

Open-Access Fibre Finance: Making Wholesale Networks Bankable

A decision framework for connecting take-up, anchor demand, build density, pricing and phased capital

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Abstract

Open-access fibre can expand competition and reduce duplicated civil works, yet a wholesale-only network becomes financeable only when physical coverage converts into contracted, paying connections at prices that recover efficient cost and sustain reinvestment. Premises passed, homes ready for service and active wholesale lines are different economic states. Bankability depends on verified demand, neutral access, a coherent product ladder, disciplined build density, enforceable anchor commitments, regulated-price visibility, phased capital, reliable operations and liquidity through the take-up ramp.

This paper develops an Open-Access Fibre Bankability Framework for public authorities, network sponsors, infrastructure investors, lenders and transaction advisers. It connects geospatial demand, network architecture, wholesale contracts, access pricing, civil-infrastructure reuse, rollout sequencing, operating costs, maintenance capital, public support, debt capacity and governance. The framework treats open access as a commercial and regulatory operating system whose obligations must reconcile with the cash flows available to fund construction and long-term service quality.

The worked case is wholly hypothetical. A network passes 500,000 premises at an assumed total programme cost of USD 500 million. The central case connects 210,000 premises, equal to 42 percent take-up, at an assumed blended wholesale charge of USD 21 per month. Consumer wholesale revenue is USD 52.92 million and assumed business, backhaul and other revenue is USD 12 million, producing total revenue of USD 64.92 million. Assumed operating cost is USD 25 million and maintenance capital is USD 7 million, producing USD 32.92 million of cash flow before debt service, tax and working capital. Assumed annual debt service of USD 20 million produces an illustrative debt-service coverage ratio of 1.65x. A correlated downside connects 150,000 premises at USD 19 per month, produces USD 42.2 million of total revenue, incurs USD 27 million of operating cost and USD 8 million of maintenance capital, and leaves USD 7.2 million before debt service, tax and working capital. Every amount, percentage, timetable, financing term and outcome is an illustrative management assumption. The case is not observed company data, a forecast, valuation advice, accounting advice, legal advice, regulatory advice, tax advice or investment advice.

JEL Classification: G31, G32, L51, L96, O18

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1. Define the bankability decision

The sponsor must decide whether a proposed wholesale network can convert coverage into durable contracted cash flow before approving the full build. State the coverage objective, customer segment, access model, ownership, capital structure, public purpose and decision thresholds. The analysis should

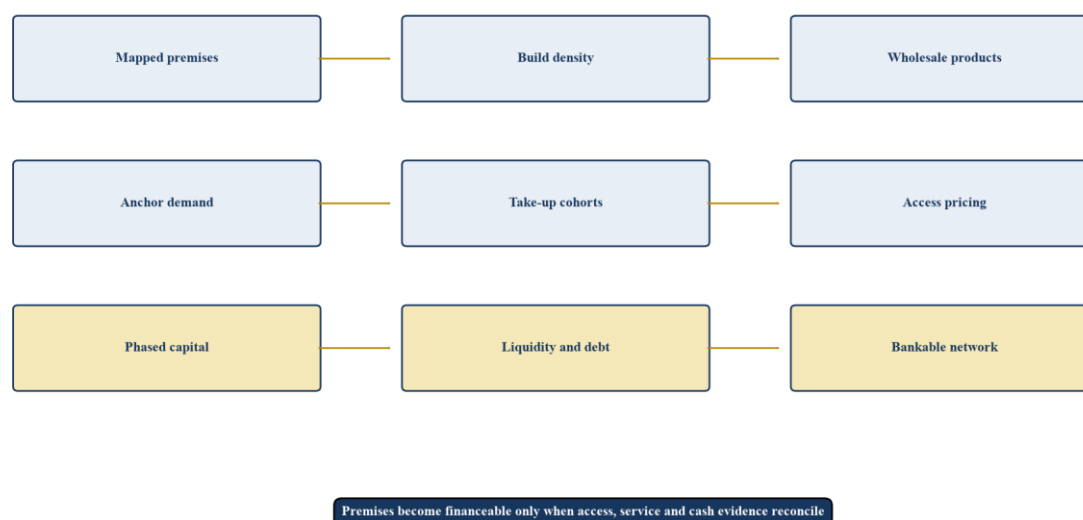
distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Approval should compare phased build, full build, concession, co-investment, acquisition and targeted subsidy alternatives. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

