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Nordic Digital Infrastructure: Ready for the Next Era or Approaching an Investment Gap?

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The Nordics are entering a new era as telecommunications networks have evolved into critical national infrastructure, vital to our societies. Investment decisions of today will define whether our critical infrastructure will have the robustness and resilience required to be renewed, protected and expanded in an era of enhanced geopolitical uncertainty.

This memo is a high-level strategic assessment of the next era of Nordic digital infrastructure with an overview of system wide investment requirements, considerations on the current regulatory environment and a deep dive on Danish telecommunications.

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Executive Summary

During the first quarter of the 21st century, liberalization transformed European telecommunications from state-owned monopolies into competitive markets. Private investment, competition and public policy enabled Europe, the Nordics and Denmark to build some of the world's most advanced, widely available and affordable connectivity ecosystems. Telecommunications networks now underpin public administration, energy systems, financial services, emergency communications, cloud services and everyday economic activity. They have evolved from civil connectivity infrastructure into critical national infrastructure, vital to the functioning and security of society.

Yet, high connectivity and penetration have not translated into equally strong economic and investment outcomes. As highlighted by the Draghi Report, Europe faces a broader competitiveness and investment challenge, while its telecommunications industry has experienced comparatively modest returns, lower investment per capita than major global peers and declining relative capital market value.

As the second quarter of the century begins, geopolitical and technological change is fundamentally reshaping the investment equation further increasing the urgency for European investors, corporates and policy makers to address the conditions for infrastructure investments. Networks must continue to provide capacity and coverage, while increasingly requiring geographic diversity, alternative routing, backup power, cyber protection, physical hardening, secure supply chains and rapid restoration. At the same time, telecommunications infrastructure is becoming part of an integrated AI ecosystem encompassing compute, hyperscale data centers, cloud services and electricity systems.

In this environment, the Nordics have the opportunity to move from established digital leadership to becoming Europe's trusted, secure and world leading center for digital infrastructure investments, but doing so will require substantial investment, financing and policy action as infrastructure requirements broaden beyond connectivity and capacity.

Using Denmark as its principal case, this paper examines a central challenge for the next Nordic digital model: whether investments and policy frameworks can keep pace as the capabilities society requires increasingly extend beyond those which the market can monetize. The estimated Nordic investment requirement of EUR 120bn between 2026–2030 spans compute, power, connectivity, cloud and resilience with an implied EUR 18–30bn for Denmark. The challenge differs materially across infrastructure layers and should not be understood as a single homogeneous gap.

The central conclusion is that the Nordics face an inevitability challenge rather than a shortage of capital. Commercially attractive assets will continue to secure funding.

Regulated connectivity and resilience investments without corresponding revenues may struggle to attract sufficient capital unless expected returns and financing mechanisms reflect the risks and requirements involved.

The present memo is a thought leadership piece pointing to a set of priorities for investment and policy frameworks without seeking to determine the appropriate regulatory treatment of individual operators or markets.

Within this framework, six conclusions emerge:

1. **Digital infrastructure and connectivity have become critical to the resilience and functioning of Nordic society.** Resilience increasingly depends on the entire system – from access and backbone networks to subsea routes, power, cyber protection and operational continuity. Denmark's role connecting continental Europe, the Nordics, the Baltics and the North Atlantic gives its infrastructure strategic importance beyond the domestic market.

2. **The next investment cycle is fundamentally different from the one that built today's networks.** Future investment must combine network renewal and future-proof fiber with cybersecurity, redundancy, backup power, physical robustness and security of supply, while AI simultaneously drives investment in compute, connectivity and power. The challenge is therefore systemwide, not simply one of investing more.

3. **Different infrastructure requirements have different economics and require different financing models.** Hyperscalers can finance commercially attractive compute and data center investments, but national telecommunications networks must ultimately be supported by network economics. Where resilience investments create significant societal value without corresponding commercial revenues, explicit financing mechanisms are required.

4. **Investment attractiveness is becoming a source of competitive advantage.** Financial viability does not necessarily make an asset attractive for incremental investment. Capital will flow where expected risk-adjusted returns are competitive relative to the cost of capital and alternative opportunities. European telecom economics illustrate the challenge, with Connect Europe reporting aggregate ROCE of 6.7% in 2024 against estimated industry WACC of approximately 8%.

5. **Scale and market structure are important components of the investment equation.** Greater scale can improve utilization, reduce unit costs, strengthen cash generation and broaden access to capital, increasing the capacity to finance long-term investment in networks, security and resilience. Consolidation and infrastructure sharing can contribute to these economics. Scale is

complementary to, rather than a substitute for, appropriate economic regulation.

6. **Economic regulation should support efficient investment while evolving with demonstrated market power and competitive conditions.** Where regulated wholesale revenues are material, forward-looking cost models should reflect efficient costs, realistic utilization, risks and evolving investment requirements. Where regulated prices do not adequately reflect these factors, adjustment – potentially including higher wholesale prices – can form part of restoring sustainable investment conditions. At the same time, wholesale terms affect access seekers' ability to compete and invest. SMP remedies should therefore remain proportionate to demonstrated market power and evolve with competitive conditions, including infrastructure competition and fixed-mobile substitution, while preserving effective downstream competition, consumer outcomes and incentives for long-term investment.

Europe has successfully ensured high levels of connectivity. The challenge for the next era is to ensure that efficient investment in network renewal, nationwide fiber coverage, security and resilience can earn sustainable risk-adjusted returns. Regulation is one part of this equation. Scale and market structure are another: greater scale can improve utilization, reduce unit costs, broaden access to capital, and strengthen the capacity to finance long-lived infrastructure. Technology, demand, financing conditions, and execution risk further shape the investment equation.

The defining question is thus whether each critical layer of the Nordic digital infrastructure system can attract sufficient capital to meet the requirements placed upon it. For connectivity, this means financing network maintenance, expansion, security, and resilience while preserving sustainable downstream competition and consumer outcomes. Across the wider ecosystem, it means mobilizing investment across compute, power, cloud and other enabling infrastructure.

Introduction

The next era of the digital economy cannot be assessed against historical benchmarks for connectivity or investments. The relevant benchmark is a future one: the infrastructure required to sustain a secure and resilient digital society in a more uncertain geopolitical environment while building the foundations of an increasingly AI-enabled economy.

This requires a forward-looking, system wide perspective. Telecommunications networks, subsea connectivity, compute, data centers, cloud services, ground-based satellite infrastructure and power infrastructure are becoming increasingly interdependent. Decisions taken today will determine which capabilities can be delivered over the coming decade; delayed decisions risk turning ageing infrastructure, insufficient redundancy and capacity constraints into structural vulnerabilities.

Globally the transition is unprecedented, reaching far beyond the establishment of the railroads, electrification or the internet with investment requirements extending across telecommunications, technology and infrastructure.

Exhibit 1:
From past waves of transformation to the next digital era

	19th Century	20th Century	20th – 21st Century	21st Century
Wave	**Railroads**	**Electrification**	**Internet**	**AI era**
Scale	215k miles of rail track by 1900	50 GW capacity added between 1920-1930	39 m miles of fiber-optic cables by 2001	+160% power demand growth by 2030
Market impact	80% of US stock market value	USDbn 295 capital raised by utilities	USDbn +800 investments in infrastructure	USDtr 5 funding required for infrastructure
Capital source	First investment banks financed expansion	Utility holding companies unlocked scalability	VC, IPOs and M&A financed digital infrastructure	Infrastructure investors, HSC and governments

Source: Powering the AI Era. Goldman Sachs and Deloitte analysis.

The challenge is thus broader than determining how much infrastructure Europe and the Nordics need as it extends to understanding what drives the requirements, where investments will be needed, how the economics differ across infrastructure layers, and under what market, financing and policy conditions investments can be mobilized.

Denmark provides a relevant case through which to examine this challenge. It combines extensive coverage, strong network quality, and competitive consumer pricing with high capital intensity and increasing resilience requirements. Its position between continental Europe, the Nordic region, the Baltic states and the North Atlantic also gives its terrestrial and subsea connectivity strategic importance beyond the domestic market.

Against this background, the paper first examines how the role and requirements of telecommunications infrastructure are changing, before considering the technological and geopolitical forces reshaping the wider digital infrastructure ecosystem. It then assesses the scale and financing of the Nordic investment requirement, using Denmark to explore the economics of telecommunications investment, before considering how policy and regulatory frameworks need to respond as market structures, infrastructure requirements and competition for investments evolve.

Two questions run through the analysis:

1. What investment must be mobilized across the wider Nordic digital-infrastructure ecosystem for the region to retain its position as a preferred digital investment destination?
2. Given the changed strategic role of telecommunications as critical national infrastructure, under what market, financing and policy conditions can Denmark's telecom sector attract the capital required for network renewal, capacity expansion, security and resilience?

Building on the broader investment challenge identified by Draghi at European level, this paper examines how the gap manifests itself in the Nordic digital infrastructure ecosystem. The main question is how significant the investment requirement is. The analysis considers the scale and composition of the requirement, the extent to which identified commitments provide an initial contribution, and the conditions under which investments can be mobilized.

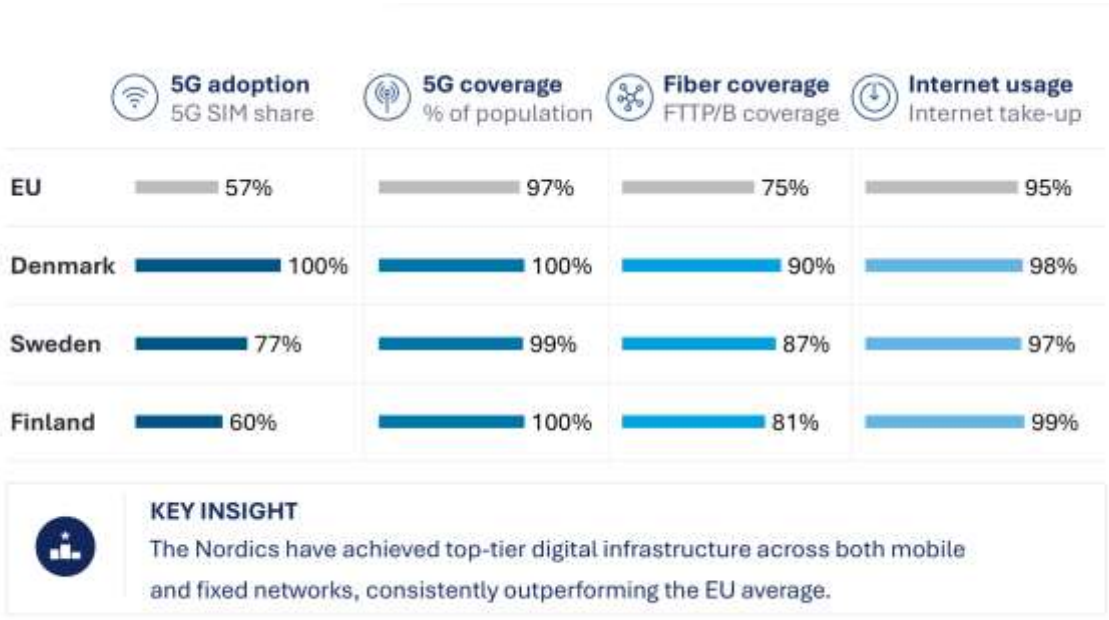
From Connectivity to Robustness in Turbulent Times

Europe and the Nordics enter the next investment cycle from a position of considerable strength. Europe has achieved high levels of fixed and mobile connectivity, while the Nordic countries consistently rank among the global leaders in digital infrastructure, supported by extensive fiber and mobile networks, high adoption and digitally capable populations.

