

X O N A Δ
P A R T N E R S

Telecom & Digital Infrastructure
Technology and Investment Trends
A look ahead into 2026

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Digital Infrastructure: Momentum in 2025, Validation in 2026

Key Takeaways

- **AI-driven infrastructure** spend is reshaping the market with a wave of data center buildouts, placing data center interconnect at both inter and intra facility levels in sharp focus as a premium asset class, with U.S. demand forecast to double backbone capacity by 2029 through 92,000 new route miles supported by hyperscaler contracts and 30-40% annual traffic growth, while subsea cable investment surges with \$13 billion committed between 2025 - 2027 through projects such as Meta's 50,000 kilometer Project Waterworth and new builds by Google, Amazon, and Microsoft to diversify global routes.
- **Telecom consolidation is accelerating** as capex spending, which weakened in 2024, remains muted and is projected to extend further into 2026, compounded by weak 5G monetization. Landmark deals on the service provider side such as Charter and Cox's \$34.5 billion merger, AT&T's \$5.75 billion acquisition of Lumen fiber assets, and EchoStar's \$43 billion spectrum divestitures highlight survival through scale as the dominant strategy. At the same time vendors are scaling down, exiting non-core businesses, and reorganizing to align with AI infrastructure demand.
- **Capex intensity in AI data centers is unprecedented**, with gigawatt-scale campuses announced worldwide, in some cases backed by sovereign AI initiatives that treat compute as strategic infrastructure. Yet the sector faces mounting risks of overbuild, fragile neo-cloud business models, and above all energy constraints that have become the defining bottleneck, driving demand for powered land strategies, alternative energy solutions, and heightened regulatory scrutiny across major regions.
- **Valuation risks remain elevated**, with record fundraising concentrated in mega-funds and annual AI infrastructure spending exceeding \$300 billion in 2025. Investor caution around AI economics is rising, driven by short GPU depreciation cycles, uncertain workload maturation, and limited RoI from generative AI deployments. Given the multilayered nature of the AI stack, asset value disinflation is uneven across segments, reinforcing the importance of disciplined evaluation of both technical fundamentals and commercial viability.
- **LEO satellites are emerging as an early convergence point** between terrestrial and space infrastructure, while traditional mobile and fixed access providers struggle with monetization and GEO operators face shrinking revenues and consolidation pressures, exemplified by SES and Intelsat. This dynamic is heightening investor interest in Ground Station as a Service (GSaaS) models that resemble tower and data center investments. At the same time, the satellite sector is undergoing rapid transformation as Amazon's Kuiper prepares for commercial rollout to challenge Starlink's five-year lead, and sovereign programs increasingly treat satellites as strategic assets, positioning national constellations as critical to digital infrastructure resilience.

In 2025, the **digital infrastructure market continued its "K"-shaped trajectory**, with explosive growth in AI-driven segments set against persistent challenges in traditional telecom. Data centers expanded rapidly to meet unprecedented demand for compute power, while low Earth orbit (LEO) satellite networks and subsea fiber investments sustained strong momentum. In contrast, telecom operators struggled with ongoing capital constraints and revenue pressures, prompting a wave of mergers and asset sales as 5G monetization stalled and fiber rollout under programs such as BEAD in the U.S., and equivalent programs in the EU and UK, achieved only limited progress. This divergence highlighted a broader shift, as hyperscalers and technology giants increasingly shaped infrastructure priorities, leaving legacy players to consolidate in order to survive.

As 2026 unfolds, the sector confronts **growing uncertainties** that could reshape investment flows and operating models. Concerns about a potential "AI bubble" have left the market cautious as it awaits proof of sustainable revenue streams and returns on investment. Aligning revenues with expenditures, particularly given the short depreciation cycle for GPU capital spending, remains a central issue for prospective investors. Additional pressures include worsening global power shortages that hinder data center expansion, shifting AI dynamics in which efficiency gains may temper hyperscale spending, persistent geopolitical tensions that disrupt supply chains, evolving rules around data sovereignty, and rising exposure to cybersecurity threats.

