

ARTICLE 01

The Telecom Value-Capture Paradox

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AUTHOR Moderion Advisory

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EXECUTIVE PROPOSITION

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Executive summary

Telecommunications has become more essential to economic and national life while much of the incremental value created by connectivity has accrued elsewhere. The sector's central problem is therefore not relevance. It is the architecture of value capture.

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

Why does an industry that enables a growing share of the economy continue to struggle to convert technical indispensability into superior, durable returns?

Key insights at a glance

- GSMA Intelligence models that mobile technologies and services contributed US\$7.6 trillion, or 6.4% of global GDP, in 2025 and supported about 50 million jobs. This is an industry economic-impact estimate, not operator revenue or an audited national-accounts measure.
- Scale does not remove the cash constraint. Vodafone reported FY2026 revenue of EUR40.5 billion, capital additions of EUR7.3 billion and adjusted free cash flow of EUR2.6 billion. AT&T reported US\$16.6 billion of 2025 free cash flow while continuing capital investment at roughly US\$22 billion a year. These are different portfolios, but both illustrate the continuing investment burden.
- Traffic, coverage and connection counts are operational measures, not value-capture measures. A network can improve every one of them while economic profit remains weak if price, utilization or service mix does not compensate for capital and spectrum costs.
- The most promising monetization opportunities attach network authority to a measurable buyer outcome: verified identity, fraud reduction, time-bounded quality, resilient coverage, deterministic industrial control and auditable sovereign service.
- Asset separation improves value only when it changes utilization, operating efficiency, market access or risk allocation. A transaction that merely crystallizes value or substitutes lease commitments for owned assets does not repair the service model.
- The controlling executive metric should be normalized return on invested capital after spectrum and lease effects, reconciled to cash. Announced technology leadership is an input, not an economic result.

- EBITDA is not an economic-return measure. A comparable operator view requires NOPAT over average invested capital, with explicit treatment of spectrum, right-of-use assets and lease liabilities, working capital, goodwill, tower transactions and non-operating cash.
- Asset separation can change leverage, governance and market transparency without automatically improving system economics. The test is whether utilization, service quality, unit cost, pricing power or risk allocation changes after separation.
- Oliver Wyman's 2017 SDN/NFV thesis correctly anticipated programmability as a business-model question, but its 15% TCO expectation and forecast that at least 30% of future revenues could come from enabled streams should be treated as historical hypotheses, not verified industry outcomes.
- 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.
- A 2026 Telecommunications Policy study of 46 economies identifies a 5G value-conversion gap in which infrastructure deployment can outpace ecosystem development. Its panel evidence supports the article's diagnosis while not proving that any single commercialization model closes the gap.

Exhibit 1 | Selected operator cash-and-capital signals

Company / period	Scale signal	Investment signal	Cash / return signal
Vodafone FY2026	EUR40.5bn revenue	EUR7.3bn capital additions	EUR2.6bn adjusted FCF; 6.6% pre-tax controlled ROCE
AT&T FY2025	>US\$125bn revenue	c.US\$22bn annual capital investment	US\$16.6bn FCF
Telefónica FY2025	326.1m accesses	EUR4.34bn capex; 12.4% capex/sales	EUR2.07bn continuing-operations FCF

Note: Company definitions differ. The exhibit is directional and must not be used as a league table without full accounting normalization.

Exhibit 3 | Normalized telecom return bridge

Bridge	Core calculation	Required normalization	Board question
Operating return	NOPAT = normalized EBIT x (1 - tax)	Restructuring, disposals, pensions, one-offs	Is the return recurring?
Capital base	Average operating invested capital	Spectrum, ROU assets, working capital, shared platforms	What capital is truly required?
Value creation	ROIC - WACC	Common lease and spectrum treatment	Is growth creating economic profit?
Cash conversion	NOPAT + D&A - maintenance capex - delta WC	Lease principal and spectrum cash	Does accounting return become cash?

Note: Moderion Advisory model. Calculate both reported and normalized views; disclose every adjustment.

Core analysis

The paradox is structural, not cyclical

Every digital service depends on networks, yet dependence does not automatically create pricing power. Operators finance spectrum, radio access, fibre, resilience, service assurance and universal reach. Platforms, devices, cloud providers and applications can then combine that infrastructure with software economics: low marginal distribution cost, global product reuse, data-rich customer relationships and faster innovation cycles. Traffic can consequently rise much faster than service revenue while the party carrying the physical investment risk captures only part of the value enabled.