High levels of penetration might not have been a unique accomplishment, but what distinguishes the Nordic model is the combination of high penetration, network quality and competitive consumer prices reflecting decades of infrastructure investments combined with liberalization, competition and regulatory frameworks designed to promote market access and consumer welfare.

Exhibit 2:

The Nordics continue to lead Europe across fixed and mobile



Source: European Commission (DESI 2026), OECD Broadband Portal and GSMA Intelligence.

Different market structures have produced different economic outcomes

As highlighted in the Draghi Report, comparing Europe with the United States illustrates how different market structures and policy priorities have shaped different outcomes.

Europe remains considerably more fragmented, and the Draghi report identifies fragmentation and limited scale as potential constraints on investment and competitiveness. These considerations can be particularly relevant in smaller national markets such as Denmark, although market structure alone does not determine investment outcomes.

The EU has 34 mobile network operators and more than 350 mobile virtual network operators (MVNOs) serving approximately 450 million consumers, compared with three nationwide mobile network operators in the United States. The two regions have also experienced different industry economics. The US has combined higher telecommunications revenues and investments per capita with a more concentrated market structure, while Europe has combined greater fragmentation with generally lower consumer prices. These differences reflect multiple factors, including scale, geography, market structure, competitive intensity, technology mix and regulatory frameworks.

Market structure and regulation influence investment economics, but their effects vary by market and asset. Where SMP remedies apply, wholesale pricing can affect regulated revenues and returns; consolidation and infrastructure sharing can improve scale and utilization but may also alter competition. The relevant policy question is therefore whether interventions remain proportionate to demonstrated market failures and whether the overall framework supports efficient long-term investment. Where regulated wholesale prices do not adequately reflect efficient forward-looking costs, realistic utilization, risks and investment requirements, adjustments, potentially including higher wholesale price levels, can be an important part of restoring sustainable investment conditions. This is complementary to, rather than a substitute for, the role of scale, efficient market structures and explicit resilience financing.

Exhibit 3:

Market structure differs fundamentally across geographies

Europe largely missed out on the digital revolution led by the internet.
– Mario Draghi, *The future of European competitiveness*, Sept 2024

Implication: Restoring competitiveness will require greater scale, *higher investment* capacity and stronger incentives for long-term digital infrastructure investment.

	EU-27	Norway	Sweden	Finland	Denmark	US
Population (million)	~450	~6	~11	~6	~6	~340
MNOs (# operators)	95	3	4	4	4	3
CAPEX per capita (PPP adj. EUR/year)	109	144	103	117	158	240

Source: European Commission (Digital Decade Country Reports 2025), national regulatory authorities, GSMA Intelligence (2025) and Analysys Mason (2025).

Denmark illustrates strengths, and some questions, from the Nordic model

The Nordics have achieved high levels of connectivity and penetration; however, the extent to which this reflects future proof rather than legacy infrastructure must also be considered when assessing the level of future investment required.

Denmark combines extensive high-speed connectivity and strong network quality with a highly competitive retail market. Danish households have received progressively higher network performance without proportionately higher retail prices. Statistics Denmark's price index shows standalone internet access prices increasing by only 4.1% between 2020 and 2025, compared with 17.0% general consumer price inflation. Tefficient's advertised fiber price basket declined by approximately 12% between 2021 and 2024 and by a further 3.1% in 2025. Retail broadband prices have therefore fallen materially in real terms.

The market is also undergoing an accelerated technology transition. Fixed internet subscriptions declined from 2.619 million in 2023 to 2.409 million in 2025, including a 5% decline during 2025. Over the same period, direct fiber subscriptions increased from 1.269 million to 1.448 million, and their share of fixed connections rose from 48.5% to 60.1%. However, a significant number of Danish subscriptions remained on xDSL or cable networks at the end of 2025, in addition to other non-fiber connection types. Denmark therefore continues to carry a material legacy customer base while fiber adoption expands.

Data suggest that this legacy exposure may interact with increasingly attractive mobile broadband alternatives. The TDC NET comparison reports that YouSee's unlimited 5G mobile-broadband offer was approximately 16% less expensive than its indicative 1 Gbit/s fiber price in December 2025. Denmark consequently combined the largest remaining legacy share among the three Nordic countries examined with a visible mobile price discount and the sharpest reduction in fixed subscriptions.

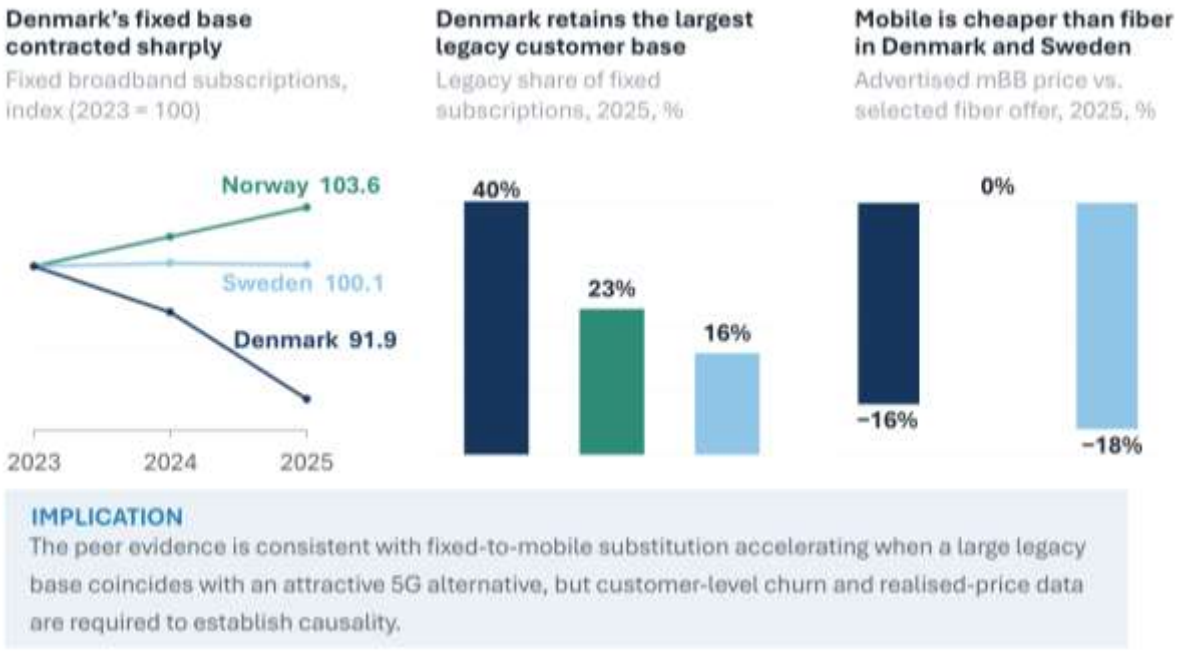
The comparison with Sweden and Norway is instructive. Sweden's fixed subscription base was broadly stable in 2025 despite mobile broadband being approximately 18% cheaper than the selected fiber offer. Only 16% of Swedish fixed subscriptions were classified as legacy, and approximately one third of fiber customers were reportedly covered by collective agreements rather than standard list prices. Norway's fixed subscription base increased by approximately 1.8%; its legacy share was 23%, while the selected 500 Mbit/s fixed-wireless and fiber offers were priced at broadly the same level.

This evidence is consistent with the hypothesis that fixed to mobile substitution is strongest when an attractive 5G alternative coincides with a large legacy fixed network customer base. Customer-level churn, technology and realized price data would be required to establish real causality.

For Denmark, this creates a dual investment challenge. Operators must finance continued migration from copper and coaxial networks to future proof fiber while simultaneously investing in cybersecurity, redundancy, backup power and physical protection. At the same time, aggressive mobile-fixed competition and falling real retail prices may constrain the incremental cash generation available to fund that transition. The relevant question is therefore not whether operators generate positive cash flow in a single period, but whether expected returns are sufficient to attract the capital required for network renewal and resilience.

Exhibit 4:

Denmark's fixed-broadband market combines a large legacy base with mobile substitution



Note: Legacy denotes non-fiber fixed subscriptions as classified in the source analysis. Fiber includes FTTH/FTTC as applicable. Prices are advertised offers, not realized ARPU; offers are not fully speed-equivalent. Sweden: c. one-third of fiber customers reportedly on collective agreements. Source: TDC NET Annual Report 2025; national telecommunications statistics for Denmark, Sweden and Norway; operator retail pricing; Deloitte analysis.

The European telecommunications paradox

The urgency to ensure the investments required to move towards future proof technologies extend from Denmark to the Nordics to the broader European agenda, where Draghi has pointed to the fact that Europe's competitiveness dilemma even goes beyond telecommunications. Analyses by the European Commission and the OECD point to a broader structural challenge: Europe's productivity gap relative to the United States has widened along with lower technology investment, fragmented markets and slower diffusion of digital innovation. The Draghi report highlights the importance of substantially increasing investments in digital infrastructure and advanced technologies if Europe is to restore competitiveness[1].

The evolution of Europe's telecommunications industry illustrates the scale of this shift. At the beginning of the century, European companies represented approximately 31% of global telecommunications market capitalization, supported by global leaders such as Vodafone and Deutsche Telekom. By 2025, Europe's share had fallen to 14%, with only one European company among the world's ten most valuable telecommunications

[1] Draghi, Mario: The Future of European Competitiveness, Part B

companies. Over the same period, the aggregate market capitalization of leading European telecommunications operators broadly stagnated, while global sector value became increasingly concentrated among US and Asian operators.

Deutsche Telekom is an important exception, although a substantial part of its market value reflects its controlling ownership in T-Mobile US.

Exhibit 5:

Global telecom capital markets have shifted away from Europe and the Nordics

Source: Deloitte analysis, LSEG Workspace, company filings and public information.

The differentiated value creation is not conclusively the result of a simple causal relationship between regulation, competition and investments. It does, however, highlight an important structural tension: Europe has been highly successful in creating connectivity, competition and consumer value, while European telecommunications have become relatively less attractive from an investor perspective.