AI has pushed data-center spending to unprecedented levels, with capex accelerating sharply as governments and hyperscalers treat **compute as strategic infrastructure** in the U.S.–China geopolitical race. The surge is increasingly financed through heavy debt issuance by major cloud providers, rising from \$15 billion in 2024 to \$125 billion in 2025 according to UBS, and

through emerging "circular" models where key suppliers reinvest into customer build-outs to secure demand. There is no obvious end to this business model. One consequence of this flywheel effect is that Gigawatt-scale campuses are being announced across the U.S. and Europe, though many remain early-stage and unproven. Analysts increasingly warn that global data-center **power demand could more than double** by 2030, driven by AI workloads and a long-term shift toward latency-sensitive inference infrastructure. Yet the build-out also carries real risk: soaring capex forecasts, uncertain workload maturation, grid constraints, and the growing exposure to neo-cloud intermediaries whose business models are already straining under scaling and pricing pressures. These factors raise the possibility of overbuild and uneven market consolidation as AI deployment patterns become clearer. To balance these risks, modular and flexible smaller-scale deployment models are emerging. They are less capital intensive to initiate and sustain, far less constrained by power and land. Positioned closer to end-user communities and faster to deploy, they follow a "grow and fund as needed" approach to compute. This model will develop alongside hyperscaler buildouts and is amenable to smaller investments with a correspondingly lower risk profile.

The **data center interconnect** market is becoming a premium asset class as AI workloads drive surging demand for dark fiber and high-capacity wavelengths. The U.S. alone is forecast to need 92,000 new route miles by 2029, with providers like Zayo and Lumen already expanding networks through hyperscaler partnerships. Traffic growth of 30–40% annually and multi-year contracts with cloud giants underpin durable returns, though capital intensity and power constraints remain key risks.

The **incumbent telecom operator capex malaise**, which deepened in 2024, showed signs of stabilization in 2025 but remained muted, as global spending normalized under

the weight of heavy debt and flat revenues from disappointing 5G adoption. U.S. fiber deployments under BEAD began to take shape, though only modestly, and failed to offset broader stagnation. Stagnation was evident in the UK, where numerous small fiber AltNets are under severe pressure. Apart from a few outliers such as Belgium, Europe has largely passed the peak of its FTTH activity for the near future. Achieving acceptable ROI has remained challenging in the fiber sector. M&A activity and divestments accelerated, highlighted by EchoStar's exit from the mobile telecom business through a \$23 billion spectrum sale to AT&T and a \$20 billion sale of AWS-4 and AWS-3 assets to SpaceX. The latter deal intensified interest in SpaceX's wireless ambitions and its potential to compete rather than collaborate with terrestrial operators. AT&T also expanded its fiber footprint through the \$5.75 billion acquisition of Lumen's fiber assets, reinforcing the strategic importance of scale in fixed access. The \$34.5 billion merger of Charter and Cox further underscored consolidation pressures in the U.S. market, while similar transactions across regions, including the breakup of Altice in France and consolidation in the Argentine telecom market, reinforced the prevailing mindset that **survival depends on scale**.

The **satellite sector** saw Amazon's Project Kuiper rebranded as LEO and launching a preview program for select enterprise customers to test its services ahead of a broader commercial rollout in 2026. Starlink, with a five-year lead on LEO, strengthened its dominance in 2025 by adding more than 3,000 satellites, expanding the constellation to over 9,200 in orbit. It reported service in 42 countries and boosted peak-hour network speeds by 50% through technological advances, reaching typical performance of 200/30 Mbps. Partnerships such as direct-to-cell with T-Mobile achieved commercial rollout milestones, while Starlink's fixed broadband offerings captured significant rural market share, surpassing traditional wireless ISPs and GEO

satellite operators. Competitors in the direct-to-device market continued efforts to close the gap, but funding challenges spurred early consolidation, exemplified by the merger of Omnispace and Lynk under SES, which became a major strategic shareholder. These developments underscored the mounting pressure on GEO satellites, reflected in declining revenues and intensifying competition from LEO operators, culminating in consolidation moves such as the SES-Intelsat merger. The convergence of these trends, the rise of LEO and the strain on GEO, has heightened investor interest in the **Ground Station-as-a-Service (GSaaS)** model, which mirrors the appeal of tower infrastructure and data center markets. GSaaS is expected to drive corresponding M&A activity in modern software needed to bring GEO ground services in line with current expectations. Once the field consolidates, the dominant players in software are even more likely to control the GSaaS domain than those focused on ground station hardware platforms.

