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Investment perspectives in the Danish telecommunications industry

February 2026

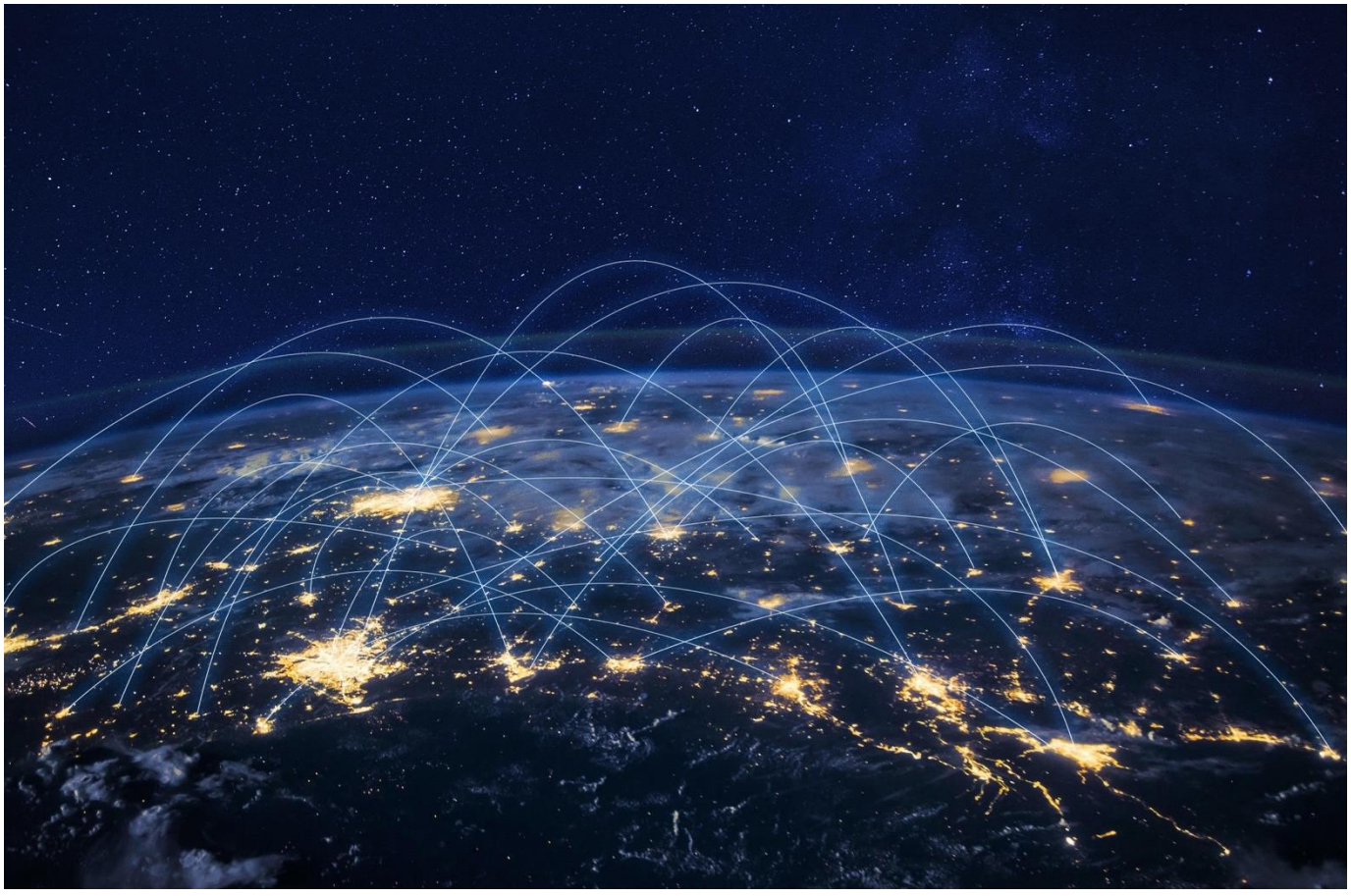
About this report

This report was commissioned by the Danish Agency for Digital Government (Digitaliseringsstyrelsen). The agency has mandated Deloitte to examine the current and future investment needs of the Danish telecommunications industry, as part of the implementation of the June 2025 Telecom Agreement aimed at securing a robust and future-proof digital infrastructure across Denmark.

The purpose of the analysis is to provide an evidence-based assessment of the economic framework conditions for telecom investment, including an evaluation of the industry's profitability, capacity to finance future upgrades, and the regulatory and market dynamics that shape long-term investment incentives. The study places particular emphasis on understanding how different forms of market structure and consolidation may influence investment levels, competition, and consumer outcomes.

The report is based on a combination of quantitative data analysis, stakeholder interviews, expert consultations, and international comparisons. It examines investment requirements across the telecommunications industry (primarily in the fixed and mobile networks segments) and assesses the industry's financial performance. The study also looks at possible consolidation pathways in the industry and their possible implications for the Danish telecom market, drawing on regulatory frameworks, merger precedents, and experience from foreign markets.

The findings presented here aim to support the Danish Agency for Digital Government in developing a deeper understanding of the telecommunication industry's investment landscape and the conditions required to ensure continued innovation, resilience, and high-quality connectivity for consumers and businesses across Denmark.



Executive summary

Market structure and long-term investment have enabled Denmark's digital leadership

The Danish telecommunications market is characterised by regional monopolies in fixed-network wholesale access, a triopoly[1] in mobile network infrastructure, and strong competition at the retail level (particularly in mobile services). This competitive retail environment has contributed to some of the lowest consumer prices in the developed world when adjusted for purchasing power. Sustained investment over the past decade has delivered near-universal high-capacity fixed and mobile connectivity, positioning Denmark among the leading digital economies. This performance reflects a combination of early technology adoption, supportive framework conditions, and a market structure (e.g., the role of local utilities, regulatory framework) that has prioritised infrastructure rollout and service availability over short-term financial returns.

Investment patterns reflect normal cyclicality rather than structural decline

Investment in Danish telecommunications follows well-established cyclical patterns typical of asset-intensive network industries. The recent moderation in capital expenditure coincides with the completion of major fibre and 5G rollout phases and should not be interpreted as a weakening of investment appetite or sector fundamentals. Historical evidence suggests that periods of intense deployment are typically followed by phases of consolidation and optimisation before the next technology and upgrade cycle begins.

Financial returns are modest, reflecting capital intensity and investment timing, with competitive pressure contributing to margin compression

Financial performance in the Danish telecommunications industry remains modest when benchmarked across industries and internationally, reflecting the sector's high capital intensity, long asset lifetimes, Denmark's particularly competitive market and the country's position in the investment cycle. While demand for connectivity services is stable, strong competitive dynamics limit short-term pricing flexibility and contribute to compressed margins during periods of elevated capital expenditure. As a result, observed return metrics should be interpreted as the outcome of structural and cyclical factors interacting in a highly competitive market, rather than as evidence of persistent inefficiency or weakened sector fundamentals.

Regulatory requirements strongly influence telecom investment decisions, while their direct cost impact appears limited in aggregate

Investment conditions in Danish telecommunications are partly shaped by the regulatory environment, which influences the scope, timing, and coordination of investment decisions in a sector designated as critical infrastructure. While regulatory and resilience requirements can add to capital and operating expenditure, their aggregate cost impact appears limited when viewed against overall investment levels. The primary influence of regulation therefore lies in predictability and implementation clarity, rather than in direct financial burden.

Future telecom investment is likely to remain structurally high, with scenario outcomes pointing to limited upside relative to the last rollout cycle

Looking ahead to 2040, telecommunications investment in Denmark is expected to remain cyclical, with increments driven by system modernisation, resilience requirements, and successive technology refresh cycles rather than by large-scale network expansion. Scenario indicates that non-discretionary drivers (particularly cybersecurity, resilience, and network upgrades) are the most robust sources of future investment pressure. By contrast, a prolonged period of subdued investment appears unlikely given regulatory obligations, technology evolution, and the sector's critical role in the wider economy. A probability weighted scenario estimates cumulative investment between 2025 and 2040 to the tune of DKK 155 billion (7% above baseline assumptions).

[1] There are three radio access networks (RAN) in Denmark, and four mobile network operators. One of the networks is a joint venture between two operators.

Operators' financial positions are unlikely to be a binding constraint on future investment, but they do shape timing and flexibility

Despite elevated leverage and modest short-term returns, the current financial position of Danish telecom operators does not, in itself, appear likely to be a binding constraint on future investment. Recent easing in capital intensity and improving interest coverage following the peak rollout phase have increased financial headroom relative to the early 2020s. While high leverage limits flexibility and heightens sensitivity to shocks, ongoing cash generation and the non-discretionary nature of key future investments suggest that financing capacity is more likely to shape the pace and structure of investment rather than its overall feasibility.

Evidence on consolidation and investment outcomes remains mixed

While market consolidation is often cited as a potential response to modest returns and limited scale, the analysis does not provide evidence that consolidation, in itself, leads to higher investment levels. A review of international case studies in duopoly market structures indicates potential adverse effects on consumer prices and network quality, without a consistent improvement in investment outcomes. The findings therefore suggest that consolidation is neither a necessary nor a sufficient condition for sustaining investment, and that stable and predictable framework conditions and effective investment execution play a more decisive role than market structure alone.

Sammenfatning

Danmarks digitale styrkeposition er et resultat af en gunstig markedsstruktur og langsigtede investeringer

Det danske telekommunikationsmarked er kendetegnet ved regionale monopoler inden for engrosadgang til fastnet, et triopol i mobilnetinfrastrukturen og stærk konkurrence på detailhandelsniveau (især inden for mobiltjenester). Det konkurrenceprægede detailmarked har bidraget til nogle af de laveste forbrugerpriser i den vestlige verden, når der justeres for købekraft. Vedvarende investeringer gennem det seneste årti har leveret stort set landsdækkende adgang til højkapacitets fast- og mobilnetforbindelser, hvilket placerer Danmark blandt de førende digitale økonomier. Denne status afspejler en kombination af tidlig teknologiadoption, fordelagtige rammebetingelser og et veludviklet marked, hvor markedsaktørerne har prioriteret udrulning af infrastruktur og tilgængelighed af tjenester over kortsigtede økonomiske afkast.

Investeringsmønstrene er cykliske og ikke udtryk for en strukturel nedgang

Investeringer i dansk telekommunikation følger veletablerede cykliske mønstre, som er typiske for kapitaltunge netværksindustrier. Den nylige nedgang i kapitaludgifterne falder sammen med afslutningen på de store udrulningsfaser af fibernet og 5G og bør ikke tolkes som tegn på en underliggende svækkelse af hverken investeringslysten eller branchens grundlæggende forhold. Historien viser, at perioder med intensiv implementering af nye teknologier typisk efterfølges af faser med konsolidering og optimering, før næste teknologi- og opgraderingscyklus begynder.

Afkastniveauet er moderat som følge af kapitalintensive investeringer og timingen heraf, mens konkurrenceintensiteten skaber et pres på indtjeningen

Den finansielle performance i den danske telekommunikationsbranche er fortsat moderat; både sammenlignet med andre brancher og internationalt. Dette kan tilskrives branchens høje kapitalintensitet og aktivernes lange levetid samt Danmarks særligt konkurrenceprægede marked og placering i investeringscyklussen. Selvom efterspørgslen efter netværkstjenester er stabil, begrænser den intense konkurrence på markedet den kortsigtede prisfleksibilitet og bidrager til pres på marginerne i perioder med høje investeringer. De observerede afkastmål bør derfor ses som et resultat af samspillet mellem strukturelle og konjunkturmæssige forhold i et stærkt konkurrenceudsat marked snarere end som udtryk for vedvarende ineffektivitet eller svækkede underliggende forhold i branchen.

Regulering har stor betydning for investeringsbeslutningerne i branchen, men kun en begrænset direkte effekt på omkostningerne

Investeringsvilkårene i den danske telekommunikationsbranche, herunder timing og koordinering af investeringsbeslutninger, er delvist formet af det regulatoriske landskab grundet branchens status som kritisk infrastruktur. Selvom både regulatoriske krav og krav til robusthed kan øge anlægs- og driftsomkostningerne, synes den samlede omkostningsmæssige betydning af regulering at være begrænset set i forhold til det samlede investeringsniveau. Regulering medfører i højere grad forudsigelighed og klarhed i implementeringen snarere end en direkte økonomisk belastning.

Investeringer i telekommunikation forventes at forblive på et strukturelt højt niveau, men med et begrænset løft i forhold til den seneste investeringsbølge

Frem mod 2040 forventes telekommunikationsinvesteringerne i Danmark at forblive cykliske med stigninger drevet af systemmodernisering, krav til robusthed og successive teknologiopdateringscyklusser frem for storskala-netværksudvidelse. Scenarieanalyser indikerer, at strukturelt betingede drivkræfter (især cybersikkerhed, resiliens og netværksopgraderinger) er de væsentligste kilder til et fremtidigt investeringspres. Omvendt virker en langvarig periode med afdæmpede investeringer usandsynligt i lyset af regulatoriske forpligtelser, den teknologiske udvikling og branchens kritiske rolle i den bredere samfundsøkonomi. Et sandsynlighedsvægtet scenarie estimerer den kumulative investering mellem 2025 og 2040 til at være omkring 155 mia. kr. (7 % over udgangspunktet).

Operatørernes økonomiske situation forventes ikke at være en begrænsning for fremtidige investeringer, men den påvirker timing og fleksibilitet

På trods af høj gearing og beskedne kortsigtede afkast synes danske teleoperatørers nuværende økonomiske situation ikke i sig selv at udgøre en bindende begrænsning for fremtidige investeringer. En nylig aftagende kapitalintensitet og forbedret rentedækning efter afslutningen på den seneste udrulningsfase har øget det finansielle råderum sammenlignet med 2020'erne. Selvom den høje gældsætning reducerer fleksibiliteten og øger sårbarheden over for chok, peger den løbende pengestrømsgenerering og den ikke-valgfrie karakter af de vigtigste fremtidige investeringer på, at finansieringskapaciteten i højere grad vil påvirke tempoet og tilrettelæggelsen af investeringerne end den overordnede gennemførlighed.

Der er ikke et entydigt svar på, hvordan konsolidering i branchen påvirker investeringsniveauet

Selvom markedskonsolidering ofte er nævnt som en måde at øge afkast og understøtte skalering i branchen, finder analysen ikke dokumentation for, at konsolidering i sig selv fører til højere investeringsniveauer. En gennemgang af internationale casestudier i duopol-markedsstrukturer indikerer potentielle negative effekter på forbrugerpriser og netværkskvalitet uden en konsekvent forbedring af investeringerne. På den baggrund konkluderer analysen, at konsolidering hverken er en nødvendig eller tilstrækkelig betingelse for at opretholde investeringsniveauet, og at stabile og forudsigelige rammebetingelser samt effektiv investeringsudførelse spiller en mere afgørende rolle end markedsstrukturen alene.

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1. Introduction

1.1. Background and context

Denmark has set and reaffirmed ambitious national objectives for digital infrastructure leadership.

Denmark has long pursued ambitious objectives for the development of its digital infrastructure, with the aim of ensuring high-quality connectivity for households, businesses, and public services across the country. These objectives are reflected in successive telecom agreements, most recently the June 2025 Telecom Agreement, which reaffirms Denmark's ambition to remain among Europe's leading countries in terms of digital infrastructure deployment and performance.

Structural, technological, and geopolitical shifts are increasing pressure on long-term telecom investment capacity.

At the same time, the telecommunications sector is undergoing significant structural change. Rapid growth in data demand, evolving security and resilience requirements, technological transitions (e.g. fibre expansion, 5G and beyond, cloudification), and sustainability expectations are placing new demands on networks and operators. These developments are occurring in a context of sustained competitive pressure, rising geopolitical uncertainty, and changing financial conditions, raising questions about the sector's capacity to deliver the required level of long-term investment.

This study assesses investment needs and market conditions shaping Denmark's telecom investment outlook.

Against this backdrop, The Danish Agency for Digital Government has commissioned this analysis to provide a structured assessment of investment needs and framework conditions in the Danish telecommunications industry. The study examines investment requirements across key infrastructure domains, and analyses how market structure, competition, and potential consolidation pathways may influence investment incentives and outcomes. Drawing on quantitative data, stakeholder input, and international experience, the study highlights key trade-offs and considerations relevant to the design of a telecom market that can support sustained investment, innovation, and high-quality services for consumers and businesses.

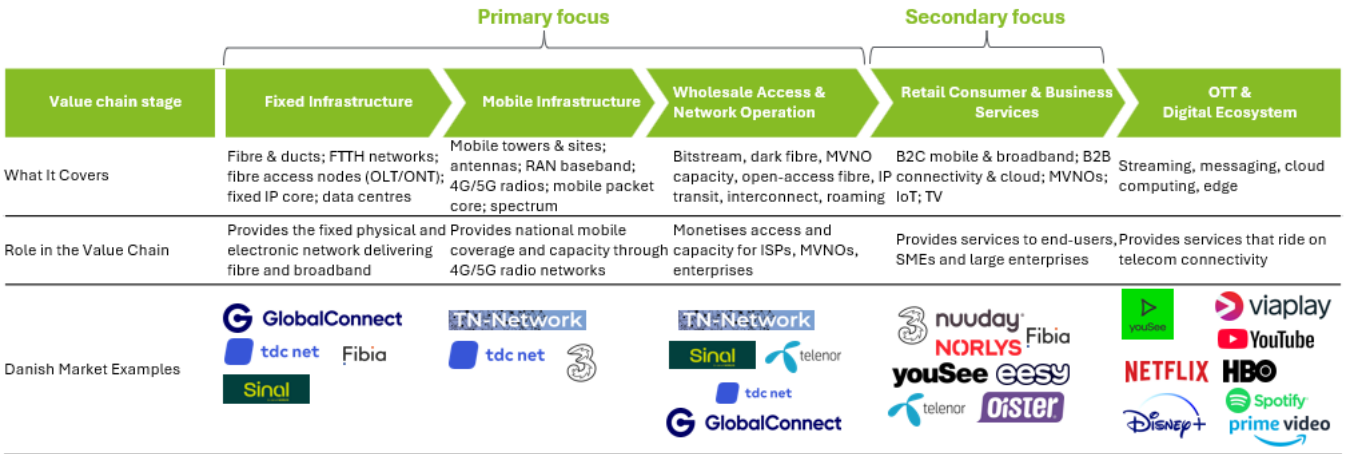
1.2. Scope of the report

1.2.1. Value chain considerations

The analysis focuses on infrastructure operators

With a focus on industry investment dynamics, this report primarily examines operators that own and operate fixed and mobile telecom infrastructure. Retail activities, whether B2B or B2C, are not analysed in detail but contribute to shape perspectives on industry revenue trends, profitability and associated competitive dynamics. Over-the-top (OTT) services and the broader digital ecosystem enabled by telecom networks fall outside the scope of the analysis. Nevertheless, these actors influence industry conditions by capturing value from network infrastructure to the extent that Danish internet service providers (ISPs) such as YouSee are developing their own digital services offering alongside connectivity.

Figure 1: The telecommunications value chain



1.2.2. Statistical and data scoping

The report uses a mix of data from public statistical bureaus, financial entities, and specific industry data provided by the Agency for Digital Government.

For the purposes of this analysis, the Danish telecommunications industry is defined in accordance with NACE code J61 (Telecommunications). This classification covers activities related to the operation, maintenance, and provision of access to infrastructure enabling the transmission of voice, data, text, and other media through mobile, fixed line, or hybrid telecom networks.

Data come from four primary sources. Firstly, the Agency for Digital Government provided annualised industry data covering revenues, capital expenditures, and industry performance data (such as data traffic or telephone minutes). Secondly, aggregated industry data and national data was sourced from Statistics Denmark and Eurostat. Thirdly, financial data was sourced from a sample of annual reports, national aggregators, and financial databases. Lastly, qualitative insight, as well anonymised quantitative anchors were sourced from 40+ interviews spanning industry participants, regulators, industry associations and academics. Data sources and interviews are detailed in the appendix.

Financial analysis rests on either aggregated industry data or a sample of key players.

Aggregated industry data comprise the complete industry data collected and published by Statistics Denmark for the entire Danish market (NACE J61). It represents the full population of firms operating in the industry, providing a broad overview. In addition, we also analyse a targeted sample of selected key providers within the industry. This sample uses financial disclosures and is curated to enable a more focused examination of market dynamics, competitive positioning, and performance indicators that are comparable to international markets.

2. The Danish telecommunication market

Denmark's telecommunications infrastructure tops international rankings and serves a population consuming over 17,000 PB of data per year

The Danish telecommunications industry represents an annual revenue of DKK 45.6 billion. It is dominated by four players operating on three networks in the mobile market. In the fixed market, multiple players operate, often within regional boundaries and two large actors dominate the national arena. As in many European markets, strategic transactions (mergers, carveouts, investment sharing) have contributed to shape the industry in the past decade. The supply of telecom services is characterised by very high coverage rates and connection speeds, with Denmark ranking among the top performers internationally (e.g., 98% technology-agnostic gigabit coverage). These supply-side outcomes have supported a shift in demand from traditional voice services to data-intensive usage patterns.

2.1. Overview of the Telecommunications market

2.1.1. Telecom operators in the Danish market

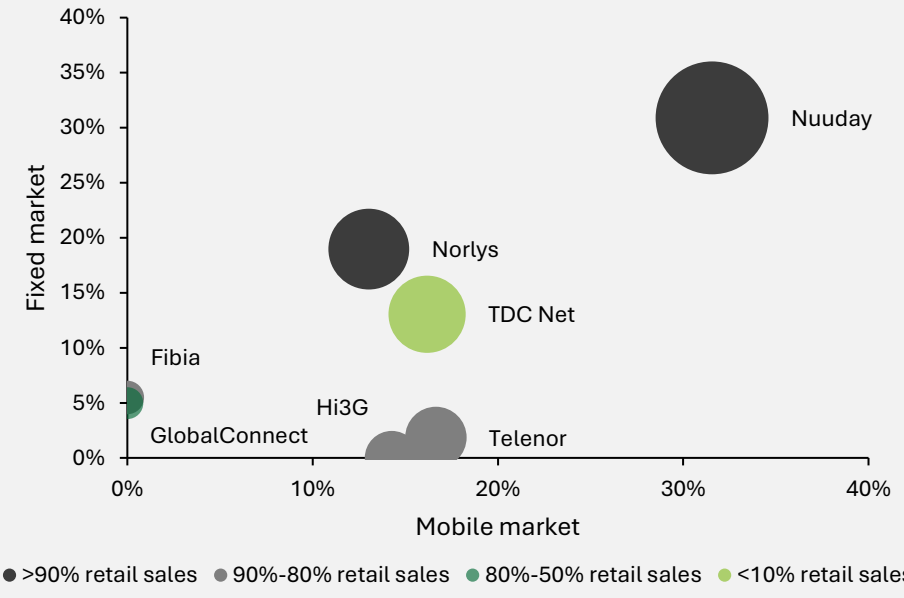
The Danish telecommunications industry generated DKK 45.6 billion in revenue, in 2024.

The Danish telecommunications sector is typically analysed along two access domains (mobile and fixed) which together underpin the provision of connectivity and related services, including voice, messaging, television distribution, and data transmission.

Nuuday enjoys a clear leadership on both mobile and fix markets, with a heavy focus on retail sales. After acquiring Telia in 2024, Norlys penetrated the mobile market and became Denmark's second largest telco operator, taking over TDC Net, effectively a network company since the creation of Nuuday in 2019. The rest of the leading market participants tend to specialise on either fix or mobile (cf. Figure 2 and Table 1).

Nuuday dominates telecommunications retails sales

Figure 2: Leading Danish Telecom operators per market share



Source: Deloitte estimates
Note: Bubble sizes indicate total wholesale and retail revenue across mobile and fix offerings (2024 data). Norlys' revenue includes Telia's as reported in 2024. TN Network's revenue is allocated equally to Norlys and Hi3G.

Table 1: Overview of key Danish telecom actors

Metric	nuuday	NORLYS	tdc net	telenor	3	Fibia	GlobalConnect
Revenue (DKK Million)[4]	14,560	14,289	6,455	3,786	2,790	1,276	1,190
Mobile Market Share[2]	30-40%	10-20%	10-20%	10-20%	10-20%	0%	0%
Fixed Market Share[3]	30-40%	20-30%	10-20%	1-10%	0%	1-10%	1-10%
Mother Entity[4]	TDC Holding A/S, Denmark (100%)	Norlys a.m.b.a., Denmark (100%)	TDC Holding A/S, Denmark (100%)	Telenor ASA, Norway (100%)	CK Hutchison Holdings, Hong Kong (60%); Investor AB, Sweden (40%)	NRGI holding A/S, Denmark (35%); Andel Holding, Denmark (65%)	GlobalConnect Group Holding AB, Sweden (100%)
Key Brands	YouSee, Telmore, Hiper, eesy, relatel and TDC Erhverv	Norlys Mobil, Call me, Mit Tele	TDC Erhverv	CBB Mobil	Oister, 3 Business	Fibia, Waoo	GlobalConnect
Infrastructure overview	Service provider delivering mobile and fixed-line services using the network provided by TDC Net	Service and wholesale provider of fixed and mobile services. Delivers through the TN-Network co-owned with Telenor	Owns Denmark's most extensive fixed and mobile network infrastructure	Service provider delivering through the TN-Network, co-owned with Norlys	Service and wholesale provider, manages its own mobile network	Large fibre infrastructure operator, servicing across Denmark	Key provider of fibre-optic, fixed-line infrastructure, and data centres
Commercial model	Comprehensive retail service provider offering mobile, fixed-line, TV, and additional telecom solutions	Integrated utility and telecom provider delivering fixed, mobile, and energy services across retail and wholesale markets	Wholesale B2B provider of fixed-line and mobile network infrastructure to telecom operators	Integrated retail and wholesale provider of mobile and fixed telecom services	Retail and wholesale provider specialising in mobile services	Regional fibre network operator providing both retail and wholesale telecom services	Wholesale and retail service provider delivering connectivity solutions across Denmark, Sweden, and the wider Nordic region

2.1.2. The Danish telecommunications infrastructure

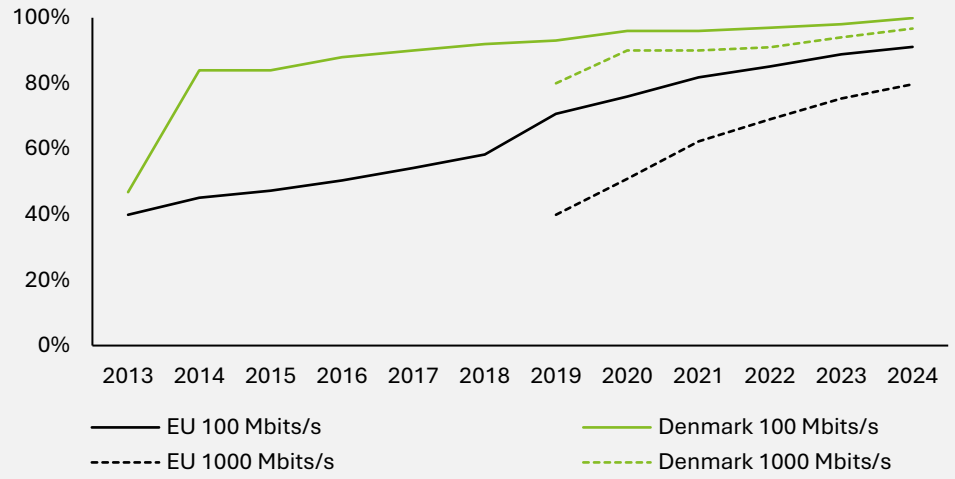
Sustained investment and supportive conditions have enabled Denmark to achieve near-universal high-capacity connectivity

The Danish telecommunications industry has achieved remarkably rapid technology rollouts and consistently high coverage (cf. Figure 3). Significant investments in fibre, broadband, 5G, and network capacity have created a digital infrastructure that outperforms European averages and is nearing universal coverage (98% technology-agnostic Gb/s coverage in H1 2025). These outcomes have been enabled by a combination of sustained industry investment, ambitious government digital strategies, strong demand for high-capacity services and relatively favourable geographic conditions.