This is not evidence that networks are becoming commodities in a technical sense. Reliability, coverage, latency, identity, location and security remain differentiated capabilities. The problem is that these

capabilities have often been sold inside undifferentiated access bundles. When superior engineering is translated mainly into more inclusive data allowances, the customer experiences improvement but the operator struggles to isolate and price the source of that improvement.

The economics must be measured consistently

Industry comparisons frequently mix accounting EBITDA, adjusted EBITDA, lease treatment, spectrum payments, restructuring charges and tower transactions. A credible view requires a normalized return-on-invested-capital bridge: operating profit after tax divided by the capital genuinely required to deliver the service, including spectrum and capitalized network assets. Free cash flow must be separated from proceeds generated by asset disposals or financial engineering. Traffic growth must be compared with service-revenue growth, not celebrated on its own.

Audited operator filings show different strategic positions, but they also reveal a common tension: sustained investment requirements coexist with price competition, regulatory obligations and rising technology complexity. Fibre, towers, cloud partnerships and enterprise services can improve the portfolio, but moving assets into another vehicle does not by itself improve the underlying system return. The decisive question is whether the new structure changes utilization, cost, pricing power or the allocation of risk.

Where value migrates

Value migrates toward control points that simplify demand. Device ecosystems control discovery and authentication. Cloud platforms aggregate compute and developer relationships. Digital platforms assemble data, software and distribution into repeatable products. Network vendors and semiconductor firms can capture scarcity rents when architectures depend on differentiated intellectual property. Operators retain powerful assets - trusted identity, local presence, licensed spectrum, real-time network knowledge and service assurance - but these assets generate superior returns only when they are exposed as products rather than buried as features.

The emerging opportunity is not to imitate every adjacent layer. It is to turn network capabilities into scarce, measurable and contractible outcomes. That may include verified identity, fraud reduction, quality on demand, resilient sovereign connectivity, deterministic industrial performance, edge placement and integrated terrestrial-non-terrestrial service continuity. Each proposition needs an accountable buyer, a measurable service level and a repeatable delivery model.

A value-capture doctrine for operators

Capital allocation should begin with control, not fashion. An operator should invest where it owns or can contractually secure a critical control point; where utilization can be measured; where the customer pays for an outcome; and where the risk-adjusted return exceeds the cost of capital under conservative adoption assumptions. Projects that offer technical prestige without a path to repeatable demand should remain experiments, not portfolio narratives.

The same discipline applies to partnerships. A partnership is attractive when it expands distribution, reduces time to market or shares risk without surrendering the customer and operational insight required to improve the product. It is weak when the operator contributes scarce network capability but receives only wholesale traffic revenue while another party controls pricing, data and customer access.

Moderion Advisory perspective

A fact-based value-capture diagnostic

A useful diagnostic begins with six linked bridges. The demand bridge compares connections, usage and enterprise workloads with service revenue. The price bridge separates headline tariffs from discounts, device subsidies and mix. The capital bridge includes radio, fibre, core, IT, spectrum and lease-adjusted infrastructure. The cash bridge removes disposal proceeds and other non-operating support. The control bridge identifies who owns discovery, customer consent, data and settlement. The final bridge tests whether the operator's return exceeds a risk-adjusted cost of capital.

This sequence avoids a common error: declaring a new growth pool attractive because the market is large. The operator may enable the pool without controlling a scarce interface or capturing the customer budget. Strategy should therefore be expressed as a set of contractible control points, not as a list of adjacent markets.

What changes the economics

Four mechanisms can improve system return. First, greater utilization spreads fixed network and platform costs across more paid workloads. Second, differentiated service levels create price discrimination without weakening basic access. Third, automation removes failure and operating cost while preserving accountability. Fourth, portfolio discipline directs scarce capital away from prestige deployments and toward repeatable demand.

None is sufficient alone. Higher utilization without pricing may increase cost; premium service without assurance destroys trust; automation without reliable inventory creates faster failure; and capital discipline without a product system simply shrinks the business. The economic architecture must connect product, network, operating model and funding.

From reported EBITDA to normalized economic return

A board-grade return bridge starts with operating profit, not EBITDA. Normalized NOPAT equals reported EBIT plus or minus clearly identified operating adjustments, multiplied by one minus a normalized cash-tax rate. Average invested capital includes net network property, capitalized spectrum, right-of-use assets, operating working capital and other assets required to deliver the service. Non-operating cash is excluded. Goodwill should be shown both included and excluded so management cannot hide acquisition economics or confuse operating execution with purchase-price history.

