administration (NTIA) issued a limited waiver of the “Build America, Buy America” (BABA). Under the waiver, recipients receiving assistance under the BEAD Program may use certain products and construction materials produced outside the U.S.

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United States—Key News Stories

Subject: Sprinklr—A Victim of Its Own CCaaS Success

Surging Success in CCaaS has Prompted Some Soul-Searching and a Shake-up at Sprinklr

CX Today

Date: March 28, 2024

Contract wins, such as its 40,000+ seat deal with Deutsche Telekom, proved that Sprinklr could compete at the forefront of the enterprise CCaaS market. Ragy Thomas, Founder and CEO of Sprinklr, led that quick-fire success, setting out his vision for the space, and the market reacted strongly. The company had another solid quarter across the board with record levels of profitability supported by strength in our Sprinklr Service product suite. However, despite its CCaaS momentum, Sprinklr's team revealed that its growth was set to decelerate, causing its stock to plummet by 33%.

Subject: Twilio Builds Momentum in CCaaS

Twilio Adds a New Data Layer and Copilot to Flex, Aims to Build Momentum In CCaaS

CX Today

Date: March 27, 2024

Twilio has launched two innovations for its Flex CCaaS platform: Unified Profiles and an Agent Copilot. The Unified Profiles solution pulls together CRM, warehouse, and real-time tracking data for a "complete view" of every customer. The offering also feeds Twilio's second innovation: Agent Copilot. The virtual assistant aims to make 'every interaction smarter' through intelligent routing, delivering real-time context to agents, and generative AI-powered contact summaries. These solutions empower businesses to enhance customer satisfaction and increase employee productivity.

Subject: Infrastructure Funds Interest in Wireless Towers

Phoenix Tower International's Investment from Grain Management and BlackRock to Continue Global Expansion

PR Newswire

Date: March 27, 2024

"Phoenix Tower International ('PTI' or the 'Company'), a leading global wireless communications infrastructure provider, today announced that Grain Management ('Grain'), through its flagship funds, and BlackRock, through a fund managed by its Diversified Infrastructure business ('BlackRock') have made a strategic investment in the Company. The investment will support PTI's future growth in providing critical tower infrastructure to new and existing markets around the world. Grain and BlackRock are joining Blackstone as investors behind PTI as they seek to further grow and expand the business. [...] 'We welcome Grain Management and BlackRock as investors in Phoenix Tower International and look forward to leveraging their strong track records in digital infrastructure investing to support our continued expansion,' said Dagan Kasavana, Founder and Chief Executive, Phoenix Tower International. 'Over the last decade, we've grown exponentially to provide wireless tower infrastructure to communities and countries in need of greater connectivity and we look forward to growing our impact with the support of our new and existing partners.'"

Subject: Cisco Furthers Customer Experience Momentum With New Offerings That Extend Customer Value

Cisco Develops New Offerings to Drive Value for its Customers

Cloud Communications Alliance

Date: March 27, 2024

"Cisco is unveiling general availability of the all-new Webex Customer Experience Essentials for customer-facing employees who are not traditional contact center agents. Cisco is also announcing new innovations in the Cisco AI Assistant for Webex Contact Center, quality management functionality and CRM integrations. [...] 'Organizations of all sizes are working with Cisco to empower contact center agents, reduce turnover and protect their brands. We offer them value at a price that's best in class,'" said Jeetu Patel, Executive Vice President & General Manager of Security and Collaboration.

Subject: RingCentral Reimagines the Business Phone System With Real-Time AI

RingCentral Integrates AI into its CSP Offerings

Cloud Communications Alliance

Date: March 25, 2024

"RingCentral [...] announced new transformative AI for its rebranded flagship solution, RingEX. By infusing RingSense™ AI across its secure, reliable platform, RingCentral is empowering every employee in an organization, from customer service to sales and marketing, with personalized and context-aware interactions that make every conversation smarter and everyday work more efficient."

United States—Key News Stories (cont.)

Subject: Affordable Connectivity Program

Providers Expected to Get No More Than \$16 per ACP Customer in May

Telecompetitor

Date: March 20, 2024

“Non-tribal providers participating in the Affordable Connectivity Program (ACP) should expect no more than \$16 per customer for the month of May — and perhaps as little as \$7, according to a public notice issued by the FCC yesterday. The reduced benefit is necessary because the program is set to run out of funding unless federal legislators opt to make additional funding available. Through the month of April, the non-tribal benefit will remain at the usual \$30 level. Beginning in June, the FCC will no longer pay any benefits in the ACP program, which is currently available to low-income customers to cover some of their costs for broadband service. Tribal providers are expected to receive between \$18-\$39 per customer for May — a drop from \$75 per month. The benefit for connected devices will drop from \$100 per device to between \$24 and \$53 per device for the month. According to the FCC, the estimates ‘take into account factors such as open claims for past service months, recent program activity, and claims trends.’ The commission expects to provide the final number for May ACP benefits in April. Providers have the option of ending their participation in the ACP with their April payment and not offering a benefit in May. Providers also have the option of contributing toward customers’ ACP service in May so that the benefits remain at the current level or at a level that exceeds what the FCC will cover for the month.”

Subject: Affordable Connectivity Program

The Death Of ACP Could Cut \$4B Out Of Telecom Industry

Light Reading

Date: March 19, 2024

New Street Research’s analysis suggests that the potential termination of the Affordable Connectivity Program (ACP) could lead to a significant \$4 billion decline in market value and a \$1.1 billion drop in revenue for the US telecom sector, based on survey data and industry trends. While there’s optimism among industry insiders that Congress may renew the program, there are doubts about its passage, despite efforts by lawmakers to maintain it.

Subject: RDOF Spending

Altice To Default On RDOF Locations In Louisiana

Light Reading

Date: March 18, 2024

Altice has informed the FCC of its intention to default on broadband funding in certain census block groups (CBGs) awarded through the Rural Digital Opportunity Fund (RDOF). The company plans to release these locations to be eligible for the Broadband Equity Access and Deployment (BEAD) program, prioritizing higher-speed connectivity. Louisiana, set to roll out BEAD grants, will remove these CBGs from federally-funded areas to potentially offer even higher speeds. However, there is ongoing debate about whether defaulting providers should still be eligible for BEAD support and what penalties, if any, they should face.

Subject: T-Mobile Activates 2.5GHz Spectrum

T-Mobile to finally activate its 2.5GHz 5G spectrum in coming days

Data Center Dynamics

Date: March 7, 2024

“T-Mobile has announced it will activate its 2.5GHz spectrum in the coming days, which it won at auction several years ago but faced disputes over with AT&T. The carrier paid \$304 million for 7,156 licenses of 2.5GHz spectrum back in 2022 during US spectrum auction 108. The spectrum will boost T-Mobile’s 5G network, by adding capacity to its network, with a particular focus on driving connectivity in rural areas. ‘Thanks to years of planning, T-Mobile is ready to put this spectrum to use right now for millions of our customers, delivering ultra capacity 5G to more people and increasing speed and performance for others,’ said Mike Sievert, CEO of T-Mobile. T-Mobile said that it will light up the 2.5GHz spectrum over the next few days. The spectrum will cover nearly 60 million customers over nearly 300,000 square miles, with the rest deployed as new towers are built out. Despite winning the spectrum almost two years ago, T-Mobile has been unable to activate it due to AT&T challenging T-Mobile’s mid-band spectrum assets. To mitigate this, the FCC confirmed last week that T-Mobile had agreed to divest 20MHz of spectrum on the Hawaiian islands of Kauai and Maui. On top of this, T-Mobile has been unable to use the spectrum because of the Federal Communications Commission’s (FCC) spectrum lapse.

United States—Key News Stories (cont.)

Subject: Hyperscalers Continued Investment in Data Centers

AWS acquires Talen's nuclear data center campus in Pennsylvania

Data Center Dynamics

Date: March 4, 2024

"Amazon Web Services (AWS) has acquired Talen Energy's data center campus at a nuclear power station in Pennsylvania. [...] According to the investor presentation, Talen sold the site and assets of Cumulus Data for \$650 million. The deal comprises \$350 million at close and \$300m escrowed, released upon development milestones anticipated in 2024. 'We are pleased today to have sold our Cumulus data center campus, unlocking significant value for Talen,' said Talen president and CEO Mac McFarland. 'This transaction provides an attractive return on Talen's investment and vision in building Cumulus, and creates value through the sale of clean carbon-free power from our top-decile Susquehanna nuclear plant.' [...] Talen said AWS aims to develop a 960MW data center campus. The cloud company has minimum contractual power commitments that ramp up in 120MW increments over several years; AWS has a one-time option to cap commitments at 480MW. The cloud provider also has two 10-year extension options, tied to nuclear license renewals. As part of the deal, Talen will also supply AWS with energy via a 10-year Power Purchase Agreement (PPA) from the Susquehanna site."

Subject: Dish Fails to Buy 800 MHz Spectrum

Dish says there's zero chance it will buy T-Mobile's 800 MHz spectrum

Fierce Network

Date: March 1, 2024

"Dish is throwing in the towel on its agreement to purchase all of T-Mobile's 800 MHz spectrum licenses for \$3.59 billion. In an SEC filing, Dish parent company EchoStar revealed that it is unable to get the financing necessary to pay T-Mobile for the 800 MHz spectrum licenses by the April 1 deadline. In the 10K, Dish said that although it was involved in various negotiations with other parties to get the financing necessary to purchase the 800 MHz spectrum, it has been unsuccessful. 'Due to the relatively short time remaining before the 800 MHz purchase option's expiration on April 1, 2024, we no longer believe it is a probability that we will exercise the option. Therefore, we reduced the probability weighted value of the spectrum option to zero,' it wrote. This spectrum deal was initially conceived as part of T-Mobile's acquisition of Sprint back in 2020. To get the Department of Justice to approve that acquisition, T-Mobile had to agree to sell its 800 MHz spectrum to Dish, which paved the way for it to become a fourth facilities-based wireless operator in the U.S. Dish was originally supposed to pay T-Mobile for the spectrum licenses by June 30, 2023, but after months of wrangling with T-Mobile Dish was able to get that deadline extended to April 1, 2024. In return for the extension Dish prepaid T-Mobile \$100 million in October that it will now forfeit because of its inability to come up with the rest of the funds."

