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Altnets

Supply chain resilience in the age of AI

Why fibre, connectivity and infrastructure resilience will shape the next generation of digital economies

Written by
Andy Ainsley

Presented by
Altnets

EXECUTIVE SUMMARY

Artificial intelligence (AI) is accelerating one of the largest infrastructure shifts the network industry has experienced in decades.

As hyperscale data centres expand, AI workloads intensify and mobile connectivity demand continues to grow, the pressure being placed on global digital infrastructure is increasing at unprecedented speed.

While AI is often discussed through the lens of software and compute power, the reality is that the next phase of growth will depend heavily on the physical foundations capable of supporting it. Infrastructure such as fibre networks, optical connectivity, backhaul capacity and interconnect architecture is rapidly becoming the foundation that future digital economies will rely upon.

At the same time, broader societal and technological shifts - including automation, fixed wireless access (FWA), edge computing, Internet of Things (IoT) and increasingly mobile-first behaviours - are continuing to drive significant increases in global data consumption. This is accelerating demand for dense fibre connectivity across both centralised data centre environments and, increasingly, distributed edge and wireless infrastructure.

As a result, the industry is entering a new phase of infrastructure development, where resilience is no longer simply about mitigating disruption. Supply chain resilience is becoming a strategic advantage, enabling providers to scale networks confidently, adapt to evolving market demand and maintain long-term competitiveness during periods of sustained infrastructure pressure.

This shift is already influencing global investment, manufacturing and infrastructure planning. From fibre manufacturing expansion and hyperscale data centre growth to government intervention around power and grid access, the market is increasingly recognising connectivity infrastructure as a strategic national and economic priority.

For integrators, the challenge is no longer simply expanding capacity; it is building scalable, future-ready networks capable of supporting unknown future demand in an increasingly distributed and AI-driven digital landscape.

The organisations best positioned to lead this next phase will be those that treat connectivity not as a supporting utility, but as strategic infrastructure - combining technical expertise, supply chain intelligence and long-term network planning to support the demands of an AI-driven economy.

As the industry continues to evolve, fibre is becoming more than a connectivity solution. It is emerging as critical infrastructure underpinning AI scalability, economic growth and national digital capability.

The AI boom is not just a computer story; it is a connectivity story.

AI is rapidly reshaping the global digital economy. What began as a surge in AI software innovation has quickly evolved into one of the largest infrastructure expansion cycles the technology sector has ever experienced.

Across the globe, hyperscale data centres are expanding at an accelerated pace as developers race to increase compute capacity, process larger AI workloads and support the growing demands of automation, cloud services and real-time digital connectivity. According to ABI Research, global active data centre capacity is forecast to grow sixfold between 2025 and 2035 - increasing from 24.4GW to 147.1GW[1] - while JLL forecasts global data centre capacity could approach 200GW by 2030 as AI adoption accelerates.[2]

AI could account for half of total global data centre workloads by the end of the decade, fundamentally reshaping the scale, density and infrastructure requirements of modern digital networks.

However, while AI is often framed as a software and compute story, the reality is increasingly physical. The next phase of AI growth will depend not simply on chips and processing power, but on the infrastructure supporting it: power; fibre; optical connectivity; cooling; interconnect; plus resilient supply chains.

The shift is already testing the limits of global infrastructure markets. Recent reporting highlights the scale of demand now emerging across the UK's AI economy. The Financial Times reported that around 140 proposed AI-related data centre projects are currently seeking UK grid connections, requiring approximately 50GW of electricity capacity. This exceeds Great Britain's current peak electricity demand of around 45-46GW. Ofgem has described demand queues as "rapidly growing", reflecting the unprecedented pressure AI infrastructure is beginning to place on national energy and infrastructure systems.[3]

Reuters also reported that OpenAI paused its proposed UK "Stargate" data centre project due to rising energy costs and regulatory challenges, reinforcing how power availability, scalability and infrastructure readiness are increasingly shaping global AI investment decisions.[4]

In many ways, the market shift mirrors previous industrial and technological transformations. Just as lithium became strategically critical during the rise of battery storage systems and electric vehicles, fibre and optical connectivity are becoming foundational resources

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[1] ABI Research – Data Centre Capacity Growth Forecast

[2] JLL 2026 Global Data Center Outlook

[3] Financial Times – Britain's great data centre balancing act

[4] Reuters – OpenAI pauses UK data centre project over regulation and costs

underpinning the AI economy. This acceleration in demand is a positive sign of progression, investment and opportunity.