Open access should be analysed as an integrated commercial and regulatory system. The network company funds and operates long-lived infrastructure; access seekers need competitive wholesale inputs; public authorities seek coverage, affordability and neutral treatment; lenders require predictable cash and enforceable controls. A viable structure connects these interests through measurable products, contracts, service levels, information rights and capital gates. Coverage alone does not repay financing. Each premise must move through design, construction, serviceability, order, installation, activation, billing and collection before it contributes durable cash. Scenario analysis should combine related pressures. Lower take-up can coincide with price competition, provider onboarding delay, higher installation cost, overbuild and slower public-sector migration. Construction inflation or permit delay can consume contingency while interest accrues before revenue. Regulated-price changes can weaken yield as maintenance, energy, labour and security costs rise. A decision-grade model therefore tests cost-to-complete, activation timing, price, operating cost, maintenance capital, liquidity and debt service together, with contractual and operational remedies for every material exception.

2. Use the Open-Access Fibre Bankability Framework

The framework links mapped demand, physical design, access products, contracts, prices, operating delivery, capital and financing. Every material assumption should reconcile to a geography, premise, route, product, wholesale customer, contract, cost centre and forecast period. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Sponsors and lenders should use the same definitions for premises passed, serviceable premises, ordered lines, installed lines and paying lines. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Figure 1. Open-Access Fibre Bankability Framework



Bankability connects mapped demand, network delivery, wholesale access, operating evidence and capital.

3. Map address-level demand

Aggregate population or household counts can conceal low-density routes, unserviceable buildings and weak willingness to pay. Build a geocoded premise register with serviceability, income, business activity, public sites, existing networks, expected demand and installation constraints. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The investment case should use address-level evidence and documented sampling quality rather than broad coverage percentages. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

4. Fix the network and service perimeter

A wholesale network may include ducts, poles, dark fibre, access fibre, splitters, cabinets, active electronics, core transport, systems and customer installations. Define owned, leased, shared and third-party components and identify where another party controls capacity, maintenance or restoration. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The financial model, access offer and operating plan should follow one verified asset and service boundary. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model

line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

5. Design the wholesale product ladder

Open access can include duct access, dark fibre, wavelength, active Ethernet, bitstream, backhaul and managed services with different capex and operating obligations. Specify technical interface, service level, ordering process, capacity unit, term, price, indexation and fault responsibility for each product. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The product ladder should let access seekers differentiate retail offers without creating uneconomic bespoke operations. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Table 1. Open-access wholesale product ladder

Product	Network layer	Access-seeker control	Financeability test
Duct and pole access	Civil infrastructure	High	Survey, capacity, price and remedy
Dark fibre	Passive optical path	High	Route, repair, term and utilisation
Wavelength	Managed optical capacity	Medium-high	Capacity commitment and upgrade
Active Ethernet	Layer 2 connection	Medium	Interface, contention and service level
Bitstream	Managed wholesale access	Lower	Scale, price, systems and neutrality
Backhaul	Aggregation and transport	Medium	Anchor volume and route resilience

Product scope determines investment, differentiation and operating responsibility.