[2] Deloitte estimates
[3] Deloitte estimates
[4] National account registers, via relevant data aggregators.

Danish download speeds consistently outrank EU averages

Figure 3: Technology agnostic download speeds availability



Source: Eurostat, Agency for Digital Government, 2025

2.2. The Danish fixed network market

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While fixed voice usage continues to decline, demand for high-capacity broadband has grown rapidly, reflecting Denmark's position as an early adopter of digital services across households, businesses, and the public sector. At the same time, the market is approaching a maturity phase in which uncertainty remains over whether future demand will require capacity well beyond current gigabit standards.

On the supply side, fixed-network deployment has been shaped by a hybrid ecosystem combining incumbent telecom operators with energy utilities and cooperative providers, particularly in fibre rollout outside major urban areas. This structure, together with regulated wholesale access obligations, has enabled near-universal high-speed coverage.

2.2.1. Market dynamics

Denmark's fixed-network market is defined by wired infrastructure and shaped by rising data demand.

The fixed-network telecom market in Denmark comprises services delivered through wired infrastructure, including fixed-line telephony, broadband access, and high-capacity data connections. The market has evolved in response to shifting consumer and enterprise needs, with increasing data usage and declining voice traffic reshaping demand for fixed-network services.

Data demands have been growing, surpassing 10,000 PB of data used in 2021.

Demand for broadband connectivity has been steadily increasing, surpassing 10,000 PB of data used in 2021 (cf. Figure 4). This increase has been driven by shifts in digital behaviour, including remote working and learning, greater use of AI-enabled services, gaming and entertainment, and expanded streaming activity.[5] While traffic volumes continue to rise, expectations for capacity requirements beyond gigabit levels remain mixed. One view anticipates further growth in data consumption, supported by demographic trends and increasingly digital lifestyles among younger users.[6] An alternative view suggests that demand may stabilise as the market approaches a maturity plateau, with existing networks sufficient for most day-to-day applications.[7]

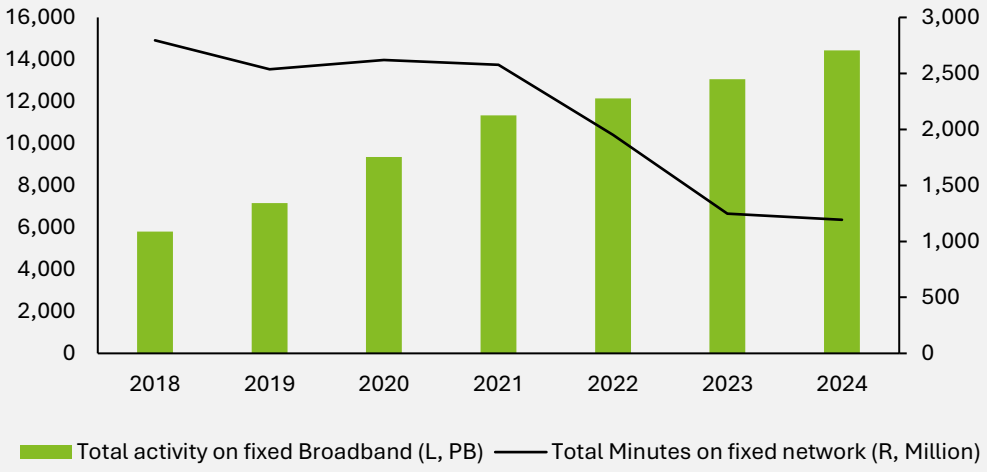
[5] Deloitte, 2021
[6] Nordicom, 2021
[7] Deloitte, 2023

Denmark's government actively prioritises digitalisation strategy.

Denmark is considered an early adopter of digital services, reflecting a pattern of rapid uptake of new technologies across households, businesses, and public institutions.[8] Strategic targets of the Danish government within digitalisation, connectivity, and security encourages further development and innovation in digital technologies. For instance, the Danish government outlined ambitions to act as a global leader in AI and AI-powered public administration.[9]

Minutes of fixed telephone use have been trending down (-10.2% CAGR) while data traffic has been increasing (13.9%).

Figure 4: Activity in fixed telecommunications



Source: Agency for Digital Government, 2025.[10]

The Danish fixed-network supply is distinctive, as non-incumbent utilities and cooperatives have been central to fibre deployment.

The Danish fixed-line telecom sector is characterised by a hybrid supply structure combining conventional telecom operators with energy utilities that have played a central role in fibre deployment. While incumbents continue to operate legacy infrastructure and core network assets, a substantial share of fibre rollout (particularly outside major urban areas) has been driven by regional energy companies such as Norlys and other utility-owned networks.

This supply structure operates within a regulatory framework that mandates wholesale network access prices based on long-run average incremental cost (LRAIC) principles. While LRAIC-based pricing has supported strong infrastructure deployment and affordability (cf. Figure 26), some market operators have argued that regulated access prices do not fully reflect investment risks, long asset lifetimes, or the cost of capital associated with fibre deployment (especially in lower-density areas). This has not prevented multiple new entrants, particularly local utilities (often cooperative ownership structures characterised by longer investment horizons and sometimes non-commercial rollout objectives), to enable continued expansion of fibre networks in Denmark.

Cooperatives have strengthened competition in the fixed market, reflecting differences in governance structures

The role of cooperatives is a distinctive feature of Denmark's approach to expanding fixed infrastructure, where customers participate as members and indirect owners of the fibre networks.[11] Such cooperatives, particularly those run by energy companies, have been able to exert significant competitive pressure in the market.[12] This is potentially driven by two key factors. First, utility operators in Denmark benefit from synergies between utility networks and fibre optic infrastructure supply including common digging, network control

[8] Ministry of Foreign Affairs of Denmark, 2025
[9] Ibid.
[10] Agency for Digital Government, 2025a; Note: 1 Petabyte is equal to 1,000,000,000 MB
[11] WIK Consult, 2019
[12] Dansk Energi, 2019

and infrastructure advantages.

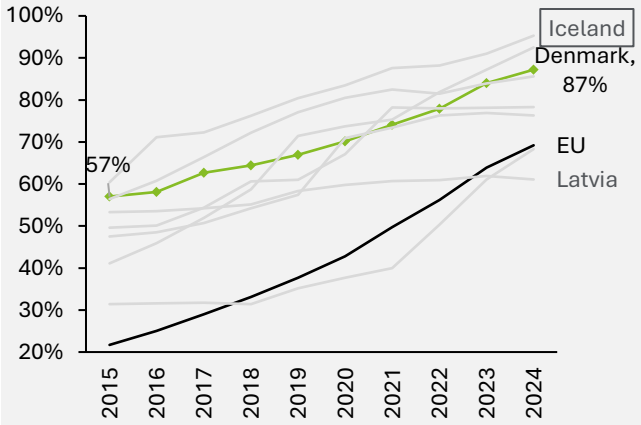
and monitoring, and service organisation, improving the financial efficiency of rollout.[13] Second, while profitability remains an important consideration, member-owned operators often balance financial returns with local development objectives, which may lead to lower target returns and pricing strategies that differ from those of conventional operators, thereby intensifying competitive pressure.[14] This is potentially reflected in financial outcomes: telecom cooperatives report lower pre-tax profit margins of ~5%, compared with 18.6% for other operators.[15] Joint efforts by local and regional players have enabled energy companies to leverage joint retail branding and existing infrastructure, creating entities such as Waoo to act as service providers on these networks.[16] Cooperative networks may also undertake investments where commercial players have assessed insufficient market conditions, stimulating accelerated rollouts following shared investment pressures—with precedents in the Vejen municipality case.[17]

2.2.2. Coverage rates and capacity

Danish fibre coverage and download speeds are approaching 100% nationwide capacity.

Danish fixed telecom coverage has expanded in both technological capacity and in geographical coverage. Denmark has the third highest Fibre to the Premises (FTTP) connectivity coverage in the Nordic/Baltic region. FTTP coverage has grown at a CAGR of 4.8%. Furthermore, Danish data capacities are very high; with download/upload splits of over 90% across all primary speeds—with 90.7% coverage in GB/s capacity.

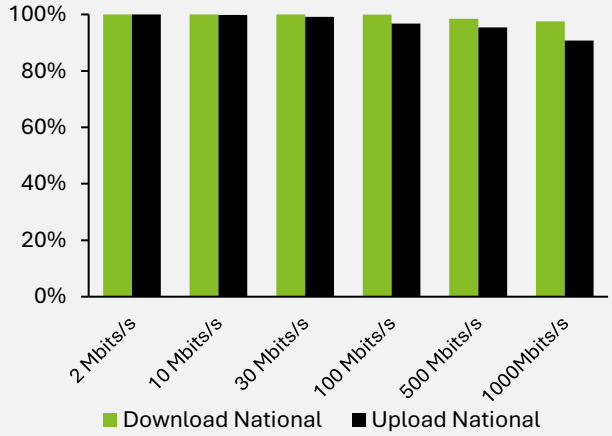
Figure 5: FTTP coverages (last year 2024)



Source: Eurostat, 2025

Amongst Scandinavian and Baltic countries, Denmark ranks 3rd in FTTP coverage; with 87% FTTP coverage (in 2024).

Figure 6: Download and upload speed coverages in Denmark, 2025



Source: Agency for Digital Government, 2025

Danish download speed coverage exceeds 98% at 1 GB/s.

[13] Sigurdsson, 2007
[14] Falch et al., 2016
[15] DB Hoovers, 2025
[16] WIK Consult, 2019
[17] OECD, 2025a

2.3. The Danish mobile network market

The Danish mobile network market is characterised by high coverage, strong competition, and extensive infrastructure deployment

Denmark has achieved near-universal mobile coverage through sustained investment across successive technology generations, supported by a limited number of nationwide operators with overlapping network footprints. Mobile services are widely adopted across consumers and enterprises, with data traffic growth reflecting high levels of digital usage and mobile connectivity. As coverage levels approach saturation, differences in network performance increasingly relate to capacity, spectrum use, and network quality rather than geographic reach, shaping competitive dynamics within an already mature mobile market.

2.3.1. Market dynamics

Denmark's mobile-network market is defined by wireless infrastructure.

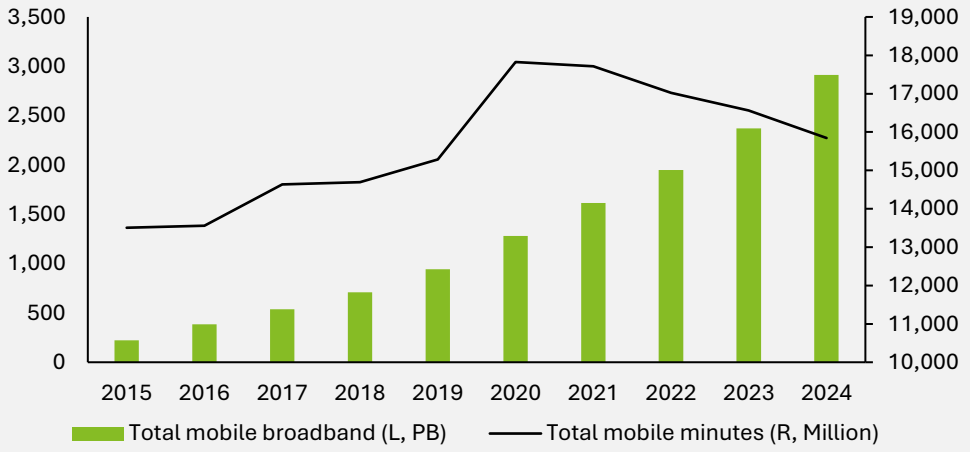
The mobile telecom market in Denmark provides nationwide wireless connectivity for voice, data, and internet services. Like the fixed market, the mobile segment is evolving as both consumers and businesses increasingly rely on mobile data services, while traditional voice usage continues to decline. These shifts are reshaping demand patterns and the overall structure of mobile communications.

Like fixed broadband, evolving consumption trends have driven mobile data consumption by 29.3% annually between 2015 and 2025.

Mobile broadband has experienced the fastest data consumption growth. As with the fixed sector, macroeconomic, consumer, and business trends have shaped an ever-increasing demand for data use. Activities such as social media, streaming, mobile app use, remote working, and remote learning have all contributed greater mobile data consumption. Furthermore, the adoption of fixed wireless access (FWA)[18] acts as a driver for mobile demand and investments.[19] The mobile broadband data usage has grown at a CAGR of 29.3%, exceeding 2,911 Petabytes in 2024 (see Figure 7).

The growth in data traffic through mobile broadband subscriptions has grown to 2,911 PetaBytes in 2024.

Figure 7: Mobile traffic in Denmark



Source: Agency for Digital Government, 2025

[18] FWA via 5G / branded as "5G to the home

[19] FWA allows for broadband access via mobile network technologies instead of physical fixed-line connections. Such packages are increasingly being offered as substitutes to conventional internet connectivity packages by multiple market players

A concentrated market structure coexists with strong competition and high network performance

The Danish mobile telecom sector is relatively concentrated, with four operators controlling key spectrum licences and network infrastructure (including two through a joint-venture, cf. Table 1). However, despite this concentration, the market remains highly competitive in practice, delivering some of the lowest prices and strongest network performance in Europe (cf. Figure 25).

This combination reflects a market structure that has enabled operators to achieve the scale and financial capacity required for rapid deployment of advanced mobile technologies, most recently 5G, while maintaining strong competitive pressure on pricing and service quality. Capital intensity related to roll out of wireless infrastructure may in some cases result in barriers to entry, but this has not translated into weak competition outcomes.

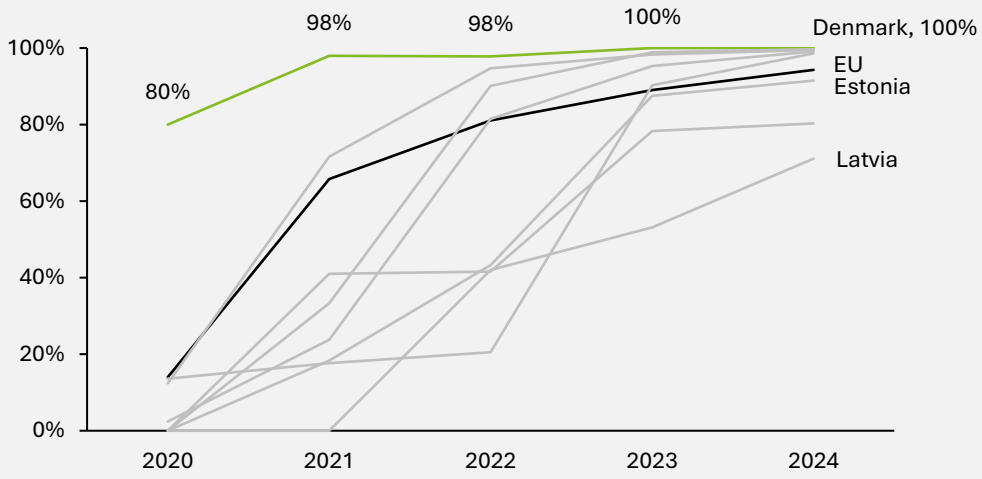
2.3.2. Coverage rates and capacity

Denmark achieved 100% 5G Coverage in 2023, 7 years before the EU goal for 2030[20]

Strategic EU and Danish initiatives on digitalisation have actively driven deployment of advanced technologies. For example, the *5G Action Plan for Denmark* provided a roadmap to ensure the rollout and adoption of 5G technologies throughout Denmark.[21] Coordinated initiatives between the Danish government and private operators have supported sustained investment in mobile infrastructure. These efforts have contributed to Denmark's strong position among European countries in mobile network coverage. Denmark achieved nationwide 5G coverage in 2023, exceeding the EU average of 89%, while also reaching the EU roadmap target seven years ahead of schedule.[22] While 5G standalone deployment is still maturing, coverage has expanded steadily at a CAGR of 5.3%, reaching 87.5% in 2024.

Denmark has a leading mobile coverage rate, outperforming the European average as well as its Scandinavian and Baltic peers

Figure 8: 5G Coverage Percentages



Source: Eurostat, 2025

[20] European Commission, 2025a
[21] Danish Energy Agency, 2019 (the roadmap is now under the authority of the Danish Agency for Digital Government)
[22] Eurostat, 2025

2.4. Perspectives on recent supply-side evolutions

2.4.1. Current supply-side structure

Denmark has a stable mobile market structure with three wholesale-level networks and four MNOs

Over the past 15 years, the number of mobile telecommunication operators in Denmark has remained stable, with four primary mobile network operators (MNOs): TDC, Norlys, Telenor, and Hi3G.[23] Notably, a network-sharing agreement between Telia (now Norlys) and Telenor resulted in Denmark effectively having three wholesale-level networks.[24] In addition, mobile virtual network operators (MVNOs) and resellers are also active in the market, collectively accounting for approximately 11% of the market as of H2 2024.[25]

The fixed market is relatively concentrated amongst few providers despite the presence of many firms in the market

The Danish fixed telecom market has remained relatively concentrated over the past decade, with a small number of firms accounting for a large share of the market. TDC has consistently been the largest fixed broadband operator, alongside other key players such as Norlys and Fibia. Over time, the market has experienced consolidation, primarily through mergers and acquisitions. For example, utility-led fibre networks such as Norlys have expanded their footprint by integrating local fibre providers. This has intensified competition from alternative providers and contributed to a gradual decline in TDC's market share, from 56% in 2010 to 33% in H2 2024.[26] However, despite more than 130 firms operating in the fixed market, the top five brands together accounted for 70% of total market share in H2 2024.[27] Overall, the Danish fixed telecommunications landscape remains characterised by a limited number of established players and a moderately concentrated market structure.

Denmark's fixed market has consolidated through vertical and horizontal M&A, while the mobile market has seen limited activity, instead relying on alternative forms of inter-firm strategic models, such as network-sharing

The Danish fixed telecommunications market has consolidated with horizontal and vertical mergers led by key market players such as Norlys and TDC.[28] For example, Norlys acquired fixed service providers GEV Fibernet in 2024 and Verdo Tele in 2021. It also vertically integrated the operations and network assets of the mobile operator Telia in Denmark for DKK 6.3 bn in 2024, expanding into the mobile communications market. Likewise, TDC consolidated its presence in the fixed market with the acquisition of fixed broadband providers, such as Hiper in 2018, ComX Networks in 2013, and OnFone in 2011.

In the mobile market, a proposed merger between Telia and Telenor in 2015 was withdrawn following concerns raised by the European Commission over its potential anti-competitive effects, including higher prices and lower innovation.[29] Mobile operators continue to resort to other forms of inter-firm strategic models such as network-sharing arrangements and joint ventures. For example, Telia (now owned by Norlys) and Telenor formed the TT Network joint venture (now TN Network) for radio access network (RAN) and infrastructure sharing to generate cost savings and efficiency gains.[30] One MNO (Hi3G) has carved out its tower assets (selling to Cellnex), while another (TDC) spun off its combined passive and active network assets into an infrastructure business (TDC Net), separated from its service operations (Nuuday).

[23] Agency for Digital Government, 2025a
[24] WIK Consult, 2019
[25] Agency for Digital Government, 2025a
[26] Agency for Digital Government, 2025a. Adding to competitive pressures, the phase-out of copper networks has compounded TDC's loss of market shares.
[27] Agency for Digital Government, 2025a
[28] Mergermarket, 2025
[29] WIK Consult, 2019
[30] ITU, 2017

2.4.2. Mergers and acquisitions in the past 15 years

Danish fixed broadband assets remain attractive despite slower deal activity

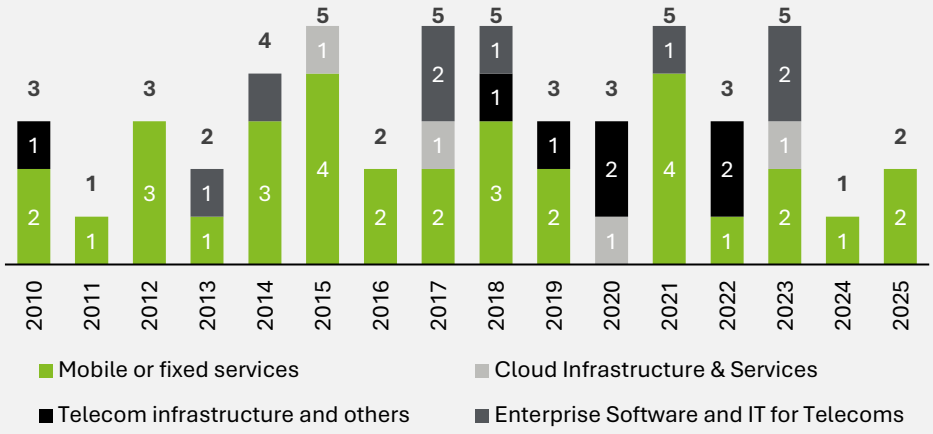
Mergers and acquisitions (M&A) in the telecommunications sector slowed in 2024 and 2025, following a period of heightened activity between 2021 and 2023 (cf. Figure 9). Over the period from 2010 to 2025, most transactions in Denmark occurred in services (27 transactions).[31]

Overall, transaction values indicate that investors have generally been willing to pay relatively high prices for Danish telecom assets. On average, transactions over the period were valued at around three times annual revenues (approximately 3.3×) and around seven times operating earnings (approximately 7.3×), which is higher than the average valuation level observed across Europe for comparable transactions (around 2.0× revenues and 7.3× earnings in 2025).[32]

In recent years, some Danish fixed-network transactions have been valued particularly highly, with operating-earnings multiples reaching up to 20×.[33] Such valuation levels typically reflect investor expectations of stable long-term cash flows, low risk, and long asset lifetimes, rather than short-term profitability. Taken together, this suggests that although M&A activity has slowed recently, parts of the Danish telecom sector have continued to be perceived by investors as attractive and resilient assets.

On average, there has been 3.3 deals per year in the Danish telecommunications industry between 2010 and 2025

Figure 9: Number of M&A deals in the Danish telecommunications industry



Source: Mergermarket, 2025[34]

[31] Period between January 2025 and 21 November 2025
[32] Mergermarket 2025; NYU Stern, 2025; Based on 7 deals with EBITDA multiples
[33] Deloitte anonymised market interviews
[34] Transactions in the telecommunications industry are categorised into four categories: fixed and mobile service providers, infrastructure and equipment operators, cloud and data-centre platforms, and specialised enterprise software and IT vendors, whose revenues respectively derive from end-user connectivity subscriptions and mobile service fees, infrastructure and equipment leasing, cloud hosting services, and telecom-focused software and IT solutions.

63% of the transactions were in mobile and fixed services

Corporate buyers (as opposed to financial investors) accounted for over three-quarters of the transactions since 2010 (cf. Figure 10), which indicates market consolidation. The vast majority of deals (64%) was directed towards service providers. The largest deal involved the financial buyout of Denmark's incumbent telecom operator TDC Group for ~DKK 40 billion. The transaction was led by a consortium comprising Macquarie Infrastructure and Real Assets and Danish pension funds ATP, PFA, and PKA, resulting in TDC's delisting from the Copenhagen Stock Exchange and its transition to private ownership.[35] [36]

Strategic buyers are undertaking the majority of transactions

Figure 10: Number of deals by type of investor

Source: Mergermarket, 2025

[35] PFA, 2018
[36] PFA, 2018

3. Financial performance in the Danish telecommunications industry

Sustained high investment has left the Danish telecommunications industry with low short-term returns reflecting capital intensity and investment timing rather than structural inefficiency

The Danish telecommunications industry combines high and sustained capital deployment with relatively modest short-term financial returns, a pattern consistent with the long asset lifetimes and strategic nature of telecom infrastructure. Recent years have been marked by elevated investment intensity, contributing to subdued return metrics (ROE of about 3% and ROCE of about 2% in 2019-2023) compared with other industries and international peers, even as operating margins remain relatively healthy (26% EBITDA).

International benchmarking indicates that Denmark's lower profitability can be partly explained by differences in investment timing, scale, and price levels, rather than by operational inefficiency alone. At the same time, leverage levels and administrative and regulatory complexity introduce constraints that may affect the timing and flexibility of future investment decisions. Overall, current financial outcomes should be interpreted in the context of investment cycles and structural market features, rather than as indicators of persistent underperformance.

3.1. Historical performance of the telecommunications industry

In real terms, Danish telecom revenues have edged down while investment intensity peaked, reflecting a focus on network rollout rather than revenue-driven expansion

Over the past decade, the Danish telecommunications industry has experienced a gradual decline in real revenues, driven primarily by falling fixed voice income and sustained price pressure, only partly offset by growth in mobile and broadband services. Despite this revenue backdrop, operators continued to deploy capital at historically high levels to accelerate fibre and 5G rollout, pushing investment intensity to a peak in the early 2020s. This divergence between real revenue trends and capital expenditure reflects strategic and policy-aligned decisions to prioritise infrastructure quality, coverage, and resilience, rather than an erosion of underlying connectivity demand. As rollout activity moderated in 2024, capital intensity began to ease, signalling a transition away from the peak investment phase.

