

Edge Infrastructure Convergence: Towers, Fibre and Distributed Data Centres

A transaction framework for evaluating commercial synergies across connectivity, compute and real estate

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Abstract

Telecom towers, fibre networks and distributed data centres increasingly occupy the same physical and commercial value chain. Towers provide locations, power and radio access. Fibre provides transport, redundancy and customer reach. Edge facilities provide local compute, storage and service orchestration. A combined platform can shorten deployment time, improve asset utilisation and support enterprise, cloud, content, mobile and public-sector workloads. These benefits depend on specific site, route, power, network, software and customer conditions. Asset adjacency alone does not create a financeable convergence thesis.

This paper develops an Edge Infrastructure Convergence Transaction Framework for boards, infrastructure investors, lenders, telecom operators, data-centre sponsors and M&A advisers. It tests where common ownership, contractual partnership or selective co-location can create value across connectivity, compute and real estate. The framework links market demand, site suitability, fibre topology, latency, power, cooling, security, product design, anchor customers, operating systems, capital deployment, regulation, integration and exit options. It separates transferable operating synergies from assumptions that depend on uncontracted demand, scarce power or unproven technical integration.

The worked case is wholly hypothetical. A combined platform has assumed recurring revenue of USD 126 million and standalone EBITDA of USD 65 million. The assumed acquisition enterprise value is USD 650 million. Management estimates USD 15 million of steady-state EBITDA improvement from revenue contribution, procurement, network operations, shared sites and avoided duplication, producing central-case EBITDA of USD 80 million after an assumed USD 45 million integration and expansion programme. Maintenance capital is assumed at USD 22 million and annual debt service at USD 42 million, producing illustrative cash before tax and working capital of USD 58 million and a debt-service coverage ratio of 1.38x. A correlated downside produces EBITDA of USD 66 million, maintenance capital of USD 25 million and cash before debt service, tax and working capital of USD 41 million, producing an illustrative ratio of 0.98x. 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, G34, L51, L96, O33

Keywords: edge infrastructure, telecom towers, fibre networks, distributed data centres, telco cloud, M&A, digital infrastructure, edge computing, synergy underwriting, infrastructure finance

1. Define the transaction decision

The board must decide whether convergence should be pursued through acquisition, merger, joint venture, commercial partnership, selective co-location or an internally funded build. The decision should state the

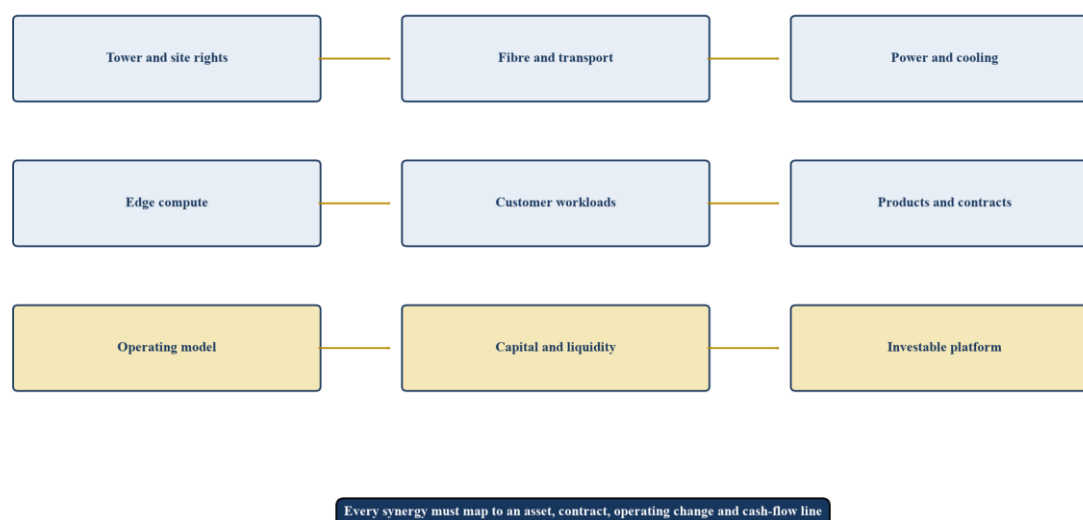
intended customers, geographies, services, ownership perimeter, capital commitment, return threshold and downside limit. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Approval should compare the combined platform with credible standalone and partnership alternatives using the same demand, cost, funding and risk assumptions. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