The rapid expansion of AI infrastructure is exposing the physical limits of existing digital infrastructure. Fibre availability, backhaul capacity, grid access and interconnect scalability are becoming important competitive differentiators for telecoms providers, hyperscalers and national economies alike.

This demand extends beyond hyperscale environments alone. Alongside AI growth, global mobile data traffic is forecast to more than double by 2031 - reaching approximately 310 exabytes per month, or 482 exabytes including FWA, according to the Ericsson Mobility Report.[5] Edge computing, FWA growth and increasingly distributed digital environments drive demand for dense, resilient fibre connectivity across both centralised and decentralised infrastructure models.

The AI infrastructure race is no longer centred solely around compute capability. It is increasingly being shaped by the organisations capable of delivering intelligent, adaptable and high-capacity connectivity infrastructure.

[5] https://www.ericsson.com/en/reports-and-papers/mobility-report/key-figures

Fibre: The strategic resource behind AI

As AI workloads continue to scale, fibre and optical connectivity are emerging as critical infrastructure supporting the next generation of digital economies. The challenge is shifting from generating compute power to transporting vast volumes of data across increasingly distributed environments with speed, reliability and ultra-low latency.

AI models require enormous amounts of data to move continuously between hyperscale data centres, cloud environments, metro networks and edge infrastructure. At the same time, broader digital behaviours including streaming, cloud services, connected devices and FWA are continuing to accelerate pressure on network infrastructure. According to the UK Government's 2026 Mobile Market Review, mobile network traffic increased by 495% between 2018 and 2025, while government analysis referencing GSMA research suggests AI-driven traffic could increase overall network demand by a further 20–80% in the years ahead.[6] Alongside this, ABI Research forecasts global active data centre capacity will increase from 24.4GW to 147.1GW between 2025 and 2035, dramatically pushing demand for high-capacity fibre routes, backhaul connectivity and interconnection infrastructure capable of supporting increasingly dense and distributed workloads.[7]

In response to growing demand, technology leaders including Nvidia and Corning recently announced strategic investment into fibre optic manufacturing expansion specifically to support AI infrastructure growth.[8] The move highlights a broader industry shift: optical connectivity is no longer viewed simply as supporting infrastructure; it is becoming strategically essential to AI scalability itself.

This acceleration is contributing to wider supply pressure across the market. Fibre constraints are no longer simply a short-term procurement challenge; they are becoming a structural consideration for organisations planning long-term digital infrastructure.

For telecoms providers, this changes the role of fibre within network strategy. It is not just a route to connectivity, but a foundation for scalability, low-latency performance and sustained digital growth in the AI era.

Securing the right infrastructure, architecture and supply partnerships will be essential to supporting the next phase of AI-driven growth.

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[6] https://www.gov.uk/government/calls-for-evidence/mobile-market-review/mobile-market-review-call-for-evidence

[7] https://www.abiresearch.com/blog/data-center-capacity-growth-forecast

[8] https://www.corning.com/optical-communications/emea/en/home/news-and-events/news-releases/2026/05/nvidia-and-corning-announce-long-term-partnership.html

The rise of the distributed digital society

While AI is accelerating infrastructure demand at unprecedented speed, it is not the only force reshaping the future of connectivity. Broader digital behaviours including automation, streaming, cloud-based services, Internet of Things (IoT) adoption and increasingly mobile-first lifestyles are continuing to drive sustained growth in global data consumption.

As businesses, consumers and digital services become increasingly dependent on real-time connectivity, the network edge is expanding rapidly. Connectivity is no longer concentrated solely within centralised hyperscale data centres. Instead, infrastructure is becoming increasingly distributed across metro networks, wireless environments, edge compute locations and FWA deployments.

This shift is fundamentally changing how digital infrastructure is designed, deployed and scaled. According to the Ericsson Mobility Report, global mobile data traffic is forecast to more than double by 2031, reaching approximately 310 exabytes per month or 482 exabytes per month when fixed wireless access (FWA) traffic is included.[9] Meanwhile, the continued rollout of 5G and future 6G technologies is accelerating network densification, requiring more mobile antennas, wireless access points (WAPs) and distributed edge environments to support growing demand.