As the next era in digital infrastructure requires substantially greater investments, understanding this tension becomes increasingly important.

From connectivity to investment attractiveness

The evolution of digital infrastructure requires significant investments. While competition, market structure and regulation shape industry economics, the ability to generate sustainable risk-adjusted returns will influence whether capital can be mobilized to finance the next generation of investments.

Investment attractiveness should therefore be perceived as the interaction of several factors: expected risk-adjusted returns, market structure and opportunities for scale,

regulatory predictability, capital requirements and the broader conditions for infrastructure deployment. Regulation is an important part of this equation, particularly where wholesale prices are directly regulated.

As digital infrastructure expands beyond traditional telecommunications networks, competition for capital is widening. Investment in fiber and mobile networks increasingly competes with data centers, AI compute, energy infrastructure and cybersecurity. For investors, the relevant question is therefore not simply whether a project generates a positive return, but whether its risk-adjusted return is attractive relative to other asset classes.

Four Forces Reshaping Digital Infrastructure

In the second quarter of the 21st century, resilience and national security are moving to the center of digital infrastructure strategy. AI, sovereignty and the energy transition reinforce this shift by increasing dependence on secure connectivity, compute and reliable power.

Four structural forces are reshaping the foundations of the digital economy. First, geopolitical uncertainty and cyber and physical threats are increasing requirements for security, resilience and robustness. Second, digital sovereignty is reshaping where critical infrastructure is located and controlled. Third, AI is driving rapid growth in compute, data processing and connectivity. Fourth, these developments are accelerating demand for reliable, scalable and low-carbon power.

These forces are interdependent: resilient networks require secure power and diverse routes; sovereign capabilities require trusted infrastructure; and AI increases the consequences of interruption. The investment challenge is therefore systemic rather than a collection of isolated technology projects.

Artificial Intelligence (AI)

AI is fundamentally changing the global economy at an unprecedented scale.

Investment value pool. Artificial intelligence is expected to trigger the largest digital-infrastructure investment cycle since the commercialization of the internet. The world's leading hyperscalers are expected to invest more than USD 750bn in AI-related capital expenditure during 2026 alone, with cumulative investment projected to exceed USD 3tn by 2030. Investment increasingly spans GPUs, cloud platforms, data centers, fiber networks, semiconductors and supporting power infrastructure.

Structural change. Unlike previous waves of digitalization, AI shifts demand beyond connectivity towards compute-intensive infrastructure. Training and inference require high-density computing clusters, advanced cooling, resilient power supplies and high-capacity fiber networks. Financing is also changing, with hyperscalers, infrastructure funds and private capital becoming increasingly important alongside traditional telecommunications operators.

Exhibit 6:

AI is triggering the largest digital investment cycle in decades

Source: Company filings and capital expenditure guidance (Alphabet, Amazon, Microsoft, Meta); Goldman Sachs Global Investment Research; Morgan Stanley Research; Bloomberg Intelligence; Deloitte analysis.

Impact. AI significantly expands both the scale and complexity of digital infrastructure investment. The regions best positioned to attract long-term infrastructure capital are likely to strengthen their competitiveness, while power availability, grid capacity, connectivity and execution speed increasingly determine where new capacity can be deployed.

Digital Sovereignty

Investment value pool. Digital sovereignty has become a major public investment priority across Europe. The EUR 43bn European Chips Act, EUR 8.1bn Digital Europe Programme and broader Digital Decade agenda are complemented by significant national investment programmes. At the same time, the European public cloud market is expected to increase, while US hyperscalers continue to account for around 70% of the market.

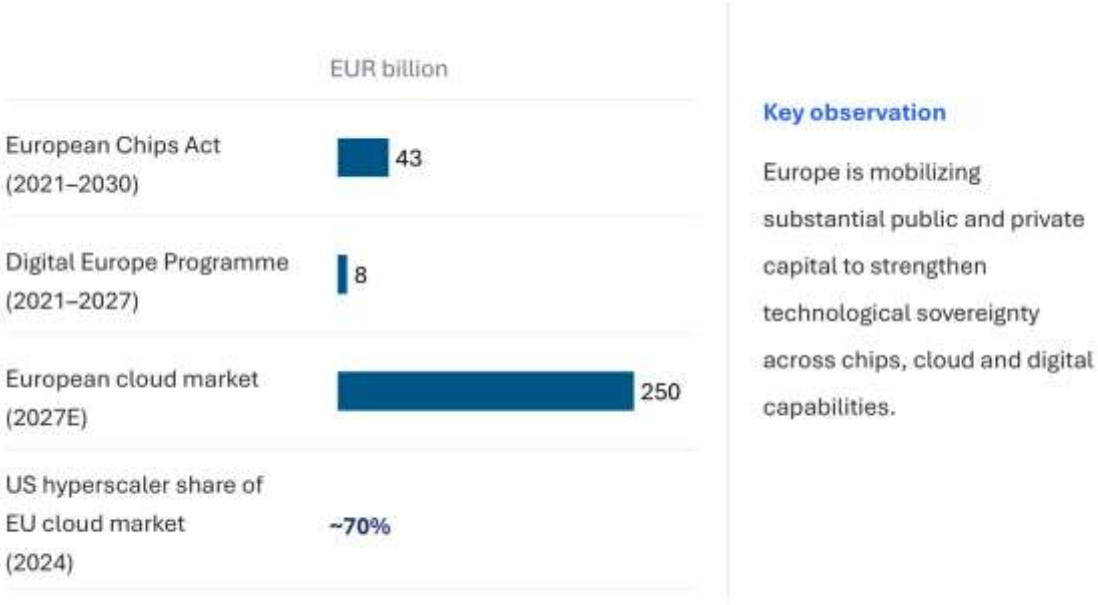
Structural change. Growing geopolitical tensions and technological dependence have broadened digital policy from promoting connectivity towards strengthening resilience, trusted cloud services, semiconductor manufacturing and strategic autonomy. Questions of where critical infrastructure is located, who controls it and which supply chains it depends on are increasingly influencing infrastructure decisions.

Impact. Digital infrastructure is increasingly viewed as strategic national infrastructure. Countries able to combine attractive investment conditions with resilient regulatory frameworks are likely to capture a disproportionate share of future investment in AI,

cloud and critical digital capabilities. For the Nordics, political stability, institutional trust, advanced connectivity and access to low-carbon energy can reinforce existing structural advantages.

Exhibit 7:

Digital sovereignty is reshaping investment priorities across Europe



Source: European Commission (Digital Decade, Digital Europe Programme, European Chips Act); Eurostat; Gartner; Deloitte analysis.

Security, Resilience and Robustness

Investment value pool. Security and resilience investment is expanding across cyber protection, network redundancy, alternative routing, backup power, physical hardening, subsea monitoring, secure supply chains and operational recovery. Unlike compute and data center investment, many of these capabilities do not create a directly monetizable revenue stream, even though they generate substantial value for society and the wider economy.

Structural change. Geopolitical instability, hybrid warfare, sabotage and AI-enabled cyber threats have changed what critical networks must withstand. NIS2 and the Critical Entities Resilience Directive reinforce this direction, but the required capability extends beyond regulatory compliance. Governments need transparent, measurable resilience requirements so infrastructure owners can plan, price and deliver the capabilities expected of them.

Resilience encompasses physical robustness, geographic diversity, redundant core and backbone routes, backup power, secure supply chains, operational continuity and rapid service restoration. These requirements apply across mobile and fixed access,

terrestrial and subsea backbone infrastructure, core and super-core sites and supporting power and transmission systems.

Impact. Security and resilience are becoming integral design principles rather than separate technology layers. Because their benefits extend beyond the paying network customer, the financing framework must determine how efficient forward-looking costs are recognized and how required capabilities can earn sustainable risk-adjusted returns.

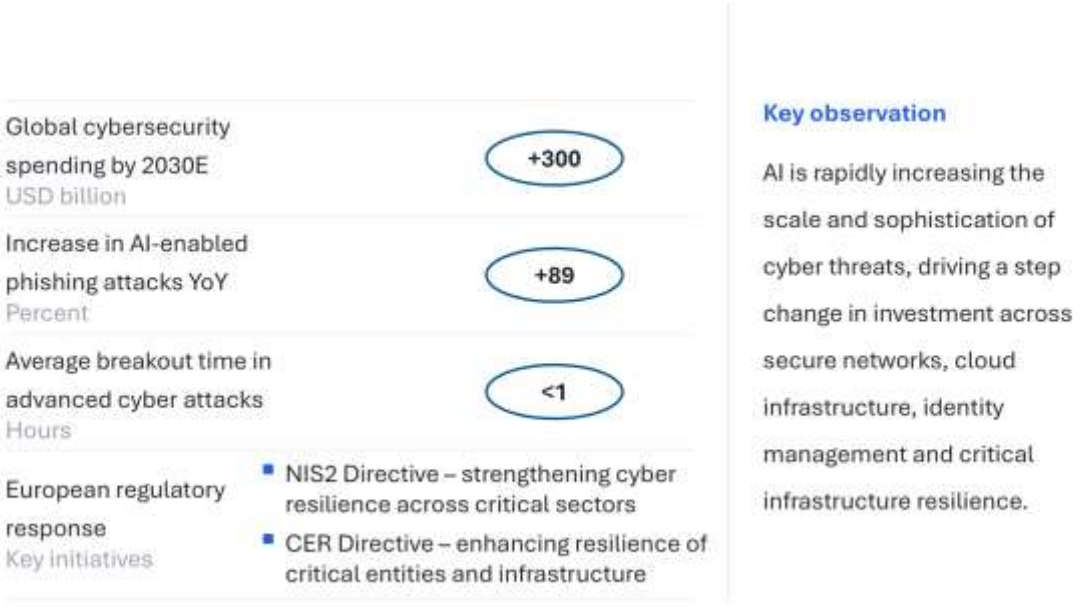
As telecommunications networks increasingly underpin cloud services, energy systems, public services and other critical infrastructure, resilience and robustness create value beyond the network itself. Investment decisions therefore increasingly need to balance efficiency and asset utilization with redundancy, robustness and security of supply. Infrastructure that may appear inefficient from a narrow utilization perspective can have significant strategic and societal value when the cost of failure is considered.

Danish threat assessments confirm that the change is already material. In March 2025, the Danish Agency for Societal Security raised the threat from cyber espionage against the Danish telecommunications sector to HIGH and noted that access to operators' systems could be used to prepare physical sabotage or destructive cyberattacks. In October 2025, the Danish Defence Intelligence Service assessed that Russia is conducting hybrid warfare against NATO and the West and that the hybrid threat is likely to increase. These elements reinforce the need to consider cyber protection, physical security, redundancy, and operational recovery as integrated network capabilities.