6. Secure credible anchor demand

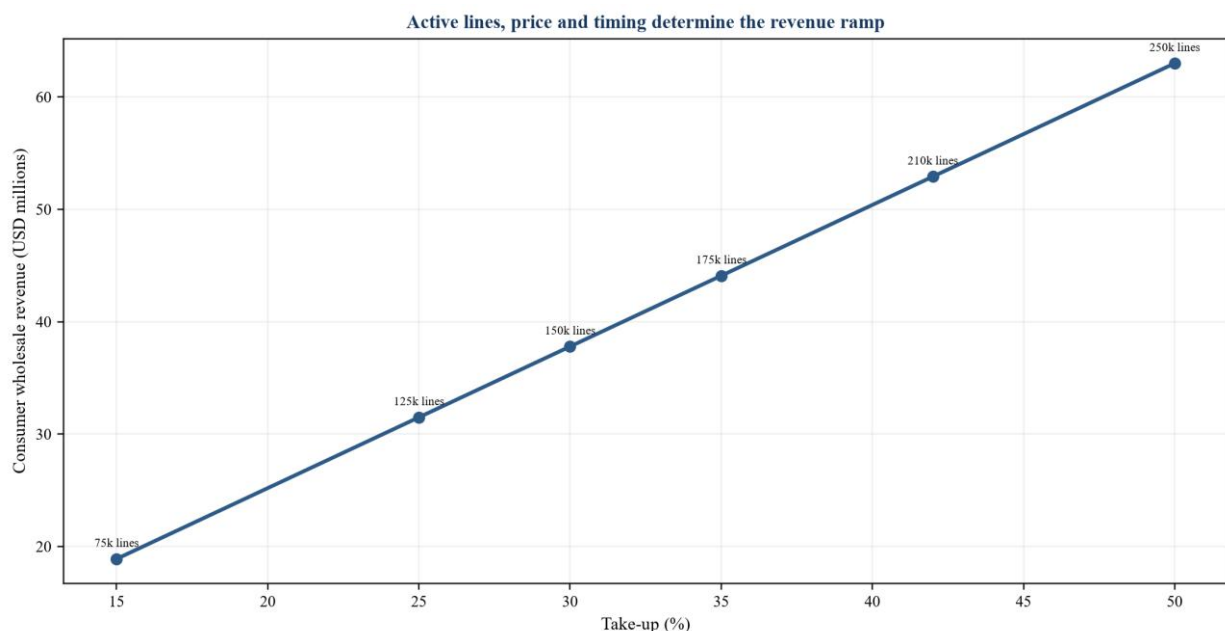
An anchor commitment can reduce ramp risk when it represents enforceable volumes rather than a non-binding expression of interest. Verify minimum lines, migration schedule, eligible premises, service mix, pricing, credit support, termination rights and remedies. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Anchor terms should support financing while preserving neutral access and capacity for additional providers. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy.

Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

7. Underwrite take-up by cohort

Network value depends on the timing and persistence of active lines, not the final penetration assumption alone. Model residential, SME, enterprise, public-sector, mobile-backhaul and wholesale-carrier cohorts by zone and month. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Base-case take-up should be supported by orders, binding commitments, comparable conversion and a funded sales and installation plan. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

Figure 2. Hypothetical take-up and wholesale-revenue ramp



USD millions; every value is an illustrative management assumption.

Table 2. Demand-evidence hierarchy

Evidence state	Commercial meaning	Model treatment	Required control
Market survey	Indicated interest	Sensitivity only	Sampling and affordability review
Provider forecast	Planned demand	Upside or weighted case	Named zones and timetable
Signed framework	Contractual route	Conditional base case	Product and onboarding readiness
Minimum commitment	Enforceable volume	Base case subject to credit	Security and remedy
Activated paying line	Realised demand	Observed revenue	Invoice and cash reconciliation

8. Connect pricing to efficient cost and demand

Wholesale prices must remain commercially attractive to access seekers while supporting cost recovery, maintenance and a risk-adjusted return. Model connection fees, recurring access, capacity tiers, volume discounts, long-term commitments, inflation, regulated resets and pass-throughs. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Price scenarios should test affordability, retail margin, competition, utilisation and the build-or-buy incentive. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