Crucially, this expansion in wireless connectivity is not reducing reliance on fibre infrastructure - it is increasing it. Every additional antenna, edge node and wireless access point requires high-capacity fibre backhaul and low-latency interconnect infrastructure capable of supporting increasingly bandwidth-intensive and latency-sensitive digital services. This evolution is reshaping how providers think about scalability, resilience and long-term network design.

The rise of distributed digital infrastructure is also changing the nature of infrastructure demand itself. Networks must now support significantly greater flexibility, higher traffic volumes and increasingly unpredictable patterns of data movement across multiple interconnected environments simultaneously.

For telecoms providers, this creates a clear strategic imperative: networks must be designed to support continuous connectivity across a more decentralised, data-intensive and unpredictable digital landscape.

[9] https://www.ericsson.com/en/reports-and-papers/mobility-report/dataforecasts/mobile-traffic-forecast

Supply chain resilience in the age of AI

As infrastructure demand accelerates across AI, mobile and distributed digital environments, the definition of supply chain resilience is evolving rapidly. Resilience is no longer simply about mitigating disruption or managing short-term procurement challenges. It is now about enabling scalable network deployment, maintaining infrastructure certainty and supporting long-term digital growth in a constrained market.

The pressure being placed on global infrastructure ecosystems is no longer isolated to a single technology or supply chain. Constraints across power availability, transformer access, semiconductor supply, fibre capacity and interconnection infrastructure are now all important considerations.

This shift reflects a broader industry reality: infrastructure demand is no longer cyclical or temporary. AI adoption, mobile connectivity growth, edge computing and increasingly distributed network architecture are creating sustained long-term pressure across multiple critical infrastructure layers simultaneously.

As a result, supply chain resilience is becoming a strategic competitive advantage.

Power

Power availability is rapidly emerging as one of the defining constraints shaping the future of AI infrastructure development. Across the UK and globally, hyperscale data centre expansion is placing unprecedented pressure on national power grids, electricity generation and energy infrastructure.

Recent reporting from the Financial Times highlighted that proposed AI-related data centre projects seeking UK grid connections could require approximately 50GW of electricity capacity, exceeding Great Britain's recent peak electricity demand.[10] Grid connection delays and increasing competition for energy access are beginning to influence where digital infrastructure projects can realistically be deployed.[11]

This growing pressure reflects a wider market shift: AI scalability is increasingly dependent on access to resilient energy infrastructure capable of supporting sustained long-term growth.

[10] https://www.ft.com/content/05f182a9-7402-4613-9ef3-eea9a5d9f543

[11] https://www.gov.uk/government/consultations/accelerating-electricity-network-connections-for-strategic-demand/accelerating-electricity-network-connections-for-strategic-demand-accessible-webpage

Electronics

Growing demand for semiconductors, servers, Graphics Processing Units (GPUs), optical components and supporting electronic infrastructure continues to reshape global technology supply chains. As AI workloads scale, competition for advanced computing hardware and critical infrastructure components is intensifying across both hyperscale and edge environments.

The scale of investment driving this demand is unprecedented. Reuters recently reported that Microsoft, Amazon, Alphabet and Meta are collectively expected to spend approximately $635 billion on AI infrastructure in 2026 alone, spanning data centres, network infrastructure and compute hardware.[12] Analysts increasingly suggest that future AI growth may become constrained not simply by chip availability, but by the wider infrastructure ecosystem required to support large-scale deployment - including power, cooling, optical networking and interconnect infrastructure.

The challenge is no longer confined to semiconductors alone. Cooling systems, networking equipment, optical components and high-density compute environments are all contributing to growing supply chain complexity across the sector. Industry analysis from McKinsey highlights the rising importance of optical networking technologies as AI workloads require increasingly larger volumes of data to move efficiently between distributed compute environments.[13]

Connectivity

Connectivity infrastructure is becoming a defining factor in how quickly and effectively organisations can scale AI-ready environments. Fibre availability, backhaul capacity and low-latency interconnect architecture are now central to supporting distributed workloads, edge computing and increasingly data-intensive digital services.