Convergence should be analysed as a transaction and operating-system decision. Towers, fibre and edge facilities can share locations, transport, power, customers and field operations, yet each layer has distinct contracts, engineering constraints, capital cycles and regulatory duties. The transaction thesis becomes credible when specific workloads generate contracted demand at sites with deliverable power, resilient fibre, secure operations and rights that survive closing. Asset adjacency is a starting hypothesis. Value arises from measurable changes in revenue, cost, capital intensity, resilience and customer outcomes. Scenario analysis should combine related pressures. Customer deployments can slip while power upgrades, fibre diversity, equipment and integration cost rise. Existing customers can churn during migration, vendors can delay interoperability, and regulators can impose access or security conditions. A decision-grade model therefore tests revenue timing, utilisation, pricing, operating cost, maintenance capital, integration spending, interest, liquidity and exit value together. Each downside should link to warning indicators, contractual protections, operational remedies and capital gates.

2. Use the Edge Infrastructure Convergence Transaction Framework

The framework connects physical assets, network functions, customer contracts, operating capabilities and capital rather than treating towers, fibre and edge facilities as interchangeable infrastructure. Each claimed benefit should map to named sites, routes, power capacity, service functions, customers, contracts, cost centres and implementation owners. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The investment committee should reject portfolio-level synergy percentages that cannot be reconciled to asset-level evidence and an executable operating change. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Figure 1. Edge Infrastructure Convergence Transaction Framework



Transaction value depends on alignment across physical assets, customer demand, operations and capital.

3. Define the convergence perimeter

A platform can include ground interests, towers, shelters, power systems, ducts, dark fibre, active transport, internet exchange connectivity, edge rooms, modular data halls, network functions and orchestration software. Ownership, lease, access, control and maintenance rights should be documented for every included layer. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The transaction perimeter should exclude assets whose permits, land rights, customer contracts, power rights or technical interfaces cannot transfer on acceptable terms. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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. Map demand by workload and location

Edge demand is local and workload-specific because latency, data sovereignty, traffic volume, resilience and processing economics vary by application. The commercial case should identify users, workloads, required locations, compute profiles, data flows, latency limits, contract status and migration dependencies. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Uncontracted market estimates should remain in sensitivities until customer evidence supports location, volume, price, duration and implementation timing. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation,

savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

5. Segment the site estate

Tower sites differ materially in land tenure, structural loading, power, cooling potential, fibre access, security, permitting, flood exposure and proximity to demand. Create a site-level suitability register that distinguishes radio-only sites, aggregation nodes, fibre points of presence, micro-edge candidates and regional-edge candidates. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Capital should be released only for sites that pass technical, commercial, legal, power, security and financial gates. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Table 1. Edge site suitability matrix

Dimension	Evidence	Failure mode	Transaction response
Land and permits	Transferable rights and allowed use	Conversion prohibited or delayed	Exclude, reprice or condition closing
Structure and space	Survey and loading assessment	Equipment cannot be installed safely	Redesign or select another site
Power and cooling	Contracted capacity and engineered design	Capacity unavailable or unreliable	Phase load or fund upgrade
Fibre	Diverse routes and service rights	Single-path outage exposure	Build or contract diversity
Demand	Named workload and customer evidence	Stranded capacity	Defer capital
Security	Physical and cyber control design	Customer or regulatory rejection	Remediate before launch

Site conversion requires a combined technical, legal, commercial and financial test.

6. Underwrite fibre topology and redundancy

An edge node without diverse transport can concentrate operational risk and fail customer availability commitments. Map owned and leased routes, route diversity, capacity, latency, hand-off points, restoration rights, planned upgrades and third-party dependencies. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The model should recognise route construction, leased-capacity charges, cross-connects, equipment refresh and outage remedies before recording convergence savings. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and

decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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. Secure power and cooling capacity

Distributed facilities need firm power, backup, heat rejection and operating headroom at locations originally designed for telecom equipment. Verify grid connection, contracted capacity, load profile, generator and battery autonomy, fuel logistics, cooling design, metering, tariffs and upgrade cost. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The base case should include only power that is contracted, deliverable on the required date and compatible with permits, resilience obligations and equipment density. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

