



Nasjonal
kommunikasjons-
myndighet

From Fiber Deployment to Digital Resilience: The Norwegian Experience

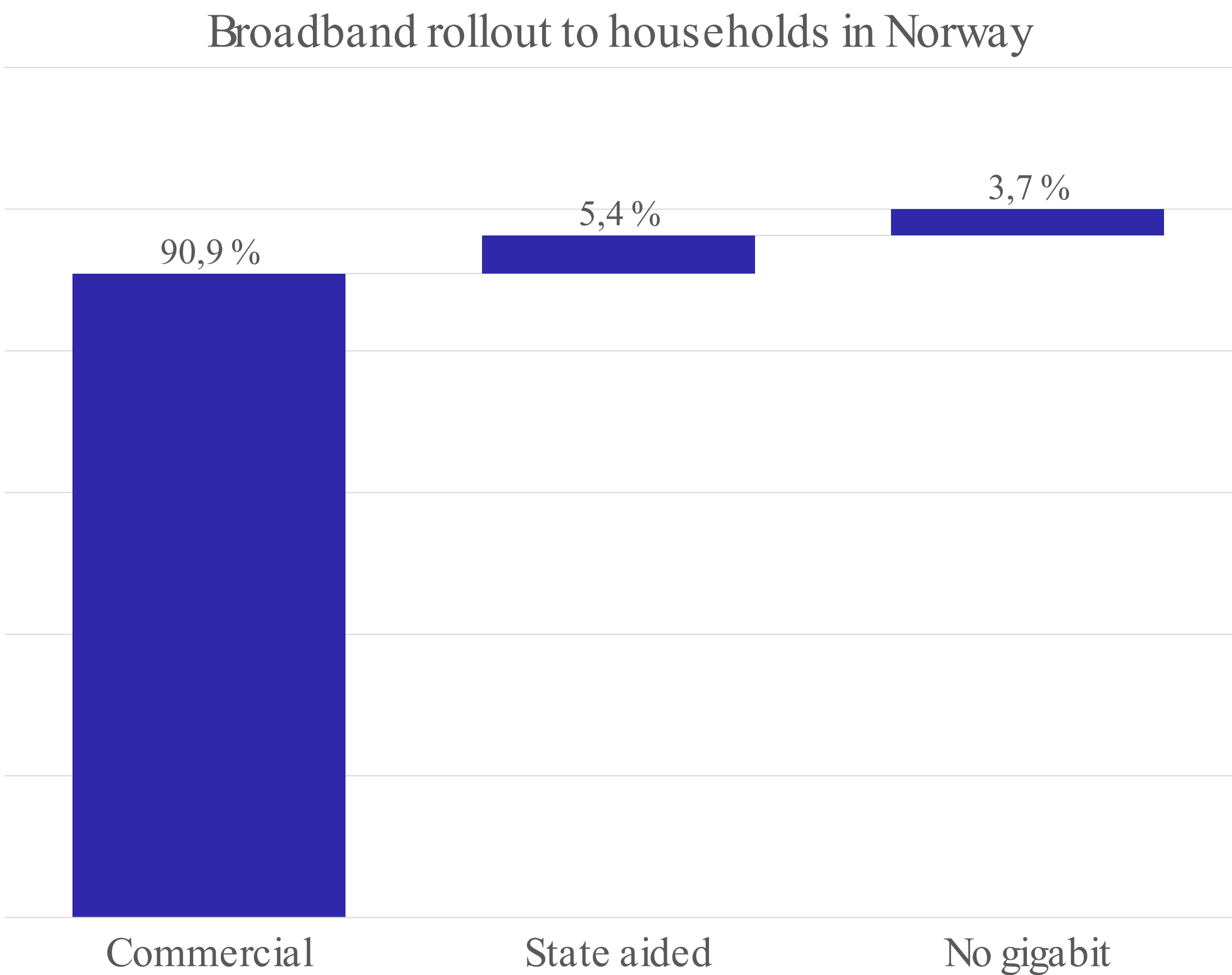
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Norway in Numbers



High Fiber Broadband Coverage

Norway has achieved 92.1% fiber broadband access and over 96% gigabit-capable coverage for households.