Subject: Leadership Changes at Large Tower Operators

Crown Castle Co-Founder Seeks Board Seats at Big Wireless-Tower Owner

Wall Street Journal

Date: February 14, 2024

"The co-founder and former chief executive of Crown Castle is making a push for board seats at the big owner of wireless-communications towers. Ted Miller, who co-founded Crown Castle in 1994 and served as CEO from 1996 to 2001, recently nominated himself along with three others including his son-in-law, according to people familiar with the matter. The deadline to nominate Crown Castle directors is Feb. 17; they will be voted on at the company's annual meeting this spring. Miller, aged 72, has expressed privately to the company that he hopes to return to Crown Castle, which has a market value of nearly \$46 billion, as executive chairman. (Crown Castle's board has a mandatory retirement age of 72.) He also wants the company to sell its fiber business. Elliott Investment Management publicly demanded late last year that Crown Castle oust its CEO, replace board members and review its fiber strategy."

United States—Key News Stories (cont.)

Subject: AI Investment Fuels Data Center Growth

Nvidia and Cisco partner on AI solutions for data centers

Data Center Dynamics

Date: February 6, 2024

“Nvidia and Cisco have partnered up to offer organizations cloud-based and on-premises AI infrastructure, networking, and software solutions for the data center. The two companies have previously collaborated on a number of integrated product solutions across areas such as the data center compute space and collaboration devices. As part of this latest joint effort, Nvidia’s new tensor core GPUs will be available in Cisco’s M7 generation of UCS rack and blade servers to improve performance across a range of AI and data-intensive workloads in the data center and at the Edge. Cisco Validated Designs (CVDs) for Cisco converged infrastructure solutions FlexPod and FlashStack for generative AI inferencing will come to market later this month, while support for Cisco Networking Cloud will also be made available. Digital experience monitoring provided by ThousandEyes will provide AI-driven insights and automated problem remediation and the Cisco Observability Platform will use AI capabilities to improve visibility and insights. Organizations will also have access to Nvidia AI enterprise software that supports the building and deployment of advanced and generative AI workloads.”

Subject: Continued Data Center Development

Rowan gains approval for 231MW data center campus at Quantum Loophole’s Maryland site

Data Center Dynamics

Date: January 11, 2024

“Data center developer Rowan Digital Infrastructure has been granted permission for a campus in Frederick County, Maryland. First reported by the Frederick News Post, the company was granted site plan approval for a new data center campus within the 2,100-acre Quantum Loophole site. The project, known as the Bauxite Data Center, would see Rowan develop four single-story buildings totaling 777,150 sq ft (72,200 sqm) across 151 acres, along with an on-site substation from Potomac Edison. County documents suggest Rowan aims to install [231MW backup generators] powered either by diesel or HVO. [...] The Maryland site, a former smelting plant in Adamstown was bought by Quantum Loophole in 2021, for a reported \$100 million, and proposed as an alternative site to the overcrowded hub at Ashburn, 25 miles away in Northern Virginia. Quantum Loophole plans to host hyperscale tenants on the 2,100-acre campus, which could use more than 1GW of power.”

Subject: RingCentral Leadership

The RingCentral C-Suite Reshuffle Continues

CX Today

Date: January 11, 2024

“RingCentral has elected the former Chief Financial Officer at Twitter, Ned Segal, to the company’s board of directors shortly after reinstating Shmunis as CEO. Last month, Tarek Robbiati resigned from the CEO post at RingCentral having only served for less than four months as CEO, likely as ‘the result of a power struggle between the two men. Now, Shmunis is firming up his executive team [...] to peddle his new contact center focus for the company.’”

Subject: Five9 Rebuffs Zoom Again

Zoom was the bidder rebuffed by Five9

REUTERS

Date: December 6, 2023

“Five9 said it had been approached with a takeover offer, without naming the bidder, and said it had decided not to pursue a transaction. The source, who requested anonymity because the discussions are confidential, said the unnamed party rebuffed by Five9 was Zoom. [...] Zoom has sought to overcome the slowdown in the growth of its video-conferencing platform by offering a broader range of software tools, especially business collaboration software, to large corporations.”

Europe—Key News Stories

Subject: U.K. Fiber Regulations

Ofcom fires starting pistol on next stage of fixed telco regulation

Megabyte

Date: March 27, 2024

“Telecoms regulator Ofcom yesterday fired the starting pistol on the next stage of fixed line telecoms regulation, launching the consultation process for regulation of BT and other players for the 2026-2031 period. Much has happened in the intervening three years since the current regulatory period started in March 2021; Gigabit access has risen from 7.9m to 23.2m premises (from 27% to 78% of UK premises), whilst full fibre access (FTTP) has risen from 5m to 17.1m premises (18% to 57%), with the delta between Gigabit and full fibre totals being VM02 areas, with significant investment by altnets. However, there has been less progress in commercialisation by the altnets. In this regard, the regulatory framework has struck a decent balance, but times are changing, not least that beyond 2026 the balance will (is already) shifting from network build to fibre commercialisation, requiring different approaches.”

Subject: Vodafone-Three Merger

CMA launches Phase 2 probe into Vodafone-Three merger

CommsBusiness

Date: March 22, 2024

“The CMA announced today that it would be following up its initial Phase 2 investigation, which it started in January, with an in-depth 40-working day probe focused on the potential impact of the deal UK consumers and businesses. Last year, both businesses announced a new joint venture agreement which would bring their 27 million customers under a new, single network provider. The CMA is concerned the deal could lead to mobile customers facing higher prices and reduced quality. [...] The CMA said that Vodafone UK and Three UK’s claims are based on a number of assumptions about how they will combine and invest in their networks post-merger. The CMA said that these assumptions need more detailed assessment, particularly given its concerns that the merger may reduce mobile operators’ overall incentives to invest in their networks.”

Subject: Vodafone Continues Its Restructuration Plan

Vodafone to sell Italian business to Swisscom for €8bn

Financial Times

Date: March 15, 2024

“Vodafone has agreed to sell its Italian operations to Swisscom for €8bn in cash as part of chief executive Margherita Della Valle’s plans to simplify the UK-based telecoms group.

The company also said it would return up to €4bn to shareholders through buybacks and cut its dividend to 4.5 cents a share from next year, down from 9 cents in 2024.

Della Valle said the sale marked ‘the third and final step in the reshaping of our European operations’ following the disposal of its Spanish unit and a merger of its UK operations currently being reviewed by Britain’s competition regulator.”

Subject: U.K. Fiber Consolidation

Cityfibre acquires Lit Fibre, accelerating its rollout by up to 300,000 premises

CityFibre.com

Date: March 14, 2024

“CityFibre has agreed to acquire alternative fibre network operator Lit Fibre from Newlight Partners. Integration of Lit Fibre will add up to 300,000 premises to CityFibre’s Ready For Service footprint, comprising over 200,000 passed homes and up to 100,000 further premises in planned network rollouts. The acquisition will provide CityFibre’s partners with the same market-leading products, pricing and service experience across its extended, carrier-grade, network footprint. CityFibre, the UK’s largest independent full fibre platform, has agreed to acquire alternative fibre network (altnet) Lit Fibre (Lit) from Newlight Partners, accelerating its nationwide full fibre rollout by up to 300,000 premises as part of its 8m rollout programme. The share-based acquisition will see Newlight Partners become minority shareholders in CityFibre and is expected to be completed in the second quarter of 2024.”

Europe—Key News Stories (cont.)

Subject: Data Center Market Consolidation

Digital Core REIT ups Frankfurt data centre stake with €117m acquisition

IPE Real assets

Date: March 7, 2024

“Singapore-listed Digital Core REIT is buying an additional 24.9% interest in a data centre in Germany for €117m from Digital Germany Holding, a subsidiary of Digital Realty Trust. The acquisition will lift Digital Core REIT’s interest in the data centre located at Wilhelm-Fay-Straße 15 and Wilhelm-Fay-Straße 24 in Frankfurt to 49.9% alongside Digital Germany which will hold the remaining 50.1% stake in the data centre. Digital Core REIT first bought a 25% stake in the facility in December 2022. In a filing, Digital Core REIT said it intended to fund the total acquisition cost with the proceeds from the sale of properties in Silicon Valley to Brookfield Infrastructure Partners and its institutional partners for \$160.2m (€147m). It also intended to fund the Germany acquisition partly with the \$117m equity raised from private placement last month. The manager said the acquisition would improve overall portfolio credit quality and it would increase the total annualised rent contribution from investment-grade customers from 78% in 2023 to 87%.”

Subject: Cross-Border Telecoms M&A

UK telecoms specialist Spirent agrees to £1bn takeover offer from US rival

Financial Times

Date: March 5, 2024

“US technology specialist Viavi Solutions has made a £1bn takeover offer for telecoms testing group Spirent Communications, in a deal that would remove another UK-listed business from the London market. The US company on Tuesday offered 175 pence per share for Spirent, a 61 per cent premium to the closing price on Monday. Nasdaq-listed Viavi provides network testing and monitoring to industries including telecommunications, the military and aerospace. Spirent also tests 5G and WiFi networks, ‘internet of things’ devices and cloud computing networks. The deal will be funded by the US group’s existing cash, a \$800mn loan from Wells Fargo and a \$400mn investment in Viavi by US private equity group Silver Lake.”