3.1.1. Revenue of the telecommunications industry

Rising data usage has not translated into real revenue growth due to price erosion and incomplete substitution

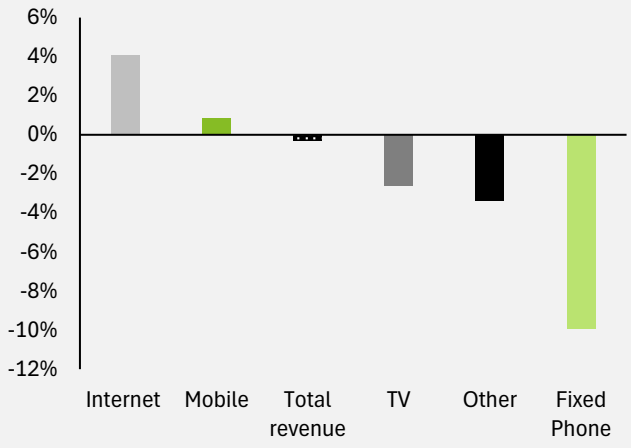
Telecommunications revenues in Denmark are increasingly concentrated in mobile and internet services, reflecting rising data consumption and demand for connectivity. Mobile services represent the largest revenue segment and subscriber base, while fixed-line voice services revenues have continued to decline sharply, with a compound annual decrease of nearly 10%. Over the past decade, revenues per subscription have diverged across segments, increasing modestly for broadband while declining for mobile and fixed-line services.

In real terms, total industry revenues have declined since 2015, primarily due to falling prices per user in mobile and fixed-line segments. While growth in mobile and internet traffic has partially offset declining revenues from fixed telephony and television services, this substitution effect has been insufficient to fully compensate for price erosion. As a result, real revenues in 2024 remain approximately DKK 1.2 billion below 2015 levels.

Overall, the revenue profile illustrates a sector undergoing technological substitution toward data-intensive services, but one in which increased usage has not translated into higher real revenues. These dynamic underscores the persistent pressure on top-line growth despite strong demand fundamentals and rising network utilisation.

Internet and mobile services are the two revenue sources that grew in the 2015-2024 period (4% and 0.8% respectively)

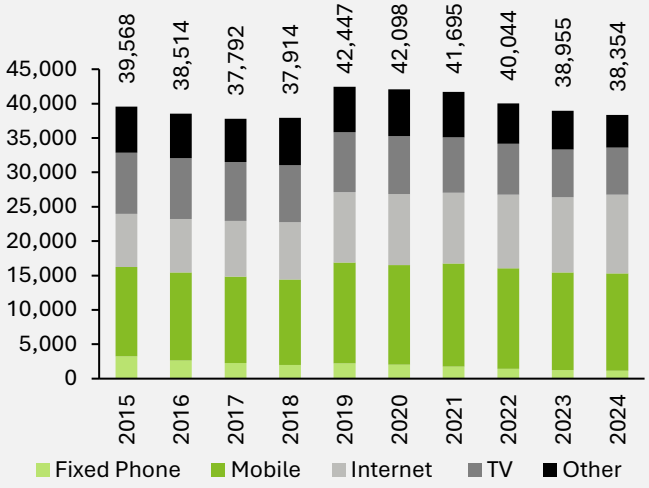
Figure 11: 2015-2024 CAGR of revenue sources (2015 DKK)



Source: Agency for Digital Government, 2025

Real revenue (2015 prices) shrunk by -0.3% annually between 2015 and 2024

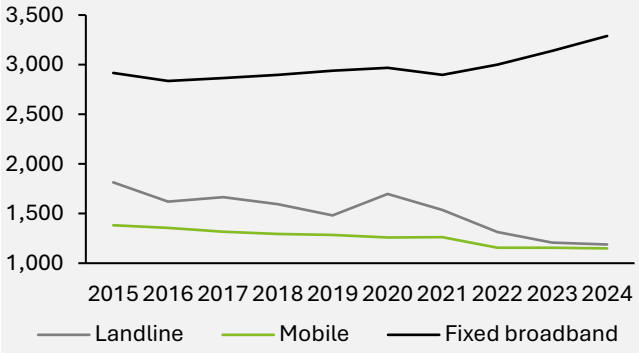
Figure 12: Telecom revenue splits (2015 DKK)



Source: Agency for Digital Government, 2025

Fixed broadband derives the highest ARPU (more than mobile and landline combined in 2024) and the only growing CAGR on the period (+1.5%).

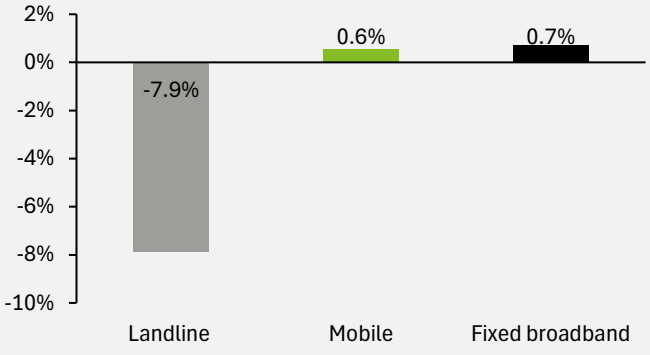
Figure 13: Average revenue per subscriber (2015 DKK)



Source: Agency for Digital Government, 2025

With sub-1% CAGR, mobile and fixed broadband subscriptions have been a saturated market for more than a decade.

Figure 14: CAGR of subscriptions in Denmark (2015-2024)



Source: Agency for Digital Government, 2025

Low telecom prices support digital inclusion but can constrain long-term investment incentives

Similar dynamics are observed across the European telecommunications industry, where rising data consumption has coincided with concerns about stagnating real revenues. Industry stakeholders have highlighted that stable or declining prices, while beneficial for consumers, may constrain future investment incentives if not offset by scale or productivity gains. Concerns are raised at the disproportionate changes in inflation against revenue growth, with a negative net difference between CPI and revenue growth observed since 2016. At the same time, low consumer prices have been associated with positive socioeconomic outcomes, including reduced digital divides and broader access to digital services.[37] These effects extend to economic participation, social inclusion, and access to essential digital infrastructure. Denmark performs strongly on these dimensions, ranking

[37] Netsweeper Solutions, 2024

highly in digital inclusion and adoption, supported by widespread use of digital public services such as MitID.[38]

In this context, affordable connectivity acts as an enabler of labour market flexibility, digital business models, and effective use of public digital infrastructure. The European experience therefore highlights a structural trade-off between affordability and investment capacity, rather than a simple tension between consumer and industry interests.

3.1.2. Investment Patterns

Telecom investment is cyclical and driven by technology rollouts rather than fixed timeframes

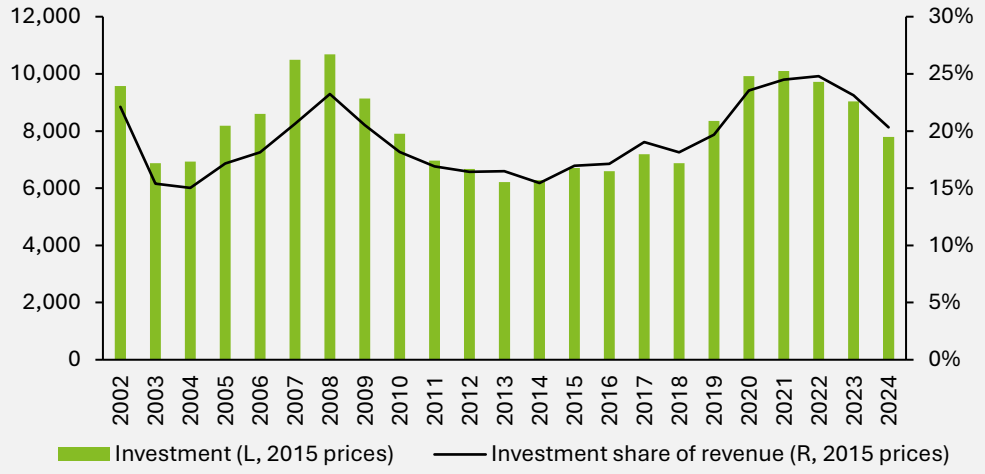
Investment in the Danish telecommunications industry follows a clear cyclical pattern, with peaks closely linked to major technological transitions such as fibre deployment and the rollout of 5G. These cycles reflect periods of intensive capital expenditure followed by phases of stabilisation as networks mature.

Similar investment cycles are observed across geographies, although their timing and magnitude differ depending on national rollout strategies, market conditions, and regulatory frameworks. While telecom investment in Western Europe peaked in 2022, Denmark's cycle reached its maximum in 2021. Other countries show different peak timings: for instance, Sweden's investment cycle peaked earlier than Denmark's, whereas Germany's peaked later (cf.Figure 16). Historical evidence also suggests that the duration of Denmark's investment cycles is not constant, with earlier cycles appearing shorter and more compressed.

Looking ahead, future investment cycles are expected to remain closely tied to technological developments and evolving demand rather than standardised timelines. While this creates uncertainty around the timing of future investment peaks, cyclical investment behaviour is likely to persist as a defining characteristic of the telecommunications industry.

Telecom investments are highly cyclical, with the last peak occurring in 2021

Figure 15: Investment in Telecommunications

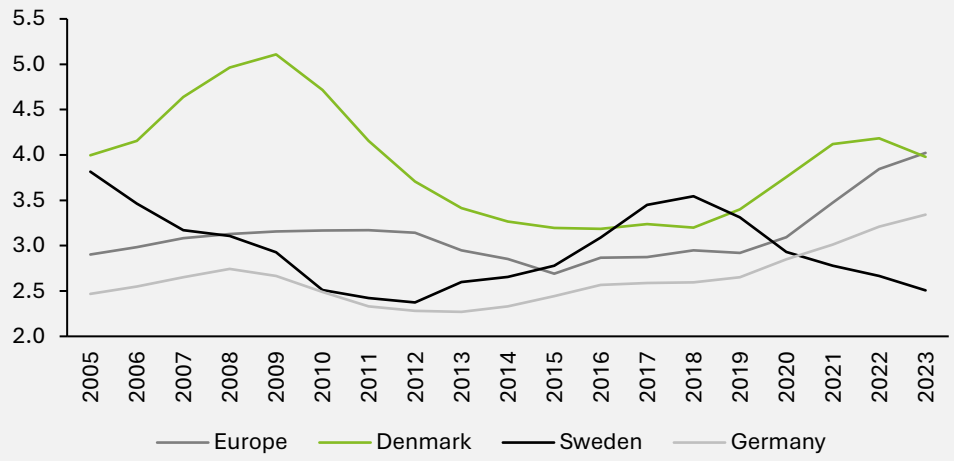


Source: Agency for Digital Government, 2025

[38] Denmark.dk, n.d.

International Telecom investments follow differently timed cycles, with total European investments peaking in 2023.

Figure 16: Normalised international investment cycles, euro / thousand of euros GDP[39]



Source: ITU, 2025; PTS, 2025; Eurostat, 2025

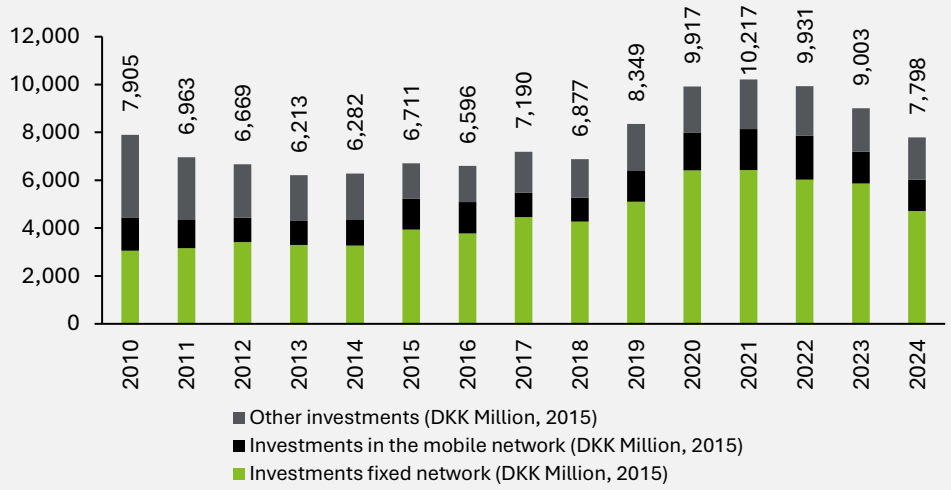
Investment in fixed network represents 57% of total telecom investments

Investment data since 2010 shows that fixed-network infrastructure has accounted for the majority of telecom investment since 2012. Although gross investment has declined since its peak in 2022, current investment levels remain above the average observed during the 2010s. This reflects the capital-intensive nature of fixed infrastructure deployment, where ducts, trenching, and line installation require substantial upfront expenditure.

These high initial costs are accompanied by long asset lifetimes and extended return horizons, as fixed-network technologies generate stable cash flows over prolonged periods. As a result, investment levels in fixed infrastructure tend to be uneven over time, characterised by periods of intensive deployment followed by longer phases of utilisation and gradual return realisation.

Though the 2024 levels are still sinking when looking at 2015 prices, the most recent period had more investment than any year between 2011-2018 in real terms.

Figure 17: Investment by activity in Telecommunications, Denmark (Million DKK, 2015 prices)



Source: Agency for Digital Government, 2025

[39] Investments are normalised by GDP to facilitate comparison of investment cycles across economies of different sizes. This metric is primarily informative for cyclical analysis and should not be interpreted as a measure of relative investment intensity across countries, as differences may reflect broader economic structure and sector composition rather than sector-specific investment effort.

Mobile networks generate higher revenue per invested krone, while fixed assets deliver slower, long-term payback

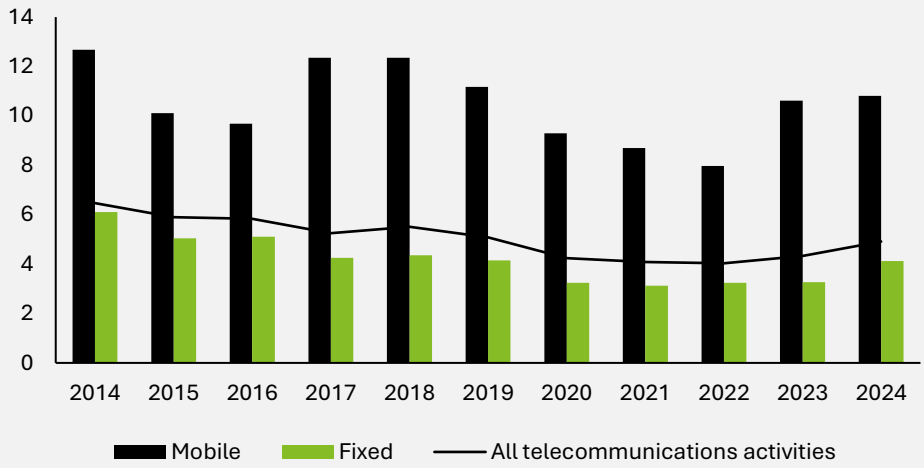
Assessing revenue per krone invested shows that the mobile segment generates significantly higher payback than fixed networks, with mobile returns exceeding fixed-network returns by approximately 263% in 2024 (cf. Figure 18). The observed differences reflect asset economics rather than relative performance. When compared to fixed-line infrastructure, mobile networks achieve higher utilisation rates and therefore greater capital efficiency, but a shorter asset lifecycle.

Fixed-network investments are more capital-intensive per unit, with deployment costs driven by civil works and household-level connectivity requirements, resulting in longer payback periods. Across both segments, revenue generated per unit of investment declines during peak investment phases, consistent with the observed disconnection between rising capital expenditure and relatively stable revenues.

The cyclical nature of telecom investment suggests that relative returns are likely to improve as the current rollout phase concludes and network utilisation increases, supporting a gradual recovery in capital efficiency for Danish operators.

Investments in fixed and mobile infrastructure are of different nature and generate very different revenue profiles.

Figure 18: Revenue-to-Investment



Source: Agency for Digital Government, 2025.[40]

Sector-specific costs affect the investment cycle, with spectrum licencing impacting mobile investments.

Spectrum licensing is a key element of the regulatory framework that shapes investment and capital expenditure in the mobile telecommunications industry. When new mobile technologies are introduced, the associated frequency bands are allocated through national award procedures, for instance spectrum auctions. In Denmark, the most recent multiband auction took place as part of the 5G rollout.[41]

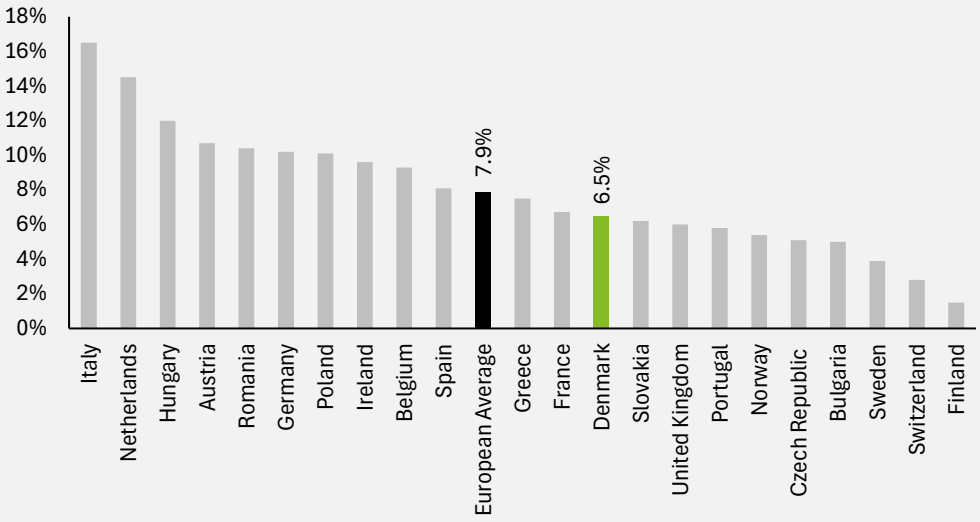
These auctions have important economic implications. The latest round generated more than DKK 2 billion in licensing fees. In addition, operators that secure spectrum rights typically undertake significant network investments to deploy the required infrastructure. Although no decision has been made as per the specific timeframe of future spectrum auctions, they are currently scheduled for 2029, 2031, 2033, 2038, and 2040.[42] The Danish ratio of spectrum cost to revenue is 6.5%, below the European average. However, Danish

[40] The other category changed definition, excluding items under the TV range for instance, in 2014. Therefore, the pre-2013 levels are not reported for consistency's sake.
[41] Specure, 2021
[42] Agency for Digital Government, n.d. a

providers are paying a larger share than Nordic counterparts (cf. Figure 19) and these costs have risen as a share of the revenue between 2021 and 2024.[43]

Denmark falls 1.4% below the European average of 7.9% in spectrum cost to revenue ratio.

Figure 19: Spectrum cost to revenue ratios (%)



Source: Aetha Consulting, 2024

3.2. Returns on investment in the Danish telecommunications industry

Returns in the Danish telecommunications industry are structurally low, reflecting high capital intensity, long-lived assets, recent investment cycles, and a highly competitive market environment

The telecommunications industry is highly asset-intensive and delivers relatively low short-term returns on invested capital, reflecting the high cost and long economic life of network infrastructure. In Denmark, this structural characteristic has been reinforced by a period of elevated investment in fibre and 5G networks, during which operators prioritised rollout and capacity expansion over near-term financial returns.

As a result, observed return metrics have remained modest, with average returns on equity of around 3% and returns on capital employed close to 2% over the 2019–2023 period. International comparisons place Denmark below many peer markets on returns on assets and EBITDA margins, partly reflecting differences in market prices, investment timing and market scale. In this context, sustained competitive pressure in the Danish market has contributed to limiting short-term pricing power, alongside the effects of investment intensity.

Leverage remains a defining feature of the sector, consistent with its capital-intensive nature. While debt levels have remained broadly stable, long-term leverage increased faster than revenues during the peak investment phase, tightening interest coverage before improving in 2024 as capital intensity began to ease. Overall, the evidence indicates that return outcomes are best interpreted as a function of structural and cyclical factors inherent to network industries operating in competitive markets, rather than as indicators of persistent financial stress.

[43] Aetha Consulting, 2021

Table 2: Overview of return metrics for the Danish telecommunications industry

Measure employed	Definition	Application to Danish Telecommunications
Return on equity	ROE measures how much profit an entity generates from each unit of equity, signalling performance and investment attractiveness.	The Danish telecommunications industry held an average ROE of 3.1% in 2019-2023, depreciated by low returns in 2023. The financial sample had higher ROE at 8.25%, still below international telecom averages.
Return on assets	ROA measures the ability to generate profits using the assets of a firm, it signals operational efficiency and asset utilisation capacity.	The ROA value for Denmark in 2019-2023 was 1.4%. The financial sample had an ROA of 2.75%, higher than European averages.
EBITDA margin	EBITDA margin is the ratio of EBITDA retained out of revenue; used to evaluate performance and benchmark profitability against other entities.	Danish telecommunications had an EBITDA margin of 28%. The financial sample exhibited an EBITDA margin of 25.8%, below international comparisons.
Capital intensity	Capital intensity ratio measures how much asset investment is required to generate a unit of revenue. Higher values indicate that more/costlier assets are required to produce revenue.	The telecommunications industry had a capital intensity ratio of 3, far higher than the Danish average of 1.7. This indicates a strong asset dependency for revenue generation.
Return on capital employed	ROCE measures how efficiently an entity uses its capital in generating earnings. It considers both debt and equity financing in its calculation, offering a balanced view of capital structure.	The average ROCE for 2019-2023 was 2% in Danish telecommunications, indicating low profitability relative to the capital base required to sustain the industry.
Net debt to EBITDA	Net debt to EBITDA indicates how many years of EBITDA would be required to repay an entity's net debt, assuming EBITDA remains constant.	The key Danish industry players held an aggregate net debt to EBTIDA of 7, higher than international benchmarks. Suggesting a long payback period at current earnings levels.
Interest coverage ratio	This measures an entity's ability to pay interest on its debt using its EBIT. Higher values signify a smaller share of EBIT would be required to cover financial interest expenses.	The average Interest coverage of 1.7 implies that EBIT is sufficient to cover immediate financial expenses but displays low flexibility for earnings variance. It recovered to 3.3 in 2024, more aligned with international comparisons.

3.2.1. Return measures in the Telecommunications industry

Telecommunications have held below average return metrics during 2019-2023, consistent with expansionary investment periods and high asset intensity

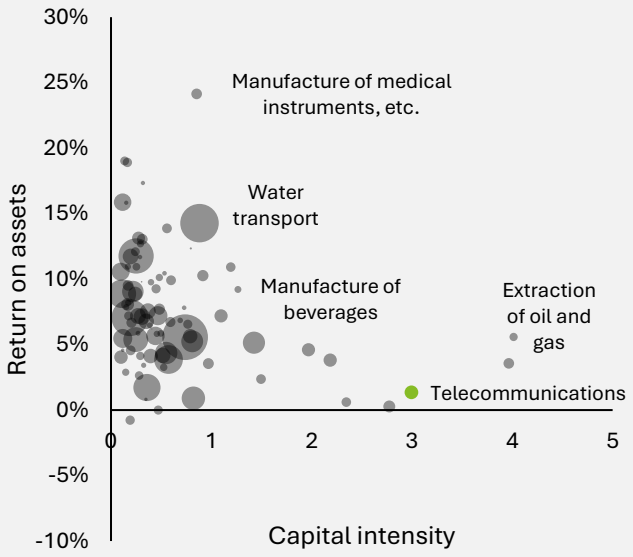
The Danish telecommunications industry exhibits a distinctive financial profile relative to other domestic industries. Although the sector maintains solid EBITDA margins (reflecting stable operating performance), its return on assets and return on equity remain comparatively modest.

Telecommunications are positioned as a particularly capital-intensive industry, with asset levels significantly higher than those observed in most other sectors. This structural characteristic dampens asset and equity returns, even when operating margins are healthy. Industries with comparable capital requirements, such as oil and gas extraction, tend to achieve higher returns on assets, indicating stronger capital productivity. Conversely, telecommunications sit lower on the return spectrum, reflecting long investment horizons, substantial depreciation, and other constraints that may limit the pace of return realisation. Additionally, this recent time period reflects a phase of aggressive investment and capital allocation. During such operations earnings and capital margins can be dampened.

From an investment perspective, the sector's profile suggests that while telecommunications offer predictable and resilient operating cash flows, the scale and duration of required capital commitments result in lower short-term financial returns. This pattern is consistent with the industry's long-term asset base and the strategic nature of network infrastructure investments.

The telecommunications industry is highly asset-intensive yet delivers relatively low yearly returns on assets, reflecting the high cost and long-life cycle of its infrastructure base.

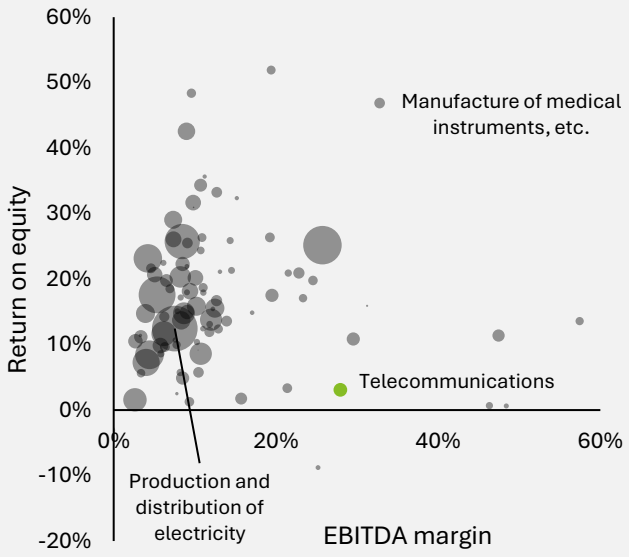
Figure 20: Capital Intensity and ROA of Danish industries



Source: Statistics Denmark, 2025
Note: Capital Intensity and ROA calculations are performed on a per year basis, then the averages for 2019-2023 are shown. Bubble sizes are determined by Revenue in 2023. Aggregate industry.

Equity returns in telecommunications (3.1%) are low when benchmarked against other industries (the average Danish value is 16.6%), despite relatively high profit retention along EBITDA margin.

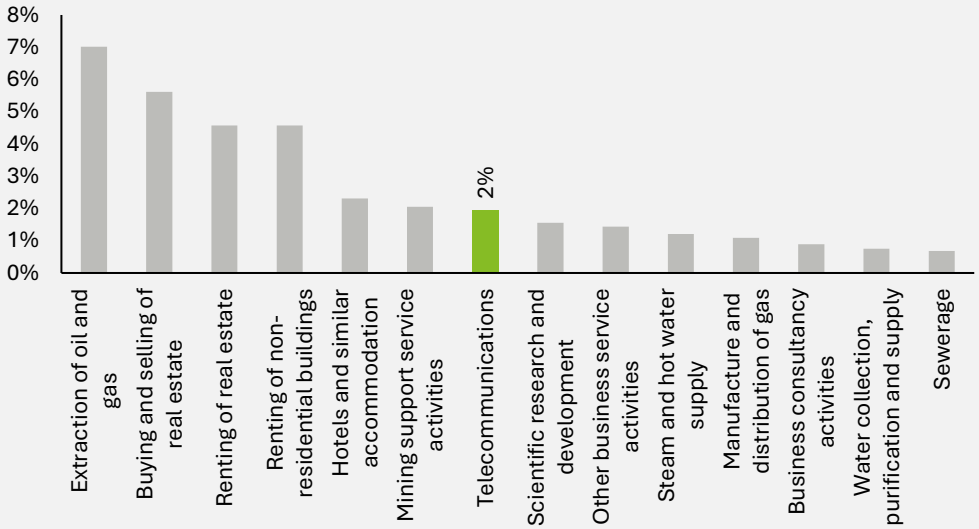
Figure 21: Return Metrics for Danish Industries



Source: Statistics Denmark, 2025
Note: ROE and EBITDA margin calculations are performed on a per year basis, then their averages for 2019-2023 are shown. Bubble sizes are determined by Revenue in 2023. Aggregate industry.