Commercial Investment Driven Rollout

Most broadband deployment was driven by commercial investment, with minimal reliance on public funding.

Infrastructure Competition

About 25% of households have access to two separate fiber networks, promoting market competition.

Targeted Public Funding

Public funds focus on challenging areas, enabling extensive fiber deployment without broad subsidies.

Why Norway is Different

Market Liberalization Effects

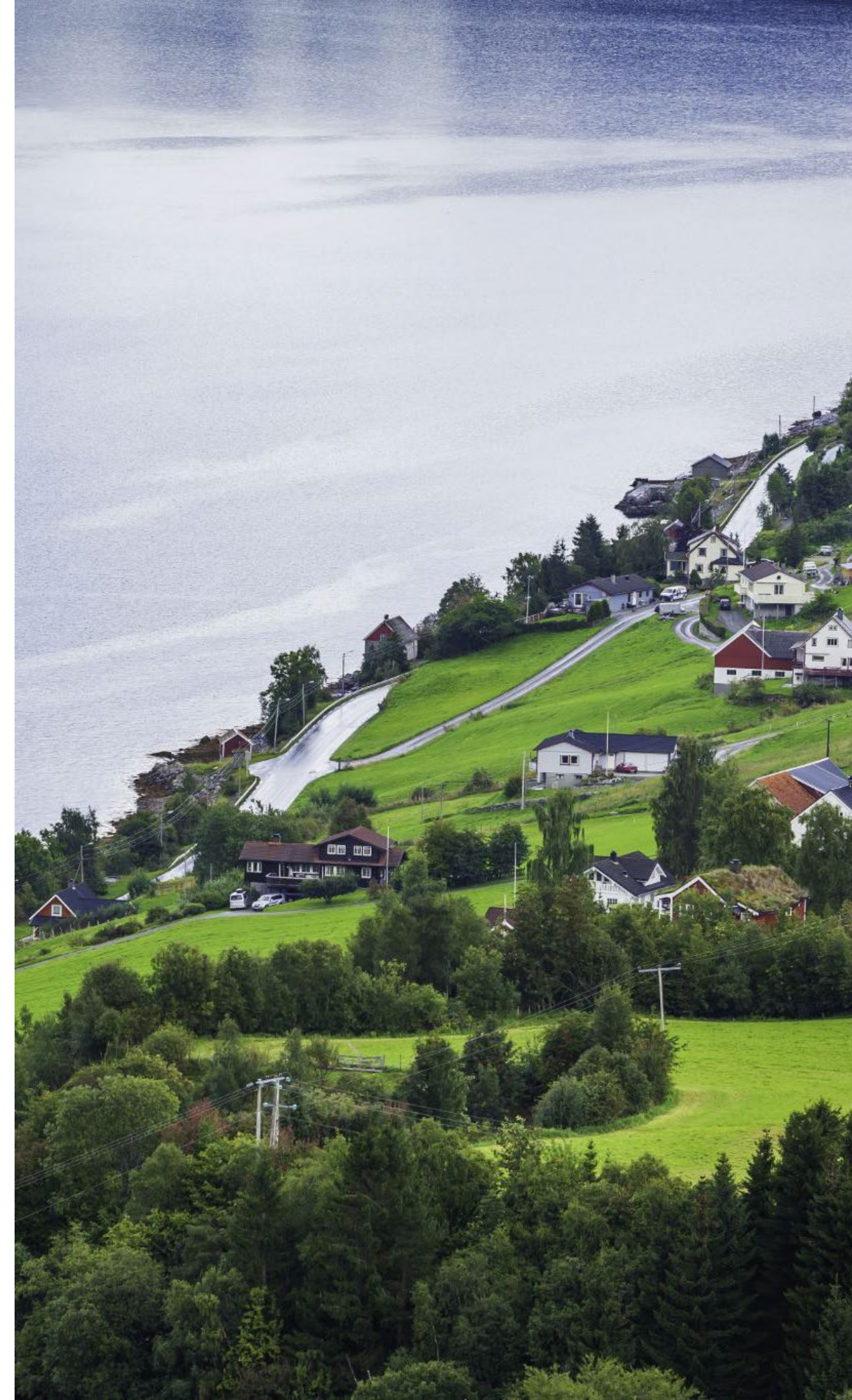
Liberalization introduced competition, encouraging multiple firms to invest in fiber infrastructure across Norway.