Subject: Data Center Market Consolidation

AtlasEdge acquires data center in Vienna, Austria

Data Center Dynamics

Date: March 4, 2024

“AtlasEdge has expanded into Austria with the acquisition of a data center in Vienna. Announced this week, the acquired site is currently part of the Siemens Campus in Vienna-Floridsdorf, which houses an existing data center, with expansion space to become a 10MW facility. Terms of the deal weren’t shared. The site, along Leopoldine-Padaurek-Strasse, will be technically and physically separated from the wider campus and will be fully expanded with the new capacity by Q3 2026. The company said the AtlasEdge Vienna sits on 11,000 sqm (118,405 sq ft), features diverse fiber routes, and has an anchor tenant in situ. Savills and Modesta advised AtlasEdge on the deal.”

Subject: Data Center Market Trends

The rise of Zurich as a leading datacentre market in the DACH region

451 research – S&P

Date: February 28, 2024

“Zurich’s datacentre market benefits from the presence of the world’s leading financial service firms, a growing fintech sector and a business-friendly ecosystem. Switzerland’s federal data protection law fosters data sovereignty but is also aligned with the EU’s General Data Protection Regulation (GDPR), allowing international companies headquartered in Switzerland to operate across the EU without any regulatory impediment. The intensification of the cloud migration process in the Swiss corporate and government sectors has encouraged the main US hyperscale cloud providers — Microsoft Corp., Amazon Web Services and Google — to establish cloud regions in Zurich.”

Europe—Key News Stories (cont.)

Subject: Cybersecurity

Cyber attacks on mobile devices increase 50 per cent

CommsBusiness

Date: February 26, 2024

“[...] According to research by Kaspersky, which found that the number of cyber attacks reached almost 33.8 million. The UK accounted for 258,959 of these attacks. The most prevalent threat to mobile devices was adware, making up 40.8 per cent of threats detected. [...] Kaspersky also observed numerous malicious applications infiltrating Google Play. One of the most common disguises for 2023 were fake investment apps that relied on social engineering tactics to extract personal data from users, primarily phone numbers and full names, which were later added to databases used for phone fraud. Another prevalent vector of attacks observed was malicious WhatsApp and Telegram mods designed to steal user data.”

Subject: Service Portfolio Expansion

NFON UK unveils new suite of services for partners

CommsBusiness

Date: February 22, 2024

“NFON UK has announced a new suite of services for its channel partners. The new offerings include professional services as a service (PSaaS), support as a service (SaaS), and marketing as a service (MaaS). [...] The new PSaaS offering gives partners access to a dedicated team of professional services engineers. The team can assist in the technical implementation of projects through consultation and support or by carrying out the technical delivery of a project from start to finish. The MaaS offering provides partners with access to a dedicated team of marketing professionals. [...] With SaaS, partners can tap into professional support services without an in-house team. This offers expert assistance as well as the flexibility to scale up as needed, to keep support costs under control.”

Subject: Data Center Market Consolidation

Starwood Capital Acquires 50% Stake In Echelon Data Centres

Sustainable Tech Partner

Date: February 16, 2024

“Starwood Capital Group has acquired a 50% stake in Echelon Data Centres, a sustainability-focused data center infrastructure provider in Ireland and the United Kingdom. The investment, involving roughly US\$850 million, gives Echelon an enterprise value of roughly €2.5 billion (US\$2.7 billion). [...] The Starwood-Echelon deal reinforces steady venture capital and private equity activity in the data center arena. The data center providers, in turn, increasingly leverage renewable energy to scale their infrastructure for artificial intelligence (AI) applications and other heavy workloads.”

Subject: European Telecoms Regulation

Brussels open to telecoms mergers to support investment

Financial Times

Date: February 14, 2024

“Brussels has signalled it is open to European telecoms mergers to help fund the rollout of 5G and update ageing networks, in what is likely to be seen as a softening of approach after regulators quashed several potential deals in recent years. Europe’s biggest telecoms groups have been calling on the European Commission to help them invest billions in the rollout of 5G and full-fibre networks, including through in-market consolidation and demanding that Big Tech groups pay a ‘fair’ contribution for using their networks.”

Subject: Acquisition of Operator Connect Capabilities

Gamma buys Coolwave Communications

CommsBusiness

Date: 6 February 2024

“Gamma Communications has announced it has acquired Coolwave Communications in an effort to bolster its global presence and enhance its voice services portfolio. Coolwave is headquartered in Dublin, Ireland, with offices in the Netherlands, Germany, Singapore and the UK. The company provides international SMS and voice services. Gamma said this acquisition will enhance its delivery of voice services in over 100 countries. Additionally, it will help underpin Gamma’s SIP, Microsoft Direct Routing and Operator Connect propositions as it expands internationally. Mike Mills, director of service providers, Gamma [...] said, ‘The acquisition of Coolwave aligns perfectly with our strategy to expand our global footprint and provide world-class voice and SMS services to customers.’ [...] Terms of the transaction were not disclosed. Q Advisors acted as financial advisor to Coolwave Communications.”

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Selected Q1 2024 Transactions

Announced Date	Target	Investor/ Acquirer	Description
United States			
Communication Service Providers			
Feb-24	CBTS, LLC	TowerBrook Capital Partners	CBTS is an IT services company focused on supporting enterprise business customers with solutions and services, including application modernization, cybersecurity, IT consulting, cloud, unified communications, and infrastructure solutions.
Jan-24	Thrio	Nextiva	Thrio is the developer of an AI-powered contact center platform designed to improve customer prospects. The company's platform provides full support for SMS, chat, bot, social, email, web, bots and virtual agents, and automated campaign managers, enabling clients with powerful automation rules to drive effective workflows.
Jan-24	Horizon Telecom	Momentum Telecom	Horizon Telecom operates globally in a carrier-neutral manner and currently orchestrates the mission-critical digital infrastructure of more than 200 clients. Customers have the autonomy to select from smart and globally available solutions for communication, connectivity, security, and related professional services.
Nov-23	G12 Communications	Momentum Telecom	G12 Communications is a provider of cloud communications services based in Kirkland, Washington. The company offers cloud faxing, business text messaging, enterprise voice-over internet protocol (VoIP), integrated access, conferencing, interactive voice response (IVR), and enterprise mobility services.
Nov-23	CallTower	BV Investment Partners	CallTower is a global cloud-based, enterprise-class unified communications, contact center, and collaboration solutions provider for growing organizations worldwide.
Nov-23	TNS Communications (Assets)	Amplix Inc.	Amplix has acquired substantially all the assets of TNS Communications, which provides IT consulting, advisory, unified communications, and managed services to businesses in the U.S.
Oct-23	nQuery Communications (Assets)	Amplix Inc.	Amplix has acquired the assets of nQuery Communications, which provides IT advisory services and SaaS for businesses worldwide. Offerings include cybersecurity, unified communications-as-a-service (UCaaS), internet, contact-center-as-a-service (CCaaS), fiber, broadband, wireless, SD-WAN, IT support, and outsourcing.
Oct-23	White Label Communications, LLC	Incline Equity Partners	White Label Communications provides private labeling, unified communications-as-a-service (UCaaS), APIs, and related mobile applications to businesses globally. The software provides features for include private reporting, SIP trunking, hosted PBX, video conferencing, TaaS, DaaS, VoIP, and Hosted PBX.
Oct-23	2600Hz Inc.	Ooma	Ooma Inc. acquires CPaaS vendor 2600Hz to accelerate its product roadmap, strengthening its position against UCaaS suppliers that are aggressively expanding their global footprint. The move positions Ooma as a player in the CPaaS enablement space.
Oct-23	LiveVox Inc.	NICE Ltd.	LiveVox provides AI-based contact center SaaS and related APIs for businesses globally. The software provides features for workforce engagement management, consent management, virtual assistants, customer analytics, business analytics, speech analytics, recording, scheduling, PBX, and inbound and outbound voice.
Digital Infrastructure Services			
Feb-24	Infinite Communications	ITG Communications	ITG Communications has acquired Infinite Communications, a construction and engineering company based in Jacksonville, Florida, effectively expanding ITG's service offerings to include advanced network architecture design and engineering while strengthening ITG's fiber buildout capabilities in the Southeast.
Jan-24	Midwest Utility Services	TD&I Cable Maintenance, Tower Arch Capital	TD&I Cable Maintenance and Tower Arch Capital have acquired Midwest Utility Services, led by its founder, Steve Kvistad, and minority owner Bill Eckles. Headquartered in Savage, Minnesota, Midwest serves telecom providers, utility cooperatives, and municipalities across the upper Midwest.
Wireless Infrastructure			
Mar-24	Phoenix Tower International	Grain Management, BlackRock	Phoenix Tower International, a leading global wireless communications infrastructure provider, announced that Grain Management, through its flagship funds, and BlackRock, through a fund managed by its Diversified Infrastructure business, have made a strategic investment in the company.
Mar-24	Cellnex Telecom	Phoenix Tower International	Phoenix Tower International (PTI) has entered a definitive agreement with Cellnex Telecom to acquire 100% of Cellnex's business in Ireland. The transaction will expand PTI's Irish business by adding approximately 1,700 mobile telecom sites and approximately 200 land locations that accommodate third-party wireless sites.
Mar-24	Shentel	Vertical Bridge	Shenandoah Telecommunications Company (Shentel) announced it has entered into a purchase and sale agreement with Vertical Bridge to sell its tower portfolio and operations to Vertical Bridge for \$310.3 million.
Feb-24	Uniti Group	CTI Towers	Uniti Group sold its remaining wireless tower assets to CTI Towers for an undisclosed amount.
Jan-24	Tigo Colombia	KKR	Millicom subsidiary Tigo Colombia has agreed to sell 1,100 telecom towers to U.S. investment firm KKR.
Jan-24	American Tower Corp.	Brookfield	Brookfield Asset Management announced the acquisition of American Tower Corp.'s loss-making Indian operations for \$2.5 billion, becoming the country's largest operator of telecom towers amid booming demand for data and wider use of 5G services.
Jan-24	SRT Communications	CTI Towers	CTI Towers, a leading owner and manager of wireless towers and a portfolio company of Palistar Capital, announced the purchase of 56 towers in North Dakota from SRT Communications, the state's largest telecommunications cooperative.

