The Partnership Paradox: How Collaborative Infrastructure Can Accelerate Germany's Fibre Future

Germany's Digital Moment in a Fragmenting World — Connectivity, Competitiveness and Collective Resilience

Whitepaper for Connected Germany 2025 – Munich

Executive Summary

Germany stands at a decisive inflection point in its digital infrastructure journey. Fibre rollout is now officially deemed of overriding public interest until 2030 — yet the country's deployment remains uneven, delayed by fragmented execution, overlapping jurisdictions, and competing incentives.

While billions have been committed and technology keeps improving, progress is constrained by a deeper paradox: **the fibre challenge is no longer technical — it's relational.**

This whitepaper argues that Germany's digital acceleration depends on a new generation of radically interoperable partnerships — where Telco's, utilities, municipalities, and innovators move beyond competition to build shared value ecosystems.

Drawing from cross-sector case studies, economic modelling, and policy analysis, this paper proposes a **"Partnership Compact for Germany 2030"**, outlining how collaborative infrastructure can deliver faster rollout, smarter investment, and stronger digital sovereignty.

The path forward demands a mind-set shift: **from trenching faster to partnering smarter.**

1. Introduction: The State of Fibre in Germany

Germany's Fibre Landscape 2025: Progress and Patchwork

Germany's digital ambitions are clear. The federal government has declared fibre-optic network expansion to be of overriding public interest until 2030, signalling an unprecedented policy commitment to closing the connectivity gap. Yet despite this clarity of intent, the reality on the ground tells a more complicated story.

As of early 2025, only approximately 40% of German households have access to fibre-to-the-home (FTTH) connections. This figure masks significant disparities: while major urban centres see competitive offerings from multiple providers, rural and semi-rural regions continue to struggle with inadequate coverage. The digital divide is not merely a matter of geography — it reflects deeper structural challenges in how infrastructure is planned, financed, and deployed.

Germany's telecommunications landscape is uniquely fragmented. Dozens of operators, represented by associations including BREKO (Federal Association of Broadband and Telecommunications), BUGLAS (Federal Association of Carriers and Services), and VATM (Association of Telecommunications and Value-Added Service Providers), are simultaneously building networks across overlapping territories. While this competitive energy has driven innovation and investment, it has also led to inefficiencies: parallel trenching in profitable areas, underinvestment in challenging terrain, and coordination failures that delay projects and inflate costs.

The Partnership Paradox

Here lies the central tension: everyone agrees that cooperation is essential, yet meaningful collaboration remains scarce. Industry roundtables produce consensus statements. Policy forums emphasize coordination. Yet on the ground, competitive instincts, regulatory complexity, and misaligned incentives keep stakeholders working in parallel rather than in partnership.

The irony is stark. Germany has no shortage of capital — public funding schemes, private investment vehicles, and European recovery funds have mobilized billions for digital infrastructure. The technology is mature and proven. The regulatory framework has been clarified. What remains missing is the connective tissue between actors: the trust mechanisms, governance structures, and economic incentives that would enable true collaborative infrastructure at scale.

The real constraint is coordination — not capital or technology.

Research Question

This whitepaper addresses a fundamental challenge: **How can Germany unlock collaborative infrastructure models that balance competition, efficiency, and public good?**

The answer requires moving beyond traditional dichotomies of public versus private, or competition versus monopoly. It demands exploring a third way: structured co-opetition, where operators compete on services while cooperating on infrastructure; where municipalities act as neutral conveners rather than competitors; where data and governance become shared assets that accelerate deployment without compromising commercial differentiation.

The following sections examine the economic rationale for collaboration, draw lessons from adjacent sectors that have navigated similar transitions, propose governance frameworks for shared digital infrastructure, and outline a concrete policy pathway toward a Partnership Compact for Germany 2030.

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2. The Economics of Collaboration

Shared Build Economics: The Case for Cooperation

Infrastructure deployment in telecommunications follows a predictable cost structure. Civil works — trenching, ducting, and permitting — typically account for 60-80% of total deployment costs. Once a trench is dug and conduit laid, the incremental cost of adding additional fibre capacity is marginal. This economic reality creates a powerful incentive for shared construction.

Joint trenching and co-investment models have demonstrated cost efficiencies ranging from 10% to 30% in CAPEX savings across European markets. These savings emerge from multiple sources:

Reduced civil engineering costs: A single coordinated dig eliminates duplicate excavation, restoration, and permitting processes. When multiple operators share a trench or duct system, the per-operator cost drops dramatically.

Economies of scale in procurement: Larger, coordinated infrastructure projects can negotiate better terms with construction firms, equipment suppliers, and engineering consultants.

Faster time-to-market: Coordinated builds reduce conflicts over street access, streamline municipal approvals, and minimize disruption to communities — accelerating deployment timelines and reducing opportunity costs.

Lower risk exposure: Shared investment models distribute financial and operational risk across multiple parties, making ambitious rural deployments more financially viable.

Yet despite these clear economic advantages, collaborative models remain underutilized in Germany. The question is not whether cooperation makes economic sense — it demonstrably does — but rather how to structure partnerships that align incentives, preserve competitive dynamics, and build sufficient trust to execute at scale.

Case Studies: Lessons from Europe

France: Public Initiative Networks (PINs)

France has emerged as a European leader in fibre deployment, in part through its Public Initiative Networks (Réseaux d'Initiative Publique, or RIP). In areas where private operators deemed deployment uncommercial, local authorities organized co-investment models involving multiple telecom players, construction firms, and public entities.

These networks operate on open-access principles: the infrastructure is built and maintained by a neutral entity, while multiple service providers compete at the retail level. The model achieves two critical objectives simultaneously: it ensures universal coverage in underserved areas while maintaining competitive choice for consumers.

The French approach demonstrates that public coordination need not mean public monopoly. By separating infrastructure deployment from service provision, France has created conditions where cooperation on passive infrastructure coexists with vibrant competition on services, pricing, and customer experience.

The Netherlands: Open-Access Wholesale Networks

The Netherlands has pursued a different but complementary path: open-access wholesale fibre networks operated by specialized infrastructure companies. Entities like Open Dutch Fiber and DIF build networks with the explicit intention of providing non-discriminatory access to multiple retail service providers.

This model attracts infrastructure investors seeking stable, long-term returns rather than volatile retail market share. It enables smaller ISPs and competitive entrants to offer services without the prohibitive capital requirements of building their own networks. And it reduces the incentive for wasteful network duplication in areas where a single high-quality network can serve multiple competitors.

The Dutch experience shows that wholesale separation — when structured with appropriate regulatory safeguards — can accelerate deployment, enhance competition, and improve capital efficiency.

Local Cooperation Models: The Stadtwerke Opportunity

Germany has a unique institutional asset in its municipal utilities (Stadtwerke). These locally rooted entities, traditionally focused on energy, water, and public transport, increasingly see digital infrastructure as a natural extension of their public service mandate.