Pressure on connectivity infrastructure is no longer confined to hyperscale data centres alone. Mobile networks, FWA, cloud environments and edge deployments are all competing for the same underlying fibre and interconnect capacity, creating sustained pressure across infrastructure delivery and deployment timelines.

This reinforces the need for integrators to develop diversified product sourcing strategies, long-term infrastructure planning, and resilient supplier ecosystems capable of adapting to sustained market demand. Successful connectivity strategies now depend on more than infrastructure access alone; they require adaptable architecture, diversified supply

[12] https://www.reuters.com/world/china/big-techs-635-billion-ai-spending-faces-energy-shock-test-sp-global-says-2026-03-31/

[13] https://www.mckinsey.com/~/media/mckinsey/industries/technology%20media%20and%20telecommunications/high%20tech/our%20insights/opportunities%20in%20networking%20optics%20boosting%20supply%20for%20data%20centers/opportunities-in-networking-optics-boosting-supply-for-data-centers.pdf?shouldindex=false

ecosystems and deployment models capable of responding to rapidly evolving demand patterns.

Collaboration

As infrastructure ecosystems become increasingly interconnected and complex, strategic collaboration is becoming a critical component of long-term resilience. Integrators are no longer simply sourcing products or components - they are building long-term infrastructure partnerships capable of supporting scalability, adaptability and deployment certainty through periods of sustained market pressure.

This is changing how organisations approach network planning, technology adoption and supply chain strategy. Increasingly, resilient infrastructure deployment depends on close collaboration between network integrators, technology providers, infrastructure specialists and strategic supply partners capable of supporting future-ready network evolution.

The organisations best positioned to support the next phase of AI and digital infrastructure growth will be those that can connect supply chain strategy with technical innovation, network intelligence and long-term deployment confidence.

As digital infrastructure demand continues to accelerate, supply chain resilience is becoming far more than an operational consideration. It is emerging as a defining factor shaping competitiveness, scalability and long-term success within the AI economy.

Building future-ready networks

As infrastructure demand continues to accelerate, Integrators are being challenged to think beyond short-term capacity expansion and towards long-term operational resilience. The next generation of digital infrastructure will need to support increasingly distributed workloads, denser connectivity environments and significantly greater volumes of data movement across hyperscale, metro, edge and wireless networks simultaneously.

This is reshaping how future-ready networks are designed, deployed and managed.

Traditional infrastructure models built primarily around centralised environments are evolving rapidly in response to AI, edge computing and increasingly decentralised digital ecosystems. AI workloads are placing growing pressure on network architecture, requiring networks to support higher bandwidth requirements, lower latency expectations and more dynamic traffic flows across interconnected environments.

The challenge is no longer simply building more infrastructure; it is building infrastructure capable of adapting continuously as demand evolves. This is where experienced infrastructure partners have a critical role to play - helping Integrators make technology decisions that are not only fit for today's demand, but resilient enough to support future network evolution.

For partners such as Altnets, this creates an opportunity to support operators not only through supply resilience, but through smarter long-term infrastructure strategy.

Industry analysis from Deloitte highlights how AI is increasingly reshaping enterprise network design and operations, driving demand for more intelligent, automated and integrated networking environments spanning fibre, wireless and edge infrastructure. This shift is accelerating the need for scalable interconnect architecture, resilient backhaul capacity and future-ready deployment models capable of supporting increasingly complex digital ecosystems.[14]

The network edge is also becoming increasingly strategic. As edge computing environments expand and mobile networks continue to densify, operators must support growing numbers of distributed nodes, wireless access points and localised compute environments - all of which depend on resilient fibre connectivity and scalable interconnect infrastructure.

This is driving a broader architectural transition away from purely centralised infrastructure models towards a more distributed mesh of interconnected digital environments. Scalability, adaptability and deployment flexibility are becoming core principles of network design.

Innovation within optical networking will play an important role in supporting this transition. Technologies such as hollow-core fibre are gaining industry attention for their ability to support ultra-low-latency connectivity and improve transmission performance across

[14] https://www.deloitte.com/us/en/insights/industry/technology/technology-media-telecom-outlooks/telecommunications-industry-outlook.html

increasingly high-demand environments. At the same time, advances in optical networking, AI-driven network management and intelligent infrastructure planning are helping operators prepare for sustained long-term infrastructure demand.