8. Design the service and product ladder

A converged platform can sell site access, fibre, backhaul, wavelength, internet transit, interconnection, colocation, bare metal, private edge cloud and managed network services. Each product needs a defined technical boundary, service level, price unit, contract term, capacity commitment, security model and support process. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Product breadth should follow repeatable customer demand and operating capability rather than a desire to present the assets as a full-stack technology platform. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

9. Test anchor-customer quality

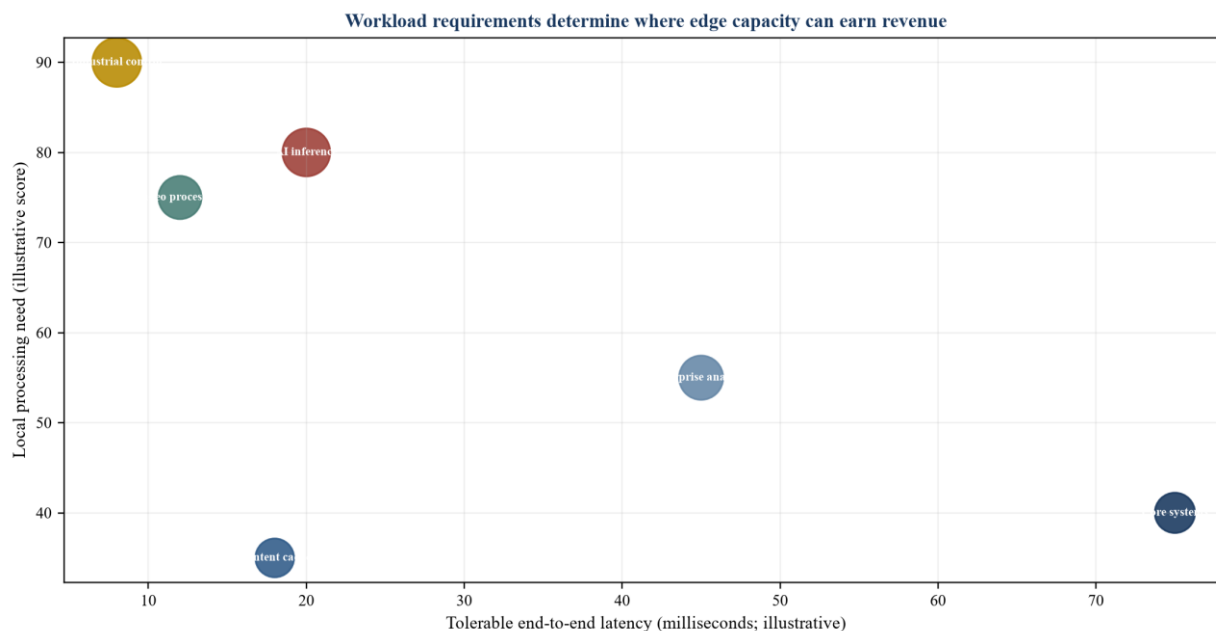
A mobile operator, cloud provider, content platform, enterprise, government or industrial customer can accelerate utilisation when its commitment is enforceable and technically aligned. Review minimum capacity, sites, ramp, price, credit support, termination, renewal, change control, equipment ownership and service remedies. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The financing case should distinguish signed take-or-pay commitments, contracted but conditional demand, pipeline opportunities and management aspirations. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost,

operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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. Quantify latency and data-path economics

Lower physical distance can improve response time, yet application performance also depends on routing, software, workload placement, congestion and customer architecture. Measure end-to-end latency, traffic paths, data-transfer charges, backhaul utilisation, cache efficiency, compute occupancy and service-level requirements. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Revenue attribution should reflect the customer problem solved and the contract earned rather than a generic premium for being closer to end users. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

Figure 2. Workload placement decision map



Illustrative qualitative map; placement depends on verified application and network requirements.

11. Build the revenue-synergy register

Revenue synergies may arise from cross-selling, faster market entry, combined bids, higher site occupancy, additional fibre connections and new edge services. For each opportunity record the named customer, product, sites, capacity, probability, sales owner, implementation cost, contract milestone and expected contribution margin. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material

judgment to customer demand, service quality, capital efficiency, financing and transaction value. Only signed or strongly evidenced opportunities should enter the central case, with probability-weighted and uncontracted opportunities shown separately. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Table 2. Synergy evidence hierarchy

Evidence state	Commercial meaning	Model treatment	Required control
Strategic adjacency	Assets appear complementary	Narrative only	Define use case and owner
Customer discussion	Indicated interest	Sensitivity	Record scope and probability
Qualified proposal	Product, site and price specified	Risk-adjusted case	Delivery and approval plan
Signed commitment	Enforceable demand	Central case subject to conditions	Credit and implementation review
Billable service	Delivered and accepted	Observed revenue	Invoice and cash reconciliation

Valuation weight should rise only as the opportunity becomes contracted and operational.