Resilience is a public good with positive externalities: the benefit goes to emergency services, public authorities, businesses and society at large, not only to the network's paying customers, so an operator cannot capture the full value of what it builds. Quality is opaque: customers can compare price and speed, but not backup power, redundant routing, cyber protection or how quickly service is restored, so competition rewards what customers can see. Determining optimal security investment requires joint action: authorities define the national threat landscape and acceptable risk, while operators assess network vulnerabilities and mitigation costs. The result is that commercial incentives, however well aligned, produce less resilience than society expects.

Exhibit 8:

Cybersecurity spending continues to accelerate with AI adoption



Source: Gartner; ENISA Threat Landscape; Microsoft Digital Defense Report; CrowdStrike Global Threat Report; Deloitte analysis.

Energy Transition

Investment value pool. Power infrastructure is rapidly becoming one of the largest investment requirements supporting digital infrastructure. The European Commission estimates that electricity-grid investment will need to reach approximately EUR 584bn through 2030, while additional investment will be required in renewable generation, storage and system flexibility. At the same time, AI-driven data-center demand is expected to more than double global data-center electricity consumption by 2030.

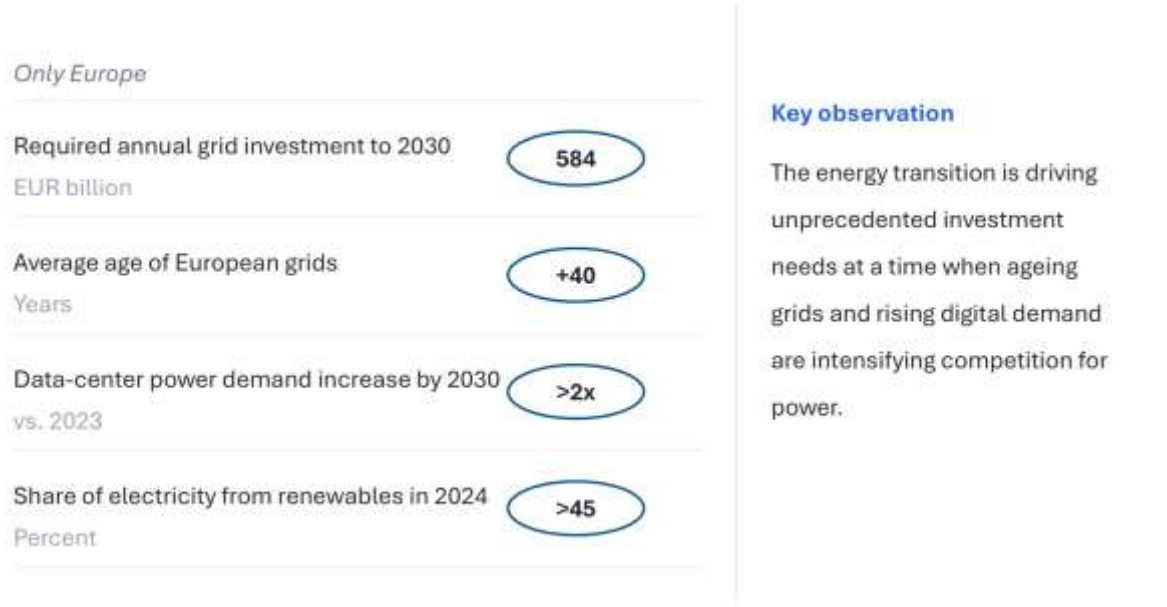
Structural change. For decades, telecommunications infrastructure expanded without materially increasing electricity demand. AI fundamentally changes this relationship. Compute-intensive workloads require significantly greater power capacity, while ageing electricity grids increasingly determine where new digital infrastructure can be deployed.

Power availability is therefore becoming both a capacity constraint and a resilience consideration as critical digital infrastructure increasingly depends on reliable and robust electricity supply.

Impact. Access to reliable, scalable and low-carbon electricity is becoming a prerequisite for digital competitiveness. Future digital infrastructure investment will increasingly depend on the ability to coordinate energy, transmission and digital infrastructure planning, while maintaining security and resilience of supply.

Exhibit 9:

Energy transition is accelerating but power availability is a constraint



Source: International Energy Agency (IEA); European Commission; ENTSO-E; Goldman Sachs Global Investment Research; *Grids, the Missing Link, EU Action Plan for Grids* (2023), Deloitte analysis.

The four forces are creating a new investment paradigm

Jointly, the four structural forces are fundamentally changing both the scale of digital infrastructure investment and the composition of investors as infrastructure is expanding beyond telecommunications into an interconnected ecosystem of AI, cloud, semiconductors, cybersecurity and energy, with financing requirements measured in trillions rather than billions.

The less obvious implication is that these forces reinforce one another. AI increases power and connectivity requirements, sovereignty increases duplication of infrastructure, resilience requires redundancy, and the energy transition constrains where new capacity can be deployed. Thus, the total requirement may exceed the sum of the layers.

How can the Nordics Finance Resilient Digital Infrastructure?

The Nordics enter the transition to the next era from a position of strength. Over the past decade, the region has demonstrated its ability to attract global infrastructure capital. International investors including EQT, Brookfield, Macquarie and KKR have committed tens of billions of euros to Nordic digital infrastructure, complemented by approximately EUR 25bn of hyperscaler investment.

Yet, these investments represent only the first phase of a broader structural shift. Maintaining the Nordic region's position as a center of digital gravity will require investment that is significantly larger in scale and broader in scope than the investment that built today's digital economy. Investments will need to extend across connectivity, compute and power, while also addressing increasing requirements for resilience, security and redundancy.

The challenge is therefore not only to mobilize capital for investments already visible today but to sustain the conditions required to attract investments over time. While near term commitments provide an important starting point, the longer term requirement will depend on the Nordics remaining comparably attractive to investors as telecommunications, data centers and energy increasingly compete for investments. The ability to offer attractive risk-adjusted returns supported by predictable market and policy frameworks will be critical to ensure future investments.

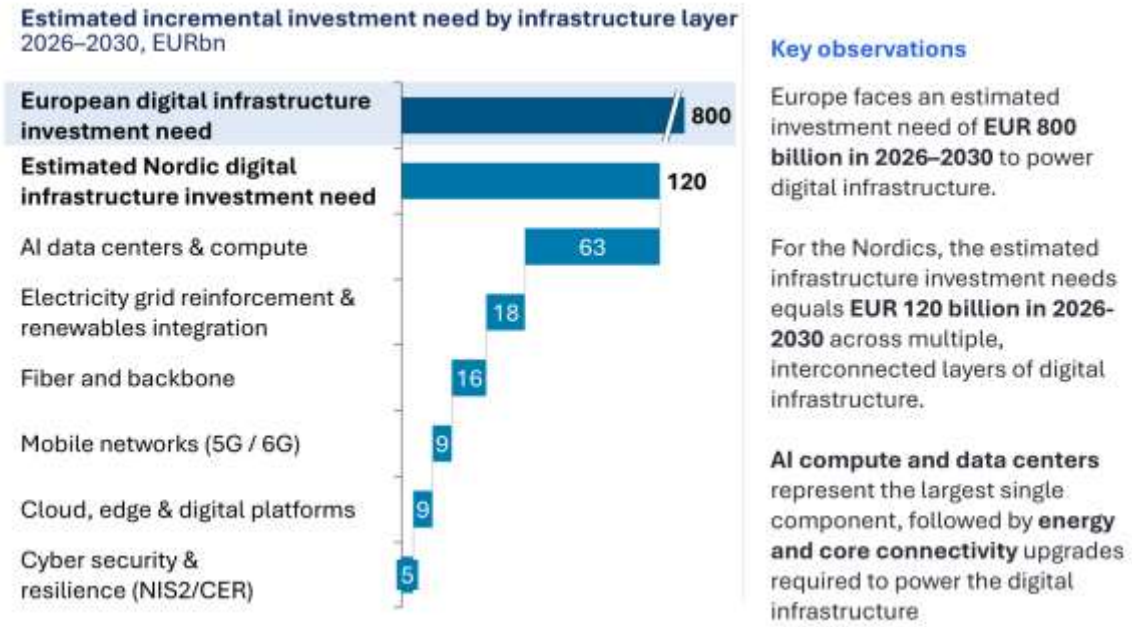
A region punching above its weight class

Few regions match the Nordic combination of abundant low-carbon electricity, resilient fiber connectivity, political stability, digital maturity and access to scalable development sites. Although the Nordics account for only approximately 0.4% of the world's population and 1.4% of global GDP, the region is estimated to attract around 2–3% of global hyperscale AI-infrastructure investment, significantly outperforming its economic size.

As AI infrastructure becomes increasingly constrained by access to power rather than latency alone, these structural advantages become more valuable. Growing requirements for resilience, robustness and security of supply also increase the importance of reliable power and resilient connectivity as location factors. The opportunity therefore extends beyond maintaining current investment levels. An illustrative scenario suggests that maintaining the Nordics' relative position as a destination for AI investment would require approximately EUR 120bn of cumulative investment from 2026 to 2030.

Exhibit 10:

Nordic digital-infrastructure investment need totals approximately EUR 120bn (2026–2030E)



Source: European Commission; International Energy Agency; GSMA Intelligence; Gartner; Synergy Research Group; McKinsey; BCG; Deloitte analysis.

In this dynamic environment, the scarce asset may change over time. Today, power availability is emerging as the principal constraint on AI deployment; tomorrow, the constraint could be grid connections, permitting, international fiber diversity or resilience. Competitiveness will therefore increasingly depend on the strength of the full infrastructure ecosystem rather than any single asset class. Cybersecurity and resilience differ from commercially attractive growth investments because much of their value accrues to society rather than to the asset owner. Where the required capability cannot generate corresponding incremental revenue, its financing has to be addressed explicitly.

Unlike previous generations of digital infrastructure, AI cannot be deployed through isolated investments. The challenge is not simply to increase investment, but to allocate capital efficiently across the entire digital infrastructure ecosystem. Compute capacity depends simultaneously on electricity, transmission grids, fiber connectivity,

land, semiconductors, cybersecurity and permitting. It also requires sufficient redundancy and robustness across these layers to maintain continuity when individual components are disrupted.

Hyperscale momentum is already visible

The Nordic region has established itself as one of Europe's preferred destinations for hyperscale investment. This momentum is already visible: Microsoft has announced a USD 3.2bn expansion of AI and cloud infrastructure in Sweden and Google is investing EUR 1bn to expand its Finnish data-center campus.

Exhibit 11:

Announced and committed Nordic hyperscaler investments approximately EUR 25bn

Source: Analyst reports, company announcements and presentations.

Hyperscaler investment understates the capital mobilized by hyperscaler demand. A new AI data center can trigger investment by utilities, grid operators, fiber providers, infrastructure funds and municipalities well beyond the hyperscaler's own capital expenditure. Its wider economic footprint can therefore be substantially larger than the hyperscaler investment alone.