The **subsea cable market showed steady progress** in 2025, with investments exceeding \$13 billion across 2025–2027, nearly double the amount committed between 2022 - 2024, according to TeleGeography. Growth was driven by insatiable hyperscalers demand for bandwidth and redundant routes for AI data flows. Meta led activity via Project Waterworth, a 50,000-kilometer cable that will connect five continents – the world's longest subsea cable project. Meta also completed the core 2Africa infrastructure, recognized as the world's longest open-access subsea cable system, and advanced the Bifrost cable linking Southeast Asia with the U.S. at 260 Tbps. Google, Amazon, and Microsoft were similarly active in funding and launching new projects. Trans-Pacific and intra-Asian routes dominated new builds, as geopolitical tensions highlighted vulnerabilities and spurred diversified routing along with sovereign-backed initiatives to mitigate risk.

In 2025, **our team contributed to cutting-edge projects** in data center, AI compute infrastructure and telecom network infrastructure. Highlights include:

- Led assessments of AI data center buildouts, including sovereign AI initiatives; developed go-to-market strategies for greenfield ventures; and advised investors on opportunities across the AI stack, spanning compute and storage chipsets, networking, data management, and cybersecurity solutions.
- Collaborated with stakeholders to evaluate the impact of AI developments on data centers, cloud infrastructure, connectivity, and cybersecurity strategies.
- Provided advisory services for the deployment of 5G private wireless networks across various geographies and sectors, including airports, utilities and manufacturing.
- Advised on multiple investments in subsea cable projects, including a significant trans-oceanic initiative.
- Offered guidance on the planning and assessment of LEO satellite constellations, covering broadband and direct-to-device services.

During 2025 Xona Partners published **Insight Notes** on some of the prominent topics, including:

Part 1: AI Infrastructure Network Reinvention

Powering the AI Revolution: The Urgent Need to Reinvent the Network. AI training now moves petabytes daily and current fiber topology cannot keep up. We map how data centers cluster near cheap power, why long haul and metro dark fiber become strategic assets, and which optical and energy efficient technologies will capture value as bandwidth demand inflates. Read it to identify where long term fiber builds, wavelength services, and low power interconnects offer durable returns.

Betting on Sovereignty: Assessing Risks in the Sovereign AI Race. Nations talk sovereignty but often underwrite projects that lack paying customers, secure power, or portable software stacks. The note breaks sovereignty into data, operational, technical, and legal pillars and exposes common execution failures that destroy value. Read it to learn how to vet sovereign AI deals for real demand, enforceable exit rights, and resilient funding rather than political rhetoric.

Navigating Risks and Opportunities in Sovereign AI Infrastructure. Countries can create strategic advantage, but only when they pair funding with usable data, talent, and realistic procurement. The analysis highlights capital intensity, supply chain dependence, and the temptation to hide vendor lock in behind sovereignty branding. Read it for a practical checklist investors can use to separate credible national programs from contingent spending that risks idle compute.

AI Infrastructure at a Crossroads: Navigating Volatility and Opportunity. The market faces both durable demand for compute and acute financial stress from rapid depreciation and customer concentration. The note explains why neoclouds absorb hyperscaler overflow, how circular financing raises contagion risk, and where disciplined due diligence can protect capital. Read it to understand which infrastructure pieces justify long horizons and which require skeptical stress testing.

Part 2: Non-Terrestrial Networks

Orbiting on Demand: How GSaaS is Rewiring the Satellite Industry's Ground Game. Ground Stations as a Service turns fixed ground infrastructure into a scalable, API driven asset with recurring revenue. The paper traces GSaaS evolution, shows how LEO traffic drives utilization, and explains why private equity treats GSaaS like tower assets. Read it to spot acquisition targets,

carve outs, and the commercial segments that will produce steady cash flow.

The Disruptive Force of Starlink: Reshaping Rural Connectivity, Challenging Incumbents.

Starlink forced incumbents to confront a new cost structure and changed expectations for remote connectivity. The note documents subscriber growth, the pressure on rural WISPs, and the strategic responses from GEO operators and governments. Read it to assess where Starlink's model creates durable winners and where public subsidies and subsea fiber still win on economics.

Friend or Foe: Rethinking Mobile Strategy in the Age of Non-Terrestrial Networks.