12. Build the cost and capital-synergy register

Common network operations, field maintenance, procurement, monitoring, security, real estate and corporate functions can reduce duplicated cost. Quantify the current baseline, future operating design, one-time cost, timing, workforce effect, vendor consent, service risk and accountable owner. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Avoided capital should be recognised only when an approved standalone project is genuinely displaced without weakening capacity, resilience or customer commitments. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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. Separate transferable and owner-specific synergies

Some benefits depend on a particular acquirer's customers, cloud relationships, spectrum, network traffic, tax position or procurement scale. Classify each synergy as market-available, buyer-specific, seller-retained, shared or dependent on third-party consent. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction

value. The valuation and negotiation strategy should protect the buyer from paying the seller for value that only the buyer can create after closing. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

14. Value the platform by asset and cash-flow driver

Tower cash flow, wholesale fibre and distributed compute can carry different growth, capex, contract, technology and terminal-value characteristics. Use a sum-of-the-parts model with asset-specific revenue, EBITDA, maintenance capital, growth capital, working capital, tax, discount rate and terminal assumptions. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The combined multiple should be a consequence of cash-flow quality and risk rather than an assumed convergence premium. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Table 3. Sum-of-the-parts valuation drivers

Layer	Primary value driver	Material risk	Diligence focus
Towers and sites	Contracted rent and tenancy	Ground rights and concentration	Lease durability and capex
Fibre and transport	Route utilisation and price	Overbuild and restoration	Route rights, capacity and churn
Edge facilities	Contracted power and occupancy	Stranded capacity and refresh	Power, customer fit and lifecycle
Platform services	Recurring service margin	Capability and vendor dependence	Contracts, people, software and support
Synergies	Realised incremental cash	Delay, leakage and one-time cost	Owner, evidence, timing and control

Each infrastructure layer requires its own cash-flow and risk assumptions.

15. Test utilisation before expansion

Edge economics are sensitive to occupancy, power utilisation, fibre capacity, rack density and the timing of customer deployments. Model committed, installed, billable and collected utilisation by site and product, including stranded capacity and customer-specific fit-out. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Expansion gates should require evidence of contracted demand, remaining capacity, service performance, cost to complete and liquidity. The work should test central and

correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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. Design the network and cloud operating model

Convergence introduces responsibilities across passive infrastructure, transport, network functions, compute, storage, virtualisation, orchestration, cybersecurity and customer support. Define design authority, change control, service ownership, incident command, field operations, software lifecycle, capacity planning and vendor management. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. A single accountable service owner should coordinate end-to-end performance even when delivery uses multiple internal teams and contractors. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

17. Integrate systems and operational data

Separate tower, fibre and data-centre businesses often use different asset registers, customer systems, monitoring tools, billing platforms and incident taxonomies. Create a common data model for sites, routes, circuits, equipment, power, capacity, contracts, orders, tickets, invoices and cash. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Integration should preserve source lineage and controls so operational dashboards reconcile with customer obligations and financial reporting. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

18. Protect cybersecurity and physical security

A converged platform increases the number of access points and can connect critical telecom, enterprise and public-sector workloads. Assess identity, privileged access, segmentation, patching, supply chain, logging, incident response, site access, surveillance, tamper controls and recovery. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Security design, operating cost and remediation capital should be included before the platform commits to regulated or mission-critical services. The work should

test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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. Review regulation and competition

Common ownership across towers, fibre and edge facilities can affect wholesale access, discrimination risk, market power, data location and critical-infrastructure obligations. Map licences, access rules, price controls, merger review, foreign investment, cybersecurity, data protection, lawful access and sector-specific requirements. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The transaction timetable and valuation should reflect approval conditions, remedies, ring-fencing, information barriers and continuing compliance cost. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

20. Control land rights permits and change of use

Tower and telecom leases may not permit data-centre equipment, higher power draw, generators, batteries, cooling systems or additional customer access. Review title, lease term, assignment, permitted use, loading rights, easements, neighbour constraints, environmental approvals and reinstatement obligations. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Site conversion should proceed only after required rights and permits are documented, transferable and aligned with the investment horizon. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