To date, Nordic hyperscaler investment has primarily focused on data centers and compute capacity, while telecommunications operators, utilities and infrastructure investors have financed much of the surrounding ecosystem, including fiber networks, backbone connectivity and electricity infrastructure. Increasing resilience and robustness requirements add further needs, including network redundancy, security of supply and resilient energy and connectivity infrastructure.

As AI deployment accelerates, this distinction is likely to become less pronounced. In other regions, hyperscalers increasingly invest directly in renewable energy, electricity infrastructure, subsea cables and international fiber systems, reflecting the growing interdependence of compute, connectivity and power.

New investment models

The AI economy is giving rise to a broader financing model in which operators, hyperscalers, infrastructure funds, pension investors, utilities and public capital finance different parts of the ecosystem. These partnerships can mobilize capital and improve asset utilization. They do not, however, substitute for sustainable underlying network revenues: assets can be recycled once, while security, maintenance, enhancement and renewal must be financed continuously.

In the Nordics, new investment partnerships have emerged:

- Brookfield's partnership with the Swedish state and Telia Company illustrates how operators can unlock capital from mature infrastructure assets and recycle proceeds into the next generation of AI-enabling infrastructure.
- Macquarie's investment in TDC alongside Danish pension funds demonstrates how institutional capital can support long-term investment.
- EQT's ownership of GlobalConnect illustrates how dedicated infrastructure investors have accelerated fiber and international backbone connectivity across the Nordics.
- KKR's fiber partnership with Telenor in Norway, established with Oslo Pensjonsforsikring, illustrates another model for accelerating network build-out.

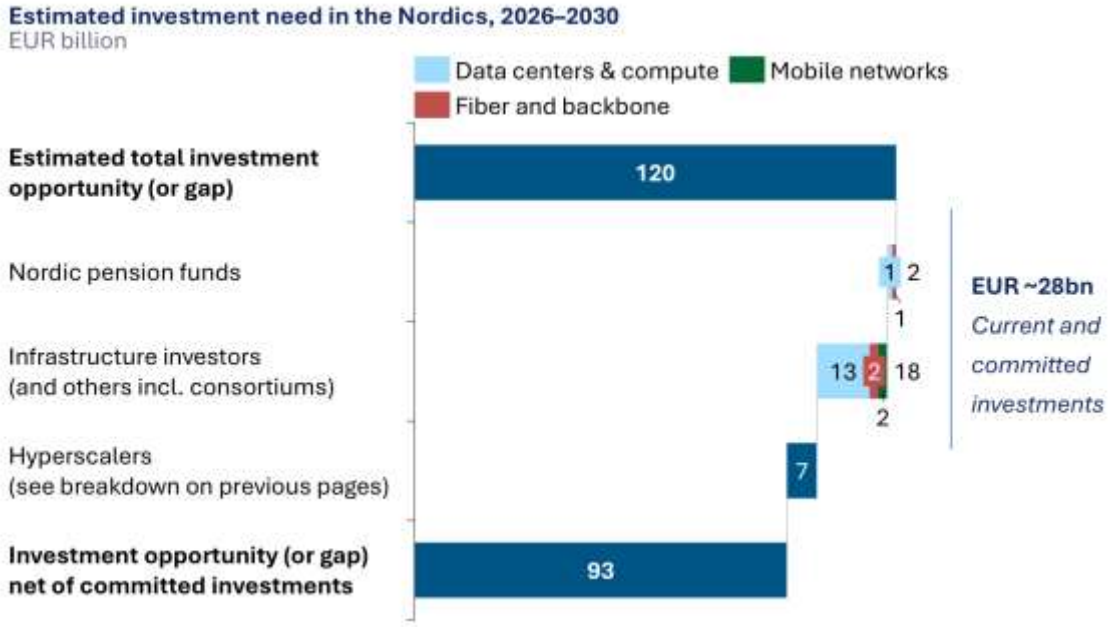
Similar models are emerging across towers, subsea cables, data centers and renewable-energy infrastructure, where specialist operators increasingly partner with long-term financial investors.

The Nordic digital infrastructure opportunity and financing requirement

The Nordics have already attracted substantial private capital, but the approximately EUR 120bn scenario spans six distinct layers: compute; grids and renewable integration; fiber and backbone; mobile; cloud, edge and platforms; and cybersecurity and resilience. Its difference from announced commitments is therefore a wider ecosystem financing requirement.

Exhibit 12:

Approximately EUR 28bn of identified commitments provide an initial contribution towards Nordic digital-infrastructure requirements

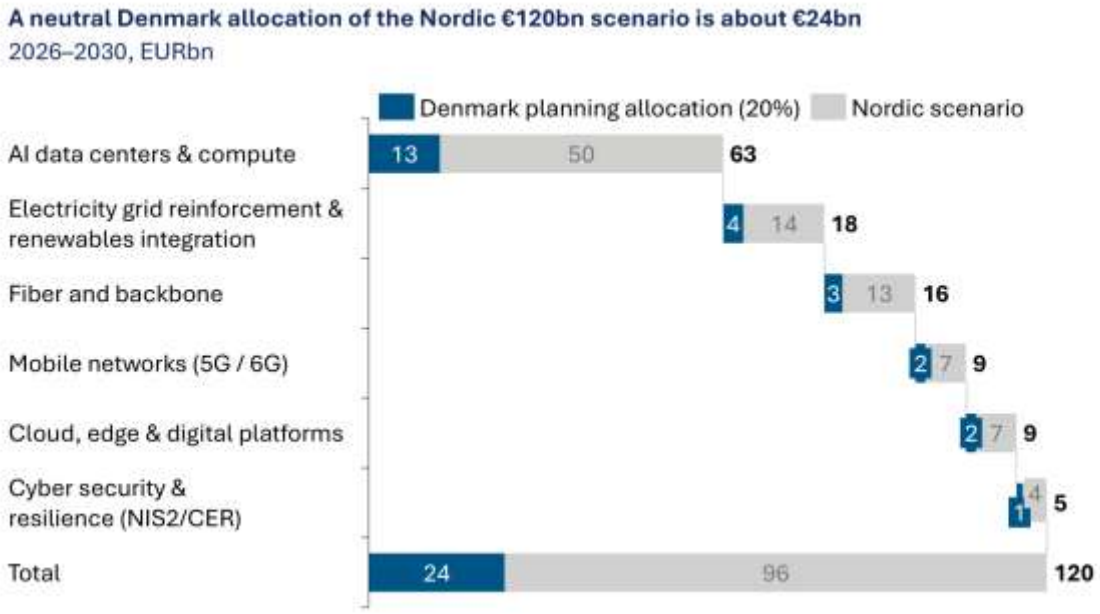


Note: Figures are illustrative and based on estimated investment needs in the Nordics for 2026– 2030. The investment opportunity (or gap) is approximate. Hyperscaler figures include publicly announced and committed investments. Infrastructure investors include global infrastructure funds and asset managers. Pension funds include combined assets of the six largest Nordic pension funds. Source: European Commission; International Energy Agency; OECD; company announcements; Deloitte analysis.

The underlying sources do not provide a complete country level allocation across the Nordics. A transparent 15–25% Denmark sensitivity gives EUR 18–30bn, with EUR 24bn at the 20% central case. This is an allocation scenario based on Denmark's approximate share of the wider Nordic economic landscape.

Exhibit 13:

A neutral 20% Denmark allocation of the Nordic EUR 120bn scenario amounts to EUR 24bn



Note: central case allocates 20% of every layer to Denmark: 15-25% sensitivity gives EUR18-30bn. This is a planning allocation, not a source-reported country forecast. Source: Categories and Nordic totals reproduced from Exhibit 10 of this paper (European Commission; IEA; GSMA Intelligence; Gartner; Synergy Research Group; McKinsey; BCG; Deloitte analysis). Denmark values allocate 20% uniformly; 15–25% is shown as sensitivity. No source-reported Denmark split was identified.

The global availability of capital is not necessarily the binding constraint; the challenge is whether the Nordics, and Denmark, offer attractive risk-adjusted opportunities and whether required resilience investments have a viable financing mechanism. The EUR 28bn of identified commitments should be interpreted as an initial contribution to the wider EUR 120bn scenario, while further investments should be expected to be announced, committed or financed over time. Regions combining speed of permitting, access to power, robust connectivity, regulatory predictability and sustainable returns are likely to capture a disproportionate share of investment.

Risk is as important as the returns in determining where investments will be deployed. The investment requirement is not homogeneous: assets with predictable, long-term secured revenues will attract investments at comparably lower expected returns, while investments exposed to greater execution, demand or technology risk require higher returns. Investments will therefore flow differently across infrastructure layers, projects, and geographies. Where expected returns do not adequately compensate for risk, investment may not materialize, creating the potential for significant shortfalls in particular parts of the infrastructure ecosystem.

Evolving Policy Frameworks

Europe's digital infrastructure has developed through the interaction of private investment, competition, public policy and sector specific regulation. The framework established during liberalization addressed a clear set of priorities: opening markets to competition, extending connectivity and protecting consumers. Against many of these objectives, it has been highly successful. Europe has achieved extensive fixed and mobile coverage, competitive retail markets and comparatively affordable connectivity.

The requirements placed on digital infrastructure are now broadening. Telecommunications networks are increasingly expected not only to provide capacity and affordable connectivity, but also to support economic competitiveness, national security and the continuous functioning of increasingly digital societies. At the same time, substantial investment will be required to renew existing networks, complete the transition to future proof fiber and strengthen resilience, while telecommunications compete with compute, data centers, energy and other infrastructure for global capital.

The policy challenge is therefore not to choose between competition and investment. It is to preserve the achievements of liberalization while ensuring that market and regulatory frameworks support efficient investment in infrastructure whose economic and strategic role has changed. Two distinct questions need to be addressed: how society finances resilience and security capabilities whose benefits cannot be fully monetized by individual infrastructure providers and whether sector specific regulation remains proportionate to demonstrated market power and competitive conditions. These questions interact where regulation materially impacts network economics.

This requires a policy framework that connects three increasingly interdependent objectives: defining the capabilities society expects digital infrastructure to provide; establishing how the associated investment can be financed; and ensuring that the form and intensity of regulatory intervention evolve with infrastructure requirements and competitive conditions.

Policies and regulation are evolving

European policy is already moving in this direction. Alongside telecommunications regulation, NIS2 and the Critical Entities Resilience Directive strengthen requirements around cybersecurity, physical resilience and operational continuity. The AI Act, European Chips Act, Digital Europe Programme and Digital Decade broaden the policy agenda towards technological capability and sovereignty.

Collectively, these initiatives reflect a transition from a policy framework focused predominantly on connectivity, competition and consumer outcomes towards one that must increasingly incorporate competitiveness, investment, security and resilience.

