

ARTICLE 10

Who Finances the Total Connectivity Economy?

Capital allocation across towers, fibre, compute, spectrum and orbit



Who Finances the Total Connectivity Economy?

Capital allocation across terrestrial, space, compute and digital infrastructure

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EXECUTIVE PROPOSITION

The Total Connectivity Economy cannot be financed as one homogeneous asset class. Towers, fibre, spectrum, data centres, satellites, software and frontier platforms carry different demand, technology, duration and control risks, and they require different capital.

Executive summary

The Total Connectivity Economy cannot be financed as one homogeneous asset class. Towers, fibre, spectrum, data centres, satellites, software and frontier platforms carry different demand, technology, duration and control risks, and they require different capital.

This evidence-led thought article develops an executive point of view using standards, official data, company disclosures and Moderion Advisory analysis. It separates established facts from emerging direction and reported implementation.

EXECUTIVE QUESTION

Which forms of capital should finance towers, fibre, spectrum, compute, satellites and software - and which party is actually able to govern each risk?

Key insights at a glance

- Digital infrastructure is not one asset class. Contracted towers, open-access fibre, spectrum, data centres, edge accelerators, satellite constellations and software differ in duration, demand visibility, obsolescence and residual value.
- IFC reports that it has committed and mobilized more than US\$9.6 billion for telecom, media and technology projects since 2015, including operators, open-access networks, towers and data centres in emerging markets.
- IFC's December 2024 TMT portfolio was US\$2.9 billion, with 60% in Africa. This illustrates the role of development capital where connectivity need is high but risk constrains purely commercial finance.
- A 2025 IFC study reports a public-market equivalent of 1.17 versus the S&P 500 for 266 core-infrastructure equity investments initiated from 1961 to March 2020, but 0.68 for the 2010-2020 cohort. The result is historical, diversified and highly period-sensitive.
- Private infrastructure capital can improve utilization and release operator balance sheets but may introduce rigid leverage or lease obligations. Venture capital is suited to scalable uncertainty, not universal-service infrastructure or long regulatory cycles.

- Sovereign and public capital are most valuable when they coordinate infrastructure, industrial capability and anchor demand, and when public-purpose benefits are explicit rather than used to excuse weak governance.
- This article contributes to the Total Connectivity Economy by testing its enabling mechanism against universal reach, open interoperability, governed intelligence, trusted participation and sustainable economics.
- The IFC return study covers core infrastructure rather than a pure telecom portfolio. It supports patient-capital potential but cannot be used as a forecast of returns for towers, fibre, data centres or satellites individually.

Exhibit 1 | Capital fit by asset type

Asset	Dominant risk	Natural capital	Critical covenant
Contracted tower	Tenant and renewal	Infrastructure equity / debt	Access and upgrade rights
Open-access fibre	Take-up and overbuild	Operator + infrastructure + project debt	Wholesale neutrality
Spectrum	Service monetization and policy	Operator / sovereign balance sheet	Coverage and renewal terms
AI / edge compute	Utilization and obsolescence	Strategic / growth then infrastructure	Portability and power
Satellite constellation	Launch, terminal, capacity and demand	Strategic, sovereign and staged project capital	Milestone and spectrum protection
Software / API platform	Adoption and distribution	Venture / growth / operator	Data, channel and interoperability

Note: Illustrative. Capital structure must reflect contracted cash flows and jurisdiction.

Core analysis

Capital has followed perceived control

Telecom infrastructure has attracted operator balance sheets, project finance, infrastructure funds, private equity, sovereign wealth, vendor finance and public support. Software and platform opportunities draw venture and growth capital. Satellite constellations combine industrial, technology and infrastructure risk. The cost of capital differs because cash-flow visibility, asset life, contractual protection and obsolescence differ.

Capital is rarely allocated by social need alone. It follows control, expected return, strategic influence, liquidity and downside protection. Projects connected to dominant technology or geopolitical ecosystems can receive funding before equally important but less monetizable coverage, resilience or public-service needs. Understanding this power circle is essential to interpreting what the market builds.

Match capital to the asset

Contracted passive infrastructure with predictable tenancy can support long-duration lower-return capital. Fibre economics depend on density, take-up, competition and wholesale design. Spectrum may be strategic but produces value only through services and can burden operators when auction prices disconnect from market cash flows. Data centres combine property, power, customer concentration and technology risk. Accelerated edge compute adds utilization and obsolescence uncertainty. Satellite systems carry launch, capacity, terminal, spectrum and demand risk before stable service revenue emerges.