A ROCE of 2% reflects the telecommunications industry's large capital base and the inherently low capital productivity of asset-intensive network industries, highlighting structural constraints on achievable returns rather than short-term operational underperformance.

Figure 22: Average ROCE for Danish industries with capital intensity greater than 2 (2019-2023)



Source, Statistics Denmark, 2025
Note, ROCE calculations are performed on a per year basis, then their averages for 2019-2023 are shown. Aggregate industry.

3.2.2. International Telecommunications benchmarks

International comparisons position Denmark's telecommunications industry as below-average for profitability and efficiency.

International benchmarking shows that the Danish telecom operator sample delivers lower returns on assets and EBITDA margins than peers in Scandinavia, Europe, and North America. Such differences are partly consistent with periods of intensive network upgrades, during which telecom operators typically prioritise capital deployment and rollout speed over near-term financial returns. With investment activity slowing in 2024, the sector appears to be transitioning from an intensive rollout phase toward a period in which returns could gradually normalise as capital expenditure declines and utilisation of newly deployed networks increases.

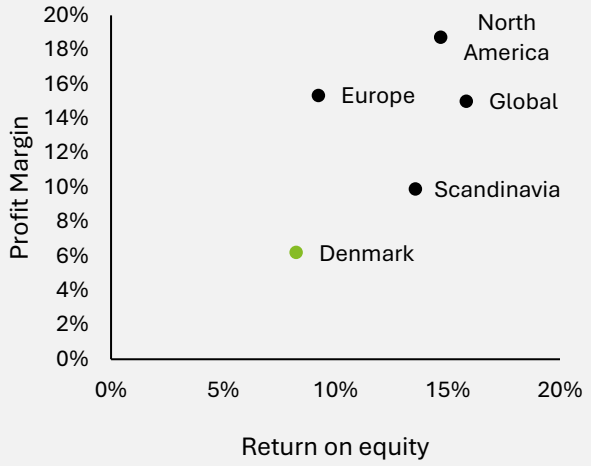
Differences in rollout timing and investment cycles across countries help explain part of the observed return gap. In Scandinavia, Sweden's fixed broadband investment peaked earlier, in 2016–2017, allowing operators to shift toward optimisation and earnings growth during the 2020s. This is reflected in FTTP coverage, where Sweden remained ahead of Denmark until Denmark's recent investment peak. Norwegian nominal investments peaked slightly later than Denmark's[44]. As a result, Denmark's weaker returns over 2020–2024 are partly attributable to being at a more capital-intensive stage of the cycle. Similar timing differences are also evident across Europe: while the broader Western European investment wave peaked in 2022, Germany's investment cycle has continued to rise and is only now peaking beyond 2024[45] (cf.Figure 16).

However, rollout timing does not fully explain the return differentials. Consumer price levels and revenue generation capacity also differ materially across markets. Denmark exhibits some of the lowest consumer prices for mobile and fixed services among Scandinavia as well as in Europe, when adjusted for differences in purchasing power between countries (cf. Figure 25, Figure 26). Danish operators also benefit from limited scale due to a small market size (cf. 3.3.1). In contrast, operators in larger European markets and North America benefit from a combination of larger operating scale and higher achievable price levels (cf. Figure 25 and Figure 26). These structural differences contribute to persistently stronger return metrics outside Denmark.

[44] NKOK, 2025
[45] Strand Consult, 2024

The lower profit margins align with negative returns for key players in 2023 and lower returns in 2024, during the expansion phase.

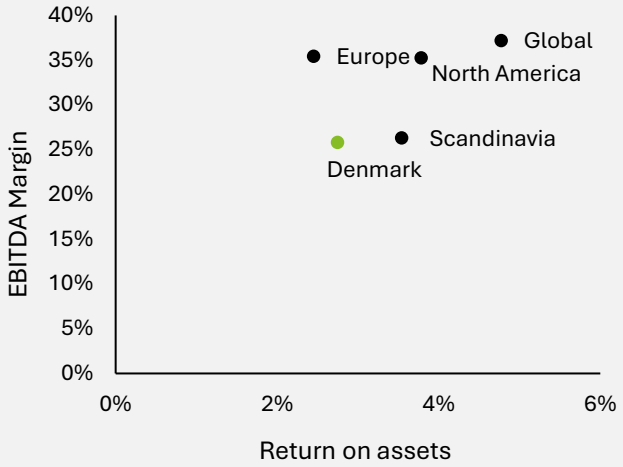
Figure 23: Operator sample financial ratio comparison, 1



Source: national account registers, via relevant data aggregators, LSEG database; 2025. Values represent sample averages from 2021-2024. Financial sample.

Among the benchmarked geographies, Denmark exhibits the lowest return on assets.

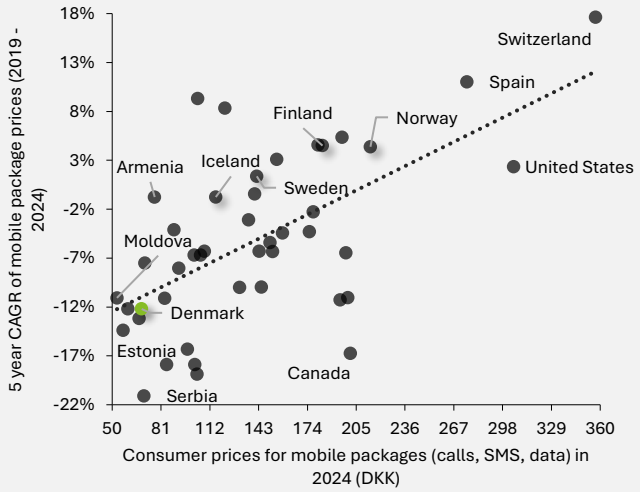
Figure 24: Operator sample financial ratio comparison, 2



Source: national account registers, via relevant data aggregators, LSEG database; 2025. Values represent sample averages from 2021-2024. Financial sample.

Denmark has one of the lowest consumer prices for mobile services in Europe, with prices being 48% lower than the European average

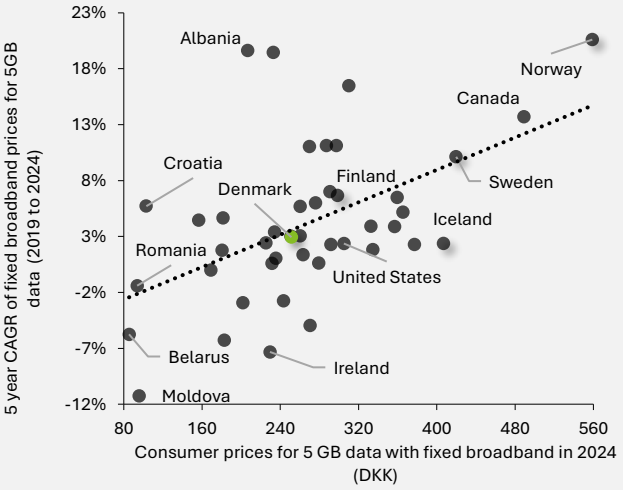
Figure 25: Consumer prices for mobile services, 2024*



Source: ITU, 2025. *The mobile data and voice high-consumption basket considers the price of 140 call minutes, 70 SMS, and 2 GB data. Original values are expressed in international Purchasing Power Parity (PPP)$ accounting for differences in purchasing power between countries; PPP adjusted exchange rate of 6.23 DKK per US$ for 2024 is used to express prices in Danish currency units

Fixed broadband prices in Denmark are between 16% to 55% lower in comparison to other Nordic countries and 3% lower than the European average

Figure 26: Consumer prices for fixed broadband, 2024#



Source: ITU, 2025. #The fixed broadband basket price considers the price of 5GB data. Original values are expressed in international Purchasing Power Parity (PPP)$ accounting for differences in purchasing power between countries; PPP adjusted exchange rate of 6.23 DKK per US$ for 2024 is used to express prices in Danish currency units

3.2.3. Leverage in the Telecommunications industry

Debt levels have remained stable overall, but long-term leverage has increased faster than revenues

Debt financing has played a central role in the Danish telecommunications industry, with the overall debt–equity structure remaining broadly stable over the past five years. As a capital-intensive industry, the sector maintains relatively high leverage. Furthermore, recent trends show that long-term debt accumulation has outpaced revenue growth: the industry's debt-to-revenue ratio increased by 44% between 2019 and 2023 (cf. Figure 27).

The 2022 investment peak drove a sharp rise in long-term debt, concentrated among a small number of operators.

A turning point occurred in 2022, when industry-wide long-term debt increased by more than DKK 19 billion. This coincided with the peak of the sector's capital expenditure cycle (cf. Figure 15), as Denmark completed a near-universal 5G rollout[46] and accelerated nationwide high-capacity network deployment.

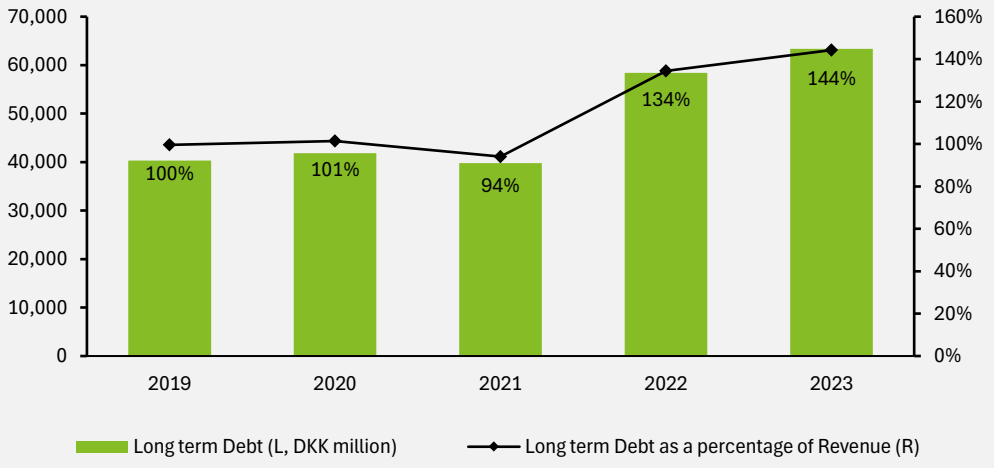
Several operators were responsible for most of the increase in long-term debt: TDC Net (+DKK 11,711 million), Sinal (+DKK 6,627 million), Fibia (+DKK 551 million), and GlobalConnect (+DKK 527 million). TDC Net's rise in long-term obligations was largely driven by capital restructuring within the TDC Group and its subsidiaries, but it was substantially offset at the industry level by Nuuday's reduction in long-term debt (–DKK 7,519 million).[47] Adjusted for TDC Group's net impact, 2022 debt-to-revenue increase would still be ca. 36%.

Operators shifted toward longer-term debt while reducing net debt and improving liquidity

Between 2022 and 2024, leading operators increased long-term debt by 22% while reducing net debt by 11.5%. This indicates a shift in debt composition rather than rising leverage, with short-term obligations declining and liquidity improving over the period. High interest-coverage ratios in 2024 support this interpretation. The increase in long-term debt primarily reflects refinancing aligned with the long asset lives of telecom infrastructure investments

The Telecommunications industry held long term debt worth 144% of its annual revenue in 2023

Figure 27: Long-term debt in Danish telecommunications



Source: Statistics Denmark, 2025, Aggregate industry

[46] 5G coverage has reached 100%, but 5G SA is 88% according to Eurostat.

[47] TDC Net's higher debt mainly reflects a restructuring following changes in ownership, rather than new borrowing to fund investment. Through a ring-financing structure, debt was concentrated within TDC Net and secured against its network assets, effectively moving debt within the group rather than creating new leverage. At the industry level, this restructuring results in a net increase in long-term debt of DKK 4.2 billion (around one-fifth of the total sector-wide increase) after accounting for Nuuday's debt reduction.

Debt behaviour can prove to be an inhibition for financial flexibility.

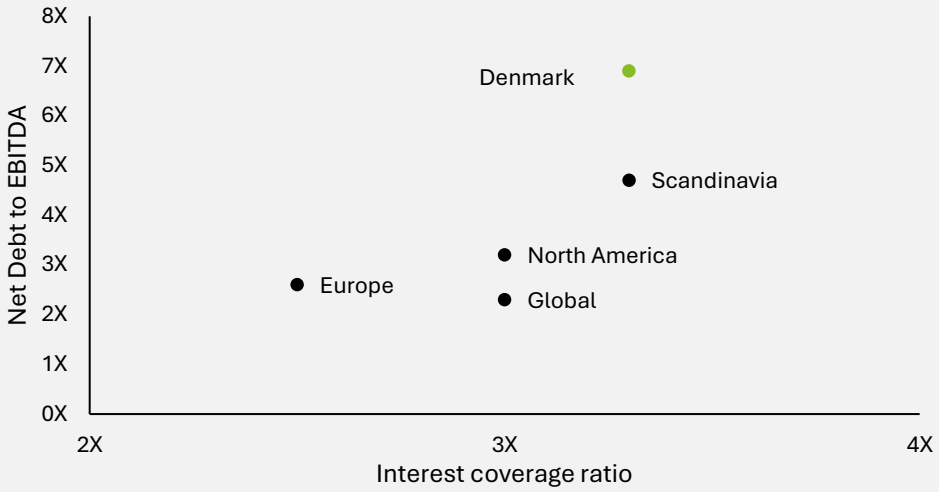
The combination of rising long-term debt and declining real revenues constrained financial flexibility for Danish telecommunications operators during the peak investment period. Between 2020 and 2024, average EBIT interest coverage stood at 1.7, indicating limited headroom while capital expenditure related to large-scale network rollouts was elevated.

As investment intensity declined in 2024, EBIT interest coverage improved markedly to 3.3, reflecting stronger debt-service capacity as rollout activity moderated and earnings stabilised. This improvement suggests that part of the financial pressure observed in recent years was cyclical and closely linked to the timing of major investment programmes.

However, in an international comparison, Denmark exhibits the highest net debt-to-EBITDA ratio among the measured geographies (cf. Figure 28). This position reflects a combination of high asset intensity, sustained investment levels, and market-specific financing choices. While Denmark's advanced rollout contributes to higher leverage, differences in investment cycles alone do not fully explain the gap, and leverage levels should therefore be interpreted in conjunction with broader structural and pricing conditions (cf. above).

Denmark's interest coverage ratio climbed markedly in 2024, reaching the top of the international benchmark

Figure 28: International debt metric comparisons (2024)



Source: national account registers, via relevant data aggregators, LSEG database; 2025. Financial sample.

High leverage can suppress investment incentives and reduce financial flexibility over time

Sustained high leverage can constrain both investment capacity and operational flexibility in capital-intensive industries such as telecommunications. Elevated debt levels increase fixed financial obligations, reducing headroom for discretionary investment and limiting firms' ability to respond to shocks or new opportunities.

From a financial perspective, high leverage is associated with several mechanisms that can dampen investment incentives. These include tighter liquidity constraints, higher financing costs, and agency-related effects that increase risk aversion. Empirical evidence also links elevated debt levels to lower returns on assets, reflecting both higher capital charges and reduced scope for value-accretive investment.

In addition, high leverage can also create debt overhang effects, where firms delay or cancel otherwise profitable investments because the benefits would mainly go to lenders rather than the company itself. In the 2024 context, the easing of rollout-related capital

expenditure and improving interest coverage reduce the immediacy of these risks, but leverage levels remain a relevant constraint for future investment decisions.

3.3. Obstacles to Investments

In Denmark's mature telecom market, investment incentives are primarily shaped by scale, capital intensity, and planning uncertainty rather than by prohibitive cost levels

The Danish telecommunications industry operates within a set of conditions that influence the pace and structure of investment rather than its overall feasibility. Modest short-term returns and limited market scale can affect capital allocation decisions in an industry characterised by high fixed costs and long asset lifetimes, particularly during periods of elevated investment intensity.

At the same time, cost pressures linked to security requirements or energy add to operational complexity, although their aggregate financial impact tends to remain moderate when viewed against total investment levels and core business needs. Regulatory and administrative factors, including permitting timelines and evolving compliance obligations, primarily affect investment planning and execution by introducing uncertainty and delays, rather than materially increasing total costs.

Overall, the evidence suggests that these factors interact to shape investment incentives and timing in a mature, competitive market, underscoring the importance of predictability and coordination rather than cost reduction alone.

3.3.1. Financial and scale constraints

The small and fragmented nature of the Danish telecom market, coupled with low profitability, can restrict operators' ability to invest at scale

Telecom networks require substantial upfront investment, making scale critical to spreading fixed costs and sustaining reinvestment. In Denmark, opportunities to realise such scale effects appear limited: mobile operators serve fewer customers than the EU average, and more than 96% of the fixed operators averaged less than 6,000 households in 2024.[48,49] These structural characteristics can potentially limit efficiency gains compared with larger European markets.

These features, together with other factors, such as strong competitive pressures, may be contributing to the relatively weak financial performance of the sector. For example, the ROCE of major Danish operators has remained below those of EU operators.[50] Consistent with this, operators' EBIT has declined in real terms from 7.2% in 2021 to 6.1% in 2024. However, given the cyclical nature of telecom investment, profitability may recover as capital intensity eases over the next few years. In the absence of such a turnaround, persistently low profits can constrain operators' ability to recover costs and attract external financing. This could adversely impact future network investments.

3.3.2. Rising cost pressures

Telecom operators face rising spectrum costs relative to revenues and an increase in security and compliance costs, potentially affecting their investment capacity

In addition to structural and financial constraints, telecom operators face rising cost pressures. Across Europe, spectrum costs have increased as a share of revenue, raising the spectrum cost burden for operators. In Denmark, this burden rose steadily between 2021 and 2024 to around 6.5% of mobile service revenues.[51] Whilst costs remain below the EU average, they are higher than in the rest of the Nordic countries.[52]

Telecom operators are also anticipating an increase in security and resilience costs. While business-driven and compliance-related cost drivers are difficult to fully disentangle, the implementation of regulations such as NIS2 and related cybersecurity measures is

[48] Letta, 2024
[49] Agency for Digital Government, 2025b; As of H2 2024, 128 fixed operators (excluding top 5 providers) served 7,69,036 households, averaging 6,008 households per operator
[50] Copenhagen Economics, 2025a
[51] Aetha Consulting, 2021
[52] Aetha Consulting, 2024

expected to affect investment levels, though the impact is likely to remain limited, at below 2% of annual capex (cf. Section 4.5). Danish operators also note that regulatory requirements can mandate retrofitting or replacement of assets before end-of-life to meet compliance standards, resulting in higher costs.[53]

3.3.3. Administrative and regulatory challenges

Lengthy permitting processes, regulatory delays, and shifting regulatory landscape create uncertainty, increasing investment risk and reducing operators' incentives to invest

Operators point to administrative procedures and policy uncertainty as weakening their ability and incentive to invest in digital infrastructure. For example, Danish operators have reported challenges with burdensome municipal permits and delays.[54] Operators also face uncertainty from delays to upcoming regulations, including the Digital Networks Act, creating ambiguity around key reform.[55]

Ex-ante regulation, designed to pre-empt the abuse of market power that could harm consumers or competition, is central to the Danish telecoms sector. It includes obligations such as providing network access to competitors and enforcing non-discrimination or structural separation, which can influence operators' incentives to invest.[56] Over time, however, some obligations have become less necessary due to other remedies, such as merger conditions and licensing obligations, while complex digital ecosystems make strict market definitions less pertinent.[57] For example, proposed Significant Market Power obligations in four regional Danish markets were withdrawn in 2022 following European Commission concerns, illustrating that the scope and timing of such obligations can change.[58]

[53] Insights from interviews with Danish telecom operators
[54] ITU, 2020
[55] European Parliament, 2025
[56] Copenhagen Economics, 2025a
[57] European Commission, 2022a
[58] European Commission, 2022a

4. Investment needs in the Danish telecommunications industry

Future telecom investment in Denmark is expected to follow cyclical patterns, with incremental needs driven primarily by resilience, system modernisation, and successive technology refresh cycles rather than large-scale network expansion

Looking ahead to 2040, investment needs in the Danish telecommunications industry are shaped less by coverage gaps and more by the requirements of maintaining, upgrading, and securing an already highly developed infrastructure base. Under a business-as-usual trajectory, cumulative capital expenditure is projected to broadly align with historical level (ca. DKK 145 billion), reflecting ongoing replacement, optimisation, and incremental capacity upgrades rather than a new expansion phase.

Scenario analysis suggests that the most robust and persistent investment drivers are non-discretionary in nature, notably increased resilience and security requirements, as well as the modernisation and re-architecture of network and core systems to accommodate evolving technologies, traffic patterns, and operational models.

By contrast, scenarios characterised by a prolonged period of subdued investment appear less plausible over a long-term horizon, given technology evolution and the critical role of telecommunications infrastructure in supporting economic activity. Overall, future investment needs are best understood as persistent and structural, with uncertainty centred on timing and composition rather than aggregate investment volumes (an upside above 10% of the business-as-usual cycle seems unlikely).

4.1. Investments dynamics in the Danish telecommunications industry

Macro trends such as new technology deployment, AI, resilience, and decarbonisation are driving investment across diverse capital and operational spending blocks

Telecom investment needs can be structured into distinct “investment blocks” covering the capital and operational spending required to build, operate, upgrade, and secure networks. These include network infrastructure, network capacity upgrades, customer devices, security and resilience, core and data systems, and IT and software systems. Investment in these blocks is being shaped by four key forces: advanced connectivity, automation and AI, geopolitical uncertainty and decarbonisation. For example, while advanced connectivity would result in increased investments in network infrastructure and capacity upgrades, AI-driven internal process optimisation would drive spending on IT and software systems.

4.1.1. Defining telecommunication investment blocks

Investment blocks are used to structure and analyse the sector’s investment needs.

To assess and qualify the investment needs of the telecommunications industry, required expenditures can be organised into discrete “investment blocks.” These blocks represent the main categories of capital and operational spending needed to build, operate, upgrade, and secure telecom networks and services. They group individual investments into coherent functional areas—such as network infrastructure, core systems, and software platforms—and provide a structured basis for analysing investment requirements, underlying drivers, and strategic trade-offs. Table 3 summarises the investment blocks used in this analysis.

Table 3: Investment blocks in the telecommunications industry

Investment block	Implementation	Non-technical definition	System layer	Key technical elements
Network infrastructure	**Broadband rollout**	Builds fixed broadband connections so homes and businesses can access fast and stable internet.	FTTH / FTTB Access Networks	Civil works (ducts, trenches), fibre cables, splitters, ONTs, building risers
	Mobile towers and antennas	Enables mobile connectivity by allowing phones and devices to connect wirelessly to the network.	Radio Access Network (RAN)	Macro towers, small cells, MIMO antennas, active sharing, 5G SA/6G upgrades
	Connections between sites	Moves data between network sites (towers, exchanges, data centres) so traffic can flow reliably across the network.	Transport & Backhaul	Optical fibre routes, point-to-point connectivity, microwave links, IP/MPLS routers, DWDM, aggregation rings
	Power systems (mandatory)	Keeps network equipment powered and operational, including during short power disruptions.	Energy & Site Infrastructure	Rectifiers, UPS (baseline power continuity), power distribution, standard cooling
Network capacity upgrade	**New technology & upgrades**	Increases network capacity and efficiency by upgrading technologies and making networks more flexible.	Modernisation	Cloudification, virtualisation, SDN/NFV, spectrum refarming
	Decommissioning & optimisation	Frees up resources and reduces costs by shutting down outdated technologies and infrastructure.	Legacy phase-out	Copper/2G/3G shutdown, asset recycling, spectrum reallocation
Customer devices	**Customer equipment**	Allows customers to connect their homes or businesses to telecom networks and services.	Customer-Premises Equipment (CPE)	Wi-Fi routers, FWA terminals, IoT gateways, enterprise femto cells
Security & resilience	**Cybersecurity**	Protects networks and users against cyberattacks, data breaches, and malicious activity.	Security Infrastructure	SIEM/SOAR, EDR/XDR, PKI, DDoS scrubbing, firewalls, zero-trust, SBOM tools
	Physical security	Protects physical network assets (sites, cabinets, data centres) from damage, theft, or sabotage.	Site & asset protection	Access control, perimeter sensors, surveillance, tamper monitoring
	Resilience & continuity	Ensures the network continues to operate during failures, outages, or extreme events.	Enhanced continuity & redundancy	Backup energy systems, batteries, dual-power feeds, network redundancy, diverse backhaul routes
Core & data systems	**Core network**	Manages calls and data sessions and connects users to services and the wider internet.	EPC / 5GC, IMS, SBCs	Switching and routing functions, control/user plane, voice and data session handling
	Data centres & edge computing	Hosts computing and storage resources close to users to improve performance and reliability.	Data-centre facilities & PoPs	Servers, racks, cooling, storage, compute clusters, edge nodes
IT & software systems	**Operational systems (OSS)**	Monitors, controls, and automates the operation of telecom networks.	Network orchestration & automation	Network inventory, configuration, fault/performance management, CI/CD pipelines
	Business systems (BSS)	Manages customers, services, billing, and commercial operations.	Customer & service management	CRM, billing, provisioning, product catalogues, analytics

4.1.2. Macro trends driving investments in the telecommunications industry

Four macro trends impact investment decisions in the telecommunications industry

Telecom investment is shaped by four key trends:

1. Deployment of new technologies enabling enterprise and consumer applications
2. AI and automation (both improving telecom operators' own efficiency and support AI adoption from an infrastructure perspective)
3. Heightened geopolitical and security risks driving resilience spending
4. Decarbonisation goals promoting energy-efficient networks and renewable energy adoption.

Table 4 provides a description of these macro trends.