The proposed Digital Networks Act further reflects this development. The European Commission's 2026 proposal seeks to modernize, simplify and harmonize the European connectivity framework, support investment in advanced and resilient networks, accelerate the transition towards fiber and strengthen the competitiveness and resilience of Europe's connectivity sector. This should not, however, be read as implying that the proposal will necessarily make wholesale price regulation more investment friendly in practice; proportionality and the adjustment of ex-ante regulation as competitive conditions evolve are already embedded in the existing framework. The impact will depend on implementation and a market specific assessment especially considering the competitive pressures between mobile and fixed connectivity, which differs by country, suggests that regulation needs to be viewed in a more holistic fashion.

Importantly, the proposed framework also envisages a gradual reduction in ex-ante sector specific regulation as competitive conditions develop, while retaining targeted intervention where significant market power or enduring infrastructure bottlenecks persist. The Commission explicitly states that ex-ante obligations should be imposed only where market failure remains and competition law is insufficient to address it.

The direction is therefore towards a more proportionate framework in which the intensity of intervention increasingly reflects demonstrated market failure and the maturity of infrastructure competition, while investment and resilience become more explicit policy objectives.

At the same time, the expansion of policy objectives is inherently increasing regulatory complexity. NIS2 and CER strengthen security and resilience requirements but also create compliance and capital obligations for infrastructure owners. Cybersecurity, redundancy, backup power, alternative routing, physical protection and secure supply chains are becoming material investment requirements across the full network architecture. These requirements must be distinguished from their financing. Regulation can mandate capabilities, but the associated investment must ultimately be funded through operating cash generation, balance-sheet capacity, public support or external capital and supported by the economics of the underlying assets.

Regulation can support investment through predictability and appropriate recognition of forward-looking costs. Wholesale remedies, compliance requirements and investment obligations can also influence revenues, returns and financing capacity. The direction and magnitude of these effects must be assessed empirically rather than assumed.

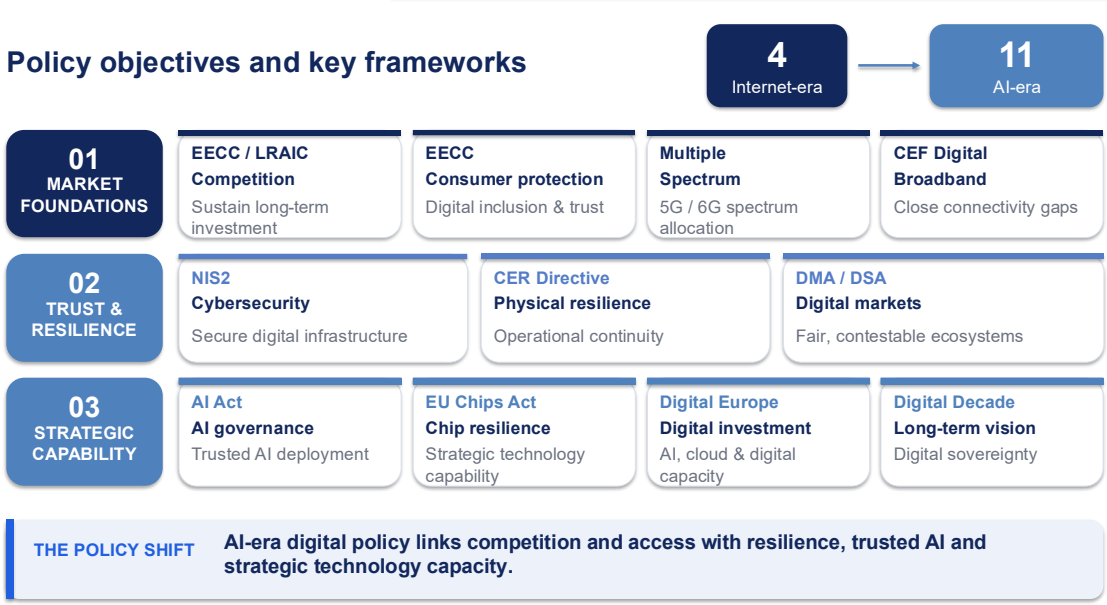
The length of the control period is itself another variable. Threat assessments now change more rapidly than traditional regulatory control periods, and the resilience measures they call for change with them. A price control that fixes allowed costs and returns for five years, on assumptions made at the start, leaves the operator carrying the

difference between what was modelled and what turns out to be needed. Shorter control periods, defined reopener conditions, or an explicit route for recognizing resilience costs as they arise would take that risk out without giving up cost orientation.

As the objectives of digital infrastructure broaden, the central policy issue increasingly becomes how these different considerations can be balanced within an overall framework.

Exhibit 14:

Digital-infrastructure policy must balance investment, resilience, competition and consumer welfare



Source: European Commission (European Electronic Communications Code, Digital Decade Policy Programme, Digital Europe Programme, NIS2 Directive, Critical Entities Resilience Directive, AI Act, European Chips Act); Draghi Report (2024); Deloitte analysis.

The European regulatory framework has historically used Significant Market Power designation and remedies including cost-oriented wholesale pricing to promote competition where infrastructure bottlenecks could otherwise restrict market entry. These remedies address market power rather than the financing of the wider digital infrastructure ecosystem. The relevance and economic impact differ across operators, geographic markets and business models. LRAIC is designed to approximate the forward-looking cost of an efficient operator rather than compensate an incumbent for its actual expenditure. Properly calibrated, this is supposed to protect consumers and access seekers from excessive pricing while preserving incentives for efficient investment. Where a cost model determines the price of a regulated wholesale product, its assumptions will influence the revenue generated by that product and where exposure is material, expected returns and investment attractiveness. At the same time, wholesale access terms influence the economics of access seekers and their ability to compete sustainably at the retail level, making the calibration of regulation

relevant to investment incentives, downstream competition and consumer outcomes simultaneously.

As network requirements evolve, forward-looking cost models should recognize the efficient costs, risks and capital requirements associated with the infrastructure operators are expected to provide. This is particularly relevant where resilience, redundancy, and security become an integral characteristic of an efficient network. The magnitude of any investment impact should be assessed empirically, not inferred from the existence of regulation alone, and the present analysis therefore does not seek to determine whether the current Danish wholesale price levels or individual SMP remedies are optimally calibrated. The relevant investment benchmark is therefore not simply whether the regulated return is positive or whether an operator remains financeable. Incremental investment must offer an expected risk-adjusted return sufficient to attract providers of debt and equity relative to alternative uses of their capital. This does not mean that LRAIC or regulation alone determines overall operator returns. Volumes, utilization, operating performance, non-regulated revenues, technology, market structure, capital structure and financing conditions all affect investment outcomes. It does mean, however, that where regulated revenues are economically material, the calibration of cost-oriented regulation forms a material part of the investment equation and cannot be considered solely as a mechanism for determining access prices.

The Nordic ecosystem investment requirement and the investment economics of regulated telecommunications networks are therefore related but analytically distinct. The EUR 120bn scenario spans compute, power, connectivity, cloud and resilience and should not be interpreted as an investment requirement caused by telecommunications regulation. Within telecommunications, regulatory calibration remains relevant where regulated revenues are material, but it is one of several factors shaping the investment environment.

Box: How LRAIC works. Long Run Average Incremental Cost is a forward-looking cost standard used to determine regulated wholesale access prices paid by downstream service providers where cost-oriented remedies apply. It models what an efficient operator would have to spend to supply the regulated wholesale product using modern equivalent assets, then sets the access price at that modelled cost plus an allowed return on the capital tied up in it. The model runs on a fixed set of inputs: the asset base and what it would cost to replace, assumed asset lives and a depreciation profile, and a weighted average cost of capital. The resulting prices are locked in for a control period of several years.

A forward-looking cost model must remain forward-looking

LRAIC is inherently forward-looking, but any model necessarily reflects assumptions about efficient network architecture, asset lives, utilization, demand, operating costs, capital expenditure, risk and the cost of capital.

Resilience changes some of those assumptions. Geographic diversity, additional routing, backup power, physical hardening, cyber protection and greater redundancy can increase the efficient cost of providing a network even where they generate little additional traffic or revenue. A network optimized primarily for unit-cost efficiency under normal operating conditions may therefore differ from one designed to maintain critical services under more demanding security and resilience scenarios.

A forward-looking cost model must reflect the forward-looking network requirement. As resilience, geographic diversity, redundancy, backup power, physical hardening and cybersecurity become integral characteristics of an efficient network, their efficient costs and associated risks need to be recognized in the regulatory framework. Otherwise, a model can remain technically forward-looking while being calibrated to a network requirement that has already changed.

Timing also matters. Telecommunications assets are long-lived, while capital market conditions, construction costs, security requirements and threat assessments can change materially during a multi-year regulatory control period. Where new requirements emerge after regulated prices and allowed returns have been established, operators may face efficient costs and risks that were not reflected when the regulatory parameters were determined.

Defined reopening mechanisms, appropriate review periods or explicit mechanisms for recognizing material new resilience requirements can reduce this mismatch without abandoning the principle of cost orientation.

The objective is not to guarantee returns or transfer ordinary commercial risk away from investors. It is to ensure that efficient forward-looking regulation remains genuinely forward-looking as the definition of an efficient and resilient network evolves.

Proportionality should follow demonstrated market power

The investment implications of regulation are related to a separate question: whether sector specific intervention remains proportionate to demonstrated market power and competitive conditions.

Europe’s telecommunications framework was developed when many markets were characterized by incumbent networks with substantial market power and limited alternative infrastructure. Liberalization, fiber deployment, infrastructure investment and technological change have subsequently altered that landscape, although not uniformly across operators, products and geographies.

Strong retail competition does not by itself demonstrate effective competition at the underlying infrastructure level. Significant market power and enduring bottlenecks can remain even where consumers have multiple retail providers. Where they do, targeted ex-ante remedies remain appropriate. Where sustainable infrastructure competition has developed, however, the proportionality of sector specific intervention should evolve accordingly subject to evidence on market conditions, access, investment incentives and competitive outcomes.

This principle is also reflected directly in the proposed Digital Networks Act. The Commission envisages a framework in which sector specific ex-ante intervention can recede as competition develops, while preserving targeted intervention where market failure persists and competition law is insufficient. The direction is therefore evolutionary rather than a presumption of deregulation and the proposal should not be assumed to in itself change the investment impact of wholesale price regulation. Regulation receding when competitive pressures rise is relatively elusive in practice. Electronic communication is ultimately governed by competition law where market conditions allow. It simultaneously preserves ex-ante intervention where market failure persists and competition law is insufficient.

The proposal also requires regulators to assess competition from a forward-looking perspective and to consider existing commercial access arrangements when determining whether ex-ante wholesale regulation remains necessary.