Selected Q1 2024 Transactions (cont.)

Announced Date	Target	Investor/ Acquirer	Description
United States			
Data Centers			
Mar-24	Digital Realty	Mitsubishi	Mitsubishi forms a joint venture with Digital Realty to expand its data center business to the U.S. Mitsubishi contributed an initial investment of \$200 million to acquire a 65% equity stake in the venture, while Digital Realty will hold a 35% interest and manage the development and operations of the project. Mitsubishi will fund an additional \$65 million towards the \$100 million estimated cost supporting the first phase of development for the project.
Mar-24	Talen Energy Cumulus Data Center	AWS	Amazon Web Services has acquired Talen Energy's data center campus at a nuclear power station in Pennsylvania. Talen sold the site and assets of Cumulus Data for \$650 million. The deal comprises \$350 million at close and \$300 million escrowed, released upon development milestones anticipated in 2024.
Feb-24	Deutsche Bank Securities	DataBank	DataBank, a provider of edge colocation, interconnection, and managed cloud services, has issued \$456 million of secured notes, its fourth securitization since 2021 and its first green financing. The proceeds will be used to refinance a previous bridge loan put in place to purchase four data centers in the Houston market from CyrusOne in 2022 and to fund the development of additional data center capacity across the DataBank platform.
Feb-24	US Innovative Technology	Lamda	Lamda, a GPU cloud company powered by NVIDIA GPUS, has raised a \$320 million series C led by Thomas Tull's US Innovative Technology, achieving a U.S. \$1.5 billion valuation.
Feb-24	Starwood Capital	Echelon Data Centres	Starwood Capital has agreed to invest \$850 million in Echelon Data Centers for a 50% stake. The investment values Echelon at an enterprise value of around \$2.68 billion.
Jan-24	Pennsylvania Data Center	Ardent Data Centers	Ardent Data Centers, a Northern Data Group company, acquired a 5MW site in Pittsburgh that Ardent will upgrade to 20MW. The investment expands Northern Data Group's ability to meet the demand for high-performance computing (HPC) solutions.
Jan-24	DominionTech	VC3	VC3, a leading MSP serving municipalities and commercial businesses across North America, acquired DominionTech, an IT services provider supporting Vermont and New Hampshire businesses. This significantly expands VC3's presence in New England.
Jan-24	Uptime Tier III Design Certified Data Centre	LightEdge	LightEdge, a provider of cloud and colocation, announced its entry into Minneapolis with the acquisition of an Uptime Tier III Design Certified 76,000 square foot, 3.6MW data center in Chaska, Minnesota. The facility houses 30,000 square feet of data hall space across three private data center suites.
Jan-24	Navisite	Accenture	Accenture agreed to acquire MSP and managed infrastructure provider Navisite, based in Andover, Maryland. Navisite will join Accenture's practice focused on infrastructure engineering. Accenture is looking to bolster its capabilities around application management and managed infrastructure services.
Jan-24	Suyati Technologies Pvt Ltd.	Milestone Technologies	Milestone Technologies, a Silicon Valley-based global IT services and digital solutions firm, announced the acquisition of Suyati Technologies Pvt Ltd., an IT company providing tech services and solutions in Microsoft and cloud technologies, Salesforce Platform, and advanced analytics, headquartered in Kochi, India. The acquisition expands Milestone's global footprint and bolsters its applications and digital engineering services portfolio.
Broadband			
May-24	Windstream	Uniti Group	Uniti Group has entered into a definitive agreement to merge with Windstream. The merger combines Uniti Group's national wholesale-owned fiber network with Windstream's fiber-to-the-home business to create a premier insurgent fiber provider in the U.S.
Apr-24	Lumos	T-Mobile and EQT	T-Mobile and EQT have entered into a joint venture to acquire fiber-to-the-home platform Lumos. Together, they will acquire Lumos' scalable fiber network build capabilities to deliver best-in-class, high-speed fiber internet connectivity to customers across the U.S. without access to fiber.
Mar-24	Aristata Communications	Visionary Broadband	Visionary Broadband, a provider of high-speed internet service to communities in the rural West, including Colorado, Wyoming, and Montana, announced the acquisition of Aristata Communications.
Feb-24	Bluepeak	Ares Management	Bluepeak, a leading provider of fiber broadband to residential and commercial customers in communities across the Great Plains region, announced that it has received a strategic investment from funds managed by Ares Management's Infrastructure Opportunities and Alternative Credit strategies.
Feb-24	Blue Stream Fiber	Sixth Street	GI Partners, a leading investor in data infrastructure businesses, announced that it has closed a deal to welcome Sixth Street, a leading global investment firm, as a strategic investor in Blue Stream Fiber.
Jan-24	Wire 3	Oak Hill Capital	Wire 3, a leading fiber-to-the-home provider in Florida, announced that Oak Hill Capital has acquired the company from Guggenheim Investments and committed to invest up to \$250 million out of Oak Hill's sixth flagship fund to accelerate the expansion of Wire 3's fiber network in underserved communities.

Selected Q1 2024 Transactions (cont.)

Announced Date	Target	Investor/ Acquirer	Description
Europe			
Broadband			
Mar-24	VX Fiber	Freedom Fibre	Freedom Fibre has announced the completion of its recent merger with InfraBridge-backed VX UK Holdings Ltd. (VX Fiber). The combined coverage of their open access fiber-to-the-premises (FTTP) broadband ISP network is now 300,000 premises (up from 285,000 in December 2023).
Mar-24	Lit Fibre	CityFibre	CityFibre has agreed to acquire alternative fiber network operator Lit Fibre from Newlight Partners. Integration of Lit Fibre will add up to 300,000 premises to CityFibre's ready-for-service footprint, comprising more than 200,000 passed homes and up to 100,000 further premises in planned network rollouts.
Mar-24	Netomnia	Barclays, Alpha Bank, Nord/LB	Netomnia, one of the fastest growing altnets in the U.K., along with ISP sister company YouFibre, has raised a further £147.5 million, increasing its committed debt financing to £377.5 million. Netomnia has successfully completed an additional fundraising of £147.5 million in its accordion facility, welcoming three new lenders: Barclays, Alpha Bank, and Nord/LB, with support from all incumbent lenders.
Jan-24	NGE Fibre	abrdn	abrdn acquired a strategic stake in NGE Fibre, a company holding participations in two fiber-to-the-home (FTTH) concessions operating approximately 1.4 million homes passed in rural areas of France, according to a press release. The transaction represents abrdn's concession infrastructure team's first major FTTH transaction in France, following three investments in Spain. abrdn's portfolio now consists of 5.4 million homes passed.
Jan-24	Voneus	Existing shareholders and lenders	A further combined capital investment of £25 million has been made into Voneus by its shareholders and lenders. This has been confirmed by Global Connectivity, a shareholder in Voneus through its investment in Rural Broadband Holdings Solutions Ltd. (RBSHL). This investment increases RBSHL's stake to 37% from 32%. Global Connectivity owns a 15% stake in RBSHL's common equity.
Jan-24	Hotspots	Wifirst	Berlin-based Hotspots GmbH, a Wi-Fi provider with more than 17,500 hotspot locations in Germany, has been acquired by Wifirst, a B2B telecom operator specialized in providing Wi-Fi managed infrastructures for professionals, headquartered in Paris and operating in 30 countries.
Jan-24	Wildanet	Jersey Stock Exchange listing	Gresham-backed, rural-focused fiber and FWA builder Wildanet has issued £63.6 million of debt on the J.S.E (£41.6 million worth of 10% secured notes maturing in 2030 and £24.0 million of 12% committed capital secured notes maturing in 2033).

Digital Infra Services

Mar-24	Infratech Bau GmbH	SPIE SA	SPIE SA, the France-based provider of electrical, mechanical, and HVAC engineering, energy, and communications services, is to acquire 92% of Infratech Bau GmbH, the Germany-based provider of broadband networks solutions, from HIG Capital LLC, the global investment firm. The terms of the deal were undisclosed.
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Telecoms

Mar-24	Spirent Communications	Viavi Solutions	Viavi Solutions, the U.S.-based provider of testing and monitoring solutions to fiber optic networks, has signed a definitive agreement to acquire Spirent Communications, the U.K.-based manufacturer of electronic and electrical products specializing in telecommunications testing systems. The consideration was approximately £1 billion at an offer price of 172.5p.
Feb-24	Vodafone Italy	Swisscom	Swisscom, the Switzerland-based provider of mobile communications, fixed networks, internet, and digital TV telecommunication services, is to acquire Vodafone Italia, the Italy-based provider of telecommunication services from Vodafone Group. The consideration is €8 billion (\$8.6 billion) on a cash-free, debt-free basis.
Feb-24	Tele2	Iliad, NJJ Holding	Iliad, the France-based telecommunications company, and NJJ Holding, Xavier Niels' investment holding company, are to acquire 19.75% of Tele2, the Sweden-based telecom operator from Kinnevik. The consideration was SEK 12.9525 billion (\$1.254 billion).
Feb-24	La Poste	Bouygues Telecom	French operator Bouygues Telecom has signed an exclusive agreement with La Poste Groupe for 100% of its subsidiary La Poste Telecom, the largest mobile virtual network operator (MVNO) in the French market.

Wireless Infrastructure

Mar-24	Cellnex Ireland	Phoenix Tower	Phoenix Tower, the U.S.-based wireless telecommunication tower operator, announced it had agreed to acquire Cellnex's business in Ireland for €971 million.
Jan-24	Telekom Srbija	Actis	An Actis-led consortium has acquired the macro tower portfolio of Telekom Srbija, a telecommunications operator in the Central and Eastern Europe region, with operations in Serbia, Bosnia and Herzegovina, and Montenegro. The portfolio consists of approximately 1,800 macro towers and is set for further commercialization and expansion.