9. Make the reference offer operational

A published price list creates little value when ordering, provisioning, assurance and dispute processes are incomplete. Define product specifications, eligibility, forecasts, lead times, installation, acceptance, billing, faults, service credits, change and termination. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The reference offer should be executable in systems and measurable through operating records. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

10. Measure build density and unit economics

Cost per premise can rise sharply when routes lengthen, reinstatement becomes complex or eligible connections disperse. Measure route kilometres, premises per kilometre, civil-work type, reusable infrastructure, drops, wayleaves, installation cost and expected active lines. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Zone approval should use lifetime cash economics and correlated downside rather than an average programme cost. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

11. Phase capital against evidence

Full upfront construction exposes equity and debt to demand, permit, contractor and technology risk before revenue is proven. Divide the programme into independently testable zones with release conditions for design, permits, demand, cost, funding and operating readiness. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Later capital should depend on verified cost-to-complete, connection conversion, service quality and liquidity. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

12. Separate passed, ready and connected premises

Headline coverage can overstate economic progress when buildings cannot order service or installations remain incomplete. Maintain explicit definitions for premises planned, passed, serviceable, released for sale, ordered, installed, activated and billed. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Board and lender reporting should reconcile physical milestones to customer orders, invoices and cash. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

13. Control acquisition, installation and churn

A technically complete network can underperform when retail partners lack sales capacity or installation creates delay and customer loss. Track lead generation, orders, cancellations, failed visits, installation time, activation, early-life faults, churn and win-back by provider and zone. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The cash model should reflect gross additions, installation cost, provider concentration and line survival. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

14. Build a diversified access-seeker pipeline

A wholesale-only model needs capable retail and enterprise providers that can sell, support and pay for services. Assess each access seeker's coverage plan, systems readiness, credit, committed volumes, product fit, marketing budget and migration capability. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Pipeline reporting should distinguish signed contract, forecast order, technical onboarding and live revenue. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

15. Test overbuild and competitive response

Incumbent upgrades, rival fibre, fixed wireless, cable and mobile substitution can reduce addressable demand and price headroom. Map current and announced networks, retail offers, switching costs, customer contracts, route overlap and likely tactical responses. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The downside should combine slower take-up, lower price, higher acquisition cost and stranded zones. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

16. Target public support to the viability gap

Public funding can extend coverage where efficient social investment exceeds private financial returns. Quantify the minimum subsidy, guarantee, availability payment, demand commitment or concessional tranche needed after competitive procurement. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Support should remain transparent, technologically neutral, proportionate and linked to measurable coverage and open-access obligations. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

17. Allocate PPP and concession risks

Public-private structures fail when land, permits, demand, construction, technology, operation, regulation or termination risks sit with parties unable to control them. Create a contractual risk matrix covering design, cost, delay, availability, take-up, price, access, force majeure, change in law and handback. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Payment and relief mechanisms should follow controllability, evidence and the public-interest objective. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Table 4. Broadband PPP risk allocation

Risk	Public authority role	Private partner role	Bankability evidence
Coverage and access	Define objective and rights	Design compliant network	Verified premise and route register
Construction	Facilitate permits	Deliver cost and schedule	Fixed scope, contingency and acceptance
Demand	Aggregate public demand	Acquire and serve access seekers	Enforceable commitments and pipeline
Pricing	Set transparent framework	Operate within reference offer	Predictable reset and cost recovery
Availability	Define service outcome	Operate and restore network	Measured SLA and remedies
Change and termination	Protect public interest	Manage controllable delivery	Compensation and handback formula

Risk should sit with the party best able to control, absorb and evidence it.