Table 4: Overview of macro trends shaping telecommunications investments

Macro trend	Impact description
Advanced connectivity	As advanced connectivity reaches maturity across Europe, operators are investing in both mobile and fixed network upgrades to enable new digital use cases and higher-value services. Alongside mobile evolution through technologies such as 5G-Advanced and 6G, investment is also focused on high-capacity fixed infrastructure, including fibre expansion and point-to-point connections for latency-sensitive and mission-critical applications. These upgrades support a growing range of enterprise and consumer use cases, shifting investment priorities toward delivering reliable, high-performance connectivity across integrated fixed and wireless networks.
AI and automation	European telecom operators are increasingly deploying AI and automation across core functions to improve efficiency and reduce costs, while also investing in network capacity and data infrastructure to accommodate rising traffic driven by AI adoption. AI tools and machine-learning-based optimisation are being applied to detect and resolve network issues, while automated security systems and generative AI are being used to support cyber-defence and customer interactions.[59] Moreover, European operators such as Orange, Telefónica, Swisscom, Fastweb and Telenor are investing in AI-focused data and edge computing capacities in partnership with non-telecom players, to expand network and computing capacity to accommodate growing AI-driven data traffic.[60]
Geopolitical uncertainty	Heightened geopolitical uncertainty has increased the risk of disruption to critical digital infrastructure, placing greater emphasis on the resilience and security of telecom networks. As the backbone of essential sectors such as financial services, healthcare, energy, and transport, the telecommunications industry is central to the functioning of the economy.[61] Rising security risks have therefore led operators and regulators to reinforce security standards, resulting in higher spending on resilience and risk mitigation.[62]
Decarbonisation	Decarbonisation objectives are placing increasing pressure on the telecommunications industry to reduce its environmental footprint. To align with EU climate targets, mobile network operators would need to cut greenhouse gas emissions by around 45 percent, and fixed network operators by around 62 percent, between 2020 and 2030.[63] In response, operators are setting emissions reduction targets and investing in more energy-efficient network technologies, circular economy initiatives, and a shift towards renewable energy sources.[64]

4.1.3. An investment taxonomy for the Danish telecommunications industry

Macrotrends affect telecom investment unevenly across infrastructure, systems, and resilience layers

Table 5 illustrates how key macrotrends translate into differentiated investment pressures across telecommunications investment blocks. Advanced connectivity primarily drives investment in network infrastructure and capacity upgrades, while AI and automation mainly affect IT, software, and core data systems. Geopolitical uncertainty has a pronounced impact on security and resilience investments, reflecting heightened requirements for redundancy, supply-chain robustness, and operational continuity. Decarbonisation exerts a broader but more moderate influence, affecting most investment blocks through energy efficiency, equipment choices, and operational optimisation rather than triggering standalone investment waves.

[59] World Economic Forum, 2025
[60] NVIDIA, 2025
[61] Copenhagen Economics, 2025b
[62] ENSIA, 2025a
[63] Capgemini, 2024
[64] International Data Corporation, 2024

Table 5: Materiality of the impact of macrotrends on investment blocks

Type of investment / investment block	Advanced connectivity	AI and automation	Geopolitical uncertainty	Decarbonisation
Network infrastructure	■■■■	□□□□	■■□□	■■■□
Network capacity upgrades	■■■□	■■□□	□□□□	■□□□
Customer devices	■□□□	□□□□	■□□□	■□□□
Security & resilience	■□□□	■□□□	■■■■	■□□□
Core & data systems	■■□□	□□□□	■■□□	□□□□
IT and software systems	■□□□	■■□□	■□□□	■□□□

4.2. The place of regulatory drivers in investment requirements

Regulatory reforms create investment incentives by addressing challenges related to scarcity, interoperability, and resilience

Telecom regulation plays an important role in enabling sector growth and innovation by addressing structural challenges unique to telecommunications, including resource scarcity, interoperability, and network resilience. In doing so, the regulatory framework is shaped by both telecom-specific rules and broader cross-sector developments, reflecting the sector's increasing integration into the wider digital economy. While ongoing regulatory obligations are likely to raise both capital and operating expenditure, the associated costs are difficult to quantify precisely. However, they are generally not expected to be highly material (below 2% of annual investments), particularly when weighed against the benefits delivered and the industry's core business requirements.

4.2.1. How regulation impacts the telecommunications industry

Regulation addresses scarcity, interoperability and resilience issues unique to telecommunications

The telecommunications industry has a critical role in national infrastructure and public communication and is thus subject to significant regulation. Unlike many other industries, telecom regulation often involves managing scarce resources like radio frequencies and enforcing interoperability standards.

Telecom regulation is driven by both regional bodies like the European Union, which sets harmonised rules, and local national regulators that tailor policies to specific market conditions and consumer needs. These regulatory frameworks aim to promote competition, innovation, and universal service while addressing issues such as data protection and network security. Key regulatory areas for the industry listed in Table 6.

Table 6: Overview of regulatory areas relevant to the telecommunications industry

Regulatory area		Description
Market design and adjacencies	**Competition**	Telecom operators are subject to competition legislation designed to prevent anti-competitive practices, ensure fair market access, and promote consumer welfare. This requires avoiding abuse of dominant market positions, refraining from price-fixing or collusion, and adhering to merger control regulations that restrict transactions likely to substantially lessen competition.
	Infrastructure sharing, access and price control	The regulatory framework ensures fair competition by enforcing access and interconnection obligations, including clear market definitions and Significant Market Power (SMP) requirements such as wholesale access to fibre and mobile network sharing. It also mandates price control through cost-oriented pricing methods like Long-Run Average Incremental Cost (LRAIC) and margin squeeze tests. Additionally, vendor risk assessments and supply chain security measures are mandatory to maintain compliance and safeguard network integrity.
	Spectrum management and radio frequency	Spectrum management regulations ensure the fair and efficient allocation and use of radio frequencies, balancing the interests of different stakeholders at both national and EU levels. They include rules on spectrum licensing, sharing, and coordination to promote competition and prevent interference. Additionally, ongoing monitoring and security measures are required to protect spectrum integrity and support the deployment of new technologies such as 5G and beyond.
	Consumer protection and end-user rights	The regulatory framework promotes transparency in contracts, number portability, complaint handling, and the protection of vulnerable users, while universal service obligations ensure that telecom services remain available and affordable. It enhances customer rights and service quality by requiring improved customer service and billing systems. Additionally, it may include subsidies or social tariffs as part of universal service obligations to support accessibility for all users.
Public interest and network integrity	**Network security and resilience**	The regulation aims to implement robust network security controls, meet strict incident reporting duties, and harden supply chains for resilience, this includes specific safeguards for 5G architectures. This demands an enhanced cybersecurity framework with continuous monitoring, rapid detection and response, and disciplined supply chain risk management from procurement through to ongoing assurance.
	Data, privacy and digital governance	Privacy rules safeguard personal data by mandating lawful use, upholding user rights, keeping communications confidential, and enabling responsible data sharing and interoperability. Telecom operators must manage consent and support data portability, and these obligations shape how their data governance systems are designed and operated.
	Environment and sustainability	Telecom operators must meet energy efficiency standards, manage electronic waste responsibly, publish ESG disclosures, and complete environmental impact assessments for major projects. Doing so requires investment in energy-efficient equipment and structured waste management programmes, with ESG reporting increasing transparency to regulators, investors and customers. Environmental impact assessments can also influence site selection and permitting, extending timelines and shaping project planning.

4.2.2. What is the current regulatory roadmap for the telecommunications industry

The regulatory outlook is shaped by both telecom-specific and cross-sector developments

The regulatory outlook for the telecommunications industry is shaped by ongoing developments driven by both sector-specific and broader regulatory changes. Technological advancements, increasing connectivity targets, and shifting market dynamics compel regulators to revise rules related to competition, network access, and service quality. At the same time, the telecommunications industry must address wider regulatory trends related to public interest and network integrity concerns, particularly in regard to the changing geopolitical landscape. Lately, there has also been a push towards simpler digital rules aimed at generating savings and boosting innovation (e.g. introduction of the Digital Omnibus package). Table 7 presents the current regulatory roadmap.

EU Regulations are directly applicable in Denmark, becoming national law without specific transposition but can require or give rise to an obvious need to introduce complementary national legislation. Directives, however, require active transposition into Danish national law, typically through acts passed by the Danish Parliament. Danish legislators can decide to either adopt directives as new acts or split the content of directives into one or multiple existing Danish acts.

Table 7: Overview of the current telecom regulatory roadmap

Regulation	Scope	Expected adoption / application
Digital Networks Act (DNA) *DK: TBD.* *EECC is currently reflected in Bekendtgørelse af lov om elektroniske kommunikationsnet og -tjenester (Teleloven)*	Core EU framework governing telecom markets, access regulation, spectrum, and consumer protection. The Digital Networks Act is proposed to replace the EECC (Directive (EU) 2018/1972).	Proposal was made 21 January 2026. Entry into force and application to be determined subject to ordinary legislative procedure.
Artificial Intelligence Act *DK: AI forordningen*	Regulation of AI systems based on risk, including AI used in network management and customer operations	Adopted March–May 2024; entered into force 1 Aug 2024; main obligations apply from Aug 2026
Gigabit Infrastructure Act *DK: Forordningen om gigabitinfrastruktur, Teleinfrastrukturlov*	Facilitation of high-capacity network deployment through access to infrastructure and faster permitting	Entered into force 11 May 2024; applicable from 12 Nov 2025; some obligations apply Feb–May 2026. The Danish "*Teleinfrastrukturlov"* is in the legislative process. It is proposed that the Act will enter into force on 12 May 2026
NIS2 Directive *DK: Lov om foranstaltninger til sikring af et højt cybersikkerhedsniveau, Lov om leverandørsikkerhed i den kritiske teleinfrastruktur, Lov om sikkerhed og beredskab i telesektoren*	Cybersecurity and resilience obligations for essential and important entities, including telecom operators	Entered into force 16 Jan 2023; transposition deadline 17 Oct 2024; NIS repealed from 18 Oct 2024
Cyber Resilience Act *DK: Forordningen om cyberrobusthed*	Cybersecurity requirements for digital products and software placed on the EU market	Adopted 23 Oct 2024; entered into force 10 Dec 2024; main requirements apply from Dec 2027
EU Data Act *DK: Dataforordningen*	Rules on access to, sharing, and use of data generated by connected devices and services	Entered into force 11 Jan 2024; majority of provisions apply from 12 Sept 2025
Corporate Sustainability Reporting Directive (CSRD) *DK: Transposition into Årsregnskabsloven, revisorloven and more*	Mandatory sustainability reporting for large companies, including environmental and social impacts	Entered into force 5 Jan 2023; applicable from 1 Jan 2024; scope and timing subject to Omnibus discussions
Corporate Sustainability Due Diligence Directive (CSDDD) *DK: TBD*	Due-diligence obligations on human rights and environmental impacts in value chains	Entered into force 25 July 2024; transposition by 26 July 2027; phased application with full scope from 2029

4.2.3. What is the financial impact of the regulatory roadmap on the industry?

Ongoing regulatory obligations are likely to raise capex and opex levels

The upcoming regulatory changes in the telecommunications industry are expected to have some financial impact on operators, affecting both capital expenditures (capex) and operational expenditures (opex). Compliance with new rules may require investment in network upgrades, security enhancements, and infrastructure expansion, driving up capex. At the same time, ongoing obligations such as stricter reporting, customer protection measures, and vendor risk assessments could increase opex through higher administrative and operational costs. Some compliance costs can be regarded as capex as well as opex depending on the choice of approach to compliance; investment in tooling versus hire additional capabilities.

While challenging to assess with precision, the majority of these costs are unlikely to be highly material in regard to associated benefits and general business requirements in the industry

While these investments may initially raise costs, they also aim to foster a more competitive and secure market environment, potentially enabling long-term efficiency gains and new revenue opportunities. Table 8 provides a high-level assessment of the expected financial impact of the regulatory roadmap. The scope of the assessment is based on estimated implementation costs. Hence, the industry benefits are not included. However, especially within cyber and resilience, positive impacts (e.g. avoidance of loss due to cyber-attacks) are assessed by the regulators to be significant.[65] Regulations already in place with annual costs are not included in the assessment as the focus is placed on additional capital requirements going forward.

Financial impact estimates are assessed based on impact at industry level[66]. Materiality bands are quantified using the 2014-2024 average investment level (DKK 9.5 billion).

Low materiality: financial impact of less than 1% of annual investments (<95m DKK)

■□□

Medium materiality: financial impact between 1% and 2.5% of annual investments (95–200m DKK)

■■□

High materiality: financial impact of more than 2.5% of annual investments (>200m DKK)

■■■

[65] See for instance, impact assessments of the Cyber Resilience Act or the NIS2 Directive from European Commission, 2022b & European Commission, 2020

[66] Estimates on financial impact are highly uncertain due to the nature of regulation. Furthermore, firms' approach to implementation and risk appetites will affect the cost incurred. The estimates below are based on impact assessments from regulators and subject matter experts.

Table 8: Estimated financial impact of the regulatory roadmap

Regulation	Impact description	Impact
Digital Networks Act	Aimed at accelerating the transition from copper to fibre networks, harmonising spectrum policy, strengthening cybersecurity for critical components, securing undersea cables, introducing EU-level authorization and "passporting" regime, and implementing regulatory frameworks to promote fair competition and cost-sharing responsibilities among large content providers. The purpose is not to expand the current regulatory obligations but instead make more efficient regulation. ➔ Limited implementation investments are expected	**Main investment blocks:** Network capacity upgrade IT and software systems **Materiality:** ■ □ □
Artificial Intelligence Act	The EU Artificial Intelligence Act establishes a risk-based regulatory framework for the development and use of AI, with stricter requirements for high-risk applications affecting safety, fundamental rights, and critical infrastructure. While not telecom-specific, the regulation applies to telecom operators where AI is deployed in network operations or other critical infrastructure, introducing requirements on transparency, governance, and human oversight. ➔ Potential investments (if applicable) are in AI governance frameworks, compliance monitoring tools, auditing capabilities, staff training, and possibly redesign of AI systems	**Main investment blocks:** IT and software systems **Materiality:** ■ ■ □
Gigabit Infrastructure Act	The act aims to accelerate the rollout of ultra-fast and lower the cost of deploying high-speed internet networks by streamlining permit processes, encouraging shared use of existing infrastructure (like ducts and poles), and making deployment in new buildings easier. Rather than increasing regulatory burden, it seeks to streamline and coordinate regulation. ➔ Potential investments are in shared infrastructure management systems, coordination mechanisms, legal compliance, and coordination with authorities. However, since mobile operators have been legally required to share and coordinate mast deployment under the Mast Act since 1999, such coordination is already well established in practice.	**Main investment blocks:** Network infrastructure **Materiality:** ■ □ □
NIS2 Directive	NIS2 is aimed at strengthening cybersecurity risk management, incident reporting, supply chain security, and governance. The regulation is targeted at essential and important entities, including fixed and mobile network operators. The directive is transposed into Danish law through a combination of legislative acts and executive orders, notably the Act on Security and Preparedness in the Telecom Sector and the Act on Measures for Ensuring a High Cybersecurity Level. [67] ➔ Investments in cybersecurity infrastructure, incident response teams, risk assessment tools, supply chain risk management, and staff training.	**Main investment blocks:** Security & resilience **Materiality:** ■ ■ □
Cyber Resilience Act	The act aims to ensure digital products meet cybersecurity requirements throughout their lifecycle, including secure design and vulnerability management. Due to the regulation, telecom operators must ensure network equipment and software comply with security standards to prevent vulnerabilities and cyberattacks, ➔ Potential investments are in secure product development, vulnerability management systems, patching infrastructure, compliance monitoring, and staff training.	**Main investment blocks:** Security & resilience **Materiality:** ■ ■ □
EU Data Act	The EU Data Act establishes rules to ensure fair access to and sharing of data generated by connected devices and services. It applies to a wide range of stakeholders, including telecom operators where they manage or provide access to such data, while operators offering only traditional connectivity are expected to face limited impacts. ➔ Potential investments are in data management platforms, interoperability solutions, and compliance systems	**Main investment blocks:** Core & data systems **Materiality:** ■ □ □

[67] Retsinformation, 2025a; Retsinformation, 2025b

Corporate Sustainability Reporting Directive	The Corporate Sustainability Reporting Directive requires companies to report ESG metrics including environmental impact, energy use, and social responsibility. The regulation is already in force and has been subject to recent changes where main scope has been to limit the obligations for companies. ➔ Potential investments are in data collection systems, reporting platforms, and sustainability governance frameworks.	**Main investment blocks:** IT & software systems **Materiality:** ■ □ □
Corporate Sustainability Due Diligence Directive	The Corporate Sustainability Due Diligence Directive requires large companies to perform risk-based due diligence to identify, assess, address and mitigate potential and actual adverse impacts on human rights and the environment in connection with a company's activities and broader business operations. ➔ Potential expected costs are related to establishing and operating the due diligence process. Transitions to adapt a company's own operations and value chains should be expected if needed.	**Main investment blocks:** IT & software systems **Materiality:** ■ □ □

4.3. How investments drive competitiveness in the telecommunications industry

As digital convergence accelerates, traditional scale advantages must be matched by strategic investment in innovation and resilience.

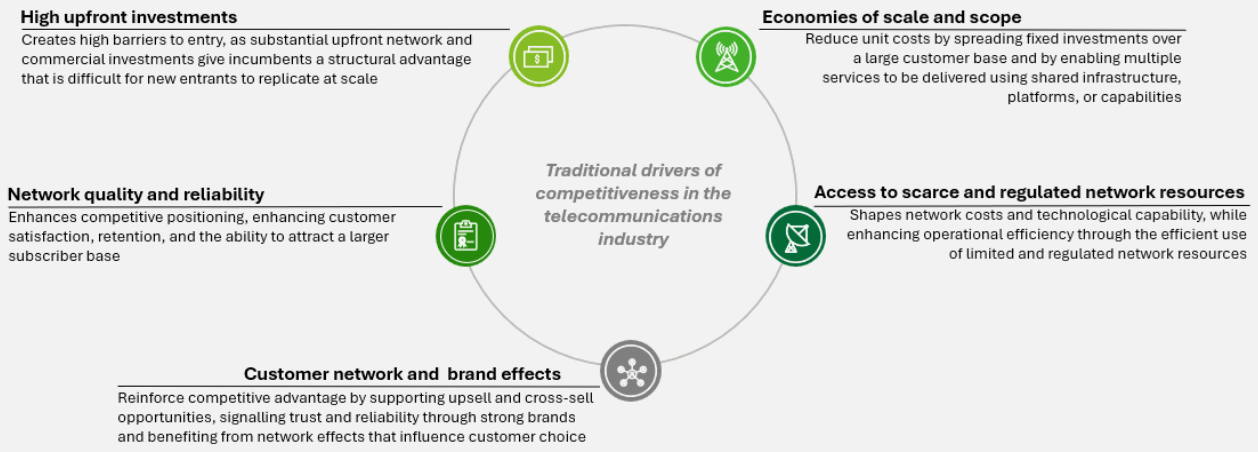
Emerging macro trends and evolving regulatory frameworks are transforming the telecom landscape, creating new drivers of competitiveness within the sector. As a result, the traditional sources of competitive advantage such as economies of scale and scope may no longer be sufficient to thrive in a more converged digital environment. Instead, early investments in AI, resilience measures, next-generation technologies, and interoperability are helping operators enable cost savings and generate new revenue streams, enhancing their competitiveness.

4.3.1. The conventional sources of competitive advantages in the telecommunications industry

Complex regulation and high capital intensity have historically underpinned competitive advantage in telecommunications

The telecommunications industry is characterised by high fixed infrastructure costs, significant economies of scale, and regulatory oversight, which has historically shaped competitive dynamics in the industry. Traditional sources of competitive advantage include extensive infrastructure ownership, robust network quality and coverage, access to spectrum, the ability to scale, and an established customer base and network effects which enable telecom operators to grow and maintain market position. These are presented in Figure 29 and described in detail below.

Figure 29: Traditional drivers of competitiveness in the telecommunications industry



Source: Deloitte Economics, 2026

High upfront investments

Upfront investments in network infrastructure, as well as commercial investments in sales and distribution channels, give incumbents a strategic advantage over new entrants.[68] High investment requirements make it difficult for new entrants to replicate incumbent networks and gain market share.[69]

Network quality and reliability

Network performance, including speed and reliability, is one of the key competitive differentiators, as it directly influences customer satisfaction and retention.[70] Operators with better network quality are therefore well-positioned to attract and sustain a larger subscriber base than those with less robust infrastructure.

Economies of scale and scope

Economies of scale and scope are well-established features of telecommunications industry economics. Larger operators can distribute the substantial fixed costs of network deployment, operations, and maintenance across a broader subscriber base, enabling

[68] World Bank Group, 2018
[69] World Bank Group, 2021
[70] Simon Kucher, 2024

materially lower unit costs.[71] This cost structure creates a structural advantage that smaller competitors find difficult to replicate. Likewise, operators with multiple telecom service offerings can benefit from economies of scope, as the cost of offering services jointly is lower than providing each service separately.[72]

Access to scarce and regulated network assets

Telecom operators derive competitive advantage from access to network resources that are both scarce and subject to regulatory oversight. This includes licensed spectrum in mobile markets and the ownership and operation of regulated infrastructure in fixed markets.[73,74] Control over these resources influences cost structures, service quality, and competitive positioning.[75]

Customer network and brand effects

A large, established customer base helps telecom operators to develop new revenue streams by creating opportunities to upsell and cross-sell services.[76] Strong telecom brands signal reliability and trust, making them more attractive to both enterprise and consumer segments.[77] These advantages are amplified by network effects, as there is some evidence that the individual choice of operators is influenced by the total number of subscribers and the choice of close family members.[78]

4.3.2. Current drivers of competitiveness in the telecommunications industry

Rapid technological change and competition from non-telecom players are shifting telecom competitiveness toward innovation- and resilience-led investment.

New drivers of competitiveness are emerging in the telecommunications industry as it faces a rapidly transforming landscape, shaped by fast-paced technological changes and growing competition from non-telecom players.[79] To navigate these shifts, telecom operators are increasingly resorting to strategic investments in emerging technologies, network infrastructure, platform interoperability, and resilience. Such investments enable operators to remain competitive by unlocking new business models and revenue streams, strengthening network effects, differentiating services, increasing supplier leverage, and enhancing operational continuity.

Investments in new technologies and innovation help create new and differentiated offerings

Investments in new technologies and innovation, sometimes through strategic partnerships with non-telecom players, can create new and differentiated services. OTT services and alternative connectivity solutions such as satellite internet are increasingly disrupting traditional telecom pricing models.[80] To remain competitive, telecom companies therefore need to innovate service offerings, invest in new technologies, and implement flexible pricing models.[81] This can support service differentiation, enabling telecom operators to attract and retain customers with high-performance connectivity.

Early investments in network infrastructure enables first mover advantage

Early investments in network infrastructure can build a high-capex backbone that provides a first-mover advantage and raises the structural cost of market entry. Significant sunk costs associated with network investments are difficult to replicate, enabling incumbents to establish effective barriers to entry.[82] For example, early fibre network deployment has been found to help operators capture a larger market share compared to late entrants as customers prefer faster, more reliable service.[83]

[71] ITU, 2000
[72] OECD, 2015
[73] Lundborg et al., 2012
[74] OECD, 2025b
[75] Competition Commission of India, 2021
[76] McKinsey & Company, 2022
[77] Desta & Amantie, 2024
[78] Birke & Swann, 2007
[79] Infosys, 2024
[80] Awwad, 2023
[81] Infosys, 2024
[82] OECD, 2003
[83] McKinsey & Company, 2024

Operational efficiency and productivity drive efficiency gains

Among stagnating revenue, operational efficiencies have been the main driver of margin preservation for Danish telecom operators. Efficiencies and productivity investment span network optimisation, security enhancements, and customer service improvement. AI applications are expected to be an increased engine to reach these outcomes in the telecommunications industry.[84] As a result, telecom operators in Europe are forming regional and global partnerships to strengthen their AI capabilities. For example, Vodafone agreed to a ten-year strategic partnership with Microsoft in 2024 to enhance customer service and digital transformation through AI.[85]

Platform interoperability augments bargaining power with suppliers

Improving platform interoperability through open architectures and standards fosters a more competitive supply chain environment, lowering reliance on suppliers, and enhancing flexibility in deployment. For example, Open RAN (effectively decoupling software and hardware) can help reduce capital expenditure by avoiding vendor lock-in and enabling a more modular value chain.[86] [87] In mature markets such as Denmark, these benefits must however be weighed against the greater technical and operational responsibility placed on operators as they move away from integrated solutions.

Resilience and trust enhance business continuity

Investments in cybersecurity, system redundancy, business continuity, and climate resilient infrastructure not only strengthen resilience to disruptions but also create new revenue opportunities. With telecom networks increasingly intertwined with critical sectors such as finance, healthcare, and energy, investments in security and resilience are critical to meeting the growing demand for reliable connectivity.[88] Reflecting this trend, some telecom operators have also introduced security-as-a-service offerings, creating additional revenue streams.[89] Moreover, investments in climate resilient telecom infrastructure can also reduce life-cycle costs and ensure business continuity, further enhancing operator competitiveness.[90]

[84] World Economic Forum, 2025
[85] Vodafone, 2024
[86] Open RAN Policy Coalition, 2024
[87] Monitor Deloitte, 2023
[88] OECD, 2023
[89] Copenhagen Economics, 2025
[90] World Bank Group, 2024

4.4. Assessing future investment needs in the Danish telecommunications industry

Capital expenditure reached a peak of DKK 12.5 billion in 2021 and has since declined as 5G and gigabit connectivity have approached universal coverage

The Danish telecommunications industry follows long-term capital expenditure cycles of around 10–15 years. In the past two cycles, capital spending peaked at ~DKK 12.5 billion in real terms in 2008 and in 2021.[91] Following the investment peak driven by 5G deployment and fibre rollout up to 2021, capital expenditure has declined, reaching DKK 9.4 billion in 2024, ~23% below the peak. Capital intensity is expected to decline further in the coming years, as Denmark has achieved near universal 5G coverage and ~98% gigabit broadband coverage, and operators increasingly focus on monetising existing network infrastructure (cf. section 3.2).[92,93]

Telecom investment in Denmark is expected to broadly follow historical cycles, with a 6–8% upside to the DKK 145 billion baseline spend over 2025–2040

A business-as-usual trajectory fitting the historical pattern would contribute to DKK 145 billion in investments between 2025 and 2040. However, emerging technological, regulatory, and security trends could shift the timing and scale of future investment peaks away from historical patterns. Given Denmark's already high levels of data consumption and the near-completion of nationwide network rollouts, a probability-weighted scenario analysis suggests that any deviation from this baseline is likely to be a relatively moderate increment (<10%). The upside is likely to be primarily driven by additional security and resilience-related spending.

4.4.1. Future investment scenarios

Four baseline scenarios draw potential trajectories for Danish telecom investments until 2040

Industry analyses anticipate the next major capital spending wave on 6G radio access network and supporting technologies including wireless access, AI-native networking, and edge infrastructure to ramp up between 2028 and 2034.[94] Rapidly evolving technology trends, such as a projected rise in data traffic, continued growth in edge computing investment, and evolving regulatory frameworks related to security and resilience, may shift the investment trajectory away from historical patterns.