Selected Q1 2024 Transactions (cont.)

Announced Date	Target	Investor/ Acquirer	Description
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Europe

Data Centers

Mar-24	Data Center in Vienna	AtlasEdge	AtlasEdge has expanded into Austria with the acquisition of a data center in Vienna. Announced this week, the acquired site is currently part of the Siemens Campus in Vienna-Floridsdorf, which houses an existing data center, with expansion space to become a 10MW facility.
Feb-24	Echelon Data Centers	Starwood Capital	Starwood Capital Group has acquired a 50% stake in Echelon Data Centers, a sustainability-focused data center infrastructure provider in Ireland and the United Kingdom. The investment, involving roughly \$850 million, gives Echelon an enterprise value of roughly €2.5 billion (\$2.7 billion).
Feb-24	Data Center in Finland	Borealis Data Centers	Icelandic operator Borealis Data Centers has acquired a facility in Finland, marking its first international expansion. The company announced it had bought a data center in the Renforsin Ranta Business Park in Kajaani in central Finland. The facility utilizes an old paper mill's infrastructure. According to Borealis' data sheet, the Tier II-quality site currently spans two data halls and is designed for a target capacity of 10MW.
Jan-24	Data Center in Stockholm	T.Loop	Swedish company T.Loop has announced the acquisition of a data center in central Stockholm, Sweden. The 800-square-meter facility is set to undergo modernization and transformation into a data energy center by 2024.

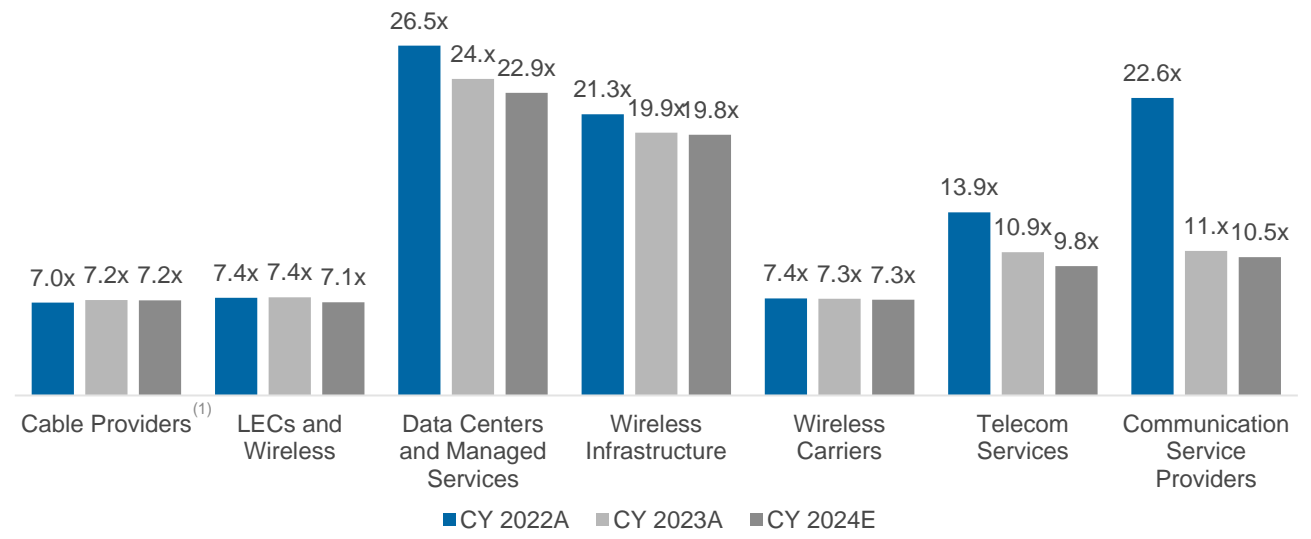
Communication Service Providers

Mar-24	Excalibur Communications	Onecom	U.K.-based communication services provider Onecom has announced its 11th acquisition since 2020. The LDC-backed company acquired Excalibur Communications, a unified communications and mobile services specialist with long-standing partnerships with Vodafone, Gamma, and Microsoft.
Feb-24	Coolwave Communications	Gamma Communications	The U.K.-listed, leading communication services provider Gamma Communications has announced the acquisition of Coolwave Communications. The transaction bolsters Gamma's global presence and enhances its services portfolio, especially by enabling the provision of Microsoft Teams Operator Connect.
Jan-24	Horizon Telecom	Momentum Telecom	Momentum Telecom, a U.S.-based managed service provider, announced the acquisition of Horizon Telecom (seventh add-on since inception), a European voice and network provider, offering PSTN replacement services in 72 countries.

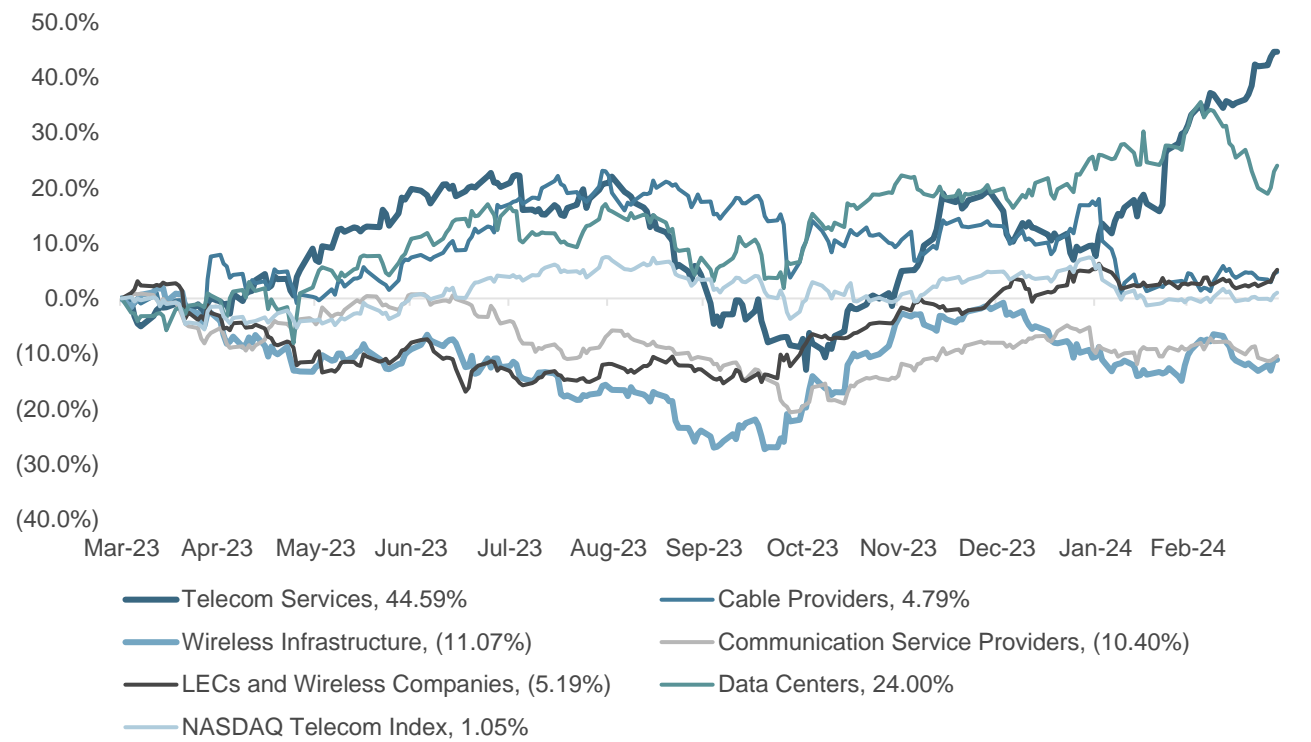
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United States Public Markets Overview

Median EV/EBITDA



12-Month Indexed Stock Price Performance



Source: S&P Capital IQ.
Notes: Calendar year consensus estimates are used unless otherwise noted. The components of each sector are detailed on the following pages. All data as of March 31, 2024.
(1) Includes Cogent.

United States Public Comparables

Cable Providers, Incumbent LECs, Data Centers and Managed Services, and Wireless Infrastructure

Cable Providers

Company	Stock Price	% of 52-Week High	Equity Value (\$M)	Enterprise Value (\$M)	LTM Lev	EV/Revenue			EV/EBITDA		
						CY 2022A	CY 2023A	CY 2024E	CY 2022A	CY 2023A	CY 2024E
Comcast	\$43.35	91%	\$172,180	\$270,405	2.8x	2.2x	2.2x	2.2x	7.3x	7.1x	6.9x
Charter Communications	290.63	63%	41,963	144,081	4.7x	2.7x	2.6x	2.6x	6.7x	6.6x	6.5x
Altice	2.61	68%	1,190	26,263	7.1x	2.7x	2.8x	2.9x	6.7x	7.3x	7.5x
Cable One	423.13	55%	2,378	5,831	4.2x	3.4x	3.5x	3.6x	6.4x	6.4x	6.6x
Cogent	65.33	76%	3,121	4,913	NM	8.2x	5.2x	4.4x	21.0x	13.1x	14.7x
Shentel	17.37	68%	876	1,088	4.5x	4.1x	3.8x	3.3x	15.0x	12.2x	10.8x
					Mean	4.7x	3.9x	3.4x	3.2x	10.5x	8.8x
					Median	4.5x	3.1x	3.2x	3.1x	7.0x	7.2x