Software can scale faster but is exposed to platform dependence and rapid competition. Mixing these assets inside one investment narrative can hide risk. Each should have a transparent cash-flow model, control map and downside scenario.

The role of private and sovereign capital

Private equity and infrastructure capital can release operator balance sheets, improve asset utilization and impose operating discipline. They can also increase leverage, create rigid return obligations or separate assets from the strategic coordination needed to innovate. Venture capital can fund experimentation, but its return profile is poorly suited to universal infrastructure or long regulatory cycles.

Sovereign wealth funds can invest across longer horizons and align capital with national digital, AI, space and resilience strategies. Their advantage is not cheap money by definition; it is the ability to coordinate infrastructure, industrial capability and strategic demand. Governance is critical so that strategic purpose does not conceal weak economics or political allocation.

A financing doctrine

The financing structure should follow who can control the principal risk. Demand risk belongs with parties able to shape distribution and pricing. Construction and operating risk belongs with capable infrastructure owners. Technology and obsolescence risk should not be transferred entirely to long-duration capital through optimistic residual values. Sovereign requirements should be explicitly funded when their public value exceeds commercial revenue.

Operators should retain strategic control where the asset determines service differentiation or resilience, and use external capital where assets are standardized, separable and contractible. Sale-and-leaseback decisions must include future flexibility and bargaining power, not only near-term proceeds.

Moderion Advisory perspective

Match the capital to the governed risk

Demand risk should remain with the party able to shape product, distribution and price. Construction and operating risk belongs with capable asset operators. Technology and obsolescence risk should not be hidden inside optimistic residual values offered to long-duration investors. Regulatory and public-service obligations require stable rules and, where necessary, explicit public support.

This logic often implies blended structures. A fibre programme may combine operator demand commitments, infrastructure equity, debt and public subsidy for uneconomic locations. A satellite or edge-compute platform may require strategic equity during technical and demand formation, followed by infrastructure-style capital only after contracted utilization becomes visible.

Protect strategic flexibility

The lowest headline cost of capital can be expensive if it transfers control of a future bottleneck or creates inflexible payments through a technology cycle. Sale-and-leaseback and asset carve-outs should be evaluated for renewal pricing, upgrade rights, access priority, resilience obligations and the ability to integrate new services.

Investment committees should reconcile project return to group cash and disclose the source of value: operating improvement, better utilization, tax or financing structure, risk transfer, or merely an asset revaluation. Only the first four can create durable system value, and each carries different execution conditions.

Capital must be matched to the risk it can govern

The Total Connectivity Economy combines long-duration infrastructure, fast-obsolescence compute, spectrum rights, orbital systems and software platforms. No single balance sheet or return model fits the

whole fabric. Financing should align duration, control, demand visibility, public purpose and failure exposure - while testing whether the resulting economic value is broadly accessible rather than concentrated only at scarce digital interfaces.

What the capital evidence can legitimately support

The strongest public evidence confirms heterogeneity: construction risk, demand visibility, technology obsolescence, regulatory exposure and residual value vary materially across connectivity assets. Historical portfolio returns do not eliminate project selection, vintage, currency or governance risk.

Capital allocation should therefore use asset-specific cash-flow models and explicit public-value contracts. Blended or sovereign capital is justified where measurable spillovers exceed private returns, not where commercial discipline is absent.

Exhibit 2 | Public and private capital roles

Capital source	Comparative advantage	Failure mode to control
Operator balance sheet	Service integration and operating control	Overextension and weak hurdle discipline
Infrastructure fund	Long duration and asset operations	Inflexible yield and strategic separation
Private equity	Restructuring and utilization discipline	Leverage and short exit horizon
Venture / growth	Experimentation and software scale	Mismatch with infrastructure duration
Sovereign / DFI	Long horizon, catalytic risk and public purpose	Political allocation and opaque return

Note: Moderion Advisory financing framework.

Executive action agenda

- Build asset-level cash-flow and control models for towers, fibre, spectrum, compute, satellites and software.
- Match financing duration and return expectations to demand visibility, obsolescence and operational risk.
- Separate genuine operating improvement from proceeds, revaluation and leverage effects.
- Use sovereign capital to coordinate strategic ecosystems with transparent governance and performance tests.
- Fund public resilience obligations explicitly rather than expecting commercial tariffs to absorb them invisibly.

Conclusion

The Total Connectivity Economy will be financed by a portfolio of balance sheets, not one capital market. Good financing does more than lower the headline cost of money. It places each risk with the party able to govern it, preserves strategic flexibility and directs scarce capital toward assets that create durable economic or public value. In the wider series, this capability is treated as an enabler of the Total Connectivity Economy rather than as an end state in itself.

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