To assess the impact of these market trends, we develop four baseline scenarios to estimate the trajectory for Danish telecom investments over the next 15 years until 2040. Each scenario is modelling the uptick of specific trends and investment drivers (e.g., increased resilience, mass AI adoption) in isolation from each other. In order to provide a comparative counterfactual to the four scenarios, a fifth "business as usual" (BAU) scenario is proposed to model an investment cycle similar to past ones. These scenarios are outlined in further details in Table 9.

A central scenario is defined based on the relative likelihood of the baseline scenarios

The baseline scenarios allow to disentangle investment drivers form each other and understand their respective impact on the investment cycle across telecommunications investment blocks. In order to understand how the simultaneous unfolding of these trends may impact actual future investments, we propose a central scenario using a probability-weighted consolidation of the four baseline scenarios. The weights represent the relative likelihood of each scenario to realise and are based on a review of recent market analyses as well as on the interviews performed with industry participants, regulators, academics and other industry experts. The weighting of scenarios is presented in Table 10.

[91] Expressed in 2025 prices
[92] Recordere, 2023
[93] GSMA, 2025a
[94] Nasdaq, 2025

Table 9: Telecom investment scenarios over 2025–2040

Scenarios	Growth in investment blocks	Scenario Description
Business as usual (BAU)	Historical growth trends	Investment follows historical patterns across all six blocks. Network, core, and IT systems grow steadily, with customer devices refreshed according to normal lifecycle schedules. Resilience and security measures are maintained at routine levels. This scenario represents a stable environment with no major technological or market shifts, serving as a baseline for comparison.
Scenario A: Digital & AI Upgrade	- Core and data systems - IT and software systems	Rapid adoption of AI, cloud platforms, and automation drives accelerated investment in core and IT systems. Upgrades to software platforms and edge computing enhance operational efficiency and service quality. Staff training and software licensing also increase to support digital transformation, while network infrastructure remains largely unchanged. This scenario assumes above-average annual growth in the OSS BSS, AI use in telecoms, edge computing, and data centre markets.
Scenario B: High-Capacity Networks	- Network infrastructure and capacity upgrades - Core and data systems - Customer devices	Strong growth in data traffic requires large-scale investment in network capacity and core systems. Fiber, mobile network base stations, and edge infrastructure are expanded to ensure reliable service and low latency, including dedicated point-to-point connections. Customer devices are upgraded to support higher speeds and advanced applications. Investment focuses on scaling infrastructure to meet current demand and future growth. This scenario assumes above-average annual growth in the network infrastructure, telecom service provider, power systems, customer devices, edge computing, and data centre markets.
Scenario C: Resilience and Security	Security and resilience	Rising cyber threats, natural disasters, and infrastructure risks drive investment in network hardening, data centre protection, advanced monitoring, and cybersecurity tools. Emphasis is on maintaining continuity, reliability, and operational resilience under adverse conditions. Capacity growth continues at historical levels, but security and risk mitigation are prioritised. This scenario assumes above-average annual growth in the telecom cybersecurity, network security, and telecom infrastructure protection markets, with expenditure going well above current regulatory baselines.
Scenario D: Demand Plateau	- Network infrastructure and capacity upgrades - Core and data systems - IT and software systems - Customer devices	Investment levels remain flat across most blocks due to structural or financial limitations. Network and core upgrades progress minimally, new IT and software projects are muted, and customer device updates occur less frequently. This scenario reflects a constrained investment environment with limited capacity to support growth or innovation, potentially affecting service performance and operational resilience. It assumes a slowdown in the annual growth rates across sub-markets of the key investment blocks except security and resilience relative to the baseline.

Table 10: Relative likelihood of alternative telecom investment scenarios

Scenarios	Weight	Rationale
Scenario A: Digital & AI Upgrade	**15%–25%**	Telecom operators see AI as a source of competitive advantage resulting in increasing deployment of AI and digital platforms, although monetisation risks remain.[95] Denmark's high digital adoption and advanced public-sector digitalisation create a sizeable addressable market for IT, data, and software investment.[96] As a result, AI and IT spending can be expected to modestly outpace prior cycles. However, as such investments remain largely discretionary compared with mandatory regulatory or security expenditures, they warrant a moderate weighting.
Scenario B: High-Capacity Networks	**15%–25%**	Denmark already benefits from extensive fibre and 5G coverage (transitioning to 5G SA), with gigabit-level broadband accessible to ~98% of households. Fixed-network investment is expected to be driven less by coverage expansion and increasingly by capacity upgrades, transport and aggregation scaling, mobile backhaul needs, and enterprise-driven extensions. In parallel, upcoming 6G, edge computing and network refresh cycles beginning around 2030 create credible windows for renewed investment in RAN and edge infrastructure.[97] Global industry forecasts indicate that 6G and advanced RAN architectures will generate a meaningful uplift in mid- to late-decade capital expenditure.[98] For Denmark, this suggests that further network investment is likely over the long horizon, although not certain to exceed previous spending cycles given the market has a well-developed infrastructure base.
Scenario C**:** Resilience and Security	**50%–60%**	The changing European geopolitical landscape creates a multi-year, non-discretionary investment trajectory in network hardening, incident response, and organisational risk management. This is compounded by a converging set of regulatory drivers including the NIS2 directive and the upcoming EU Cyber Resilience Act imposing increased security and resilience requirements. With some telecom operators launching security-as-service offerings to match increased demand from governments and enterprises, security-driven capex is expected to remain the most certain and persistent investment area through 2026–2040.[99]
Scenario D: Consumption plateau and subdued cycle	**5%–15%**	Global industry reports and operator guidance across the Nordics suggest disciplined capital expenditure in the short to medium term, as 5G SA and fibre rollouts mature and capex-to-sales ratios temporarily decline.[100,101] As high-bandwidth applications such as 4K streaming become standard and efficiency gains from technologies such as large language models my reduce data intensity, overall data consumption growth may plateau and add to a potential subdued investment cycle. However, over a 15-year horizon, ongoing security compliance requirements and successive technology refresh cycles make this scenario unlikely. While a temporary stabilisation in capex in the late 2020s is plausible, a sustained subdued cycle through 2026–2040 appears unlikely, warranting a lower weighting.

4.4.2. Telecom investment forecast between 2025 and 2040

Investment in the Danish telecommunications industry through 2040 varies across scenarios. A probability-weighted outcome scenario points to a sub-10% increase above the baseline.

Under the BAU scenario, cumulative capital expenditure in the Danish telecommunications industry is projected to reach DKK 145 billion between 2025 and 2040, with investment peaking in 2033.[102] Figure 30 illustrates capital spending across scenarios, highlighting the range of possible investment paths driven by varying degrees of network expansion, digitalisation, and security requirements. Network capacity investments under Scenario B gain momentum between 2029 and 2034, while IT and AI investments under Scenario A and resilience and security investments under Scenario C begin to rise from 2026, reflecting a faster integration of generative AI and the phased implementation of resilience-related measures.

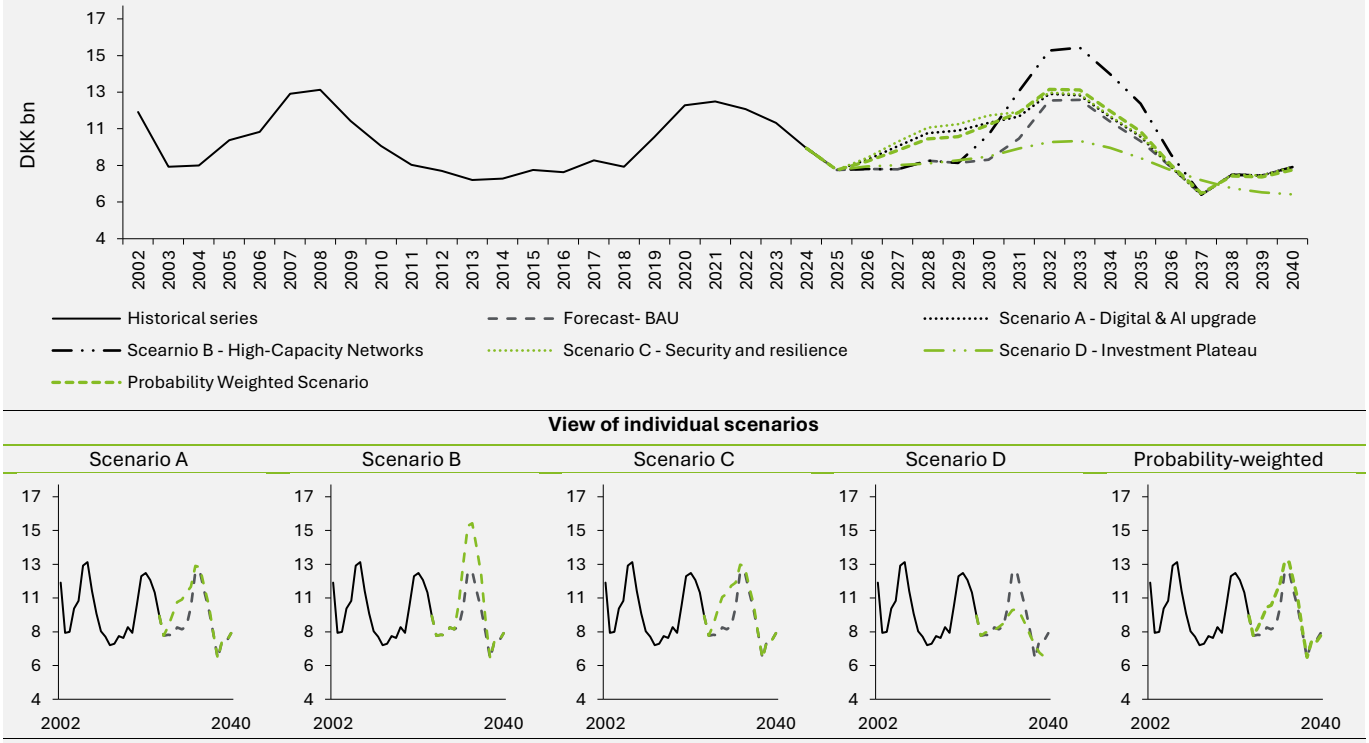
Changes in spending relative to the baseline for each scenario are presented in Table . Changes over the cumulative baseline profile range from DKK -11.4 billion (scenario D, demand plateau) to +17.9 billion (scenario B, high-capacity networks). While scenarios span a broad range of outcomes, the probability-weighted scenario points to a moderate increase of DKK 7.8 to 9.5 billion relative to the baseline, for a total of DKK 155 billion on the considered period. This suggests that investment over the next 15 years is likely to broadly follow the pattern of the previous cycle, with some upside potential.

[95] IBM, 2025
[96] ITA, 2024
[97] TelcoFutures, 2025
[98] Dell'Oro Group, 2025
[99] Copenhagen Economics, 2025b
[100] Telenor, 2025
[101] Dell'Oro Group, 2025
[102] Expressed in 2025 prices

Investment scenarios are forecast using past trends, projected growth rates across investment blocks from industry analysis as well as inputs from interviews

The BAU scenario forecast assumes that Denmark will replicate the historical telecoms investment cycle, with the distribution across investment blocks informed by industry analysis and stakeholder interviews. An average annual growth rate, based on Danish and broader European market trends, is applied to all investment blocks to project their relative shares in 2040. A 15-year growth trajectory is then computed and fitted to the underlying cycle pattern, using historical data as well as market forecasts. Alternative approaches follow a similar approach, where the growth rate for relevant blocks is adjusted to reflect either maximum potential growth or a slowdown relative to BAU, while the remaining blocks continue to grow at the average rate. Growth assumptions for these blocks have been developed to reflect the expectations expressed by market stakeholders under different scenarios.

Figure 30: Investment forecast for the Danish telecommunications industry, 2025 prices



Source: Deloitte Economics 2026

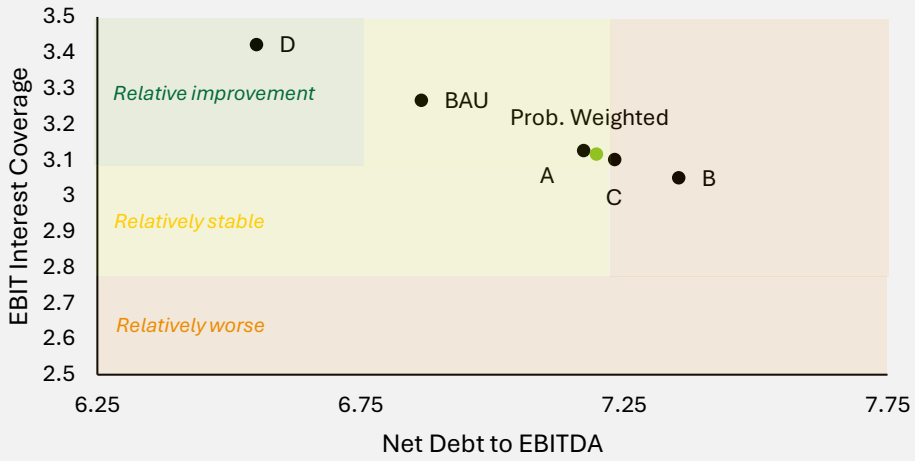
Table 11: Overview of additional investment by scenarios relative to the baseline

Scenarios	Additional investment requirements between 2025 and 2040 (DKK bn, 2025 prices)						
	Network infra & upgrades	Core and data systems	Customer devices	IT and software systems	Security and resilience	Total additional investment	Percentage increase over baseline
Scenario A: Digital & AI Upgrade	-	2.1–2.5	-	7.2–8.8	-	**11.3–9.3**	**6.4%–7.8%**
Scenario B: High-Capacity Networks	9.4–11.5	4.0–4.9	1.2–1.5	-	-	**14.7–17.9**	**10.1%–12.4%**
Scenario C: Resilience and Security	-	-	-	-	11.1–13.5	**11.1–13.5**	**7.6%–9.3%**
Scenario D: Demand Plateau	(6.5)–(8.0)	(1.4)–(1.7)	(0.5)–(0.6)	(0.9)–(1.1)	-	**(9.3)–(11.4)**	**(6.5%)–(7.9%)**
Probability Weighted Scenario	**1.2–1.5**	**1.0–1.2**	**0.2–0.2**	**1.1–1.3**	**5.9–7.2**	**7.8–9.5**	**6.5%–7.9%**

4.4.3. Financial implications of forecast investment scenarios

The probability-weighted scenario appears absorbable for the Danish telecommunications industry, but would further strain already elevated debt levels

Figure 31: Potential impact of forecast scenarios on industry's financial position



Source: National account registers, via relevant data aggregators, LSEG database; 2025. Note: the ratios are calculated using real 2024 prices. Financial sample.

Most investment paths remain manageable but leave telecom firms financially stretched.

Figure 31 provides an illustrative view of how investment trajectories could translate into financial outcomes under simplified assumptions.[103] It offers a high-level assessment of how firms' financial positions might evolve relative to the most recently published financial information (2024). Financial outcomes are expressed in terms of firms' ability to pay the interest on their debt (EBIT interest coverage) and their level of indebtedness relative to earnings (net debt to EBITDA, i.e. how much debt firms carry compared to what they earn).

Across all scenarios, companies remain highly indebted, with debt staying large relative to earnings. At the same time, their ability to pay interest on that debt remains positive but tight. In practical terms, this implies that firms would continue to service their debt, but with a limited margin of safety, leaving financial headroom sensitive to changes in operating conditions and investment intensity.

At the same time, recent developments illustrate the cyclical nature of these dynamics. In 2024, as investment intensity declined following the peak rollout phase, interest coverage improved markedly, highlighting how financial flexibility strengthens in periods of lower capital expenditure. This reflects the point at which operators begin to realise returns from long-lived investments, underscoring that financial pressure observed during high-investment phases is not necessarily persistent.

Under the probability-weighted scenario in particular, the sector appears able to absorb the projected investment path without tipping into financial distress. However, it would operate close to a stressed position. In such a context, unexpected setbacks (such as weaker revenues, higher costs, or delays in realising returns on investment) could place renewed pressure on cash flows and financing capacity.

As a result, firms would have limited room to manoeuvre without adjusting investment profiles, seeking additional financing, or accepting higher refinancing risk. Rather than facing an immediate risk of failure, operators would be required to manage balance sheets cautiously, with a focus on preserving financial stability during periods of elevated investment, while benefiting from improved flexibility as capital intensity eases.

[103] The aggregated 2024 financial position of industry players is modelled by scaling investment and revenue assumptions in line with each scenario. The results are used to assess the relative financial sustainability of the scenarios considered. The model is intended to illustrate the sensitivity of key financial sustainability indicators to different scenarios and should not be interpreted as a forecast of future financial performance.

4.5. Measures to support investments and future financing needs

Greater telecom investment in Denmark can be supported with streamlined regulation, supportive policies and alternative financing mechanisms

Whilst some policy and industry studies have pointed to market consolidation as a potential response to financing challenges, both its necessity and its benefits remain contested. More broadly, a stable and predictable regulatory and policy environment can play an important role in supporting telecom investment by reducing uncertainty and costs and enabling long-term planning, for example through flexible spectrum management and streamlined administrative processes.

To fund greater investments, Danish telecom operators will need to consider a range of financing sources. Elevated leverage, modest short-term returns, and the completion of a major investment cycle limit the scope for additional equity or debt financing. Moreover, traditional financing channels pose trade-offs relating to dilution, signalling, solvency, and financial flexibility. As a result, alternative financing mechanisms such as network sharing, asset monetisation, purpose-linked financing, and public–private partnerships could become increasingly relevant to sustain investments.

4.5.1. Market and regulatory measures to support investments

Whilst consolidation has emerged as a means to address low profitability, its necessity and potential benefits remain contested.

Some industry and policy studies have suggested consolidation as a means to improve operator finances and support network investments in the telecommunications industry.[104] However, the necessity and benefits of consolidation remain contested. An alternative view is that consolidation may concentrate scarce resources, such as spectrum, in the hands of fewer operators, while recurrent revenues may already be sufficient to finance future network upgrades.[105.106] The impact of consolidation on key telecom market outcomes is extensively discussed in section 5.

Flexible spectrum policies and policy support can reduce costs for telecom operators, supporting sustainable network investment.

Flexible and balanced spectrum management can help contain rising spectrum costs and support the sustainability of telecom investment. Denmark performs well in this respect, as spectrum assignments are largely technology-neutral, enabling operators to deploy multiple wireless technologies and use cases under a single authorisation.[107]

In recent years, Denmark has also introduced measures to ease the financial burden on operators, including setting zero reserve prices in exchange for coverage obligations and allowing licence fees to be paid in instalments rather than as lump-sum payments in some cases.[108] These measures have contributed to lower prices compared with international benchmarks for certain bands, such as sub-1 GHz spectrum, although prices for other bands remain above the global average.[109] For example, the price of mid-band 2.6 GHz spectrum in Denmark is USD 0.26 per MHz per population, compared with a global average of USD 0.11.[110]

Section 3.1.2 notes the gradual increase in ratio of spectrum costs to revenues in Denmark in recent years. If this ratio continues to climb further in the future, operators may face increasing financial pressure. This could be further compounded by additional spectrum requirements estimated by GSMA, including an estimated additional 2–3 GHz of mid-band spectrum capacity per country, expected to be sourced from frequencies between 3.8 GHz and 8 GHz, over the 2035–2040 period to support advanced 6G deployments.[111] As a result, keeping the cost of future mid-band spectrum assignments lower as noted by ITU in the

[104] GSMA, 2025B
[105] CEPR, 2024
[106] BEREC, 2023
[107] Agency for Digital Government, 2009
[108] Energistyrelsen, 2021
[109] Aetha Consul, 2019
[110] PolicyTracker, 2026
[111] GSMA, 2025c

case of 5G rollouts globally, could therefore help mitigate these pressures, enabling operators to allocate more capital to future network rollout.[112]

The Centre on Regulation in Europe (CERRE) has put forth another recommendation to support operators' financial performance in the form a longer duration for spectrum licences than the typical 15–20 years seen elsewhere in Europe and in Denmark.[113] However, this approach has been contested by BEREC on the grounds that longer licence durations may lead to inefficient use of spectrum and reduce market competition by raising barriers to entry.[114] As a result, telecom authorities may need to consider market conditions, financial performance of operators, and potential impacts on efficiency and competition when determining licence durations for future auctions.

Policy guidance and streamlined regulation can also help reduce compliance costs for operators by lowering uncertainty regarding the scale of security investments required. Risk-sharing mechanisms, such as public-private partnerships, can support the rollout of initiatives that have broader societal benefits, such as resilience measures.[115] Streamlining regulatory requirements from overlapping regulations such as NIS2 and Critical Entities Resilience (CER) is another measure that has been forward by the industry to reduce compliance costs and support more investments[116], although compliance costs are unlikely to be strongly material (cf. section 4.2)[117].

Streamlined administrative processes and a predictable, flexible regulatory framework reduce delays and uncertainty, supporting stronger investment incentives

Streamlined and predictable administrative processes can address challenges related to permitting and regulatory delays, have also been pointed by industry participants as supporting greater investments.[118] In this context, the Danish Agency for Digital Government introduced a permitting toolbox in 2022 to simplify procedures for operators and municipalities.[119] However, average waiting times for mast permits continued to rise between 2022 and 2024, increasing by 35% to 347 days, indicating that additional measures may be required.[120] The proposed introduction of a four-month case processing deadline for infrastructure permits, in line with the EU Gigabit Infrastructure Act, with the option for operators to appeal to the Danish Digital Agency if the deadline is exceeded, could help reduce administrative delays in Denmark.[121]

Improvements and flexibility in the regulatory framework also play a critical role in shaping investment outcomes. CERRE and the Draghi report on European competitiveness posit that ex-ante regulation should be complemented by ex-post regulation that addresses anti-competitive conduct after it occurs. [122,123] This approach can result in a flexible framework that better accommodates evolving connectivity and technological changes. However, as ex-post interventions can sometimes be slow or ineffective, the balance between ex-ante and ex-post regulation must be carefully calibrated to ensure meaningful deterrence of competitive harms. [124]

[112] ITU, 2022
[113] CERRE, 2024a
[114] BEREC, 2025
[115] ENSIA, 2015
[116] Copenhagen Economics, 2025b
[117] Stakeholders interviewed in the preparation of this report could provide isolated examples of regulatory-driven expenses but were unable to provide a quantified cost assessment of compliance costs.
[118] ITU, 2021
[119] Agency for Digital Government, 2022a
[120] Copenhagen Economics, 2025a
[121] Agency for Digital Government, n.d. b.
[122] CERRE, 2024
[123] Draghi, 2024
[124] OECD, 2021a

4.5.2. Measures to support future financing needs

Table 12: Financing options for the telecommunications industry

Financing Framework	Definition
Equity financing	Equity financing involves raising capital by selling shares of ownership in a company, allowing investors to gain a stake and potential dividends.
Debt financing	Debt financing refers to borrowing funds that must be repaid over time with interest, typically through loans or bonds, without giving up ownership.
Alternative debt instruments	Alternative debt instruments are non-traditional borrowing methods such as sustainability-based notes, offering flexible terms beyond standard loans or bonds.
Shared networks	Shared networks are collaborative infrastructures where multiple organisations or users connect and share resources, enhancing efficiency and communication.
Asset monetisation	Asset monetisation is the process of converting non-liquid assets (such as mobile towers) into cash or revenue streams, often through leasing, selling, or securitisation.
Public-private partnerships	Public-private partnerships are cooperative agreements between government entities and private sector companies to finance, build, and operate projects or services for public benefit.

Equity financing could be appealing to reduce leverage risks.

The Danish telecommunications industry faces limited room to raise additional financing through conventional equity or debt channels. Elevated leverage levels, modest short-term returns, and the near completion of a major investment cycle reduce both the attractiveness of equity issuance and the capacity for further borrowing. As a result, the sector may need to rely on alternative financing mechanisms, such as network-sharing structures, asset monetisation, public-private partnerships, and emerging instruments linked to non-financial performance.

Equity-based capital injections remain an option but bring significant trade-offs. The sector's average equity ratio of 36% remained stable throughout the investment peak, meaning new equity would dilute the incumbents' ownership stake. Equity fundraising also introduces signalling effects (where markets interpret issuances as markers of unfavourable financing circumstances) and agency risks (referring to misalignment between new investors' objectives and existing owners' strategic priorities).[125] Combined with Denmark's relatively low short-term returns between 2021-2024, attracting broad investor interest may be challenging. Nonetheless, long-horizon institutional investors, particularly pension funds, remain well suited to the sector's sustained long-term return profile[126]. This is reflected in international examples (e.g. CPP's investments in Cellnex and NetCo) as well as domestic co-investment from ATP, PFA and PKA in TDC.[127]

Additional debt financing preserves ownership control but would further constrain liquidity and solvency.

Debt financing has been a reliable source of capital for the telecommunications industry, but rising leverage through the latest rollout period has increased financial constraints. Like equity's valuation and ownership concerns in signalling and agency costs, debt financing can raise concerns about solvency and control. Debt carries non-liquidity costs in signalling costs (increased borrowing perceived as financial stress), agency-related risks (stricter creditor oversight limiting operational flexibility) or the potential for higher refinancing costs if earnings do not rise at commensurate levels to debt.[128]

[125] Myers and Majluf, 1984; Jensen and Meckling, 1976; Ross, 1977
[126] Pinkus et al. 2025
[127] Dk Telekommunikation Aps, 2025
[128] Myers 1977, Fama and French 1998

Given these constraints, operators must stabilise leverage, maintain earnings, and demonstrate disciplined financial structures. TDC Net's ring-fenced debt framework (separating infrastructure assets as dedicated collateral) illustrates how operators can enhance their credit quality and unlock greater financial flexibility. This may however be perceived as detrimental to short-term returns.

Furthermore, alternative channels such as ESG-linked financing may play a role too, particularly in a country like Denmark, with strong sustainability ambitions. While ESG-linked financing played a visible role during the 2020–2024 investment period, it is likely to remain a complementary rather than central financing channel. Instruments such as sustainability-linked loans adopted by TDC, GlobalConnect and Telenor Group demonstrate that linking financing costs to measurable performance targets can strengthen lender confidence and reduce risk premiums.[129] More importantly, these approaches provide a template for future purpose-driven financing mechanisms, such as resilience-linked bonds or security-of-supply instruments (tools that could become increasingly relevant as geopolitical risks shape expectations for critical-infrastructure investment).

Alternative financing options lend themselves to the economic situation telecom firms in Denmark are facing.