Incumbent LECs

Company	Stock Price	% of 52-Week High	Equity Value (\$M)	Enterprise Value (\$M)	LTM Lev	EV/Revenue			EV/EBITDA		
						CY 2022A	CY 2023A	CY 2024E	CY 2022A	CY 2023A	CY 2024E
Verizon	\$41.96	97%	\$176,652	\$354,553	3.7x	2.6x	2.7x	2.6x	7.4x	7.4x	7.3x
AT&T	17.60	88%	125,889	296,461	3.8x	2.4x	2.4x	2.4x	7.1x	6.8x	6.6x
T-Mobile	163.22	97%	193,721	302,226	4.0x	3.8x	3.9x	3.7x	11.1x	10.3x	9.6x
Lumen	1.56	58%	1,575	20,637	5.2x	1.2x	1.4x	1.5x	3.0x	4.6x	5.0x
Frontier	24.50	95%	6,023	15,751	5.4x	2.7x	2.7x	2.7x	7.6x	7.5x	7.1x
TDS	16.02	74%	1,810	8,597	4.8x	1.6x	1.7x	1.7x	7.2x	7.0x	6.9x
Consolidated Communications	4.32	93%	501	3,065	8.5x	2.6x	2.8x	2.7x	7.5x	9.7x	8.7x
					Mean	5.1x	2.4x	2.5x	7.3x	7.6x	7.3x
					Median	4.8x	2.6x	2.7x	7.4x	7.4x	7.1x

Data Centers and Managed Services

Company	Stock Price	% of 52-Week High	Equity Value (\$M)	Enterprise Value (\$M)	LTM Lev	EV/Revenue			EV/EBITDA		
						CY 2022A	CY 2023A	CY 2024E	CY 2022A	CY 2023A	CY 2024E
Equinix	\$825.33	90%	\$78,094	\$93,478	6.1x	12.9x	11.4x	10.5x	27.8x	25.2x	22.6x
Digital Realty Trust	144.04	93%	44,983	65,084	8.0x	13.9x	11.8x	11.6x	26.5x	24.0x	22.9x
DigitalBridge Group	19.27	92%	3,151	4,720	1.2x	4.1x	3.6x	10.0x	15.1x	16.6x	25.2x
					Mean	5.1x	10.3x	8.9x	10.7x	23.1x	22.0x
					Median	6.1x	12.9x	11.4x	10.5x	26.5x	24.0x

Wireless Infrastructure

Company	Stock Price	% of 52-Week High	Equity Value (\$M)	Enterprise Value (\$M)	LTM Lev	EV/Revenue			EV/EBITDA		
						CY 2022A	CY 2023A	CY 2024E	CY 2022A	CY 2023A	CY 2024E
American Tower	\$197.59	90%	\$92,147	\$143,995	6.8x	13.5x	13.0x	12.9x	21.8x	20.4x	20.3x
Crown Castle	105.83	78%	45,985	74,694	6.9x	10.7x	10.7x	11.3x	17.2x	17.1x	18.0x
SBA	216.70	81%	23,427	37,717	8.1x	14.3x	13.9x	14.0x	21.3x	19.9x	19.8x
					Mean	7.3x	12.8x	12.5x	12.7x	20.1x	19.1x
					Median	6.9x	13.5x	13.0x	12.9x	21.3x	19.9x

Source: S&P Capital IQ.

Notes: Stock price last updated on March 31, 2024.

NM in EV/EBITDA if the multiple is greater than 40 or EBITDA is negative.

NA means information is not available or not applicable.

United States Public Comparables (cont.)

Wireless Carriers, Telecom Services, and Communication Service Providers

Wireless Carriers

Company	Stock Price	% of 52-Week High	Equity	Enterprise	LTM	EV/Revenue			EV/EBITDA			
			Value (\$M)	Value (\$M)	Lev	CY 2022A	CY 2023A	CY 2024E	CY 2022A	CY 2023A	CY 2024E	
Verizon	\$41.96	97%	\$176,652	\$354,553	3.7x	2.6x	2.7x	2.6x	7.4x	7.4x	7.3x	
AT&T	17.60	88%	125,889	296,461	3.8x	2.4x	2.4x	2.4x	7.1x	6.8x	6.6x	
T-Mobile	163.22	97%	193,721	302,226	4.0x	3.8x	3.9x	3.7x	11.1x	10.3x	9.6x	
U.S. Cellular	36.50	75%	3,103	7,011	5.0x	1.7x	1.8x	1.8x	7.3x	7.2x	7.2x	
					Mean	4.1x	2.6x	2.7x	2.6x	8.2x	8.0x	7.7x
					Median	3.9x	2.5x	2.5x	2.5x	7.4x	7.3x	7.3x

Telecom Services

Company	Stock Price	% of 52-	Equity	Enterprise	LTM	EV/Revenue			EV/EBITDA			
		Week High	Value (\$M)	Value (\$M)	Lev	CY 2022A	CY 2023A	CY 2024E	CY 2022A	CY 2023A	CY 2024E	
Quanta Services	\$259.80	99%	\$37,866	\$41,050	2.6x	2.4x	2.0x	1.8x	24.5x	21.4x	18.6x	
MasTec	93.25	76%	7,253	10,234	4.6x	1.1x	0.9x	0.8x	13.2x	12.0x	10.7x	
Dycom Industries	143.53	98%	4,176	4,939	1.8x	1.3x	1.2x	1.1x	14.6x	9.7x	8.9x	
Primoris Services	42.57	99%	2,283	3,383	3.6x	0.8x	0.6x	0.6x	11.8x	9.2x	8.6x	
					Mean	3.2x	1.4x	1.2x	1.1x	16.0x	13.1x	11.7x
					Median	3.1x	1.2x	1.0x	1.0x	13.9x	10.9x	9.8x

Communication Service Providers

Company	Stock Price	% of 52-Week High	Equity Value (\$M)	Enterprise Value (\$M)	LTM Lev	EV/Revenue			EV/EBITDA			
						CY 2022A	CY 2023A	CY 2024E	CY 2022A	CY 2023A	CY 2024E	
8x8	\$2.70	55%	\$333	\$707	NM	1.0x	1.0x	1.0x	15.9x	6.5x	6.6x	
Altigen Communications	0.79	68%	20	17	NM	NA	NA	NA	NA	NA	NA	
AudioCodes	13.04	87%	395	331	2.3x	1.2x	1.4x	1.3x	6.6x	11.0x	7.7x	
Bandwidth	18.26	84%	480	971	NM	1.7x	1.6x	1.4x	29.2x	21.8x	13.5x	
Crexendo	4.81	63%	126	118	2.1x	3.2x	2.2x	2.0x	44.4x	22.0x	19.3x	
Symbolic Logic	0.91	79%	10	(19)	NM	NA	NA	NA	NA	NA	NA	
Five9	62.11	67%	4,554	4,618	NM	6.0x	5.1x	4.4x	34.4x	29.0x	24.6x	
LivePerson	1.00	16%	88	469	NM	0.9x	1.2x	1.5x	NM	17.5x	26.5x	
Ribbon Communications	3.20	88%	552	866	5.1x	1.1x	1.0x	1.0x	12.7x	9.5x	7.7x	
Twilio	61.15	78%	11,133	8,298	NM	2.2x	2.0x	1.9x	35.8x	10.7x	10.5x	
Zoom Video Communications	65.37	86%	20,105	13,216	0.1x	3.0x	2.9x	2.9x	8.4x	7.1x	7.2x	
					Mean	2.4x	2.2x	2.0x	1.9x	23.4x	15.0x	13.7x
					Median	2.2x	1.7x	1.6x	1.5x	22.6x	11.0x	10.5x

Source: S&P Capital IQ.

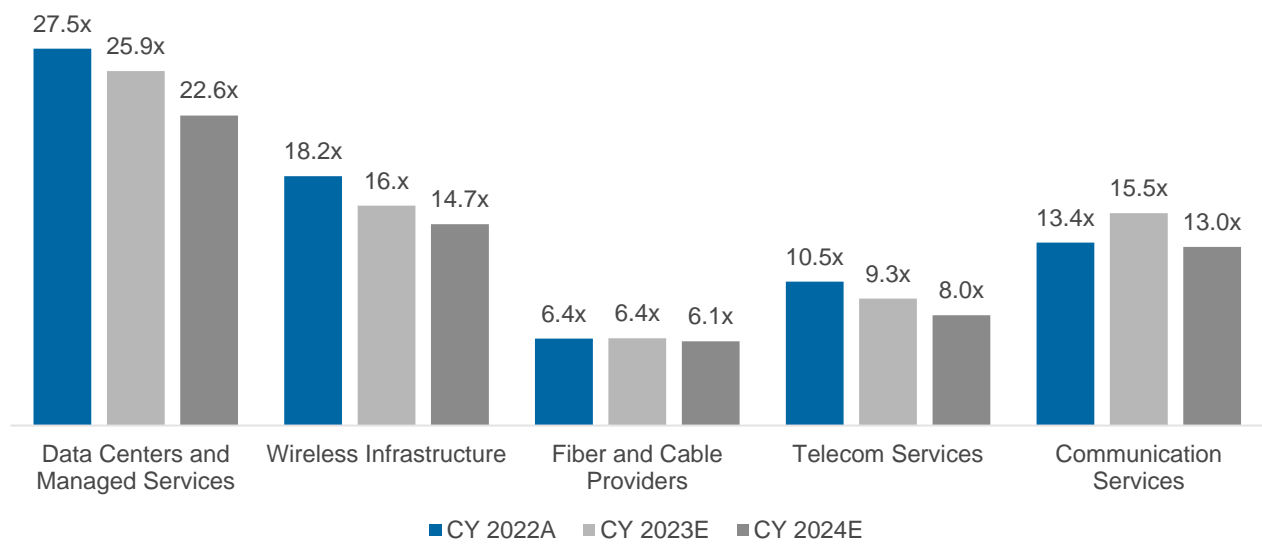
Notes: Stock price last updated on March 31, 2024.

NM in EV/EBITDA if the multiple is greater than 40 or EBITDA is negative.