Stadtwerke possess several advantages as neutral infrastructure providers:

Local knowledge and trust: As established community institutions, they understand local needs and have existing relationships with municipal authorities, making permitting and coordination smoother.

Existing infrastructure assets: Many Stadtwerke control duct systems, rights-of-way, and technical facilities that can be leveraged for fibre deployment, reducing greenfield construction costs.

Long-term orientation: Unlike venture-backed operators seeking rapid returns, Stadtwerke operate with patient capital and multi-generational planning horizons, better aligned with infrastructure investment timelines.

Neutral positioning: Stadtwerke can serve as honest brokers, coordinating between competing private operators while ensuring public interest objectives are met.

Several German municipalities have already demonstrated successful Stadtwerke-led fibre models. These projects typically combine public seed funding, private operator partnerships, and open-access principles to achieve rapid deployment while maintaining competitive service markets.

Incentive Recalibration: Redesigning Funding Frameworks

Current public funding mechanisms in Germany often inadvertently discourage collaboration. Subsidies are typically awarded to individual operators for specific projects, creating incentives to maximize individual footprint rather than optimize collective efficiency. The result is

predictable: operators pursue funding in isolation, coordination remains ad hoc, and opportunities for shared infrastructure go unrealized.

A recalibrated funding framework would explicitly reward collaborative approaches:

Bonus allocations for joint ventures: Projects involving multiple operators sharing infrastructure could receive higher subsidy rates or prioritized approval.

Shared infrastructure credits: Tax incentives or accelerated depreciation for operators participating in open-access or co-investment models.

Outcome-based funding: Shifting from input-based subsidies (euros per kilometre built) to outcome-based metrics (households connected, cost per passing) that reward efficiency over activity.

Regional coordination requirements: Making funding contingent on demonstrated coordination with local Stadtwerke, municipal planning authorities, and other operators active in the region.

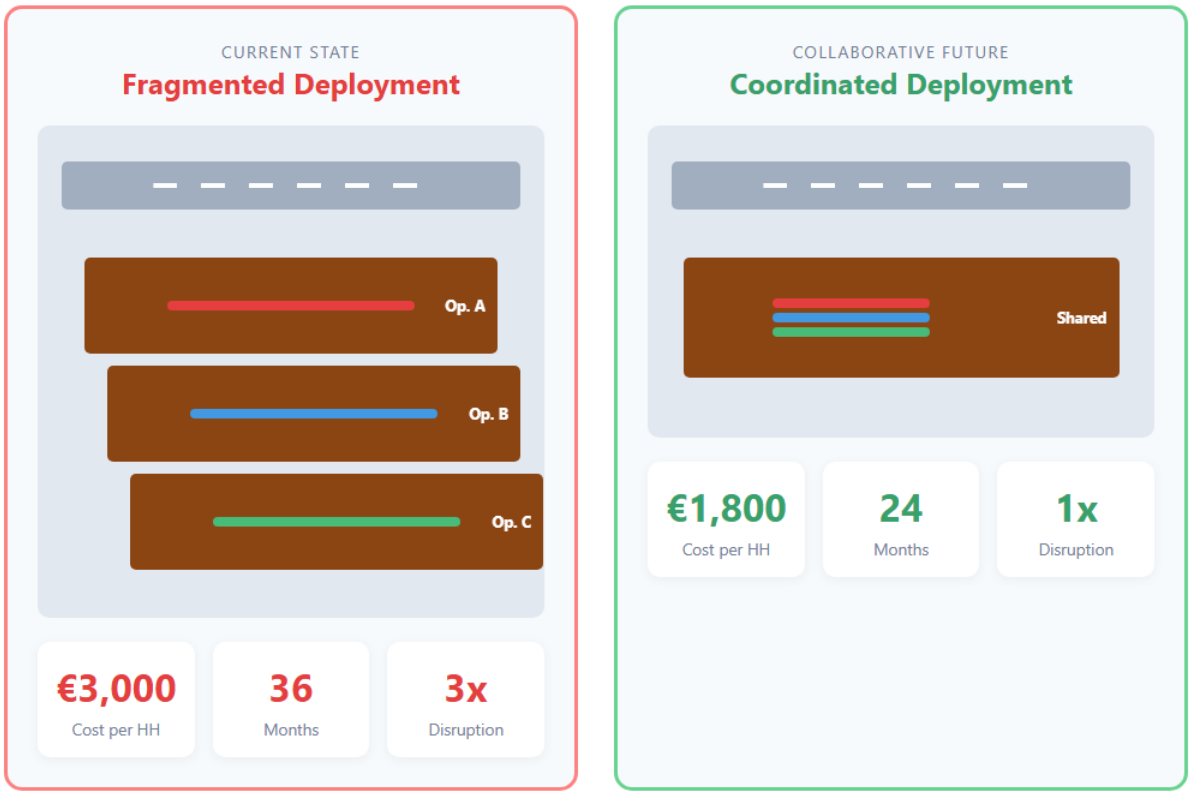
Outcome: Collaboration as Economic Rationality

The economic case for collaborative infrastructure is not merely idealistic — it is fundamentally rational. Structured cooperation reduces costs, accelerates deployment, distributes risk, and improves capital efficiency. The challenge is not convincing actors of collaboration's value, but rather creating the institutional frameworks, governance mechanisms, and incentive structures that make cooperation the path of least resistance.

When partnership becomes economically advantageous rather than economically exceptional, transformation follows.

The Cost of Fragmentation

Comparing Independent vs. Coordinated Fibre Deployment



40% Cost Reduction Through Collaboration

€1,200 saved per household passed

12 months faster deployment • 67% less community disruption

Operator A Fibre Operator B Fibre Operator C Fibre

3. Beyond Competition: Co-opetition as a Catalyst

The Limits of Pure Competition

Germany's telecommunications market has long operated on a competitive model: multiple operators building parallel networks, competing for customers, and differentiating on service quality and price. This approach has driven innovation and prevented monopolistic stagnation. Yet in the context of fibre infrastructure, pure competition reveals inherent limitations.

Infrastructure networks exhibit strong natural monopoly characteristics. The fixed costs are enormous, the incremental costs minimal, and the efficient scale often matches or exceeds market demand. Building three parallel fibre networks to the same households generates neither economic efficiency nor superior consumer outcomes — it simply triples capital requirements while fragmenting returns.

The question is not whether competition has value — it does — but rather at which layer competition delivers the greatest benefit. The answer increasingly lies in separating infrastructure competition from service competition.

Energy Transition Parallel: Lessons from Grid Cooperation

Germany's energy sector provides an instructive precedent. During the Energiewende (energy transition), competing utilities faced a comparable challenge: how to rapidly deploy renewable generation and grid infrastructure while maintaining competitive markets.