18. Secure permits, wayleaves and building access

Route consent and in-building access can determine schedule and unit cost even when trunk construction is complete. Build a consent register for roads, utilities, rail, municipalities, private land, buildings and environmental constraints. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Construction commitments should follow verified access dates, reinstatement standards and escalation routes. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

19. Reuse ducts, poles and coordinated civil works

Civil engineering often dominates fibre deployment cost and disruption. Test the availability, capacity, condition, safety, price and service process for existing telecom, energy, transport and public infrastructure. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The model should recognise survey, remediation, access delay and dispute cost before crediting reuse savings. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

20. Define the passive-active operating boundary

Ownership of fibre and ducts can be separated from electronics, service orchestration and retail activity. Map design authority, capacity planning, equipment refresh, cybersecurity, monitoring, field maintenance and customer-interface responsibilities. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The structure should preserve wholesale neutrality and avoid fragmented accountability during incidents. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

21. Engineer service levels and remedies

Wholesale customers need predictable installation, availability, latency, restoration and information to support retail commitments. Define metrics, exclusions, measurement sources, service credits, chronic failure, capacity relief and escalation. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Service levels should be technically achievable, funded in the operating model and auditable by all parties. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

22. Build the standalone operating model

A network requires skilled field operations, network control, product management, billing, assurance, cybersecurity, finance and regulatory reporting. Map retained, outsourced and newly built capabilities,

systems, staffing, vendor contracts and transition dependencies. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The steady-state cost base should include every capability required after temporary sponsor support ends. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

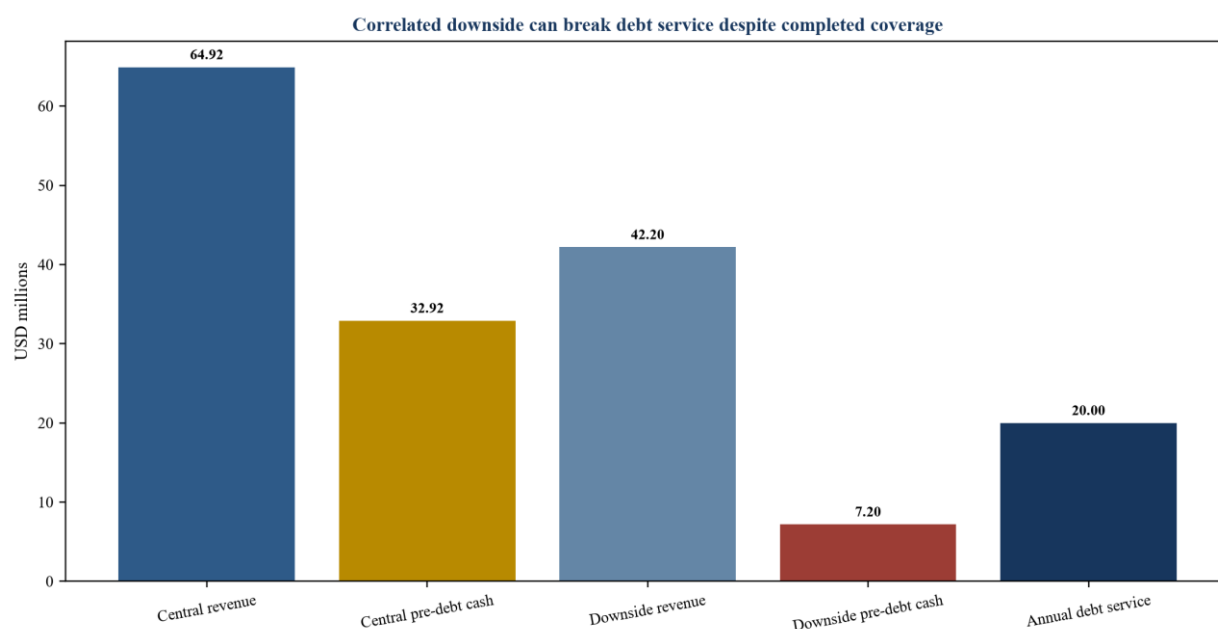
23. Protect resilience, security and critical service