21. Manage technology and vendor concentration

Edge infrastructure can depend on proprietary hardware, virtualisation, orchestration, accelerators, network equipment and cloud interfaces with different replacement cycles. Identify sole-source components, licence terms, interoperability, support periods, export controls, security obligations and migration paths. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The model should include refresh capital, support cost, exit assistance and service risk where vendor substitution is slow or

technically complex. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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. Design the integration programme

Closing the transaction starts a programme across governance, customers, networks, sites, systems, people, vendors, finance and regulatory commitments. Sequence Day One controls, service continuity, consent management, operating-model decisions, systems integration, synergy delivery and capital projects. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. The programme should protect existing service levels and cash collection while creating the evidence needed for later convergence investments. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

23. Protect customers during migration

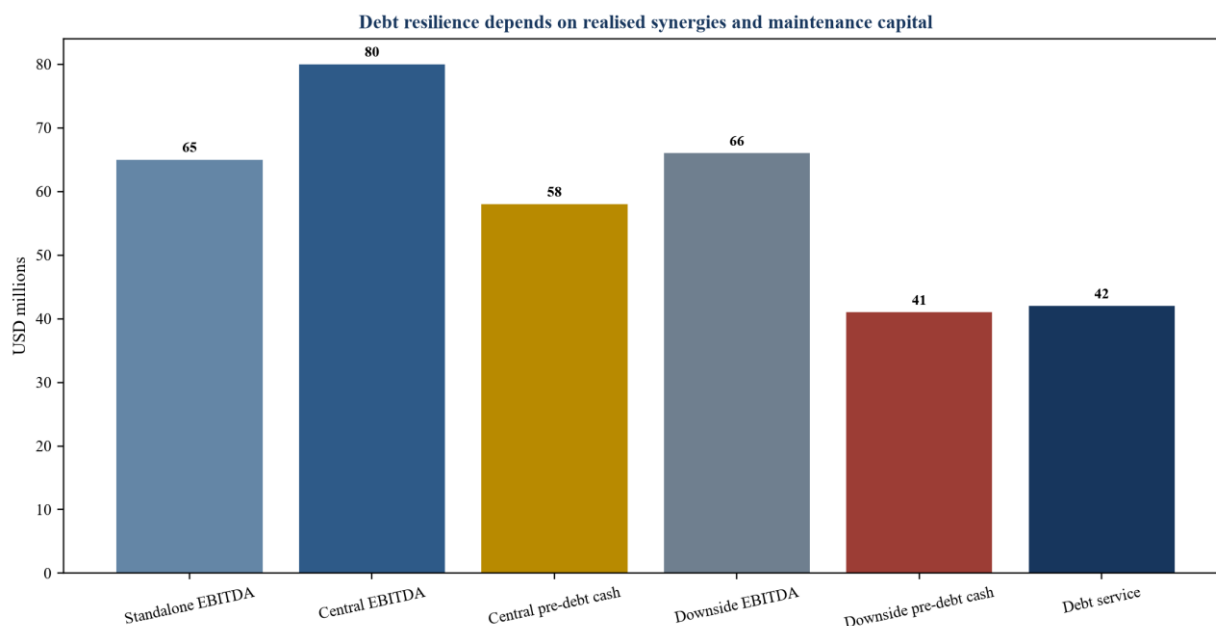
Routing changes, equipment moves, contract novations and support transitions can interrupt services or weaken accountability. Build a customer-by-customer migration plan covering notification, consent, design, testing, rollback, acceptance, billing and service credits. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Revenue synergies should not be credited where migration risk threatens existing recurring revenue or renewal probability. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

24. Build the hypothetical combined platform

The hypothetical platform produces USD 126 million of recurring revenue and USD 65 million of standalone EBITDA at an assumed enterprise value of USD 650 million. An assumed USD 45 million integration and expansion programme supports USD 15 million of steady-state EBITDA improvement, producing central-case EBITDA of USD 80 million. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction

value. The case treats every value as a management assumption and uses the downside to test whether the proposed debt, capital programme and integration pace remain supportable. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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 4. Hypothetical convergence transaction scenarios

Measure	Standalone or entry	Central case	Correlated downside
Recurring revenue	126	142	130
EBITDA	65	80	66
Acquisition enterprise value	650	650	650
Integration and expansion programme	45	45	52
Maintenance capital	20	22	25
Cash before debt service	45	58	41
Annual debt service	42	42	42
DSCR	1.07x	1.38x	0.98x
Entry EV / standalone EBITDA	10.00x	10.00x	10.00x
EV / case EBITDA	10.00x	8.13x	9.85x

USD millions except ratios; every value is an illustrative management assumption.