The solution involved structured cooperation at the infrastructure layer. Utilities that competed fiercely for retail customers collaborated on shared grid investments, regional balancing mechanisms, and coordinated renewable integration. This co-opetition model was enabled by:

Regulatory frameworks that encouraged infrastructure sharing: Grid operators were incentivized to coordinate investments, share capacity, and optimize system-wide efficiency.

Clear separation between network operation and energy retail: This unbundling allowed infrastructure cooperation without eliminating retail competition.

Regional coordination bodies: Multi-stakeholder platforms where utilities, grid operators, and public authorities aligned investment priorities and shared technical roadmaps.

The result: Germany deployed renewable capacity at unprecedented speed while maintaining competitive energy markets. The lesson for telecommunications is clear — infrastructure cooperation and service competition can not only coexist but can reinforce each other.

Mobility Example: Shared Charging Networks

The electric vehicle sector offers another relevant model. European automotive manufacturers — historically fierce competitors — recognized that fragmented charging infrastructure would slow EV adoption for all players. Their response was the IONITY consortium, a joint venture among BMW, Daimler, Ford, Hyundai, and Volkswagen Group to build a high-power charging network across Europe.

IONITY demonstrates several principles applicable to fibre deployment:

Competitors can cooperate on pre-competitive infrastructure: Charging stations don't differentiate car brands; fibre ducts don't differentiate ISPs. Both are enablers of competition, not sources of competitive advantage.

Joint ventures can accelerate deployment timelines: Pooled resources and coordinated planning deliver infrastructure faster than fragmented individual efforts.

Open access preserves competitive dynamics: IONITY infrastructure is available to all EV manufacturers, not just consortium members, ensuring cooperation doesn't morph into exclusion.

Telecom Adaptation: Co-opetition Under EU Competition Law

The telecommunications sector can embrace similar models while respecting European competition law. Several frameworks already exist:

Network sharing agreements: Operators can share passive infrastructure (ducts, poles, towers) and even certain active components while competing on services, customer acquisition, and pricing.

Open-access models: Infrastructure providers offer non-discriminatory wholesale access to multiple retail competitors, separating infrastructure economics from service differentiation.

Joint ventures with regulatory oversight: Co-investment projects can receive antitrust approval when they demonstrably increase efficiency, accelerate deployment, or extend coverage to underserved areas without harming consumer choice.

The key is structural safeguards: clear access rules, price transparency, non-discrimination commitments, and independent oversight. These mechanisms ensure cooperation serves public interest rather than enabling anti-competitive coordination.

Strategic Benefit: Enabling Smaller Operators

Co-opetition models carry a particularly important benefit for market diversity. When infrastructure costs are shared, smaller ISPs and regional operators can compete without the crushing capital requirements of building their own networks end-to-end.

This dynamic strengthens competition rather than weakening it. A market with ten service providers competing on shared infrastructure is more competitive than a market with three vertically integrated operators whose infrastructure moats limit entry. Shared infrastructure democratizes access, lowers barriers to entry, and enables competition to focus on what matters most to consumers: service quality, pricing innovation, and customer experience.

Outcome: Co-opetition as Competitive Advantage

In mature infrastructure markets, co-opetition is not a compromise — it is a competitive advantage. It allows operators to:

- **Reduce capital intensity** while maintaining service differentiation
- **Accelerate market coverage** through coordinated deployment
- **Focus investment** on customer-facing innovation rather than duplicative infrastructure
- **Share risk** in challenging deployments while preserving upside in competitive markets
- **Strengthen regulatory standing** by demonstrating commitment to efficient, universal deployment

The shift from infrastructure competition to infrastructure cooperation, paired with intensified service competition, represents the natural evolution of telecommunications markets moving from scarcity to maturity.

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4. Digital Trust Infrastructure: Governance and Data as Glue

The New Infrastructure Stack

Historically, telecommunications infrastructure meant physical assets: cables, switches, towers. But 21st-century infrastructure deployment requires a second, less visible layer: **digital trust infrastructure.**

Effective collaboration at scale depends on three interlocking elements:

Physical infrastructure: Fibre, ducts, and access networks **Governance infrastructure:** Rules, standards, and coordination mechanisms **Data infrastructure:** Shared information systems enabling transparency, planning, and operational coordination

Without this layered approach, partnership remains aspirational rather than operational. Collaborative models fail not because of bad intentions, but because of information asymmetries, coordination costs, and trust deficits that governance and data systems are designed to resolve.

Interoperability Standards: The Language of Cooperation

Collaboration requires a common language. In infrastructure deployment, that language consists of technical standards, data formats, and coordination protocols that enable seamless information exchange.

Germany needs national interoperability standards covering:

- **Network mapping and geodata:** Standardized formats for representing planned and existing infrastructure, enabling operators to identify opportunities for shared builds, avoid conflicts, and optimize routing.
- **Build coordination protocols:** Common processes for notifying other stakeholders of planned construction, requesting access to existing infrastructure, and coordinating shared projects.
- **Maintenance and incident management:** Shared systems for reporting outages, coordinating repairs, and managing infrastructure lifecycle, particularly in shared-duct or open-access scenarios.
- **Quality and performance metrics:** Agreed definitions for measuring network quality, coverage, and deployment progress, enabling transparent comparison and accountability.

These standards need not be complex or rigid. The goal is not bureaucratic uniformity but pragmatic interoperability — ensuring that information flows efficiently between organizations with different systems, cultures, and priorities.

Trust Architecture: Neutral Digital Platforms

Information sharing requires trust, and trust requires neutrality. Germany should establish neutral digital coordination platforms that serve as honest brokers in infrastructure planning.

A National Fibre Coordination Platform could function as:

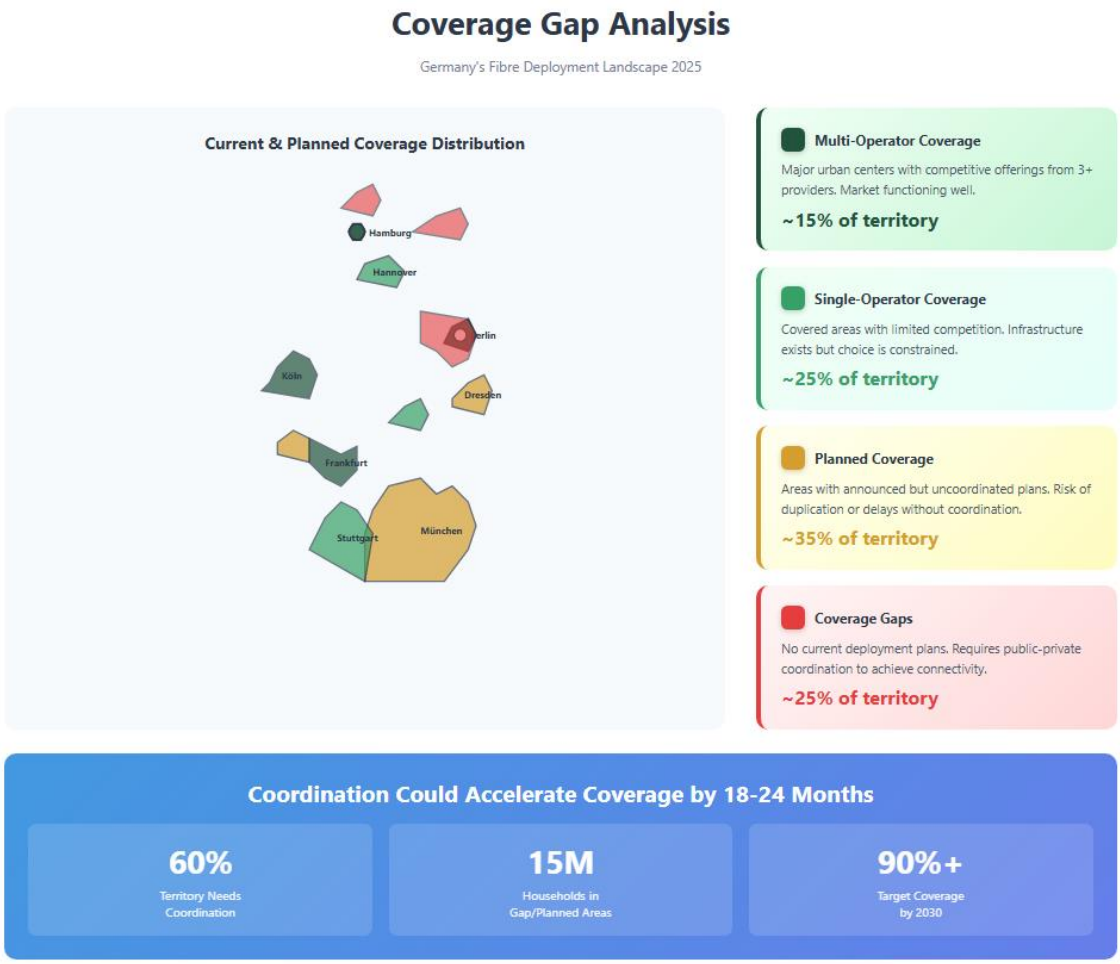
A transparent registry of planned builds: Operators submit construction plans to a central, secure database visible to authorized stakeholders. This visibility enables coordination, reduces duplication, and facilitates joint ventures.

A marketplace for infrastructure access: Owners of existing ducts, poles, or rights-of-way can offer capacity to other operators, with standardized pricing, terms, and dispute resolution mechanisms.

A planning and simulation tool: Municipalities and operators can model different deployment scenarios, identify coverage gaps, and optimize investment allocations before breaking ground.

A performance dashboard: Public tracking of deployment progress against national targets, holding both private operators and public authorities accountable for meeting 2030 objectives.

Critically, such platforms must be governed independently — neither controlled by incumbent operators nor subject to political interference. Models from energy sector coordination bodies or transportation planning authorities provide precedents for this kind of neutral, multi-stakeholder governance.



Data Stewardship: Balancing Openness and Competition

Infrastructure data is simultaneously a public good and a competitive asset. The challenge is designing data-sharing frameworks that unlock collaboration benefits while protecting legitimate commercial interests.

Germany should establish data stewardship principles that:

Distinguish between pre-competitive and competitive data: Information about duct locations, construction schedules, and coverage gaps is pre-competitive and should be widely shared. Data about customer relationships, service pricing, and network utilization may be commercially sensitive and subject to different sharing rules.

Employ secure, anonymized sharing mechanisms: Modern data platforms can provide aggregate insights and coordination benefits without exposing granular, identifiable information. Techniques like differential privacy, secure multi-party computation, and data trusts enable cooperation without compromise.

Create reciprocal obligations: Operators that access shared infrastructure data should contribute their own data to the platform, creating a virtuous cycle of transparency and cooperation.

Ensure public oversight: An independent data stewardship board, representing operators, municipalities, civil society, and regulators, can oversee data governance, resolve disputes, and adapt rules as circumstances evolve.

Governance Models: From Fragmentation to Federation

Current infrastructure governance in Germany is deeply fragmented. Federal ministries set policy goals, state governments control funding and permits, municipalities manage local approvals, and industry associations coordinate their members — but no integrating mechanism aligns these layers.

A federated governance model could provide coherence without centralization:

Regional Fibre Acceleration Alliances: Multi-stakeholder bodies at the state or regional level bringing together Telcos, Stadtwerke, municipalities, and planning authorities. These alliances would coordinate deployment roadmaps, resolve conflicts, and channel funding to collaborative projects.

National Coordination Council: A strategic body providing overall direction, standardizing approaches across regions, and ensuring federal policy aligns with ground-level realities.

Independent arbitration mechanisms: When disputes arise over infrastructure access, pricing, or coordination, neutral arbiters can resolve conflicts quickly and fairly, preventing escalation and maintaining momentum.

This multi-layered governance is not about adding bureaucracy — it's about adding connective tissue that currently doesn't exist.

Outcome: Shared Governance Enables Efficiency

When governance and data infrastructure are in place, collaboration transforms from aspiration to operation. Operators can identify partnership opportunities with confidence. Municipalities can coordinate across jurisdictions with clarity. Investors can assess projects with transparency. And deployment accelerates because trust reduces transaction costs.

Shared governance doesn't eliminate competitive differentiation — it enables it, by allowing companies to focus competitive energy on service innovation while cooperating on infrastructure fundamentals.

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5. The New Partnership Compact: Policy & Action Framework 2025–2030

Introduction: From Principle to Practice

The preceding sections have established why collaboration matters, how it works in practice, and what institutional foundations it requires. This section translates those insights into concrete policy recommendations and an actionable roadmap for Germany's fibre future.

The **Partnership Compact for Germany 2030** is not a government program or regulatory mandate. It is a shared framework — a set of commitments, incentives, and coordinating mechanisms that align public and private actors around common objectives while preserving competitive dynamics and local autonomy.

Policy Recommendations

1. Create Regional Fibre Acceleration Alliances

Objective: Establish structured coordination bodies at the state or regional level where stakeholders can align deployment plans, share resources, and resolve conflicts.

Design Principles:

- Multi-stakeholder composition: telcos, Stadtwerke, municipal representatives, state authorities, and civil society
- Shared KPIs: Regional coverage targets, cost efficiency benchmarks, and timeline milestones
- Decision-making authority: Real convening power to allocate funding, coordinate construction schedules, and broker joint ventures
- Transparency requirements: Public reporting on progress, bottlenecks, and partnership outcomes

Implementation Path:

- Pilot alliances in 3-5 states with diverse characteristics (urban/rural, high/low coverage, different operator landscapes)
- Federal seed funding for alliance establishment and initial operations
- Legal framework clarifying roles, responsibilities, and coordination authority
- Evaluation after 18 months to refine model and scale nationally

Expected Outcomes:

- 15-25% reduction in deployment timelines through coordinated permitting and construction
- Identification and rapid closure of coverage gaps through shared mapping
- Increased joint venture activity as stakeholders build trust and discover synergies

2. Introduce "Shared Infrastructure Credits"

Objective: Provide direct financial incentives for operators who participate in collaborative infrastructure models.