Fibre cuts, power failures, equipment faults, cyber incidents and supplier concentration can interrupt public and commercial services. Assess route diversity, spares, backup power, monitoring, incident response, vendor support, data controls and recovery time. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Resilience obligations should map to customer priority, regulatory requirements, capex and insurance. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

24. Build the hypothetical wholesale network

The hypothetical programme passes 500,000 premises for USD 500 million and connects 210,000 premises in the central case. At USD 21 monthly blended wholesale revenue, consumer revenue is USD 52.92 million; assumed other revenue is USD 12 million. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. After USD 25 million of operating cost and USD 7 million of maintenance capital, the case leaves USD 32.92 million before debt service, tax and working capital. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

Figure 3. Hypothetical central and downside cash bridge



USD millions before tax and working capital; every value is an illustrative management assumption.

Table 3. Hypothetical wholesale-network scenarios

Measure	Central case	Correlated downside	Decision meaning
Premises passed	500,000	500,000	Completed physical coverage
Active connections	210,000	150,000	Paying wholesale lines
Take-up	42%	30%	Demand conversion
Monthly wholesale price	21	19	Blended access yield
Consumer wholesale revenue	52.92	34.20	Recurring access revenue
Other revenue	12.00	8.00	Business and backhaul
Total revenue	64.92	42.20	Cash-generating base
Operating cost	25.00	27.00	Network and platform cost
Maintenance capital	7.00	8.00	Sustaining investment
Cash before debt service	32.92	7.20	Pre-tax, pre-working-capital cash
Annual debt service	20.00	20.00	Illustrative financing burden
DSCR	1.65x	0.36x	Liquidity and covenant outcome

USD millions except premises, percentages and monthly price; every value is an illustrative management assumption.

25. Size debt to ramp and operating cash flow

Leverage must survive construction draw, delayed activation, working capital, interest during construction and the slowest credible take-up path. Model debt quantum, draw conditions, grace period, amortisation, interest, reserve accounts, covenants, cash sweep, hedging and refinancing. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Debt service should fit downside cash flow after

operating cost and maintenance capital, with explicit cure and equity-support mechanics. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

26. Design equity and public-capital layers

Equity, subordinated capital and public support absorb different risks and should receive returns consistent with those risks. Define sponsor equity, institutional equity, concessional funding, grants, guarantees, preferred return, distributions and exit rights. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The capital stack should avoid hidden refinancing dependence and align completion, access and affordability obligations. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

27. Fund liquidity through correlated downside

Construction delay, weaker take-up, price pressure and higher operating cost can occur together. Model minimum cash, committed liquidity, contingency, debt-service reserve, capex reserve and sponsor support under correlated scenarios. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Management should state warning thresholds, draw conditions, remediation actions and the point at which expansion stops. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

28. Establish neutral governance and information rights

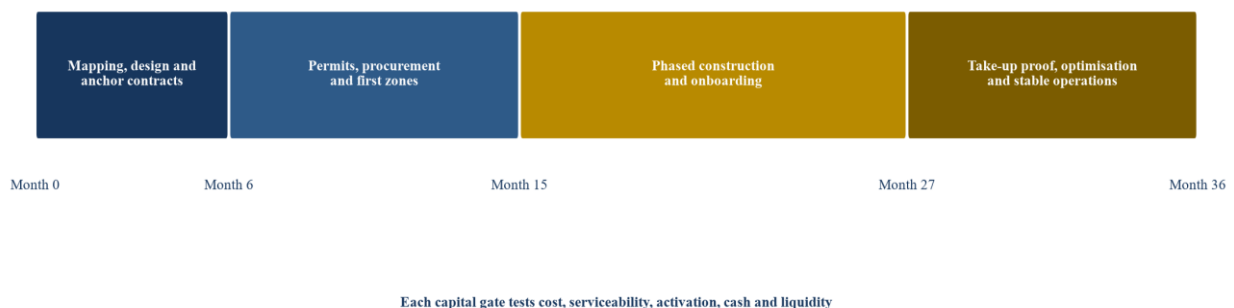
Open access requires confidence that pricing, capacity, service and confidential information are handled without discrimination. Define board independence, related-party approvals, access-seeker information barriers, product change, capex priorities, regulatory reporting and complaints. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Governance should support commercial execution while protecting equal treatment and lender controls. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a

named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. The section output should identify the governing source, contract, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from mapped demand to construction, wholesale revenue and financing.