Strong Local Ownership Model

Local communities and municipal utilities actively participated in broadband development, overcoming deployment barriers.

Innovation Through Challenges

Norway's tough geography spurred decentralized investment and regional commitment for successful broadband coverage.





Local Power Utilities as Fiber Builders

Lyse and Altibox as Industry Pioneers

Lyse pioneered early 2000s fiber infrastructure, proving fiber broadband's commercial viability beyond traditional telecom models.

Utility Assets for Communication

Local utilities manage rights-of-way and infrastructure corridors valuable for fiber deployment.

Integration of Fiber and Power Networks

Fiber deployment alongside electricity infrastructure reduces construction challenges and costs.

Distributed Local Deployment

Hundreds of local utility-led projects speed broadband rollout across urban and rural areas.

Risk Distribution and Coverage Expansion

Utility involvement spreads investment risks and supports expansive broadband coverage.



Community Participation and Rural Deployment

Community-Led Broadband Deployment

Local residents coordinated demand and participation to enable broadband deployment in areas lacking traditional business cases.

Volunteer Cooperation Tradition

Bygdefiber reflects Norway's tradition of volunteer cooperation and collective problem-solving in infrastructure projects.

Local Ownership and Impact

Active participation gave communities ownership and accelerated access to high-capacity broadband networks.

Complementing Market Forces

Bygdefiber shows how local engagement can support broadband projects in sparsely populated regions with challenging economics.



The Role of Public Funding

Selective Public Support

Norway's public broadband funding focused on economically unviable, difficult-to-reach areas to complement private investments.

Private Sector Investment

Most broadband infrastructure was financed and built by private companies and utility sectors, not by state funds.

Balanced Funding Approach

Strategic subsidies acted as catalysts for universal broadband access while minimizing taxpayer burden.

Effective Intervention Model

Well-targeted support proved more effective than broad subsidies where strong market incentives exist.



The Market is changing

Network Coverage Expansion

Initial market focus was to provide high-capacity broadband access to maximize household coverage across Norway.

Competition and Overbuild

Multiple operators deployed competing fiber networks in many locations, resulting in overlapping infrastructure and overbuild.

Policy and Market Adaptation

Industry and policymakers explore network sharing and consolidation to improve efficiency and sustain market growth.



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From Coverage to Resilience



Strengthening Security and Preparedness

Policy Shift to Reliability and Focus on Network Resilience

The Government prioritizes resilience and infrastructure security to protect critical digital networks from outages and attacks.

Diversity and Redundancy

Focus on increasing diversity in transport infrastructure and redundancy ensures multiple independent broadband access options nationwide.

National Security Plan for Digital Infrastructure

Critical Infrastructure Importance

Electronic communications infrastructure is vital for economic growth, national defense, and digitalization efforts.

Addressing Security Challenges

The plan tackles threats from geopolitical tensions, extreme weather, and interconnected system vulnerabilities.

Measures for Resilience

Initiatives focus on physical protection, redundancy, recovery, stakeholder coordination, and investment in networks.

Strategic Policy Shift

Digital infrastructure is now seen as essential for national resilience, influencing policy and investment decisions.



Fysisk sikring av kommunikasjonskabler

Riktig sikring. Stabil drift.
Et tryggere samfunn.



Key Takeaways

- Competition drove deployment. A diverse group of investors accelerated fibre rollout and stimulated innovation.
- Local ownership mattered. Municipal utilities, regional actors and local communities played a decisive role in expanding coverage.
- Resilience is the next challenge. Coverage was the defining issue of the previous two decades. Security, robustness and preparedness are now taking over the priority.