Mechanism:

- Tax credits for companies investing in open-access infrastructure or shared-duct systems
- Accelerated depreciation schedules for jointly built assets
- Subsidy bonuses (10-20% uplift) for applications demonstrating genuine co-investment or infrastructure sharing
- Funding priority for projects that leverage existing Stadtwerke or municipal infrastructure

Eligibility Criteria:

- Infrastructure must provide non-discriminatory access to multiple operators
- Governance includes independent oversight or third-party management
- Projects demonstrate measurable cost savings or coverage expansion versus independent builds
- Commitment to standardized data sharing and network mapping

Expected Outcomes:

- Shift 30-40% of subsidized projects toward collaborative models by 2028
- Unlock €2-3 billion in additional private investment through improved project economics
- Reduce effective cost-per-passing by 20-30% in subsidized builds

3. Launch a National Coordination Platform

Objective: Create a transparent digital registry for planned builds, existing infrastructure, and partnership opportunities.

Core Functions:

- **Build Registry:** Operators submit construction plans 6-12 months in advance, visible to other operators and municipalities
- **Asset Database:** Inventory of existing ducts, poles, and fibre infrastructure available for sharing or leasing
- **Collaboration Marketplace:** Matching system connecting operators with complementary needs or overlapping projects
- **Performance Dashboard:** Real-time tracking of national deployment progress against 2030 targets
- **Planning Tools:** GIS-based simulation and optimization capabilities for municipalities and operators

Governance:

- Independent platform operator with multi-stakeholder board
- Secure access controls protecting commercially sensitive data
- Open APIs enabling integration with operator planning systems

- Regular audits ensuring data accuracy and system integrity

Rollout Timeline:

- Platform design and procurement: 2025
- Pilot deployment with voluntary operator participation: 2026
- Mandatory build notification for subsidized projects: 2027
- Full national rollout: 2028

Expected Outcomes:

- 40% reduction in parallel overlapping builds in competitive markets
- €500M-€800M annual savings from avoided duplication and improved coordination
- Faster identification and closure of "white spots" with no planned coverage

4. Encourage Co-investment Joint Ventures

Objective: Remove regulatory friction and provide legal clarity for infrastructure partnerships between competitors.

Policy Actions:

- **Streamlined antitrust review:** Fast-track process for joint ventures meeting clear public interest criteria (rural coverage, cost efficiency, open access)
- **Model contracts and governance frameworks:** Pre-approved templates for co-investment structures, reducing legal costs and uncertainty
- **JV formation support:** Technical assistance and legal guidance for operators, particularly smaller players, exploring partnership structures
- **Regulatory sandboxes:** Experimental zones where innovative partnership models can be tested with relaxed regulatory requirements

Safeguards:

- Mandatory open-access provisions for co-investment infrastructure
- Price transparency and non-discrimination commitments
- Independent arbitration for access disputes
- Sunset provisions allowing models to be revisited if anti-competitive effects emerge

Expected Outcomes:

- 20-30 new infrastructure joint ventures formed by 2028
- Expansion of fibre coverage to 500,000+ additional households through JV-enabled projects
- Reduction in average regulatory approval time from 12-18 months to 3-6 months

5. Institutionalize Public-Private Digital Trust Boards

Objective: Create permanent governance bodies ensuring collaborative infrastructure serves public interest while respecting commercial realities.

Functions:

- Oversee data-sharing frameworks and interoperability standards
- Monitor open-access compliance and investigate discrimination complaints
- Facilitate dispute resolution between operators, municipalities, and other stakeholders
- Provide independent assessment of partnership proposals and policy effectiveness
- Recommend adjustments to incentive structures and regulatory frameworks

Composition:

- Independent experts in telecommunications, infrastructure, and public policy
- Rotating representatives from operator associations, municipalities, and consumer groups
- Transparency requirements: published decisions, annual reports, stakeholder consultations

Authority:

- Advisory power to regulators and policymakers
- Binding arbitration on technical disputes (with appeals to courts)
- Convening power to bring stakeholders together around emerging issues

Expected Outcomes:

- Increased trust in shared infrastructure governance, reducing operator reluctance to cooperate
- Faster, fairer resolution of access disputes and technical conflicts
- Continuous improvement in partnership frameworks based on real-world feedback

Strategic Vision 2030: A Federated Digital Nation

These five policy pillars, implemented in concert, point toward a transformed German connectivity landscape by 2030.

Coverage and Capacity:

- 90%+ fibre household coverage, with no region below 75%
- Universal gigabit access in urban and suburban areas
- Reliable 100+ Mbps service in even the most remote communities

Economic Efficiency:

- 25-35% reduction in national deployment costs through collaboration
- €5-8 billion in cumulative savings versus fragmented deployment scenario
- Improved return on investment for operators, enabling continued private funding

Market Structure:

- Thriving competitive retail market with 15-20 viable service providers nationally
- Lower barriers to entry enabling innovative, specialized ISPs
- Infrastructure layer characterized by cooperation; service layer by vibrant competition