Sector specific regulation should therefore increasingly reflect demonstrated market conditions. Targeted remedies remain appropriate where significant market power persists; where effective and sustainable infrastructure competition has developed, greater reliance on commercial access arrangements, market monitoring and general competition law becomes proportionate. This remains a market specific assessment rather than a general presumption in favor of more or less regulation.

Norway illustrates the trade-offs involved as regulation evolves

Norway provides a relevant comparator rather than a template. In 2025, the Norwegian regulator Nkom consulted on a proposal to remove the existing national sector specific regulation of Telenor in the fixed wholesale and access markets, reflecting competitive developments and voluntary commercial wholesale arrangements. In 2026, subsequent analysis indicated that SMP regulation could be warranted in certain regional markets. This is particularly relevant as Nkom, which suggested to change the geographical scoping of SMP regulation, did so in concert with the telecommunication industry.

The change in Norway was assessed differently by market participants, illustrating that the consequences of regulatory reform should be considered across infrastructure owners, access seekers, service providers and consumers rather than inferred from the regulator's market analysis alone.

Market conditions in Denmark and Norway are not identical, and the Norwegian approach cannot therefore be transferred mechanically. The Norwegian experience illustrates both the possibility of changing regulatory intensity as markets evolve and the importance of assessing the impact of such changes on competition, investment and market participation over time.

Denmark, an illustration of the trade-off

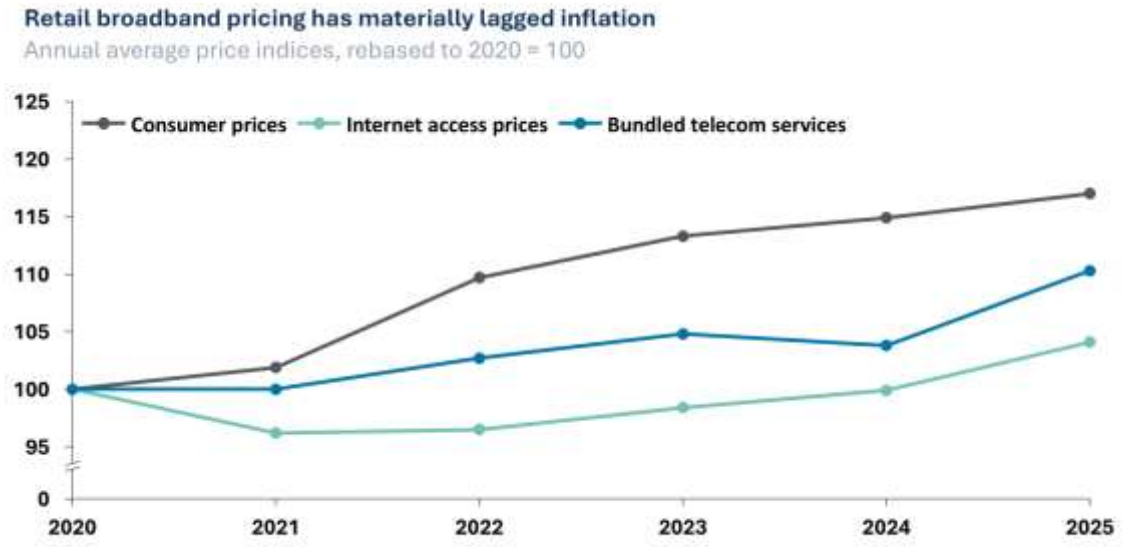
Denmark provides a useful illustration because it combines many of the outcomes European telecommunications policy originally sought to achieve.

The country has extensive high-capacity connectivity, substantial fiber deployment and strong retail competition. In 2025, 97.7% of Danish households were covered by very high-capacity networks, 90.3% by FTTP and 100% by basic 5G. More than 36% of fixed-broadband subscriptions provided at least 1 Gbit/s.

Consumer outcomes have also been strong. Between 2020 and 2025, general Danish consumer prices increased by approximately 17.0%, while the official price index for internet-access services increased by only 4.1%. In real terms, connectivity has therefore become cheaper relative to the wider consumption basket, although retail price indices do not by themselves establish operator profitability or realized ARPU.

Exhibit 15:

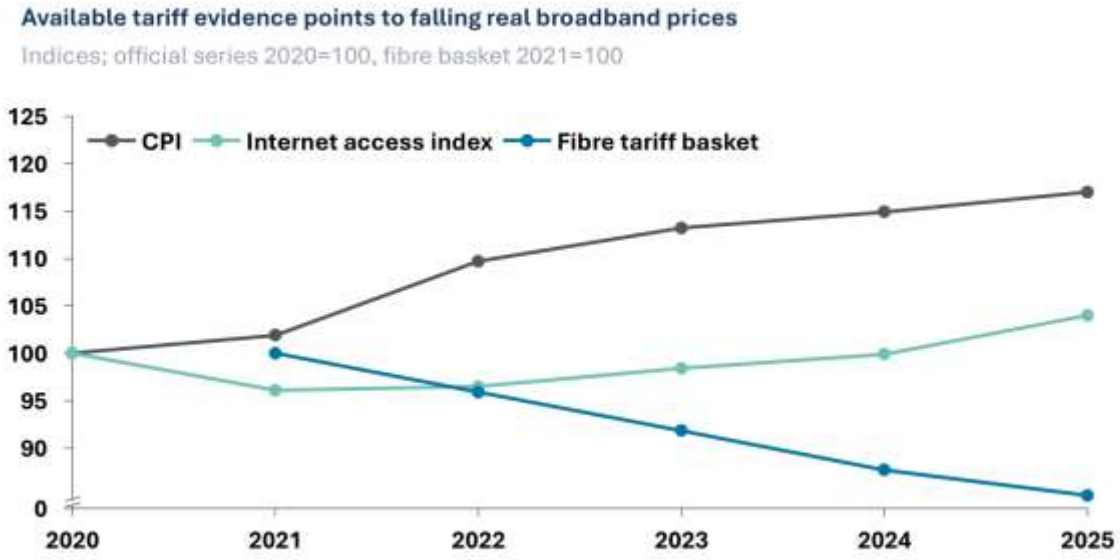
In Denmark retail broadband pricing has materially lagged general inflation



Source: Statistics Denmark PRIS111. Internet access is the closest official retail broadband price index; it is not split by speed tier.

Exhibit 16:

Public evidence shows falling real tariffs, but cannot establish speed-specific ARPU



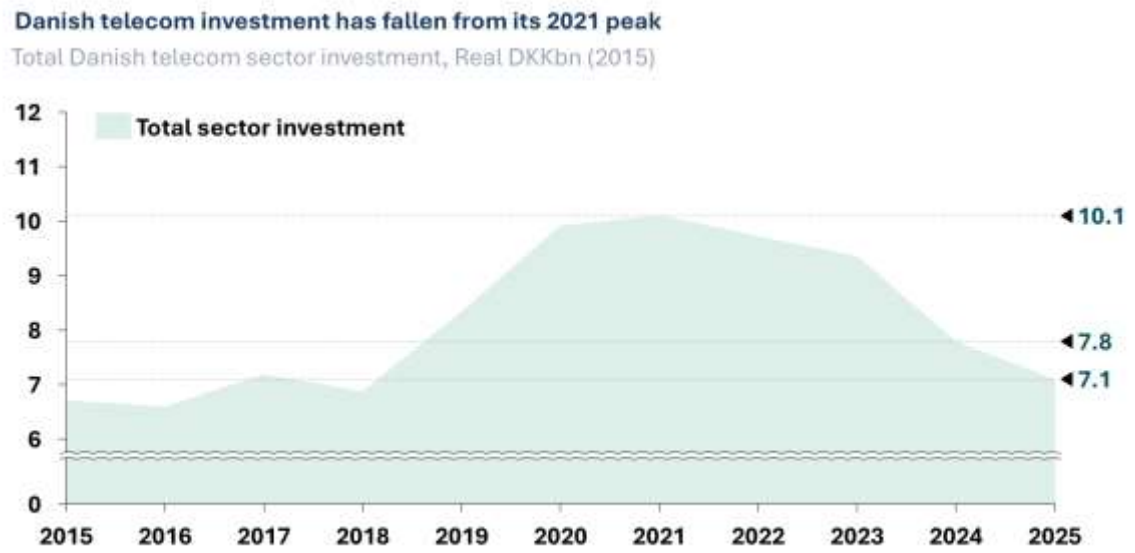
Note: No public historical series isolates 1 Gbit/s or 100/200 Mbit/s ARPU. Fiber basket covers advertised prices across tiers.
Source: Statistics Denmark PRIS111; Tefficient fiber-pricing benchmarks 2021–2025. Tefficient index uses the published ~12% decline for 2021–2024 and 3.1% decline in 2025. It covers advertised fiber prices across tiers, not realized ARPU.

At the same time, strong connectivity and consumer outcomes do not remove the investment challenge. Telecommunications remain highly capital intensive, network renewal and resilience requirements are increasing, and providers of capital compare expected returns across infrastructure sectors and geographies.

The Danish telecommunications industry invested DKK 7.1bn in 2025, down from DKK 7.8bn in 2024 and DKK 10.1bn at the 2021 peak, in real terms (fixed at 2015 prices). Part of the decline reflects the maturation of the major fiber and 5G roll-outs, and some easing after a build-out peak is to be expected. The size and duration of the decline nevertheless warrant concern as requirements are broadening towards network renewal, security and resilience just as the earnings that would fund them are shrinking. Sustained underinvestment in connectivity will weaken Denmark's wider digital infrastructure ecosystem and its ability to attract the next wave of digital investment. This decline in investments has coincided with a decrease in real EBIT from the telecommunications sector, most recently a decline of ~18% in 2025 according to Dansk Erhverv.

Exhibit 17:

Danish telecom investment has declined from its 2021 peak as future network requirements increase



Source: Danish Agency for Digital Government, Economic Key Figures for the Telecom Sector 2025. 2015–2025 actuals; real prices fixed at 2015 levels.

The Danish wholesale market also demonstrates that SMP based regulation is not solely an incumbent issue. SMP remedies can apply to both historically incumbent and alternative infrastructure providers, depending on the competitive conditions identified in the relevant markets. The economic significance of regulated wholesale revenues therefore differs across providers. Where regulated wholesale revenues represent a material share of network economics, regulatory calibration affects cash generation, expected returns, and investment attractiveness.

Ensuring that cost-oriented regulation recognizes efficient forward-looking costs, risks and capital requirements is therefore an investment issue as well as a pricing issue. Where regulated wholesale prices do not adequately reflect these factors, adjustment, potentially including higher wholesale price levels, can improve network economics and form an important part of restoring sustainable investment conditions. The magnitude of this effect should nevertheless be assessed empirically rather than inferred from wholesale price differences alone. Network architecture, utilization, customer mix, scale, commercial strategy, technology, substitution, and financing structures can also create different economic outcomes. In particular, competition between fixed and mobile technologies can constrain the wholesale prices that network owners are able to realize in practice even where regulated ceilings provide greater headroom.