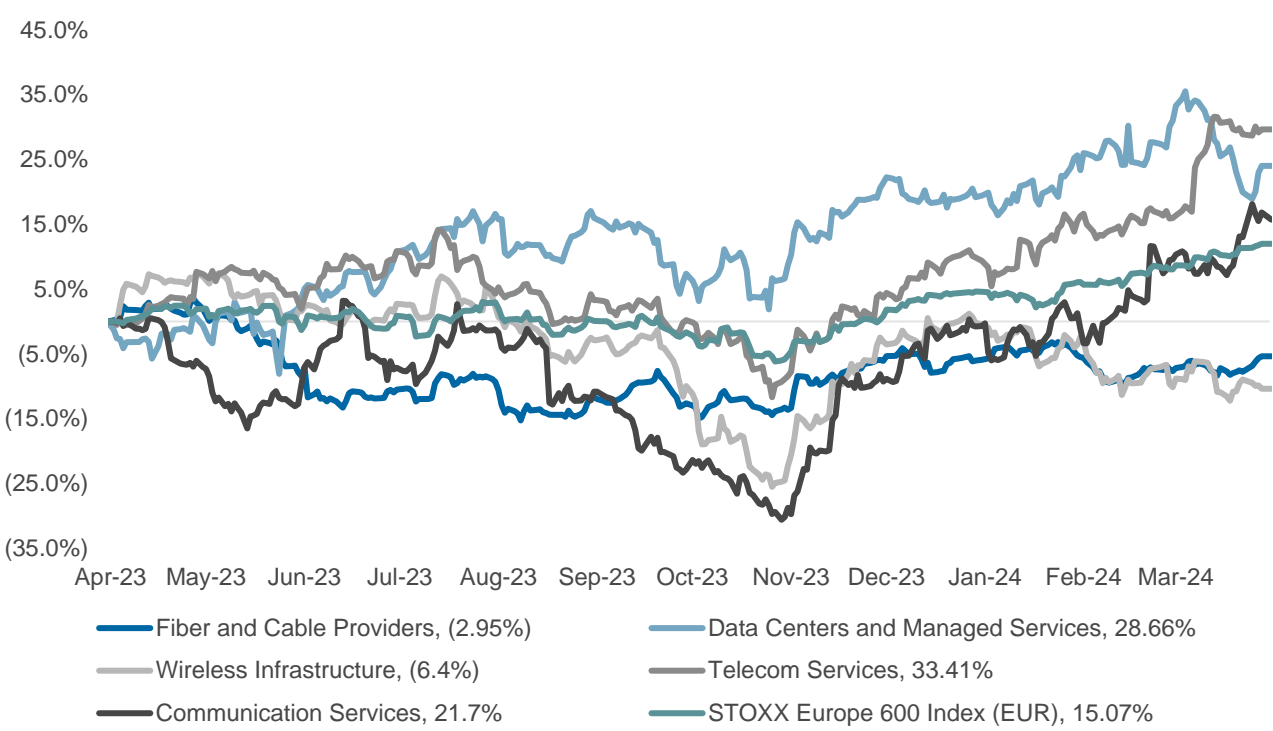
NA means information is not available or not applicable.

European Public Markets Overview

Median EV/EBITDA



12-Month Indexed Stock Price Performance



Source: S&P Capital IQ.
Notes: Calendar year consensus estimates are used unless otherwise noted. The components of each sector are detailed on the following pages. All data as of March 31, 2024.

European Public Comparables

Fiber and Cable Providers, Data Centers and Managed Services, and Wireless Infrastructure

Fiber and Cable Providers

Company	Stock Price	% of 52-Week High	Equity Value (€M)	Enterprise Value (€M)	LTM Lev	EV/ Revenue			EV/ EBITDA		
						CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E
BT	€1.28	68%	€12,526	€37,228	3.7x	1.6x	1.6x	1.5x	4.3x	4.0x	3.9x
Deutsche Telekom	€22.50	96%	€111,636	€283,984	3.8x	2.5x	2.5x	2.5x	6.4x	6.1x	5.8x
Elisa	€41.35	73%	€6,638	€7,945	1.9x	3.8x	3.6x	3.6x	10.9x	10.5x	10.2x
KPN	€3.47	100%	€13,670	€19,895	3.2x	3.7x	3.7x	3.6x	8.0x	7.9x	7.6x
Telecom Italia	€0.23	69%	€4,801	€36,336	6.2x	2.3x	2.2x	2.2x	6.4x	6.4x	5.5x
Telefónica	€4.09	99%	€23,059	€66,694	6.0x	1.7x	1.6x	1.6x	5.2x	5.2x	5.1x
Telenor	€10.33	89%	€14,307	€22,045	4.0x	2.2x	3.1x	3.2x	5.0x	7.2x	7.3x
Telia	€2.38	95%	€9,350	€17,694	4.2x	2.2x	2.2x	2.3x	6.6x	6.5x	6.6x
Vodafone	€0.82	73%	€22,337	€78,575	6.3x	1.7x	1.8x	1.8x	5.2x	5.8x	6.1x
Mean					4.4x	2.4x	2.5x	2.5x	6.4x	6.6x	6.4x
Median					4.0x	2.2x	2.2x	2.3x	6.4x	6.4x	6.1x

Data Centers and Managed Services

Company	Stock Price	% of 52-Week High	Equity Value (€M)	Enterprise Value (€M)	LTM Lev	EV/ Revenue			EV/ EBITDA		
						CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E
Digital Realty Trust	€133.51	93%	€41,695	€60,326	8.0x	13.8x	12.1x	11.6x	26.3x	24.6x	22.9x
Equinix	€765.00	90%	€72,385	€86,645	6.1x	12.8x	11.7x	10.5x	27.5x	25.9x	22.6x
Mean					6.1x	12.8x	11.7x	10.5x	27.5x	25.9x	22.6x
Median					6.1x	12.8x	11.7x	10.5x	27.5x	25.9x	22.6x

Wireless Infrastructure

Company	Stock Price	% of 52-Week High	Equity Value (€M)	Enterprise Value (€M)	LTM Lev	EV/ Revenue			EV/ EBITDA		
						CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E
Cellnex	€32.77	84%	€23,120	€44,576	9.4x	12.8x	11.0x	10.5x	17.3x	14.8x	13.9x
INWIT	€10.53	83%	€9,960	€14,167	4.9x	16.6x	14.7x	13.5x	18.2x	16.0x	14.7x
Mean					4.9x	16.6x	14.7x	13.5x	18.2x	16.0x	14.7x
Median					4.9x	16.6x	14.7x	13.5x	18.2x	16.0x	14.7x

Source: S&P Capital IQ.

Notes: Stock price last updated on March 31, 2024.

NM in EV/EBITDA if the multiple is greater than 40 or EBITDA is negative.

NA means information is not available or not applicable.

European Public Comparables (cont.)

Telecom Services and Telecom Software

Telecom Services

						EV/ Revenue			EV/ EBITDA			
Company	Stock Price	% of 52-Week High	Equity Value (€M)	Enterprise Value (€M)	LTM Lev	CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E	
Eltel	€0.63	74%	€98	€202	NM	0.2x	0.2x	0.2x	6.2x	5.8x	3.5x	
Renew Holding	€10.82	98%	€856	€835	0.2x	0.8x	0.7x	0.7x	10.6x	9.6x	9.0x	
SPIE SA	€34.82	98%	€5,796	€7,166	4.3x	0.9x	0.8x	0.7x	10.5x	9.3x	8.0x	
					Mean	2.3x	0.7x	0.6x	0.6x	9.1x	8.2x	6.9x
					Median	2.3x	0.8x	0.7x	0.7x	10.5x	9.3x	8.0x

Communication Services

						EV/ Revenue			EV/ EBITDA			
Company	Stock Price	% of 52-Week High	Equity Value (€M)	Enterprise Value (€M)	LTM Lev	CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E	
Eckoh	€0.44	81%	€128	€120	0.1x	2.9x	2.7x	2.5x	12.4x	10.5x	9.5x	
Gamma	€16.01	96%	€1,560	€1,413	0.1x	2.6x	2.3x	2.1x	11.9x	10.7x	9.7x	
Link Mobility	€1.69	100%	€499	€753	6.8x	1.6x	1.3x	1.3x	12.6x	12.6x	12.6x	
Netcall	€1.07	78%	€175	€142	0.1x	3.8x	3.3x	3.0x	17.5x	15.4x	14.9x	
nFon	€5.66	67%	€94	€87	NM	1.1x	1.0x	1.0x	NM	12.6x	9.3x	
Nice	€238.88	97%	€15,063	€14,511	1.3x	7.1x	6.8x	5.8x	21.1x	19.9x	16.5x	
Sangoma	€4.48	99%	€149	€234	11.2x	1.0x	1.0x	1.0x	5.7x	6.1x	5.7x	
Sinch	€2.33	69%	€1,963	€2,656	3.9x	1.0x	1.0x	1.0x	9.9x	8.1x	7.9x	
Vercom	€28.06	98%	€621	€646	1.3x	11.4x	8.5x	6.3x	NM	33.9x	24.6x	
					Mean	4.1x	3.9x	3.3x	2.8x	13.4x	15.5x	13.0x
					Median	2.6x	1.6x	1.3x	1.3x	12.6x	12.6x	12.6x

Source: S&P Capital IQ.

Notes: Stock price last updated on March 31, 2024.