Satellites that secure mobile spectrum can bypass mobile operators and shift market power. The briefing examines regulatory frameworks, the operational demands of NTN, and high profile spectrum transactions that redraw competitive lines. Read it to evaluate how spectrum ownership and regulatory moves will affect mobile incumbents, satellite operators, and potential consolidation plays.

Navigating the Future of HAPS: Challenges, Investments, and Innovations. High altitude platforms offer targeted coverage and complement satellites but they still face cost, spectrum, and station keeping hurdles. The report compares fixed wing, airship, and balloon platforms and outlines commercial use cases that can reach payback. Read it to identify niche deployments and where regulatory clarity or technology advances could unlock investor scale.

Optical Space Communications: Enabling the Next Leap in Connectivity. Laser feeder links promise orders of magnitude more throughput and stronger security than radio, yet atmospheric turbulence and automation limits block broad commercial scale. The note highlights defense as the early anchor market and portable ground stations as a nascent commercial pathway. Read it to judge where technical leadership meets

defendable contracting that can support returns.

Part 3: Telecom Networks

Turning the Page on 5G: Service Providers' Vision for 6G. Operators want a simpler, monetizable 6G that fixes 5G's cost and complexity. The paper summarizes operator priorities around efficiency, software first architectures, and realistic capex discipline. Read it to position investments around incremental, deployable technologies and services that operators can actually pay for.

Fortifying Global Connectivity: Enhancing Resiliency and Strategic Investments in Subsea Fiber Cable Networks. Subsea fiber remains the backbone of global data flows and AI driven demand elevates its strategic value. The analysis shows where new long haul corridors and redundancy investments will concentrate, and why dark fiber and wavelength economics improve with hyperscaler contracts. Read it to find resilient subsea projects and partnership structures that secure long term cash flows.

AI's Speculative Surge: Unpacking Mobile Traffic's Uncertain Path Forward. AI is transforming long-haul networks, but its mobile impact is uncertain. With saturated video and social media, mobile data growth is slowing, weakening investment cases for new networks. AI could spur demand if apps need low latency, edge execution, or heavy uplinks. While ecosystem players highlight uplink-driven scenarios to justify 5G Advanced, evidence is inconclusive. This framework helps investors assess whether AI will meaningfully change traffic, signaling, caching, or network architecture, or follow past hype cycles.

In 2025, the digital infrastructure narrative centered on momentum. By 2026, we expect it to shift toward validation and resilience, with emphasis on proving the economics of AI, addressing energy constraints, navigating geopolitical risks, and consolidating

fragmented markets. Looking ahead across segments of digital infrastructure, key themes to watch include:

- **AI platforms:** Scaling large language models is approaching its economic and technical ceiling. Investors are beginning to recognize diminishing returns, with rising capex for GPUs and energy costs outpacing revenue growth. The shift could signal a potential reallocation of capital toward more efficient architectures, hybrid approaches, and AI models that deliver measurable ROI rather than sheer scale.
- **LEO satellite services:** The anticipated launch of Amazon's LEO commercial services and expansion of Starlink's Direct-to-Cell service the first service with further development in the GSaaS segment as interests of satellite players and investors converge to develop new revenue streams.
- **Telecom networks:** Funding flow from programs such as the BEAD initiative to

breathe new life into the fixed access market with potentially significant spillover into fixed wireless access and satellite connectivity.

- **Infrastructure resiliency:** The growing strategic importance of wireline, wireless, and cloud infrastructures for national sovereignty and economic development.
- **Quantum technology:** Applications in both computing and cybersecurity.
- **Sustainability:** Challenges facing cloud and telecom infrastructures, particularly with the demands of AI and 5G.

In conclusion, we expect economic conditions and geopolitical tensions to be pivotal factors shaping investments in telecom, cloud, and digital infrastructure assets in 2026. A potential disinflation in asset valuations reminds investors of the critical importance of thorough technical and commercial due diligence to mitigate losses from hype-driven bubbles.

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About Xona Partners

Xona Partners (Xona) is a boutique advisory services firm specialized in technology, media and telecommunications. Xona was founded in 2012 by a team of seasoned technologists and startup founders, managing directors in global ventures, and investment advisors. Drawing on its founders' cross-functional expertise, Xona offers a unique multidisciplinary integrative technology and investment advisory service to private equity and venture funds, technology corporations, as well as regulators and public sector organizations. We help our clients in pre-investment due diligence, post investment lifecycle management, and strategic technology management to develop new sources of revenue.

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