The issue is therefore not simply whether current operators remain capable of financing existing networks. As infrastructure requirements expand, the relevant question is

whether expected risk-adjusted returns are sufficient to attract incremental capital relative to competing infrastructure opportunities.

Denmark consequently illustrates both sides of the regulatory transition. Cost-oriented regulation must remain calibrated to the forward-looking economics of the infrastructure society requires, while the continued development of infrastructure competition supports a progressively more proportionate application of sector specific regulation. Where sustainable competition has developed sufficiently, commercial access, market monitoring, and general competition law should assume a greater role.

Returns increasingly compete for capital

The Danish case reflects the broader European investment debate highlighted by the Draghi report. European network operators have experienced declining returns on capital and moderate shareholder returns relative to global peers. In 2024, European telecom operators invested approximately EUR 65bn, equivalent to around EUR 118 per capita, compared with EUR 217 in the United States, EUR 173 in Japan and EUR 151 in South Korea. European telecom investment declined by approximately 2% in 2024 following a similar decline in 2023.

Return on capital is therefore central to the distinction between financeable and investable. Connect Europe reports aggregate ROCE among its members declining from 9.1% in 2017 to 5.1% in 2021 before recovering to 6.7% in 2024, compared with an estimated industry WACC of approximately 8%.

The European Commission notes that European telecommunications equities have underperformed global telecommunications indices and broader European equity markets over the past decade and that European operators trade at comparatively low EV/EBITDA multiples. For comparison, recent European Commission data center analysis cites market benchmarks of approximately 7–9% IRR for core infrastructure and 10–13% for core-plus infrastructure, with higher expected returns for deployment, power and commercial risk. This comparison illustrates competition for capital; it does not establish the return requirement for every telecom asset.

Scale and consolidation are becoming part of the investment equation

Europe's mobile network markets also illustrate that investment capacity can be influenced by scale, market structure and infrastructure sharing, not only by access regulation. Denmark provides an established example: network sharing between Telenor and what was then Telia reduced the number of physical radio access networks from four to three while the companies continued to compete independently at the service level. Greater scale can improve network utilization, reduce unit costs, strengthen cash generation and capital access, and thereby increase capacity to finance network renewal, security and resilience.

These assessments are also developing as most markets have historically operated with four competing national operators, a structure that European regulators maintained as the competitive benchmark following liberalization. Recent shifts in EU telecommunications regulation, however, are beginning to accommodate consolidation pressures driven by substantial capital requirements for network renewal and resilience investment. The proposed Digital Networks Act and related regulatory guidance increasingly recognize that four-player markets may not remain economically sustainable where infrastructure requirements continuously extend. This is evident from the Commission's draft merger guidelines from spring 2026 that highlight the need for scale, investment and resilience in concert. This regulatory evolution reflects a pragmatic reassessment under which consolidation from four to three players, or further concentration, may be permissible where general competition law remains sufficient to protect consumers and access seekers, and where the resulting operators can sustain the investment and innovation required for critical digital infrastructure. The Orange-MásMóvil merger in Spain, conditionally approved by the European Commission in February 2024 and completed in March 2024, exemplifies this regulatory evolution. The EUR 19bn transaction created a 50:50 joint venture (MásOrange) that became Spain's largest telecom operator, with the Commission imposing conditions including spectrum divestiture and optional roaming to preserve competition, a model that permits consolidation while maintaining safeguards.

The UK provides a more recent case. Vodafone UK and Three UK merged in May 2025, reducing the number of national mobile networks from four to three. The Competition and Markets Authority cleared the deal on the basis of a legally binding commitment to invest GBP 11bn in the combined network over eight years, together with three-year caps on selected retail tariffs and pre-determined wholesale terms for virtual operators. A one-year review by Frontier Economics, commissioned by Vodafone and published in July 2026, reports a rise in the average 5G download speeds on the Vodafone network and a rise in 5G population coverage including significant whitespace coverage. The case shows how merger control can make investment an explicit and enforceable condition of consolidation.

Four policy considerations

Europe's digital-infrastructure framework now needs to support a broader set of objectives than connectivity and affordability alone. Competition and consumer protection remain essential, but investment, resilience and security have become increasingly important to the functioning and competitiveness of European economies.

The estimated Nordic investment requirement of around EUR 120bn for 2026–2030 spans a broad ecosystem of compute, data centers, power, cloud, connectivity and resilience. The present memo does not seek to prescribe a comprehensive policy framework for the entire ecosystem, yet drawing on the Danish telecommunications case and connectivity analysis, the following considerations provide direction for the connectivity domain while highlighting selected broader principles.

Across the ecosystem, the ability to mobilize investments will depend on demand, scale, utilization, technology, access to power, permitting, market structure, financing and returns with the relative importance differing materially by infrastructure layer.

Timing matters as much as the amount. Much of the investment will need to be committed over the next three to four years if the Nordics are to compete for globally mobile infrastructure investments and deliver the required infrastructure by 2030. Slower mobilization risks investments being allocated to competing regions and could leave parts of the Nordic infrastructure less resilient or less capable than future requirements demand.

For connectivity, the analysis points to four policy considerations:

- **First, keep infrastructure investable.** Telecommunications and other digital infrastructure compete for global capital. Predictable frameworks, efficient deployment conditions, predictable spectrum availability and sustainable risk-adjusted returns are therefore fundamental to attract continued long-term investments.

- **Second, enable sufficient scale.** Scale and efficient market structures can strengthen investment capacity through higher utilization, lower unit costs, stronger cash generation and improved access to capital. Merger control should remain evidence based and protect effective competition, while giving appropriate weight to substantiated efficiencies and dynamic effects on investment, innovation, resilience and competitiveness.

- **Third, fund resilience explicitly.** Where society requires security and resilience capabilities that generate substantial societal value but insufficient incremental revenues, their financing should be addressed directly. Depending on the capability, this may include recognition within regulated costs where applicable, industry or user-based mechanisms, public-private arrangements or direct public support.

- **Fourth, modernize economic regulation.** Cost-oriented regulation should reflect efficient forward-looking costs, realistic utilization, risks and investment requirements, including network renewal, security, and resilience. Where regulated wholesale prices do not adequately reflect these factors, adjustment, potentially including higher wholesale prices – can form part of restoring sustainable investment conditions. At the same time, wholesale terms materially affect access seekers' ability to compete and invest, and any adjustment must therefore preserve sustainable downstream competition. SMP remedies should remain proportionate to demonstrated market power and evolve with competitive conditions, including infrastructure competition and fixed-mobile substitution.

Scale and market structure are increasingly important components of the investment equation. Greater scale can improve network utilization, reduce unit costs, strengthen cash generation and broaden access to capital, supporting operators' capacity to finance continued investment in networks, security and resilience. These components are, in fact, largely dynamic and interdependent with one driving the other and reinforcing each other. Competition and merger frameworks interplay and impact long-term investment, innovation and resilience alongside competition and consumer outcomes. Scale is complementary to rather than a substitute for appropriate economic regulation: both market structure and the calibration of regulated wholesale prices can materially influence investment economics through different mechanisms.

Looking Ahead

Europe and the Nordics enter the next era of digital infrastructure from a position of considerable strength. Extensive connectivity, highly digital economies, and a strong record of attracting private capital provide important advantages. The challenge now is to convert those advantages into leadership in the infrastructure on which the next phase of the digital economy will depend.

Digital infrastructure is changing in both scope and strategic importance. Connectivity remains foundational but increasingly forms part of an interdependent system spanning compute, power, security and resilience. At the same time, telecommunications networks themselves are expected to perform a broader role: providing not only capacity and coverage, but the robustness, redundancy and security required by societies whose dependence on digital infrastructure continues to deepen.

This changes the investment challenge. Some of the infrastructure required for the next era will attract capital through strong commercial demand. Other investments, particularly in resilience, redundancy and security, create substantial societal value without necessarily generating corresponding incremental revenues. Mobilizing the required capital will therefore depend both on attractive investment opportunities and on viable mechanisms for financing capabilities that markets may not provide independently.

For the Nordics, this creates both an opportunity and a test. The region combines advanced digital economies, access to renewable energy, strong institutions, and established connectivity with a track record of attracting international infrastructure investment. But historical leadership does not guarantee future leadership. Telecommunications, data centers, energy and other infrastructure increasingly compete for global capital, and investment will flow towards markets offering attractive risk-adjusted returns, predictable frameworks and the ability to deploy capital efficiently.

Denmark illustrates the implications particularly clearly. Extensive connectivity, strong competition, and affordable consumer outcomes demonstrate the achievements of the framework developed over previous decades. The next phase requires these achievements to be preserved while networks are renewed, the transition to future proof infrastructure is completed, and resilience and security requirements increase.

This places investment incentives alongside competition and consumer protection as an increasingly important policy consideration. Where cost-oriented regulation applies to a material part of network economics, its calibration influences cash generation, expected returns and investment attractiveness. As infrastructure requirements evolve, forward-looking regulation must evolve with them, recognizing the efficient costs, risks

and capital requirements associated with the networks society expects operators to provide.

No single lever will determine whether the required investment takes place. Demand, scale, utilization, technology, market structure, financing conditions and regulation all shape investment economics, and their relevance differs across infrastructure providers and business models. Where cost-oriented regulation materially impacts network economics, it should reflect efficient forward-looking costs and risks. Resilience financing and market power regulation should also remain analytically distinct. Where society requires security and resilience capabilities with a value that cannot be recovered commercially, financing mechanisms need to be explicit. SMP regulation, by contrast, should address demonstrated market power, irrespective of ownership model or historical incumbent status. The two issues can interact but are different by nature.

The same principle applies more broadly to resilience. Governments and authorities have an increasingly important role in defining the capabilities expected of critical digital infrastructure, while operators and investors determine how those capabilities can be delivered efficiently. Where societal requirements extend beyond what commercial revenues can support, the associated financing mechanism needs to be made explicit rather than left implicitly with infrastructure owners.

The strategic task for the Nordics is therefore to move from connectivity leadership to infrastructure leadership: preserving the competition, affordability and digital adoption achieved over the past decades while building the resilience, investment capacity and wider digital ecosystem required for the decades ahead.

Europe successfully built the infrastructure of the digital economy. The next decade will determine whether it can build and attract the capital required to sustain the secure, resilient and investable infrastructure of the AI economy. The Nordics are well placed for the next era, but whether they avoid an investment gap will depend on investability. Capital is global, mobile and disciplined. It will come to the region where expected returns reflect risk and where public requirements are backed by credible financing; where those conditions are missing, it will go elsewhere. The next Nordic digital model must therefore make resilience, network renewal, capacity expansion and technological upgrading more investable than they are today.