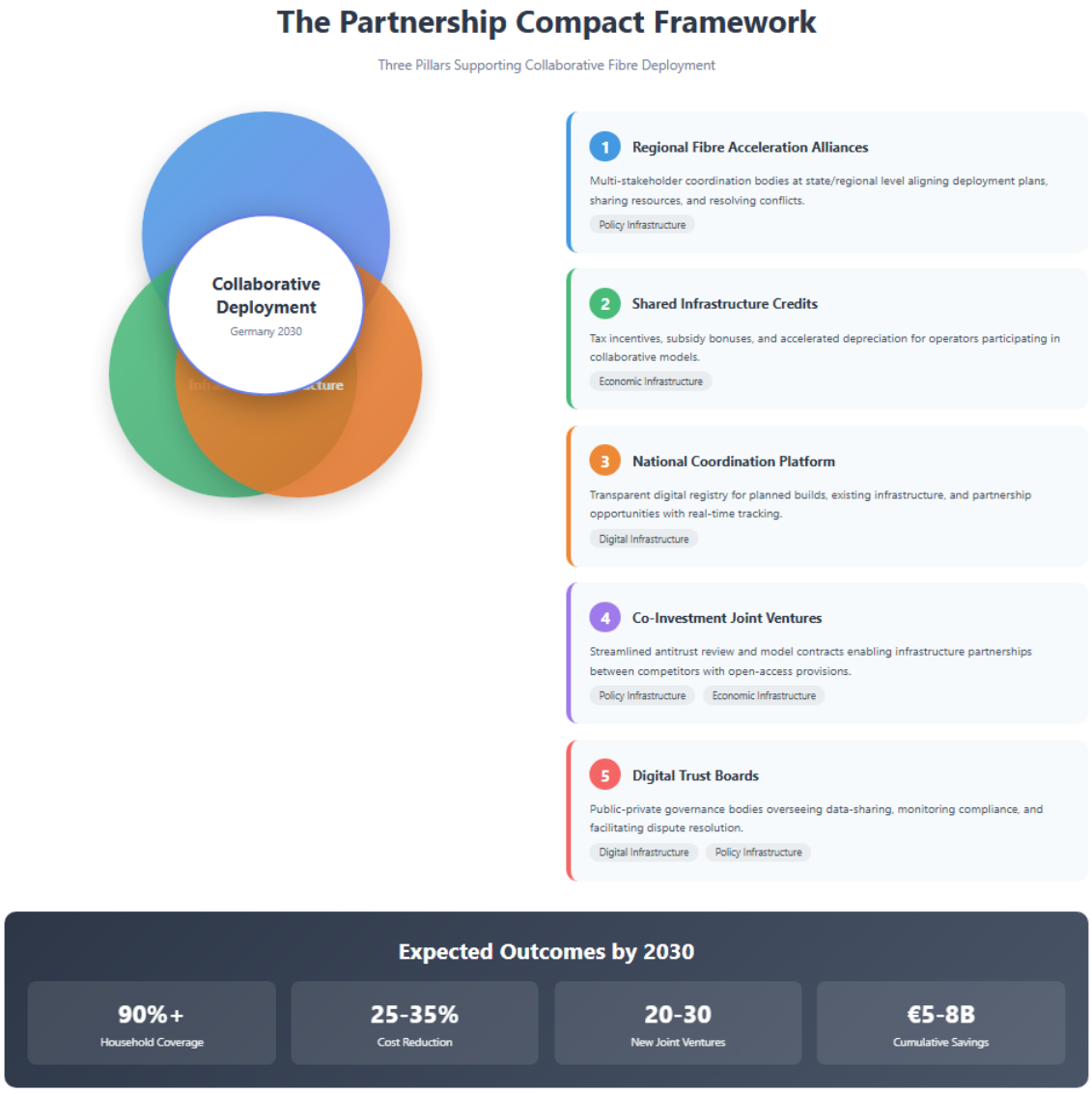
Digital Sovereignty:

- Germany-controlled digital backbone reducing dependence on non-EU infrastructure providers
- Resilient, redundant network architecture meeting security and continuity requirements
- Leading European model for collaborative infrastructure governance

Social Outcomes:

- Digital divide substantially narrowed, with underserved communities connected
- Enhanced economic opportunity, remote work, and entrepreneurship in rural areas
- Strong foundation for emerging technologies (IoT, Industry 4.0, smart cities)

By 2030, Germany's connectivity ecosystem can become a model of **federated collaboration** — where every fibre built strengthens not just one operator's balance sheet, but the nation's digital backbone.



6. Conclusion: The Connected Future Requires Connected Actors

Germany's journey to comprehensive fibre coverage is not failing because of insufficient capital, inadequate technology, or unclear policy objectives. The resources exist. The tools are proven. The political will is declared.

What has been missing is the **architecture of collaboration** — the governance structures, economic incentives, trust mechanisms, and coordinating platforms that transform individual efforts into collective progress.

This whitepaper has argued that Germany's digital acceleration depends on embracing a new paradigm: infrastructure cooperation paired with service competition. This is not compromise or resignation; it is strategic adaptation to the realities of mature infrastructure markets.

The Path Forward

The Partnership Compact for Germany 2030 offers a concrete path:

- **Regional Fibre Acceleration Alliances** provide the coordination venues where stakeholders align around shared objectives while respecting local contexts.
- **Shared Infrastructure Credits** recalibrate economic incentives, making cooperation financially rational rather than financially sacrificial.
- **A National Coordination Platform** builds the digital nervous system enabling transparent planning, efficient coordination, and continuous learning.
- **Streamlined Co-investment Frameworks** remove regulatory barriers, providing legal clarity and reducing transaction costs for partnership formation.
- **Public-Private Digital Trust Boards** institutionalize governance, ensuring partnerships serve public interest while allowing competitive differentiation.

None of these interventions alone is transformative. Together, they create conditions where **partnership becomes the path of least resistance** — economically advantageous, operationally practical, and strategically essential.