29. Build the implementation roadmap

A financeable programme sequences mapping, design, anchor contracting, procurement, permits, funding, construction, systems, onboarding and service launch. Set stage gates, acceptance evidence, accountable owners, critical dependencies and contingency for each zone and workstream. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. The roadmap should preserve operating continuity and cash control from first draw through stable take-up. The work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Evidence should remain traceable to premise, route, product, access seeker, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Figure 4. Illustrative thirty-six-month fibre delivery roadmap



Capital release follows verified evidence, construction acceptance and take-up performance.

30. Define the investment and financing case

A bankable open-access network combines verified demand, efficient routes, enforceable access contracts, transparent pricing, phased build and resilient operations. Present the premise register, product ladder, anchor evidence, cost-to-complete, ramp, operating model, capital stack, downside liquidity and governance. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to coverage, competition, service quality, capital efficiency, financing and public purpose. Commitment conditions should close material evidence gaps before unbuilt coverage or forecast take-up is treated as value. The

work should test central and correlated downside cases for build cost, permit delay, premises released, take-up, price, provider concentration, installation, churn, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, savings, subsidy, price growth, multiple expansion or refinancing remains outside the base case until enforceable evidence supports it. Management should define the earliest warning indicator, intervention trigger and executable remedy. Reporting should preserve the approved baseline, change history, actual cost, service outcome and realised cash.

Frequently asked questions

What makes an open-access fibre network bankable?

Bankability requires verified routes and premises, enforceable wholesale demand, transparent access products, prices that support efficient cost recovery, controlled construction, credible operating capability, phased capital and liquidity that survives the take-up ramp.

Why is premises passed an insufficient financing metric?

A passed premise may remain unable to order, uninstalled or inactive. Financing depends on serviceable addresses converting into paying lines whose invoices and cash can be reconciled to contracts and operating records.

How should take-up be underwritten?

Model take-up by zone, customer cohort, provider and month. Give the greatest weight to activated lines and enforceable commitments. Treat surveys, provider forecasts and non-binding expressions of interest as weaker evidence.

How can anchor demand improve financeability?

Minimum-volume or migration commitments can reduce ramp uncertainty when pricing, eligible premises, timing, credit support, termination and remedies are enforceable. Anchor rights should preserve capacity and fair treatment for other access seekers.

How should wholesale prices be set?

Test the price against efficient network cost, maintenance, investment risk, affordability, access-seeker retail margin, competitive alternatives and any regulatory methodology. Long-term or volume terms should reflect genuine risk reduction and remain available on transparent conditions.

What role can public support play?

Targeted grants, guarantees, concessional capital, demand commitments or availability payments can address a demonstrated viability gap. Support should be competitively awarded, proportionate, measurable and consistent with applicable procurement, subsidy and open-access rules.

How should fibre debt be sized?

Size debt to cash flow after operating cost and maintenance capital under delayed take-up, lower pricing, higher cost and construction stress. Include interest during construction, reserves, covenant headroom and committed liquidity through the ramp.

What should be monitored after launch?

Track serviceable premises, orders, installation time, activation, active lines, wholesale yield, provider concentration, faults, restoration, churn, billed revenue, cash collection, operating cost, maintenance capital, liquidity and covenant headroom.

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At Matchpoint Partners, he is Managing Partner and leads the firm's corporate finance, M&A and capital-raising practice. He holds an MBA from London Business School, an engineering degree from VTU and a Master of Laws (LLM, in progress) from UCL London.

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