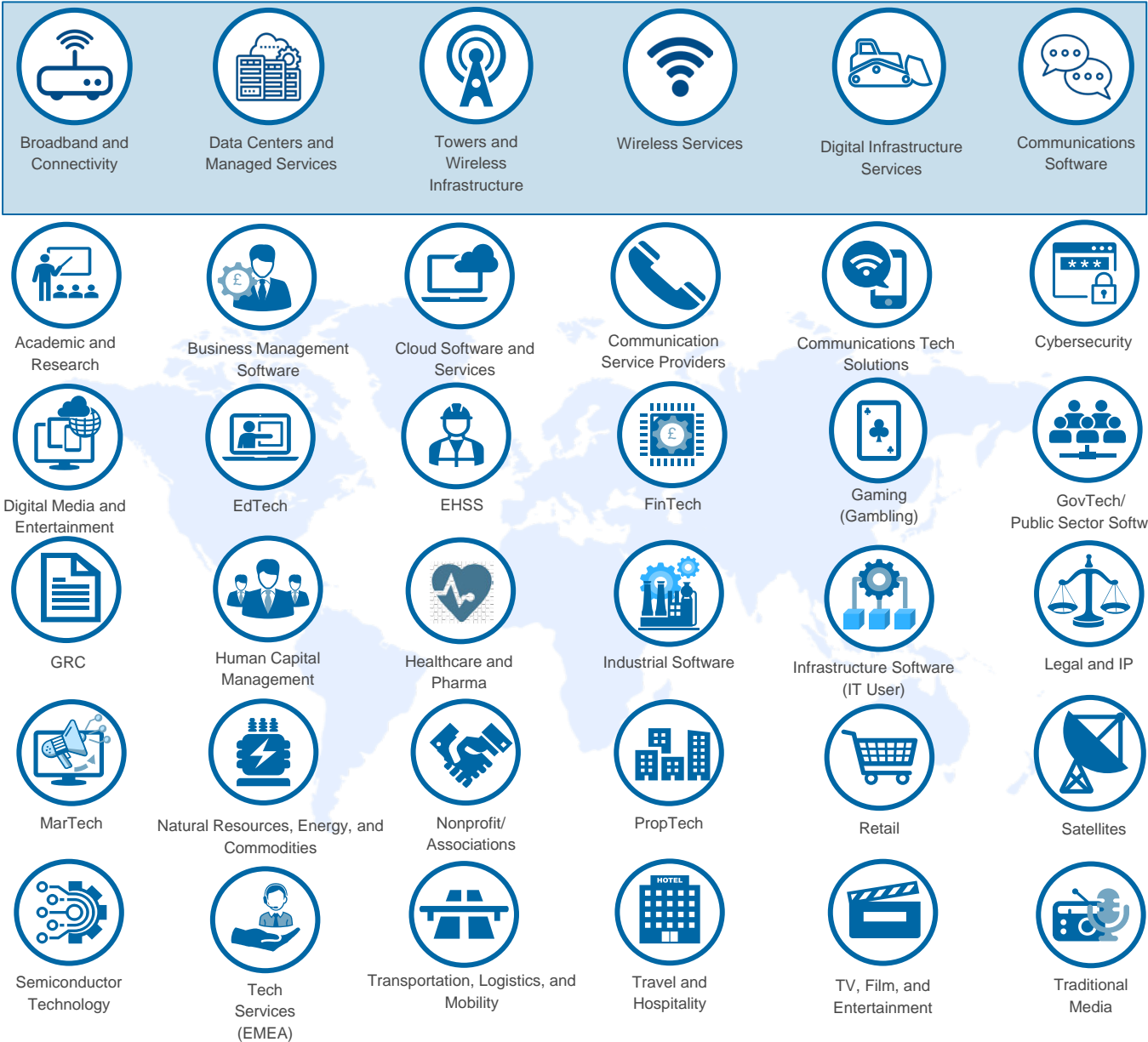
NM in EV/EBITDA if the multiple is greater than 40 or EBITDA is negative.

NA means information is not available or not applicable.

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Sector-Specific Expertise Across the Tech Coverage Universe




Our global industry coverage model brings sector-specific knowledge, experience, and relationships to every client we work with.



How Houlihan Lokey Can Help

Our firm is ideally equipped to help our clients navigate uncertain times. We respond quickly to challenging situations and are constantly helping clients to analyze, structure, negotiate, and execute the best possible solutions from both a strategic and a financial perspective.

What We Offer

<div>1</div>  <p>Corporate Finance</p>	<p>Mergers and Acquisitions</p> <p>Capital Markets</p> <p>Private Funds Advisory</p> <p>Board Advisory Services</p>	<p>We are widely recognized as a leading M&A advisor to the mid-cap and have long-standing relationships with capital providers, including commercial banks and other senior credit providers, insurance funds, asset managers, and mezzanine fund investors. Few other investment banks maintain the breadth of relationships and capital markets intelligence that we do.</p>
<div>2</div>  <p>Financial Restructuring</p>	<p>Company Advisory</p> <p>Special Situations</p> <p>Distressed M&A</p> <p>Liability Management</p> <p>Creditor Advisory</p>	<p>We have the largest restructuring practice of any global investment bank. Since 1988, we have advised on more than 1,700 restructuring transactions (with aggregate debt claims in excess of \$3.5 trillion). We served as an advisor in 12 of the 15 largest bankruptcies from 2000 to 2023.</p>
<div>3</div>  <p>Financial and Valuation Advisory</p>	<p>Portfolio Valuation and Fund Advisory</p> <p>Transaction Opinions</p> <p>Corporate Valuation Advisory Services</p> <p>Transaction Advisory Services</p> <p>Real Estate Valuation and Advisory</p> <p>Dispute Resolution Consulting</p>	<p>Over five decades, we have established ourselves as one of the largest financial and valuation advisory firms. Our transaction expertise and leadership in the field of valuation help inspire confidence in the financial executives, boards of directors, special committees, investors, and business owners we serve.</p>

Why We're Different



No. 1 for the U.S. and Tech* M&A



Significant Experience With Financing Markets



Senior-Level Commitment and Dedication



Deep, Industry-Specific Expertise



Superior Work Product/Technical Abilities



Creativity, Imagination, Tenacity, and Positivity

Leading Independent, Global Advisory Firm

Houlihan Lokey is the trusted advisor to more top decision-makers than any other independent global investment bank.



2,600+
EMPLOYEES

36
LOCATIONS

\$8.8B
MARKET CAP⁽¹⁾

\$1.9B
ANNUAL
REVENUE⁽²⁾

~25%
EMPLOYEE
OWNED

NO
DEBT

Corporate Finance

- No. 1 Global M&A Advisor
- Leading Capital Markets Advisor Raising More Than ~\$14 Billion in the Past Year

2023 M&A Advisory Rankings All Global Transactions

Advisor	Deals
1 Houlihan Lokey	352
2 Rothschild	349
3 Goldman Sachs	300
3 JP Morgan	300

Source: LSEG (formerly Refinitiv). Excludes accounting firms and brokers.

Financial Restructuring

- No. 1 Global Restructuring Advisor
- \$3.5 Trillion of Aggregate Transaction Value Completed

2023 Global Distressed Debt & Bankruptcy Restructuring Rankings

Advisor	Deals
1 Houlihan Lokey	73
2 PJT Partners	64
3 Rothschild	51

Source: LSEG (formerly Refinitiv).

Financial and Valuation Advisory

- No. 1 Global M&A Fairness Opinion Advisor Over the Past 25 Years
- 2,000+ Annual Valuation Engagements

1999–2023 Global M&A Fairness Advisory Rankings

Advisor	Deals
1 Houlihan Lokey	1,247
2 JP Morgan	1,035
3 Duff & Phelps, A Kroll Business	977

Source: LSEG (formerly Refinitiv). Announced or completed transactions.

Financial Sponsors Coverage

- No. 1 Global Advisor to Private Equity Firms
- 1,000+ Sponsors Covered Globally

2023 Most Active Investment Banks to Private Equity—Globally

Advisor	Deals
1 Houlihan Lokey	217
2 Lincoln International	156
3 William Blair	112

Source: PitchBook. Excludes accounting firms and brokers.

Houlihan Lokey X **7MILE ADVISORS**

Houlihan Lokey has acquired 7 Mile Advisors (7MA), an independent advisory firm that provides a range of investment banking services to clients across the IT services sector.

The addition of 7MA further enhances Houlihan Lokey's deep industry expertise in IT services and expands the firm's geographic footprint.

Founded in 2008, 7MA provides mergers and acquisitions, private capital raising, and valuation services to clients in IT services. Since its inception, the firm has closed on more than 170 transactions for clients across the globe.

(1) As of April 30, 2024.
(2) LTM ended March 31, 2024.

Houlihan Lokey Is the Trusted Advisor to More Top Decision-Makers Than Any Other Independent Global Investment Bank

2023 M&A Advisory Rankings All Global Transactions

Advisor	Deals
1 Houlihan Lokey	352
2 Rothschild	349
3 Goldman Sachs	300
3 JP Morgan	300
5 Morgan Stanley	253

Source: LSEG (formerly Refinitiv). Excludes accounting firms and brokers.

2023 M&A Advisory Rankings All Global Technology Transactions

Advisor	Deals
1 Houlihan Lokey	89
2 Rothschild	76
3 JP Morgan	68
4 Goldman Sachs	63
5 Morgan Stanley	59

Source: LSEG (formerly Refinitiv). Excludes accounting firms and brokers.

No. 1

Global M&A Advisor

No. 1

Global Restructuring Advisor

No. 1

Global M&A Fairness Opinion
Advisor Over the Past 25 Years*

Leading

Capital Markets Advisor

1,700+

Transactions Completed Valued at
More Than \$3.5 Trillion Collectively

2,000+

Annual Valuation Engagements

Houlihan Lokey's Tech M&A Team Is No. 1 Globally With Unparalleled Reach

Americas

Atlanta
Baltimore
Boston
Charlotte
Chicago
Dallas
Houston
Los Angeles
Miami
Minneapolis
New York
San Francisco
São Paulo
Washington, D.C.

Europe and Middle East

Amsterdam
Antwerp
Dubai
Frankfurt
London
Madrid
Manchester
Milan
Munich
Paris
Stockholm
Tel Aviv
Zurich

Asia-Pacific

Beijing
Fukuoka
Gurugram
Hong Kong SAR
Mumbai
Shanghai
Singapore
Sydney
Tokyo

Local Technology team

No. 1
TECH M&A
ADVISOR*

14
LOCATIONS
WORLDWIDE

170+
TECHNOLOGY
FINANCIAL
PROFESSIONALS

30+
MANAGING
DIRECTORS

89
TECHNOLOGY
DEALS IN CY23

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