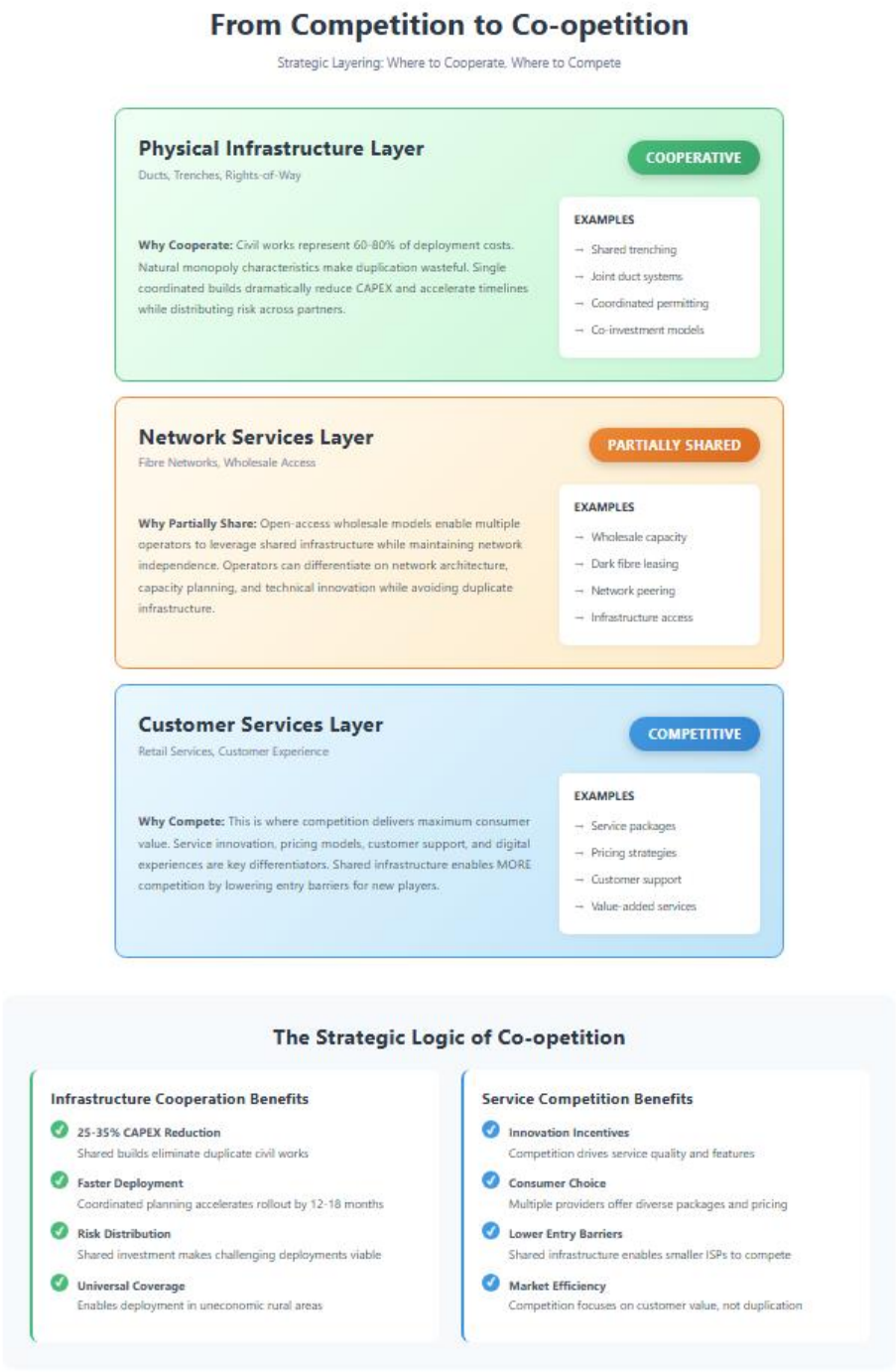
From Competition to Co-opetition

The future of German telecommunications is not zero-sum. The question is not whether to compete or cooperate, but rather **at which layers to compete and at which to cooperate.**

Physical infrastructure — ducts, trenches, rights-of-way — exhibits natural monopoly characteristics. Building three parallel fibre networks serves no social purpose and wastes scarce capital.

Services, customer relationships, and digital experiences are where competition delivers greatest value. A market with shared infrastructure and vigorous service competition can be more dynamic, more innovative, and more customer-focused than fragmented infrastructure competition.

The energy sector learned this. The mobility sector is learning it. Telecommunications must embrace it.



A Call to Shared Purpose

Germany's path to full-fibre is not a race of speed but **a challenge of alignment.** The future belongs to those who partner at scale, govern with trust, and innovate through shared purpose.

Every stakeholder has a role:

Operators must recognize that collaboration on infrastructure enables rather than constrains competitive success. The capital freed from duplicate builds can fund service innovation, customer acquisition, and market expansion.

Municipalities and Stadtwerke must embrace their role as neutral conveners and infrastructure stewards, bridging between private operators and public interest.

Regulators and policymakers must create frameworks that reward cooperation without enabling anti-competitive coordination — a delicate balance requiring ongoing attention and adaptation.

Industry associations must move from defending territorial interests to championing collective advancement, recognizing that sector success depends on aligned effort.

Citizens and businesses must hold all parties accountable — demanding rapid, universal deployment while ensuring competitive choice and fair pricing.

The Paradox Resolved

This whitepaper began with a paradox: everyone agrees cooperation is essential, yet collaboration remains scarce.

The resolution is now clear. Collaboration is not prevented by ill will or short-sightedness. It is constrained by coordination costs, trust deficits, and misaligned incentives — **all of which are solvable through deliberate institutional design.**

The Partnership Compact provides that design. It doesn't eliminate competition or impose uniformity. It creates **structured co-opetition** — where operators compete fiercely on what matters to customers while cooperating efficiently on what matters to society.

Final Reflection

In 2030, when Germany achieves comprehensive fibre coverage, the achievement will not be remembered as the triumph of any single operator, technology, or policy. It will be remembered as a collective success — proof that complex coordination challenges can be overcome when stakeholders align around shared purpose.

Partnership is not the paradox — it's the solution.
The infrastructure Germany needs is within reach. The question is whether the nation's digital actors can become as connected as the networks they seek to build.

The answer will define Germany's digital future.

Appendices

Appendix A: Comparative Data – Fibre Economics across EU States

Table A1: FTTH Household Coverage (2024)

Country	Coverage %	Deployment Model	Key Success Factors
Spain	92%	Competitive + wholesale	Strong incumbent investment + competitive incentives
Portugal	88%	Incumbent-led	Single national rollout with regulatory oversight
France	78%	Public Initiative Networks	Regional co-investment + open access
Sweden	75%	Municipal + cooperative	Stadtwerke-like model + local ownership
Netherlands	70%	Wholesale open-access	Infrastructure funds + retail competition
Germany	**40%**	**Fragmented competitive**	**Strong operators but limited coordination**
Poland	38%	Competitive	Rapid growth but starting from low base
Italy	35%	Mixed	Urban/rural divide + regulatory complexity

Table A2: Average Deployment Cost per Household Passed

Deployment Approach	Cost per HH (€)	Notes
Coordinated joint build	800-1,200	Shared trenching, optimal routing
Independent competitive build	1,500-2,200	Parallel infrastructure, negotiation overhead
Rural greenfield (individual)	2,500-4,000	Low density, complex terrain
Rural greenfield (coordinated)	1,800-2,800	Shared costs reduce rural penalty
Urban overbuild	1,200-1,800	Existing ducts available but competitive

Sources: FTTH Council Europe, BREKO market data, European Commission Digital Decade reports

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Appendix B: Partnership Model Archetypes

Model 1: Joint Venture Co-Investment

Structure:

- Two or more operators form legal entity to build shared infrastructure
- Each partner contributes capital proportional to planned capacity usage
- JV owns and operates passive infrastructure (ducts, fibre)
- Partners compete independently on retail services

Best For: Urban/suburban areas with multiple viable operators

ROI Profile:

- 15-25% CAPEX reduction vs. independent builds
- Faster time-to-market (shared permitting, construction)
- Risk shared across partners

- Potential regulatory complexity

Example: Regional city where Deutsche Telekom and regional operator share trenching, each pulling their own fibre but coordinating route and timing

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Model 2: Wholesale Open-Access Network

Structure:

- Infrastructure company (private investor, Stadtwerke, or consortium) builds network
- Network operates as wholesale-only, no retail services
- Multiple ISPs purchase wholesale capacity on non-discriminatory terms
- Independent governance ensures fair access and pricing

Best For: Rural areas, small cities, or regions with limited commercial interest

ROI Profile:

- Lower retail revenue but stable, predictable wholesale income
- Attracts infrastructure-focused investors (pension funds, infrastructure funds)
- Enables maximum retail competition
- Requires strong regulatory oversight

Example: Municipal Stadtwerke builds network with public co-investment, offers wholesale access to 5-10 competing ISPs

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Model 3: Infrastructure Leasing / Duct Sharing

Structure:

- One operator builds primary infrastructure (ducts, poles)
- Additional operators lease duct space or pole capacity for their own fibre
- Pricing regulated or negotiated with arbitration mechanism
- Each operator maintains independence on network architecture and services

Best For: Areas with existing infrastructure that has spare capacity

ROI Profile:

- Minimal additional CAPEX for duct owner (monetizes existing assets)
- 30-50% CAPEX reduction for leasing operator vs. greenfield
- Fast deployment (physical construction already complete)
- Requires clear access rules and pricing frameworks

Example: Energy utility with extensive underground duct network offers capacity to telecom operators, creating instant fibre-ready infrastructure

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Model 4: Regional Coordination Coalition

Structure:

- Informal alliance of operators, municipalities, and Stadtwerke in defined region
- Participants share construction schedules, identify joint build opportunities
- No shared ownership, but coordinated planning and opportunistic collaboration
- Supported by regional coordination platform and facilitation resources

Best For: Regions with diverse operators and complex jurisdictional landscape

ROI Profile:

- Low commitment threshold (no capital sharing required)
- Opportunistic savings (10-20%) when coordination opportunities arise
- Builds trust for potential deeper partnership
- Requires sustained coordination investment

Example: State-level alliance where operators notify planned builds 12 months in advance, municipality coordinates permit timing, occasional joint trenching when routes align

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Table C1: Partnership Model ROI Comparison

Model	CAPEX Savings	Time Savings	Complexity	Best Coverage Scenario
Joint Venture	20-30%	20-35%	High	Urban competitive
Wholesale Open-Access	15-25%	15-25%	Medium	Rural underserved
Duct Sharing	30-50%	40-60%	Low	Existing infrastructure
Regional Coalition	10-20%	10-20%	Low-Medium	Mixed landscape

Appendix C: Policy Timeline – From 2025 to 2030 Targets

2025: Foundation Year

Q1-Q2:

- Federal government announces Partnership Compact framework
- Consultation process with BREKO, BUGLAS, VATM, VKU, and municipal associations
- Legal review of co-investment frameworks under EU competition law

Q3-Q4:

- Launch pilot Regional Fibre Acceleration Alliances (3-5 states)
- Begin National Coordination Platform design and procurement
- Introduce first Shared Infrastructure Credits in federal funding programs
- Establish interim working group for Digital Trust Board design

Key Metric: 5 pilot alliances established, 50+ operators engaged

2026: Pilot and Proof

Q1-Q2:

- National Coordination Platform soft launch with voluntary participation
- First co-investment JVs approved under streamlined review process
- Model contracts and governance templates published
- Pilot alliances coordinate first shared build projects

Q3-Q4:

- Evaluation of pilot alliances: lessons learned, refinements needed
- Expansion of Shared Infrastructure Credits to broader funding programs
- Draft legislation for permanent Digital Trust Board structure
- First quantitative results from coordinated builds

Key Metric: 10+ joint projects launched, €200M in coordinated investment

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2027: Scale and Standardization

Q1-Q2:

- National Coordination Platform mandatory for all subsidized projects
- Digital Trust Boards established at federal and state levels
- Interoperability standards published and adopted
- Regional alliances expanded to all 16 states

Q3-Q4:

- First comprehensive national deployment map published
- Identification and prioritization of remaining coverage gaps
- Enhanced funding programs rewarding collaborative approaches
- Regulatory sandboxes launch for innovative partnership models

Key Metric: 50% household coverage achieved, 30+ active joint ventures

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2028: Acceleration Phase

Q1-Q2:

- Coordination platform reaches full operational capacity
- All major operators participating in data sharing framework
- Duct sharing and infrastructure leasing agreements proliferate
- Rural coverage programs prioritize collaborative bids

Q3-Q4:

- Mid-term review of Partnership Compact: successes, challenges, adjustments
- Enhanced incentives for hardest-to-reach areas
- International benchmarking: Germany compared to EU peers
- Digital Trust Boards issue first comprehensive assessment

Key Metric: 65% household coverage, €1B+ annual CAPEX savings from coordination

2029: Final Push

Q1-Q2:
- Intensive focus on remaining "white spots" and rural gaps
- Special funding programs for last-mile challenges
- Technology neutrality maintained (fibre, FWA, satellite) for truly remote areas
- Regulatory review: ensure frameworks remain fit-for-purpose

Q3-Q4:
- Wholesale access pricing review to ensure competitive service markets
- Assessment of market concentration and competitive dynamics
- Planning for post-2030 framework: transition to steady-state governance
- Celebration and recognition of partnership achievements

Key Metric: 80% household coverage, functional coverage in all regions

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2030: Target Achievement

Q1-Q2:
- Final deployment sprint for remaining gaps
- Comprehensive national coverage assessment
- Transition from deployment focus to optimization and maintenance
- Documentation of Partnership Compact outcomes and lessons

Q3-Q4:
- Achievement of 90%+ household fibre coverage
- Public report on economic, social, and competitive outcomes
- Design of post-2030 governance framework for mature market
- Germany positioned as European model for collaborative infrastructure

Key Metric: 90%+ coverage, 25-30% overall cost reduction vs. baseline, thriving competitive service market

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Post-2030: Sustaining Success
- Transition to steady-state infrastructure maintenance and evolution
- Regional alliances become permanent coordination venues
- National platform evolves into operational infrastructure registry
- Focus shifts to next-generation technologies and service innovation
- Partnership frameworks adapted for 5G/6G and emerging infrastructure needs

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About This Document

Intended Audience:

- Telecommunications operators and executives
- Policy makers and regulators (federal and state)
- Municipal authorities and Stadtwerke leadership
- Infrastructure investors and financial institutions
- Industry associations (BREKO, BUGLAS, VATM, VKU)
- Academic and research institutions

Document Purpose:

- Frame strategic conversation around collaborative infrastructure
- Provide evidence-based rationale for partnership models
- Offer concrete policy recommendations and implementation roadmap
- Catalyse commitment to Partnership Compact for Germany 2030

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Further Reading and Resources

Policy Documents:

- European Commission Digital Decade Policy Programme 2030
- German Federal Ministry for Digital and Transport Infrastructure Strategy
- Bundesnetzagentur Gigabit Guidelines

Industry Reports:

- FTTH Council Europe Market Panorama
- BREKO Market Analysis Annual Reports
- OECD Broadband Statistics and Analysis

Academic Research:

- Studies on co-opetition in infrastructure sectors
- Regulatory economics of open-access networks
- Comparative analysis of European fibre deployment models

International Examples:

- France: Regulatory Framework for Public Initiative Networks
- Netherlands: Open-Access Wholesale Network Analysis
- Spain: Competitive Fibre Deployment Case Study

"The most powerful infrastructure is not what connects homes to networks — it's what connects stakeholders to shared purpose."

The question for 2030 is not whether Germany can connect its homes, but whether it can connect its ambitions. Partnership isn't the paradox — it's the proof of progress.