Alternative financing routes will also be important in reducing operator-specific financial burdens. Network-sharing arrangements materially lower both capital and operating expenditure, improve credit profiles, and reduce risk exposure. The TN-network shared by Telenor and Norlys is a strong domestic precedent, as it is assumed to cut per-operator investment and operational costs in half. Internationally, the MBNL venture in the UK offers a similar illustration.[130] Asset monetisation, through the sale or carve-out of passive infrastructure (e.g., mobile towers, dark fibre), can provide substantial deleveraging capacity (although at the cost of reduced strategic control). Recent examples include Vodafone's transactions with Vantage Towers and Deutsche Telekom's sale of GD Towers.[131,132]

Finally, public–private partnerships can support investments in areas with low commercial returns. Direct funding can also have a role to play. Denmark's Bredbåndspuljen illustrates how targeted grants can make last-mile deployment economically feasible, and international models (such as Italy's broadband programme for rural "white areas") demonstrate how public intervention can accelerate universal coverage.[133,134,135]

[129] GlobalConnect, 2022,
[130] MBNL, n.d.
[131] Vodafone, 2024,
[132] Deutsche Telekom, 2023,
[133] Areas without fibre infrastructure present, requiring state financial support.
[134] Agency for Digital Government, 2025c
[135] Infratel Italia, n.d.

5. Perspectives on market concentration

The impact of consolidation on telecom prices, service quality, and investments is mixed with outcomes shaped by the nature of the transaction, market structure and local conditions

As competitive dynamics evolve, telecom operators may face challenges in sustaining the investments required to remain competitive. Supportive regulatory frameworks and policy incentives can facilitate investment, while operators are also pursuing mergers and strategic alliances to achieve the necessary scale. Rising demand for consolidation, alongside broader structural shifts, has prompted a review of the EU Merger Control framework, including its treatment of innovation and dynamic efficiencies. This has also brought theoretical and empirical evidence on the impact of market consolidation into focus. The evidence indicates that its effect on prices, investment, and quality is mixed and context-dependent, with outcomes shaped by merger type, market structure, and local conditions.

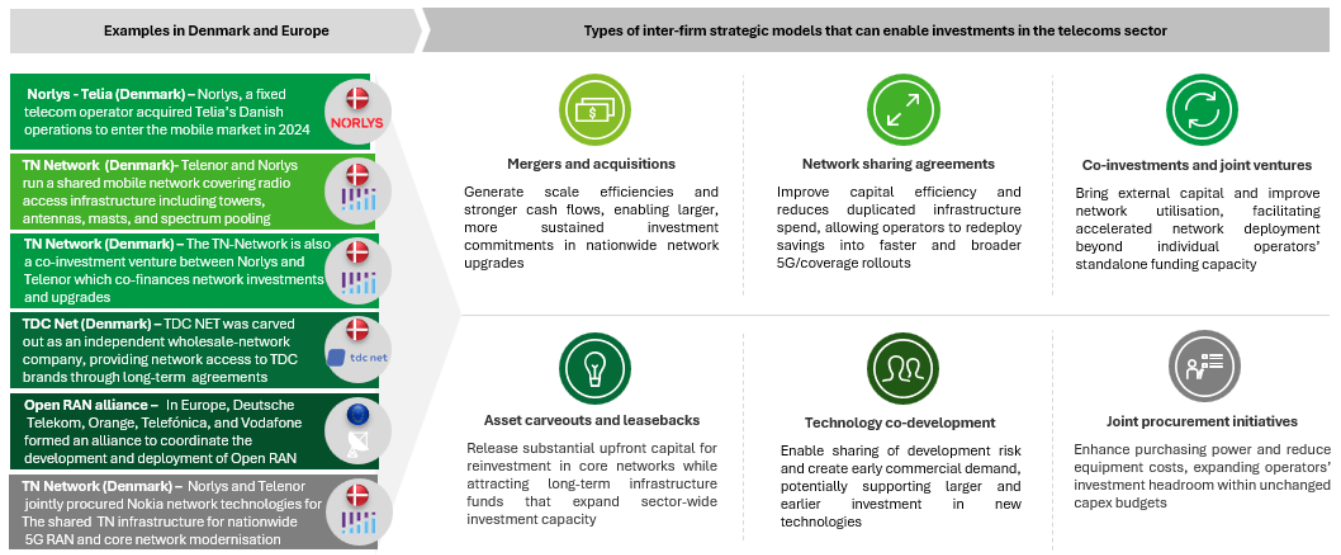
Following the authorisation of the TT network (now TN Network) by the Danish Competition and Consumer Authority in 2012, and the blocking of the Telia–Telenor merger by the European Commission in 2015, Denmark effectively operates with three wholesale mobile networks. The implications of further consolidation remain uncertain, given the limited availability of robust empirical evidence on three-to-two mergers. However, a review of selected case studies where such mergers resulted in market duopolies indicates adverse effects on key telecom market outcomes, including consumer prices, investment levels, and network quality.

5.1. inter-firm strategic models in the telecommunications industry

Telecom operators are leveraging inter-firm strategic models such as mergers, network sharing, and co-investment to enhance scale, reduce costs, share risks, and accelerate network deployment

As telecom operators report facing challenges including insufficient scale, lower profitability, and high network investment requirements, they resort to inter-firm strategic models to reduce costs and facilitate investments. These alliances can take several forms, including mergers and acquisitions, network sharing arrangements, asset carve-outs, joint procurement, and co-investment and technology co-development as illustrated in Figure 32. These approaches allow operators to improve scale, reduce costs, and share risks, while supporting faster network deployment. The choice of alliance structure may be influenced by regulatory constraints, market conditions, and the investment objectives of the participating firms.

Figure 32: Overview of inter-firm strategic models in the telecommunications industry



Source: Deloitte Economics, 2026

Mergers and Acquisitions (M&A)

M&A activity in the telecommunications industry can take on of the following forms:

- Horizontal mergers, which integrate competitors operating at similar stages of the value chain;
- Vertical mergers, involving firms at different stages of the value chain;
- Conglomerate mergers, involving firms operating outside of the telecommunications value chain.[136]

These deals enable telecom operators to combine scale which can create incentives to invest in new technologies and expand coverage.[137] As M&A transactions can reduce the number of operating firms and increase market concentration, they are often approved subject to structural or behavioural remedies, including divestment of spectrum or other assets.[138] In Denmark, Norlys, traditionally a fixed-network operator, entered the mobile market through the acquisition of Telia's Danish operations following its acquisition in 2024.[139]

Network sharing agreements and joint ventures

Network sharing agreements allow operators to jointly invest in passive infrastructure[140] such as towers, sites, ducts, and sometimes active components like spectrum, usually within defined areas and timeframes.[141] Whilst not considered to be a direct alternative to M&A, they help operators reduce network deployment costs, lower operating costs, resulting in a faster network rollout, and improved coverage and capacity.[142] For example, voluntary spectrum sharing agreements are associated an increase in mobile investment, network coverage, and mobile penetration while reducing prices.[143] In Denmark, the TN network was created as a part of the network sharing arrangement between Telia and Telenor in 2012.[144]

Asset carveouts and transfers

Telecom operators are increasingly divesting passive infrastructure assets or pooling them into jointly owned network entities.[145] This approach consolidates passive infrastructure

[136] CMA & ICN, 2018. Conglomerates are a combination of vertical and horiztonal integrations.
[137] GSMA, 2015
[138] OECD, 2019
[139] Telia, 2024
[140] Outside of network sharing agreement, access to existing passive infrastructure falls under Danish legislation.
[141] OECD, 2021b
[142] GSMA, 2019
[143] ITU, 2021
[144] CERRE, 2020
[145] OECD, 2024

under a single wholesale provider or a small number of tower companies. Independent TowerCos, whose core business is managing the passive components of network infrastructure, typically achieve greater efficiency by optimising site contracts, reducing maintenance costs, and streamlining operations.[146] This also reduces asset duplication and frees financial resources for more strategic investments.[147] In Denmark, Hi3G sold off its tower assets to an independent entity (Cellnex) in 2020.[148]

Joint procurement initiatives

Joint procurement alliances have been explored by some telecom operators to coordinate the purchase of network equipment and services. Such arrangements enable operators to pool demand and potentially improve purchasing terms, particularly for standardised inputs such as radio equipment or IT services. For example, the BUYIN venture between Deutsche Telekom and Orange launched in 2011 targeted €1.3 billion in annual procurement savings after three years through combined purchasing of equipment.[149] Denmark's TN network, owned by Norlys and Telenor, also jointly procures network equipment and managed services for deployment of 5G RAN.[150]

Joint ventures and co-investments

Telecom operators are forming co-investment vehicles such as network companies (NetCos), for supplying passive fibre access primarily owned by them.[151] Third-party entrants can often purchase active wholesale services from the NetCo and potentially purchase passive fibre loops under commercial terms after an initial period.[152] Such co-investment models can potentially foster large-scale investments in next-generation broadband infrastructure by mitigating firm-level demand uncertainty and reducing cost risks.[153] In Denmark, The TN-Network is a co-investment joint venture between Norlys and Telenor which co-finances network investments and upgrades.[154]

Technology co-development

Telecom operators are increasingly forming technology co-development alliances to jointly design, test, and implement new network technologies. These alliances allow operators to share development costs and technical risks, for example in areas such as Open RAN, 5G, or edge computing.[155] In Europe, Deutsche Telekom, Orange, Telefónica, and Vodafone formed an alliance to coordinate the development and deployment of Open RAN technology, including interoperability and vendor engagement.[156] By working together, operators can reduce duplication of effort and better manage technical and vendor-related risks while pursuing their individual network objectives.

5.2. Outcomes of consolidation in the telecommunications industry

While economic theory and evidence suggest a mixed and context-dependent impact of consolidation, 3-to-2 mergers leading to duopolies tend to negatively affect prices, quality, and investment.

Mergers and acquisitions are the most common form of inter-firm strategic model pursued by Danish telecom operators to consolidate their businesses and achieve dynamic efficiencies. Growing industry demand for consolidation and rapid technological and market changes have prompted a review of the EU Merger Control Regulation. While the regulation factors the impact of consolidation on market structure, competition, buyer power, entry barriers, and scale efficiencies, long-term dynamic efficiencies and non-price factors such as innovation or service quality are more challenging to assess objectively.

Economic theory and empirical evidence indicate that the impact of consolidation on market outcomes is mixed and depends on factors including the market structure and the

[146] EWIA, 2024
[147] GSMA, 2021
[148] TDC Net, 2023
[149] Deutsche Telekom, 2011
[150] Nokia, 2025
[151] OECD, 2020
[152] Oxera, 2011
[153] Oxera, 2011
[154] TN Network, 2025
[155] EY, 2023
[156] Telefonica, 2021

nature of the transaction. Adding to this uncertainty, limited empirical evidence on three-to-two mergers complicates the assessment of further consolidation in the Danish mobile market, which currently has three wholesale networks. However, a review of select case studies of similar mergers that resulted in duopolies suggests potential adverse effects on consumer prices, network quality, and investment.

5.2.1. Base principles to assess M&A in the telecommunications industry

5.2.1.1. Guidelines to assess merger cases

EU merger guidelines assess the competitive and consumer impact of mergers

The European Commission has set out comprehensive merger guidelines to assess the impact of merger on market competition and consumer wellbeing. These guidelines are currently under review to align with the transformation permeating various industries including digitalisation, globalisation, and decarbonisation, with a revised framework expected in 2026.[157] The key assessment criteria laid out in the existing framework are briefly outlined below.[158,159]

Impact on market structure and competitiveness

Pre- and post-merger market shares and concentration levels are assessed using measures such as the Herfindahl-Hirschman Index to evaluate whether market positions are dominant and sufficient constraining influences exist.

Possible anti-competitive effects

The merger is evaluated for any impact that may impede effective competition, either by removing key competitive constraints and increasing unilateral market power (non-coordinated effects) or by altering market conditions in a way that makes tacit coordination more likely, easier, or more effective (coordinated effects).

Impact on buyer power

The assessment also considers whether customers possess countervailing buyer power that can constrain the merged entity, focusing on their ability to switch suppliers, vertically integrate, or facilitate new entry. The benchmark is whether this bargaining strength would remain effective post-merger and continue to prevent the merged firm from profitably raising prices or reducing quality.

Impact on barriers to entry

Ease of market entry is assessed by examining legal, technical, and strategic barriers, as well as market conditions and entry risks, to determine whether entry would be likely, timely, and sufficient to deter the anti-competitive effects of the merger.

Efficiency gains and impact on consumer welfare

Potential efficiencies generated by the merger are assessed for their ability to support dynamic competition and enhance industry competitiveness, potentially improving growth and consumer welfare. The benchmark for accepting efficiency claims is that consumers must not be worse off due to the merger.

Failing firm consideration

In some cases, the merger is assessed for a failing firm defence, which applies only if the firm would imminently exit the market absent the transaction, a less anti-competitive buyer is not available, and the firm's assets would otherwise leave the market, such that the same competitive harm would arise without the merger.

Foreclosure risks

Vertical mergers are assessed for the risk of foreclosure, where rivals' access to key inputs or customers is restricted, reducing their ability or incentive to compete and enabling the merged firm to profitably raise prices; such risks arise through input foreclosure (raising downstream rivals' costs) or customer foreclosure (limiting upstream rivals' market access).

[157] European Commission, 2025b
[158] European Commission, 2004
[159] European Commission, 2008

5.2.1.2. Actual decisional practices and missing outcomes

Decisional practice extends beyond guidelines, especially in effects-based merger assessments

While merger guidelines provide the formal analytical framework for assessing transactions in the telecommunications sector, they do not fully reflect how mergers are assessed in practice[160], nor do they necessarily capture the full range of potential competitive effects. Decisional practice indicates that authorities increasingly rely on effects-based analysis and case-specific evidence, often going beyond (or, in some areas, applying more caution than) the tools and presumptions set out in the Guidelines. As a result, certain outcomes, particularly those linked to long-term dynamics in capital-intensive industries, may be only partially reflected in merger assessments.

Dynamic efficiencies and investment benefits face high evidentiary thresholds in practice

In particular, while the EU Merger Regulation formally allows efficiencies (such as improvements in network performance, investment incentives, and scale efficiencies) to be taken into account, decisional practice applies a high evidentiary threshold. Long-term and dynamic efficiencies are often difficult to substantiate ex ante, especially where they depend on uncertain assumptions, extended time horizons, or behavioural responses.[161] Past cases suggest that competition authorities have frequently taken the view that similar efficiencies could be achieved through alternative arrangements, such as network-sharing agreements, reducing the weight attributed to merger-specific efficiency claims.[162] As a result, potential positive effects on investment and network quality may be under-assessed or discounted in practice.[163]

Non-price effects like innovation remain difficult to substantiate in merger reviews

Beyond efficiencies, non-price dimensions of competition—such as innovation, service quality, and network performance—receive more limited and less standardised treatment than price effects. While recent decisions increasingly acknowledge the relevance of non-price competition, academic and policy literature[164] suggests that innovation-related arguments are often dismissed due to challenges in demonstrating causality and timing. Short efficiency realisation horizons applied in practice may further limit the extent to which long-term consumer benefits are reflected in merger assessments, particularly in infrastructure-intensive sectors such as telecommunications. [165,166]

Structural indicators screen mergers; substantive decisions rely on effects-based evidence

Decisional practice also illustrates that some analytical tools highlighted in the Guidelines play a more limited role in substantive assessments. [167] Structural indicators, including market shares and concentration measures such as the Herfindahl–Hirschman Index (HHI), are primarily used for preliminary screening rather than as determinants of outcomes. In practice, authorities place greater emphasis on evidence of competitive constraints, unilateral effects, and incentives to harm competition. However, the guidelines do not explicitly incorporate certain quantitative indicators (such as diversion ratios[168], profit margins, or demand elasticities) that are often central to effects-based analysis and could provide a more nuanced understanding of competitive interactions.[167]

Guideline-practice gaps may understate long-term dynamic effects in telecom mergers

Taken together, these considerations suggest that, while the current merger control framework is robust and effects-based in principle, there remains a gap between formal guidance and practical application. This gap may lead to certain long-term, dynamic, and non-price effects—particularly those relevant to investment-intensive industries—being only partially captured in merger assessments.

[160] European Commission, 2021
[161] OECD, 2025c
[162] Frontier Economics, 2021
[163] OECD, 2013
[164] George Washington Competition & Innovation Lab, 2025
[165] Gönenç Gürkaynak, David J Teece, 2025
[166] Jay Modrall, Maria Chiara Paoli, Joshua White, 2025
[167] See e.g., the review of EU mergers performed by the International Centre for Law and Economics, a US-based think tank informing global policy debates
[168] The proportion of sales that would shift from one product or firm to another if the first product became more expensive or less attractive.

5.2.2. Theoretical impact of consolidation

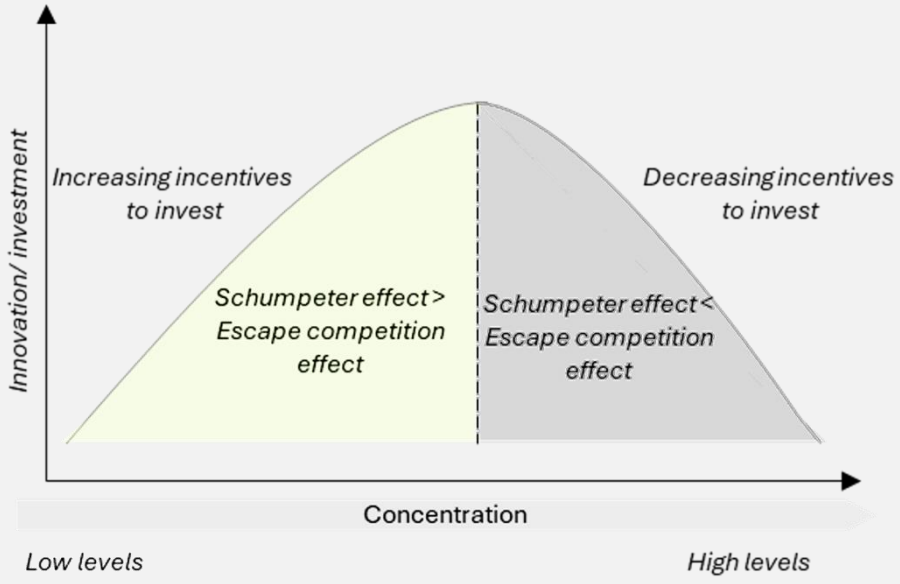
Telecom consolidation can boost efficiency and investment incentives but may also raise prices and reduce competitive pressure, producing mixed effects on market outcomes

Economic theory posits that the impact of market consolidation on market outcomes in the telecommunications industry can be positive or negative, depending on the prevailing mechanism. Consolidation can affect investment through opposing forces: greater market power may boost incentives to invest, while reduced competition can weaken the drive to out-invest rivals. For prices, higher concentration can increase pricing power and collusion risk, but efficiency gains from scale and scope may lower costs. Service quality may be influenced directly through network usage and spectrum utilisation, and indirectly through changes in investment incentives and financial capacity because of consolidation.

Consolidation influences industry-wide investment through two opposing effects, potentially producing an inverse U-shaped link between investment and concentration

Market consolidation can lead to an increase in market power for incumbents. The *Schumpeterian effect* suggests that greater market power can enhance investment incentives, as firms are better able to capture the higher margins generated by new investments.[169] In contrast, the *escape-competition effect* implies that in more concentrated markets, firms may have weaker incentives to out-invest rivals, particularly where competitors can easily replicate upgrades. Consequently, the overall impact of a merger on investment depends on the prevailing mechanism. Recent literature posits an inverse U-shaped relationship between investment and concentration, as illustrated in Figure 33, with innovation tending to be lower at both very low and very high concentration levels.[170]

Figure 33: Market consolidation and incentives to invest



Source: GSMA, Deloitte Economics 2025

The impact of consolidation on consumer prices depends on the balance between increased market power

Microeconomic theory suggests that higher market concentration, an outcome of market consolidation, is generally associated with increased prices, as it reduces the number of alternative suppliers available to consumers.[171] Greater concentration can also facilitate collusive behaviour, which is more easily established and sustained in markets with few firms.[172] Conversely, higher concentration may reduce marginal costs through enhanced economies of scale and scope, with benefits potentially passed on to consumers.[173] Accordingly, the overall effect of market consolidation on consumer welfare depends on

[169] GSMA, 2015
[170] Aghion et al., 2005
[171] Weisman, 2022
[172] European Commission, 2024
[173] Oxera, 2015

and realised efficiency gains

the balance between efficiency gains achieved by a smaller number of operators and the increased pricing power resulting from greater market concentration.

Market consolidation can impact quality of telecom services both directly through network usage and indirectly through investment incentives

Changes in market concentration can have both positive and negative effects on telecom service quality. Consolidation may directly influence quality through changes in consumer usage patterns and spectrum utilisation, potentially enhancing or worsening network performance.[174] It can also affect quality indirectly by altering operators' investment incentives and financial capacity. Stronger margins following consolidation may support higher industry-wide investment, enabling technology upgrades and improved service quality.[175] Conversely, reduced competitive pressure may weaken incentives to innovate or invest in high-quality services and new products.[176]

5.2.3. Observed impact of consolidation

5.2.3.1. Empirical findings from the literature

The impact of telecom M&A on prices, investment, and quality is mixed and context-dependent, with outcomes shaped by merger type, market structure, and local conditions

Empirical evidence on the impact of telecom M&A on prices, investment, and service quality is mixed and context dependent. Horizontal mergers can raise market concentration, which may put upward pressure on prices, but they can also support higher capital expenditure. Vertical mergers generally pose fewer competition concerns, though they can create entry barriers in certain cases. Network sharing agreements and asset carve-outs help reduce costs and improve efficiency, even if the gains from sharing are typically smaller than those from mergers. Overall, the effects of consolidation depend on the type of transaction, local market conditions, and market structure, with no single number of operators guaranteeing optimal outcomes for investment, quality, or pricing.

The evidence on the impact of telecom M&A on consumer prices, investment, and service quality is mixed and inconclusive

Across empirical studies, the impact of consolidation on mobile market outcomes is mixed and highly context dependent. Cross-country analyses indicate that markets with a greater number of MNOs tend to exhibit lower prices and higher aggregate investment: one additional operator is associated with a 7–9% reduction in ARPU and around a 9% increase in total investment, while higher concentration is linked to price increases of 11–18%.[177] MVNO presence, by contrast, appears to have only limited influence on pricing. Findings from a literature review of merger case studies paint a more varied picture: some 4-to-3 mergers were associated with post-merger price increases, while others showed price reductions. The study also found that capital expenditure increased post-merger in all the reviewed studies that examined it.[178]

Results are similarly diverse regarding the impact of mobile market mergers on quality of service. Whilst a broader panel analysis finds no consistent indication that more concentrated markets deliver higher network performance (e.g., faster download speeds), some merger-specific evaluations report improvements in service quality following consolidation.[179] Taken together, the empirical evidence indicates that the effects of consolidation on price, investment, and quality vary materially across markets and may not be generalised as summarised in Table 13.

Vertical mergers pose fewer competition concerns than horizontal

According to the European Commission, non-horizontal mergers such as vertical and conglomerate mergers are generally less likely to impede effective competition in comparison to horizontal mergers.[180] This is because they are more likely to be driven by efficiency considerations with empirical studies finding no significant decrease in

[174] Ofcom, 2020a
[175] GSMA, 2015
[176] Arrow, K., 1962
[177] European Commission, 2024
[178] ICLE, 2019
[179] Ofcom, 2020b
[180] European Commission, 2008

mergers but may still create entry barriers

consumer welfare, according to the OECD.[181] However, in certain cases, vertical mergers may indirectly harm competition by increasing the potential for foreclosure or horizontal collusion, thereby creating entry barriers and strengthening bargaining power.

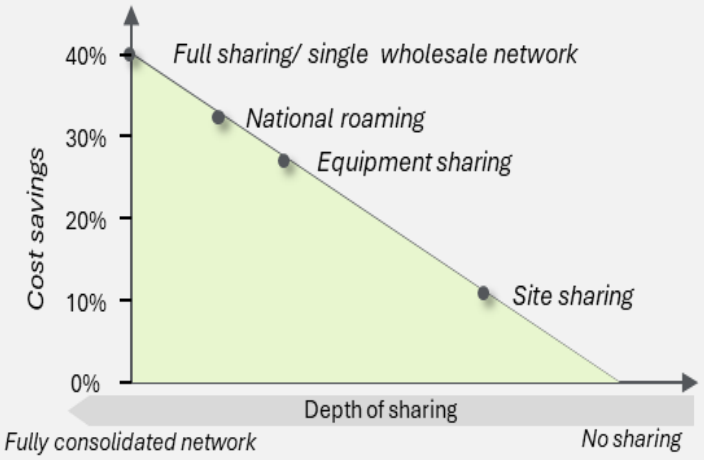
As optimal market structures differ across countries, consolidation outcomes depend on both the nature of the transaction and local market conditions

Overall, research indicates that there may be no universally optimal number of mobile network operators for a well-functioning telecom market. Both the academic literature and regulatory commentary emphasise that the impact of consolidation is highly context-specific, with outcomes dependent on the particular transaction and prevailing market conditions.[182] Whilst some studies suggest that three operators can support strong investment incentives, they also note that the optimal number of operators may vary across jurisdictions. For example, four operators are regarded as a better fit for densely populated countries and two operators are likely to be well-suited for widely dispersed, smaller populations.[183]

Whilst network sharing joint ventures present potential for cost reduction with limited competition concerns, they may offer lower efficiency gains compared to mergers

Network sharing can generate cost savings for operators and have limited adverse impact on market competition. While it can reduce network costs by between 10% and 40% (cf. Figure 34), efficiency gains at the retail and network levels may be smaller compared to conventional mergers.[184,185,186] Comparative analysis shows that Denmark and Sweden, which implemented extensive mobile network sharing, did not experience adverse effects on prices or service quality relative to countries with less extensive sharing, such as France and Spain.[187] Moreover, the ITU notes that the network sharing agreement between Telia and Telenor in Denmark resulted in significant cost savings and better coverage and capacity than the two previously independent networks.[188]

Figure 34: Cost savings with infrastructure sharing



Source: Frontier Economics; Deloitte Economics 2025

Asset carveouts can lower costs and improve efficiency by achieving higher co-location and

Offloading assets to TowerCos can reduce cost per user and free up capital for investment in new technologies.[189] This is because independent TowerCos can achieve financing at a slightly lower cost of capital compared with MNOs. In Europe, MNOs typically exhibit a weighted average cost of capital (WACC) that is around 1.1% higher than that of

[181] OECD, 2019
[182] Ofcom, 2020a
[183] ICLE, 2019
[184] Frontier Economics, 2021
[185] GSMA, 2019
[186] GSMA, 2015a
[187] WIK Consult, 2019
[188] ITU, 2020
[189] OECD, 2024

lower cost of capital than MNOs

comparable European TowerCos.[190] On average, independent TowerCos achieve a co-location ratio of 2.1, whereas MNOs have a ratio of 1.3. Higher co-location ratios significantly reduce the cost per user, as the substantial fixed costs associated with each tower are distributed across multiple network operators.