Normalized ROIC equals normalized NOPAT divided by average invested capital. Economic spread equals ROIC minus WACC; economic profit equals that spread multiplied by average invested capital. A second cash lens is required: recurring operating cash after maintenance capital, spectrum renewals, lease principal and restructuring cash. Labels such as 'maintenance' and 'growth' are management classifications, so the model should reconcile them to asset cohorts, capacity added, coverage obligations and service outcomes.

What structural separation evidence can and cannot prove

TIM's 2024 annual report records completion of the NetCo sale on 1 July 2024, a EUR183 million net gain after incidental expenses, and material debt and lease-liability deconsolidation. Those accounting effects establish the transaction perimeter; they do not by themselves prove a higher long-run return for the combined service and infrastructure system. The post-separation test must track wholesale price, committed volumes, network quality, duplicative cost, financing cost and investment delivery on both sides of the contract.

TDC NET and Nuuday illustrate a different governance model: infrastructure and service responsibilities are separated within a holding structure. This can sharpen accountability, but value depends on the commercial interface. Comparisons should therefore use a common before-and-after scorecard rather than headline valuation multiples alone, which are affected by leverage, inflation linkage, asset duration and market timing.

A 2017 thesis viewed from 2026

Oliver Wyman argued that SDN and NFV could produce around 15% TCO savings and, under maintained revenue-sharing arrangements, enable at least 30% of future revenues. The enduring insight is that software-defined infrastructure can make capability composable and can support new products. The missing bridge was commercial and institutional: common external APIs, consent, product catalogues, cross-operator discovery, charging, settlement, assurance and accountable channels.

The 2026 lesson is therefore more disciplined than either confirmation or rejection. Virtualization has become an architectural prerequisite, but programmability creates value only when a paid outcome traverses the full chain from customer intent to network execution and reconciled cash. Moderion's model tests the forecast through realized savings, paid recurring revenue, operator net share and incremental invested capital rather than adoption announcements.

Economic sustainability is a system requirement

Universal and affordable connectivity cannot be financed by rhetoric. This article supplies the capital discipline for the North Star: normalize economic return, separate recurring operating improvement from financial engineering, and fund public-interest obligations explicitly. Programmability is valuable when it improves utilization, cash conversion, customer outcomes or risk - not merely when it increases technical optionality.

What peer-reviewed economics confirms - and does not

Recent economics research supports the proposition that complementary digital services can capture a growing share of value while access providers continue to fund capacity. It does not establish one universally efficient remedy: access pricing, interconnection payments, product innovation and competition policy create different welfare and investment effects in different markets.

The publication-grade conclusion is therefore narrower than a claim of systematic value transfer. Operators face a measurable conversion problem between capital deployment and economic return; the remedy must be evaluated with cash return, customer willingness to pay, competitive response and social welfare rather than traffic growth alone.

Exhibit 2 | Capital-allocation gates

Gate	Question	Evidence required
Control	Do we own or contract a scarce interface?	Rights, data, customer and substitution map
Demand	Is there a funded recurring buyer?	Paid conversion, renewal and cohort usage
Economics	Does return clear the hurdle rate?	Downside NPV, normalized ROIC and cash bridge
Accountability	Can we assure the outcome?	SLA, telemetry, liability and remediation
Option value	Does the investment preserve future choices?	Portability, standards and exit cost

Note: Moderion Advisory decision framework.

Executive action agenda

- Publish a reconciled five-year peer dataset covering service revenue, traffic, capex, spectrum, free cash flow, leverage and normalized ROIC.
- Identify network capabilities currently delivered for free inside access bundles and test whether they can become separately governed products.
- Apply explicit return and control-point gates to AI, cloud, edge, fibre, tower and satellite investments.
- Redesign partnerships around customer ownership, data rights, service accountability and transparent revenue sharing.
- Reward management for economic return and repeatable customer outcomes, not traffic, coverage announcements or asset revaluations alone.

Conclusion

Telecom's strategic importance is real, but strategic importance is not a business model. The industry will improve its economics only when investment, architecture and commercial design are treated as one system. The route out of the paradox is not less ambition; it is a stricter definition of where the operator creates differentiated value, how that value is contracted, and which capital should bear the associated risk. 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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