For Integrators, future-readiness will depend on the ability to make smarter infrastructure decisions earlier - aligning technology selection, supply resilience and network design before demand outpaces deployment capability.

The organisations investing in intelligent and adaptable infrastructure today will be best positioned to support the next generation of AI-driven connectivity tomorrow.

Strategic opportunity for integrators

As AI, mobile connectivity and distributed digital infrastructure continue to expand, inegrators are becoming increasingly central to the future of economic growth, digital capability and national infrastructure resilience.

Connectivity infrastructure is no longer viewed simply as an operational utility. Fibre networks, backhaul architecture and interconnect environments are rapidly evolving into strategic assets underpinning AI scalability, enterprise transformation and increasingly data-driven societies.

This shift is creating a significant strategic opportunity across the sector.

The providers most likely to lead the next phase of digital infrastructure growth will be those capable of combining resilient supply chain strategy, scalable network deployment and intelligent long-term infrastructure planning into a sustainable competitive advantage. Increasingly, success will depend not simply on network coverage or deployment speed, but on the ability to support complex, high-capacity digital ecosystems operating across hyperscale, edge and distributed environments simultaneously.

Infrastructure resilience is also becoming increasingly important from a national competitiveness perspective. Governments and regulators are placing growing focus on digital infrastructure readiness, recognising that fibre connectivity, power availability and resilient network architecture will play a defining role in attracting future AI investment and supporting long-term economic growth.

This is reshaping how providers approach strategic planning, infrastructure investment and technology adoption. Long-term scalability now depends on more than expanding capacity alone. It requires intelligent network design, operational flexibility and infrastructure ecosystems capable of adapting to rapidly evolving market conditions.

Strategic collaboration will become increasingly important as infrastructure ecosystems grow more interconnected and operationally complex. Integrators will require partners capable of supporting long-term network evolution, accelerating infrastructure delivery and helping them adapt to rapidly changing connectivity demands across AI, mobile and distributed digital environments.

As market pressure intensifies, the ability to respond quickly, scale intelligently and plan beyond immediate deployment cycles will become a defining differentiator for success.

The AI economy will not be built by compute power alone. It will depend on the connectivity infrastructure capable of supporting it reliably, efficiently and at scale.

For Integrators, this is the strategic opportunity: to move from capacity providers to infrastructure leaders, shaping the networks that will underpin the next phase of AI, mobile and distributed digital growth.

CONCLUSION

AI is accelerating one of the most significant infrastructure transformations the connectivity industry has experienced in decades.

What began as a surge in AI software innovation has rapidly evolved into a global race to build the physical infrastructure capable of supporting increasingly data-intensive, distributed and always-on digital environments.

Across hyperscale data centres, edge computing environments, mobile networks and fixed wireless infrastructure, demand for resilient connectivity is continuing to intensify. Fibre availability, backhaul scalability, interconnect performance and long-term infrastructure readiness are becoming increasingly central to how organisations scale AI capabilities, support digital services and remain competitive within rapidly evolving markets.

Infrastructure pressure is exposing the limitations of traditional deployment models. Power constraints, fibre availability, supply chain complexity and growing network densification are reshaping how telecoms providers approach resilience, scalability and long-term infrastructure planning.

The pressure this creates will reshape how operators plan, deploy and scale infrastructure over the next decade.

The organisations best positioned to lead the next phase of digital infrastructure growth will be those capable of combining intelligent network design, resilient supply ecosystems, strategic collaboration and future-ready infrastructure planning into long-term operational advantage.

In the age of AI, connectivity infrastructure is no longer just enabling digital transformation; it is shaping the speed, scale and competitiveness of entire digital economies.

For Altnets, this is where the opportunity becomes clear. As fibre, backhaul and interconnect architecture become increasingly strategic, providers will need partners who understand not only product availability, but network architecture, supply chain management and long-term deployment resilience. Altnets is well positioned to support this shift, helping providers navigate constraints, adopt the right technologies and build networks capable of supporting the next generation of digital demand.

The AI boom is not just a computer story - it is a connectivity story.

The organisations investing in intelligent, adaptable infrastructure today will help shape the next generation of digital economies tomorrow.