Table 13: Overview of the literature on the impact of concentration on telecom market outcomes

Study	Type of study examining the impact of concentration on:	Investment	Consumer prices	Service quality/ innovation
European Commission, (2024)	Panel data across 29 European countries between 2009–2019	No impact	Higher prices	No impact
Bahia et al. (2023)	Panel data across 29 European countries between 2011 and 2021	Higher investment	No impact	Higher quality or no impact
Ofcom (2020a)	Panel data across 30 European countries between 2000–2018	Lower investment	Not assessed	No impact
GSMA (2020)	Panel data across 15 European countries between 2011–2018	Higher investment	Lower prices	Higher quality or no impact
ICLE (2019)	Literature review of 18 empirical analyses between 2000–2015	Higher investment	Both lower and higher prices	Higher quality or no impact

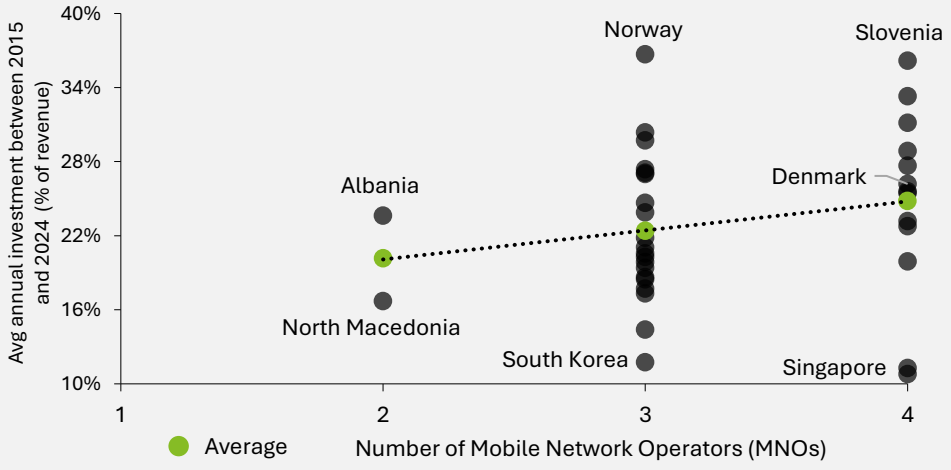
5.2.3.2. Correlation between number of operators and market outcomes in the mobile market

Three to four mobile operators appear to form the optimal structure for strong telecom market performance

Correlational analysis suggests that markets with three to four Mobile Network Operators may deliver more socially desirable market outcomes, such as higher investment, lower consumer prices, better network quality, and greater network coverage in comparison to a duopoly.[191] Although correlation does not imply causation and outcomes depend on market-specific conditions, these patterns highlight trends in how markets with different numbers of telecom operators perform on key telecom sector metrics.

Mobile network operators in markets with 3 to 4 players invest an additional 2% to 5% of their revenues annually as compared to two-operator markets

Figure 35: Number of MNOs and annual investment



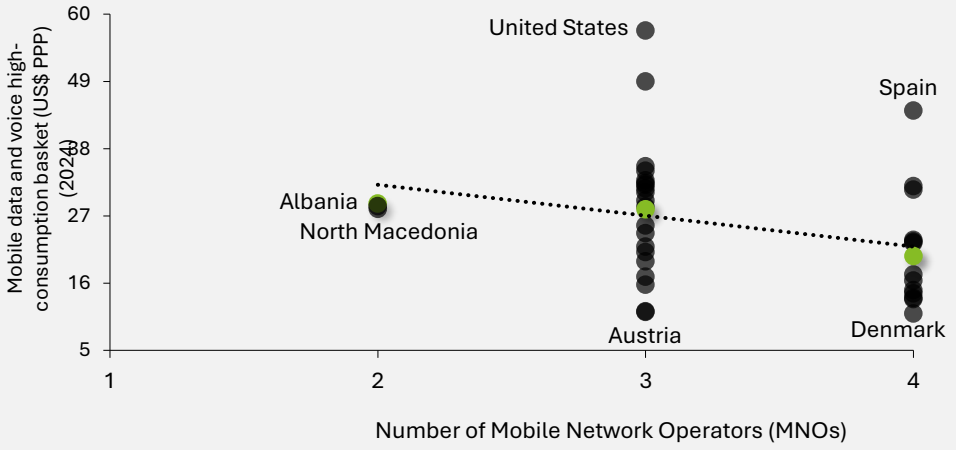
Source: ITU, OpenSignal, 2025

[190] EWIA, 2024

[191] The analysis considers the number of Mobile Network Operators (MNOs) while excluding Mobile Virtual Network Operators (MVNOs) and is based on the number of market operators as of early 2025. Impact on key metrics including network quality, network coverage, and consumer prices is from 2024 while an average of 10-year investments is considered to account for the full investment cycle in the industry. The sample includes European countries for which data was available and select high-income markets including United States, Canada, Australia, New Zealand, Japan, South Korea, and Singapore

Consumer prices are the lowest in four-player markets, being 28% and 26% lower than two-operator and three-operator markets respectively

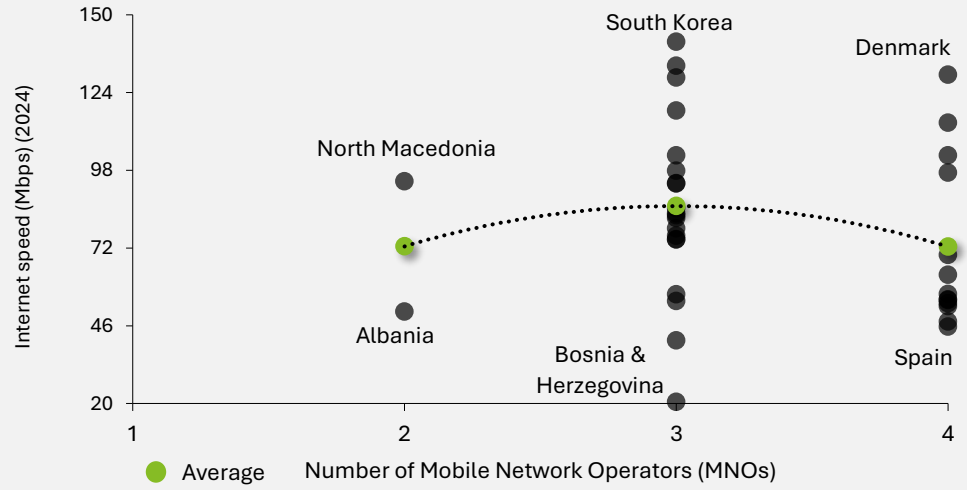
Figure 36: Number of MNOs and consumer prices



Source: ITU, OpenSignal, 2025

Network quality as measured by internet speed, exhibits a U-shaped pattern, with the best quality in a three-operator market

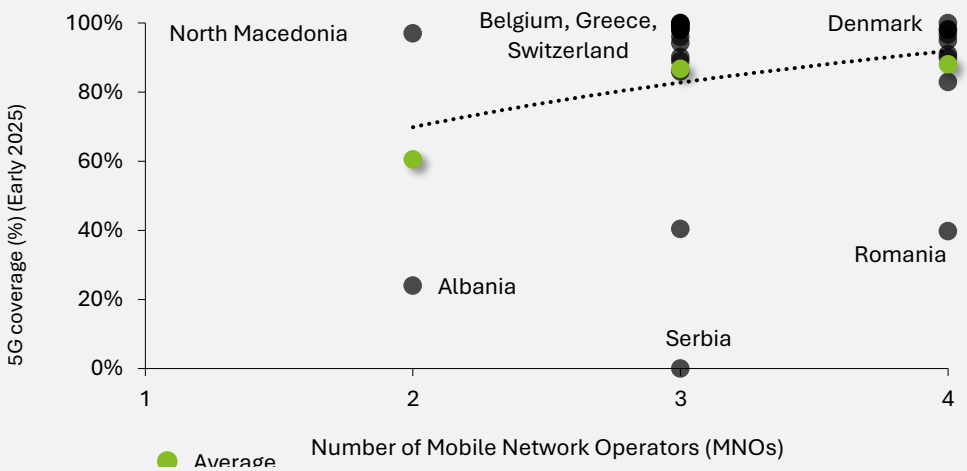
Figure 37: Number of MNOs and internet speed



Source: ITU, World Population Review, 2025

5G coverage is 27 percentage points higher in three- and four-operator markets on average as compared to two-operator markets

Figure 38: Number of MNO operators and 5G coverage



Source: GSMA, Opensignal, 2025

5.2.3.3. Case studies

Telecom consolidation pressures examined through merger cases

The mobile market in several European countries, such as Denmark is characterised by the existence of three or four mobile network operators (MNOs), making duopolies relatively uncommon.[192] Regardless, weak operator finances, substantial capital investments in new technologies, and the need for scale are driving operators to pursue consolidation in the form of mergers and acquisitions.[193] To examine the implications of further consolidation in the telecommunications industry, select case studies of three-to-two mobile market mergers are considered, drawing on evidence from within Europe and abroad. These cases set out the merger rationale, the regulatory assessment, proposed remedies, and impact on key market outcomes.

Three-to-two mergers resulting in a duopoly

Three-to-two telecom mergers approved outside of Europe

Globally, mergers that reduce the number of telecom operators[194] from three to two have generally been approved in markets characterised by small population size, concerns regarding long-run financial viability of an incumbent, or the need to achieve greater scale efficiencies. Since 2021, such three-to-two mergers have been authorised in the Channel Islands, Albania, and Thailand. While similar transactions resulted in two-operator mobile markets in the Philippines, Jamaica, and Uganda over the past decade, regulators in some of these jurisdictions have since pursued a shift away from a duopolistic market structure.[195,196] Two case studies of three-to-two mergers that led to the creation of mobile-market duopolies are presented below. These cases were selected based on the availability of post-merger evidence regarding their impact on key market outcomes.

[192] OECD, 2021b
[193] S&P Global, 2023
[194] These cases are relevant in the Danish context where even though four MNOs operate, only three networks (and wholesale operators) cater to the market.
[195] DITO, 2025
[196] Samena, 2021

Philippines—PLDT's acquisition of Digitel (Sun) (2011)

Context and rationale for the merger:

The Philippines mobile telecommunications market consisted of three mobile network operators in 2010, with PLDT controlling ~52% of the mobile market, followed by Globe (31%) and Digitel (Sun) with 17% of the market. Digitel's entry into the market in 2003 increased market competition with the launch of unlimited plans and cheaper prepaid bundles. Intense competition put pressure on telecom margins, resulting in PLDT pursuing a takeover of Digitel to optimise capital expenditure and drive operational synergies. The acquisition resulted in a market duopoly with the merged entity accounting for ~70% of the mobile market.

Regulatory approval:

The National Telecommunications Commission approved the merger subject to several structural and access remedies including:

- Making unlimited service promotional offerings such as unlimited SMS and voice calls introduced by Digitel a permanent feature.
- Reduction of interconnection rates imposed by PLDT on other carriers to promote market competition.
- PLDT was required to divest 10 MHz of 3G spectrum as it had access to 45 MHz of 3G capability compared to just 10 MHz for the other incumbent.

Concerns regarding the merger:

As the Philippines lacked comprehensive antitrust legislation at the time of the merger, concerns regarding potential anti-competitive effects were not adequately addressed. For example, the merger increased PLDT's ownership of submarine cables, granting the entity significant control over internet connectivity. This increased the risks of potential abuse of market power in the telecommunications industry. Moreover, the proposed remedies were considered unlikely to mitigate the transaction's anti-competitive effects, as they were generic in nature rather than tailored to the specific concerns raised.

Impact of the merger:

- **Prices**: Whilst Average Revenue Per User declined, telecom prices continued to remain moderately high in comparison to regional benchmarks. Competition between incumbents, however, restrained significant price increases.
- **Market competition:** The World Bank noted that the merger may have been disadvantageous to smaller Internet Service Providers.
- **Investments and quality:** The number of cell sites, a key driver of internet quality, continued to be the lowest in the region as of 2020, with prices remaining high relative to the ASEAN average and the quality of mobile services.

Main outcome: new entrant to the market

Driven in part by concerns about poor service quality and high prices under the duopoly, the telecom authority and the telecom ministry organised a bidding process to select a third national telecom operator in 2018. This facilitated the entry of a third operator in the market in 2021, effectively ending the duopoly, with the new entrant rapidly growing its market share to 12% in 2024.

Sources: World Bank (2020); Lizares (2018); PIDS Policy Monitor (2011); Developing Telecoms (2024); Oxford Business Group (n.d.); Philippine Competition Commission (2017)

Albania—One Telecom's acquisition of Albtelecom (2023)

Context and rationale for the merger:

Albania's mobile market is relatively small with 3.3 million active mobile subscribers and was serviced by three mobile network operators in 2022. Vodafone Albania was the largest operator with a 52% market share, followed by ONE Telecommunications with a 36% share and Albtelecom with 12% of the market. Albtelecom, the smallest operator, was facing significant financial challenges, raising concerns over its ability to invest in new technologies and compete effectively in the market. With the rollout of advanced technologies such as 5G requiring significant capital investments in network infrastructure, One Telecom proposed acquiring Albtelecom to achieve greater scale efficiencies. The 3-to-2 merger would result in the creation of a market duopoly in the retail mobile market.

Regulatory approval:

The Albanian Competition Authority (ACA) approved the merger without imposing structural or behavioural remedies, resulting in a two-operator market. To monitor market conditions in a more concentrated environment, the ACA announced that it would track developments in three areas: retail prices, investment levels, and service quality indicators.

Impact of the merger on key market outcomes:

- **Consumer prices:** Within one year of the merger, mobile telecom prices increased significantly. Average Revenue per User (ARPU) grew 16% in 2024 as compared to a year prior with the average spend per minute on mobile calls also rising 16%.
- **Usage terms:** For business customers, contract terms were revised to introduce inflation-based indexation of mobile service tariffs for the first time, potentially resulting in more frequent price increases going forward.
- **Profitability**: Operators reported stronger financial performance, with industry revenues increasing by 8.9% in 2024.
- **Investments:** Investment trends were mixed, with telecommunications industry investment increasing by 55% in 2023 relative to 2022, followed by a 16% decrease in 2024.

Launch of preliminary investigation

Following a series of consumer complaints regarding price increases in prepaid mobile packages, the ACA initiated a preliminary investigation into the retail mobile services market in January 2025. The Authority's initial assessment indicated that the conduct of incumbent operators may have constituted a restriction of market competition, paving the way for an in-depth investigation in the future.

Sources: AKEP (2024); ACA (2025); Albania Daily news (2023); AIK (2025); Hashtag (2025a); Hashtag (2025b); Mordor Intelligence (2025)

Three-to-two mergers reinstating existing market structure

In Europe, two-to-three mergers blocked, or conditionally approved without effective duopoly

In Europe, several three-to-two mergers were either blocked or approved conditionally based on the entry of a third market player, which would reinstate the existing market structure. In Switzerland and Malta proposed three-to-two mergers that would result in duopolies were dropped after the local competition authorities raised concerns regarding their potential anti-competitive effects.[197,198] In Norway and Belgium, similar mergers were conditionally approved subject to the entry of a new market operator (effectively avoiding a duopoly) and are outlined below in greater detail.

[197] Global Competition Review, 2010
[198] Vodafone, 2017

Norway—Telia's acquisition of Tele2 (2015)

Context and rationale for the merger:

Norway had three main telecom operators in 2014, Telenor with the largest market share at 45% in mobile telecom revenues, followed by TeliaSonera with a 27% share and Tele2 with 24% of the market. At the 2013 multiband frequency auction, Tele2 did not win any spectrum, which resulted in limited or no new spectrum rights, challenging its ability to deploy a 4G network and compete with other operators. Following the auction, the sale of Tele2's Norwegian business to Telia was proposed. The horizontal merger, if approved unconditionally, would have resulted in a market duopoly with the merged entity overtaking Telenor to be the largest operator with a 51% share of the market.

Concerns raised by the Norwegian Competition Authority (NCA):

The NCA found that the merger could increase concentration in an already highly concentrated market and raised significant competition concerns:

- **Higher consumer prices:** Operators could have a strong incentive to raise prices post-merger due to Telia and Tele2 being close competitors.
- **High entry barriers:** The resulting market duopoly would consolidate infrastructure and the customer base within two operators, creating high barriers to entry.
- **Decline in investments and service quality:** Lower market competition could reduce incentives to invest, resulting in a potential decline in the quality of service.

Decision:

The NCA emphasised that maintaining a third network operator with a sufficient customer base was essential to preserving competition on both price and quality. In response, TeliaSonera offered a new package of commitments designed to provide ICE with a concrete opportunity to establish itself as a third mobile network operator and compete effectively for Norwegian mobile customers.

Merger remedies:

The merger was approved subject to several structural and access remedies that would ensure that ICE could adequately compete in the market:

Structural remedies:

- ICE would purchase part of Tele2's mobile network infrastructure including cell towers and base stations
- ICE would acquire two-thirds of Tele2's business portfolio with the transfer of Network Norway's customer portfolio
- ICE could purchase three Tele2 stores from TeliaSonera.

Access remedies:

- ICE would benefit from network co-location on Telia-owned infrastructure, reducing network deployment costs for the new entrant.
- ICE would gain roaming access and continuity of wholesale services from TeliaSonera while building out its network.
- TeliaSonera would provide wholesale access to Mobile Virtual Network Operators under fair terms.

Sources : Norwegian Competition Authority (2015) ; OECD (2016) ; Braunfels et al. (2023)

Belgium—Orange's acquisition of VOO and Brutélé (2023)

Context and rationale for the merger:

Orange is one of Belgium's three mobile network operators and the largest fixed access-seeker, relying on wholesale access to VOO and Brutélé's network in the South. VOO and Brutélé operated a unified fixed network operators in Southern Belgium, providing fixed internet and TV services within their footprint. Orange's acquisition of these operators aimed to create its own fixed infrastructure in the South, enabling it to evolve into a fully convergent operator. As the fixed telecommunications market was already characterised by limited infrastructure competition between two fixed networks—Proximus and a unified network of Voo and Brutélé, the transaction was scrutinised by the European Commission due to its potential to alter the competitive balance in the market.

Concerns raised by the European Commission:

The 3-to-2 merger in the fixed telecommunications market raised competition concerns in the retail markets for fixed telecommunications services, in which both Orange, and VOO and Brutélé serve customers:

- **Regional scope of the market:** The regional scope of the market raised concerns that the transaction could eliminate one of the effective competitors within each local area.
- **High market share:** The merging entities would have a high market share of 40%, with significant market power being driven by high profit margins indicative of pricing power and their ability to capture an outsized proportion of churning customers.
- **Limited substitutability:** The merger would significantly limit the ability of end-users to switch to alternative suppliers.
- **Eliminate a potent competitive force:** The transaction would eliminate an important competitive force in the form of Orange, which exerted competitive pressure beyond its market share.
- **Coordinated effects:** The transaction could have increased the likelihood of collusion between the remaining market participants in the market of Southern Belgium.
- **Low likelihood of new entry:** The entry of a new player in the market was unlikely as Telenet, an established player in the North had not entered the market in the past due to concerns over profitability.

Decision:

Since its entry in 2016, Orange has exerted substantial competitive pressure in the retail fixed internet and television markets in Southern Belgium, despite relying entirely on wholesale access to the fixed networks of VOO and Brutélé. The proposed transaction would have eliminated this important source of retail competition. Consequently, the Commission approved the merger subject to the entry of a new operator, thereby preserving the pre-merger market structure of three players. In essence, the commitments ensure that Telenet will replace Orange as the access seeker on the VOO and Brutélé networks in Southern Belgium, becoming the new third player in the region post-transaction.

Access remedies:

The merger was cleared subject to several access remedies that would ensure that Telenet, the new market entrant, could sufficiently offset any loss of retail competition following the transaction:

- Telenet would gain access to the existing fixed network infrastructure of VOO and Brutélé for at least 10 years.
- Telenet would also benefit from market entry discounts on the prices of Cable Wholesale Access Services starting at 20%–30% and gradually declining to 0%–10% for the first five years after entry.
- Telenet would also gain access to Orange's future fibre network to ensure access to equivalent new technologies.

Sources: European Commission (2023)

5.2.4. Implications of consolidation on the stability and vulnerability of digital infrastructure

Consolidation can strengthen some aspects of resilience while weakening others

Consolidation in the telecommunications industry can strengthen operator finances and scale, enabling greater investment in security, regulatory compliance, and the resilience of digital infrastructure. However, higher market concentration may reduce redundancy and network diversity, increasing systemic vulnerability to outages, cyber incidents, and supply-chain disruptions. Effective regulatory oversight may therefore be essential to ensure that gains in scale translate into tangible improvements in security and reliability without increasing systemic risks.

Consolidation can strengthen operator finances, potentially enabling greater investment in the resilience and security of digital infrastructure

Consolidation may improve operators' financial positions, enabling greater investment in the security and resilience of digital infrastructure. Given the telecommunications industry's exposure to complex and costly regulatory requirements related to security and resilience, larger operators may be better positioned to meet rising compliance and investment obligations.[199] By improving operating margins and generating efficiency gains, consolidation can ease financial pressures and free up capital for investments in network resilience. Telecom operators and industry bodies have also argued that fewer, larger operators may be better placed to strengthen technological resilience, ultimately benefiting consumers through more secure and reliable services.[200,201]

However, increased market concentration reduces redundancy, meaning failures or cyber incidents can have broader, systemic impacts on digital infrastructure stability

Conversely, increased market concentration may reduce redundancy and raise systemic risks in the event of infrastructure failures or cyber incidents. Outages or attacks in concentrated networks could result in wider and a severe cascading impact on other critical sectors such as healthcare, financial services, energy among others.[202,203] Greater concentration may also limit network diversity and the availability of independent alternatives, both of which are important for resilience.[204] In addition, consolidation can increase reliance on a narrower set of suppliers, heightening exposure to supply-chain disruptions, vendor restrictions, and geopolitical risks.[205] Further, as market competition supports resilience by driving investment in competing networks and technologies, higher market concentration may reduce competitive pressures to invest in security measures.[206]

Regulatory oversight may therefore be essential to ensure scale benefits translate into stronger security, maintained redundancy, and reduced systemic risks

Overall, the potential resilience benefits of consolidation must be carefully weighed against the risks associated with increased market concentration. A balanced approach may involve allowing consolidation where it demonstrably supports investment in security and network resilience, while ensuring that regulatory safeguards preserve redundancy, diversity, and competitive incentives. This could include investment commitments, global collaboration, and ongoing oversight of supply-chain dependencies, so that gains in scale translate into tangible improvements in security and reliability without increasing systemic risks.[207]

[199] Copenhagen Economics, 2025b
[200] Financial Times, 2025
[201] GSMA, 2025a
[202] CERRE, 2024
[203] ENSIA, 2025b
[204] OECD, 2025d
[205] UK Government, 2024
[206] Jiang et al., 2025
[207] CERRE, 2024

6. Conclusion

Strong competition and sustained investment delivered near-universal, high-quality Danish connectivity.

The Danish telecommunications market has delivered strong outcomes for consumers and the wider economy through sustained infrastructure investment and strong competition. Near-universal high-capacity fixed and mobile connectivity positions Denmark among leading digital economies, reflecting long-standing prioritisation of network rollout, service quality, and affordability.

Financial performance is weak, reflecting capital intensity, competition, cycle timing

At the same time, the financial performance of the Danish telecommunications industry is modest. When benchmarked across industries and internationally, it can be seen as relatively unattractive. The analysis shows that recent years of elevated investment intensity have coincided with subdued return metrics (with average ROE around 3% and ROCE around 2% over 2019–2023, despite EBITDA margins remaining relatively healthy). International comparisons place Denmark towards the lower end of peer markets on conventional return measures, reflecting the interaction of high capital intensity, investment-cycle timing, limited pricing headroom in a competitive market, and market scale effects. These outcomes are best interpreted as structural and cyclical, rather than as evidence of persistent operational inefficiency.

Future investment remains high, driven by continued modernisation.

Looking ahead, future investment needs are expected to remain structurally high and, under probability-weighted scenarios, higher than in the previous cycle, though not by a large order of magnitude. The scenario assessment indicates cumulative investment of around DKK 155 billion over 2025–2040, implying an uplift of roughly 7% relative to baseline assumptions This investment level is driven primarily by non-discretionary requirements (system modernisation, resilience and cybersecurity, and successive technology refresh cycles), complemented by structurally driven demand for point-to-point connectivity, rather than by large-scale network expansion. While the projected uplift is moderate relative to the most recent rollout phase, it nevertheless implies sustained pressure on financing capacity and may place operators closer to “stressed” financial positions during peak years, depending on interest rates, competitive intensity, and the sequencing of required upgrades.

Financial positions unlikely to materially constrain investment, but influence timing and flexibility.

The analysis also indicates that operators’ current financial positions are unlikely to constitute a binding constraint on future investment in aggregate, but they do shape flexibility and risk tolerance. Leverage remains elevated and can heighten sensitivity to shocks; however, easing capital intensity after the peak rollout phase and improving interest coverage are likely to increase headroom compared with the early 2020s. As a result, financing capacity is more likely to influence the timing, structure, and prioritisation of investment than its overall feasibility.

Regulation influences investment predictability; costs exist but remain immaterial overall.

Regulation and administrative processes remain central determinants of investment outcomes in a sector designated as critical infrastructure. The report recognises that compliance and implementation requirements entail real costs, affecting both capex and opex. However, the estimated financial impact of the regulatory roadmap is unlikely to impact cost structures materially. In this context, regulation is primarily influential through

predictability, sequencing, and implementation clarity, rather than as a material direct cost driver at the industry level, particularly when potential benefits (notably in cyber and resilience) are taken into account.

Consolidation evidence is mixed; stable frameworks and execution likely to better support investment.

Finally, while market consolidation is often cited as a potential response to modest returns and limited scale, international empirical evidence does not consistently show a positive relationship between consolidation and higher investment, particularly in two-operator market structures. The findings therefore underscore that sustained investment is more closely associated with stable and predictable framework conditions and efficient investment execution than with market structure alone.

The Key challenge is managing cycles, finance, and predictability amid complexity

Taken together, the Danish telecommunications sector remains well positioned to support future connectivity needs. The key challenge is not the existence of investment demand, but the effective management of cyclical investment requirements, financial flexibility, and regulatory predictability in an increasingly complex technological and security environment.

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Interviews were conducted during the fall of 2025 with industry participants, regulators, interest organisations. Both Danish and international.

Aalborg University

ATP

BEUC

Connect Europe

Danish Business Authority

Danish Competition and Consumer Authority

Dansk Erhverv

Dansk Industri

DTU

Fastspeed

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