25. Size debt to post-integration cash flow

Acquisition leverage must survive customer churn, delayed synergies, integration cost, growth capital, maintenance capital and interest-rate stress. Model draw, amortisation, cash interest, hedging, covenant headroom, restricted payments, reserve accounts, equity cure and refinancing dependency. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Debt capacity should follow downside cash after maintenance capital and required integration spending, with no reliance on uncontracted revenue or multiple expansion. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

26. Stage capital through evidence gates

A portfolio-wide edge rollout can consume capital faster than demand and operating capability develop. Create stage gates for site rights, power, fibre diversity, anchor demand, product readiness, build cost, commissioning, utilisation and cash collection. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Later waves should require verified performance from earlier sites and a refreshed view of liquidity, capacity and customer demand. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

27. Design governance for a multi-layer platform

Capital allocation can become distorted when tower, fibre and compute units compete for funding and report different performance measures. Define board oversight, investment thresholds, related-party controls, customer neutrality, security committees, regulatory reporting and information rights. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Management reporting should reconcile asset utilisation, service performance, customer economics, capital deployed and cash returns on a consistent basis. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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.

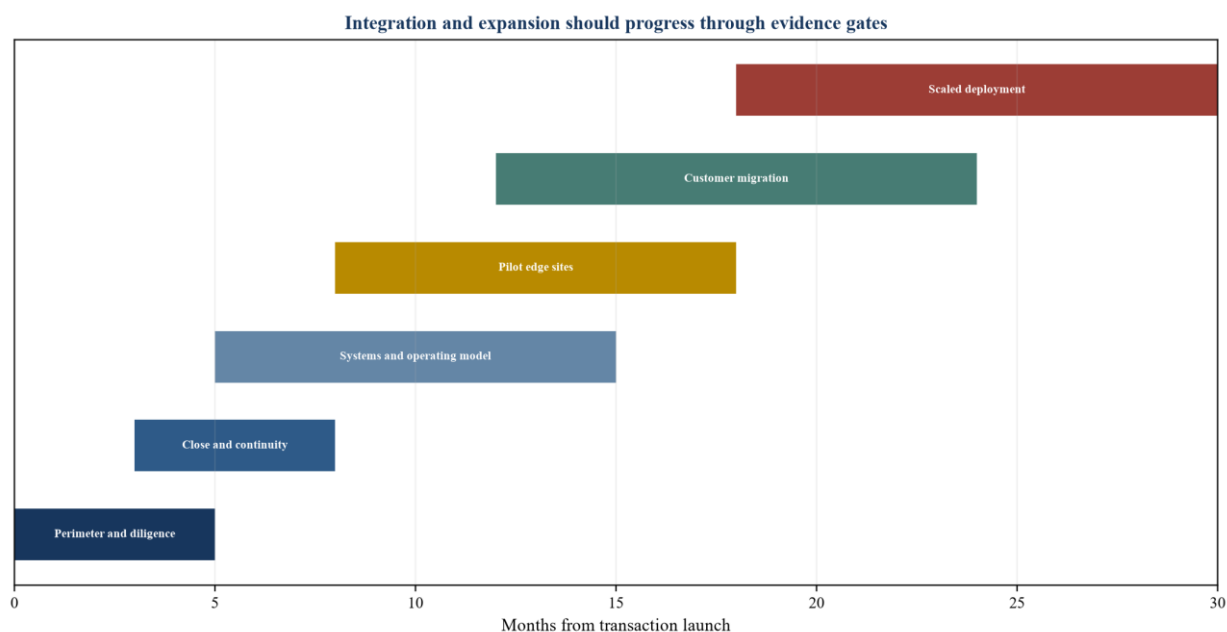
28. Prepare separation and exit options

Future buyers may value the platform as an integrated network, a sum of infrastructure verticals or a collection of regional assets. Preserve asset registers, contracts, licences, systems boundaries, transfer rights and standalone financial information needed for refinancing, partial sale, joint venture or carve-out. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Integration choices should create operational value without making later separation prohibitively expensive or contractually impossible. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. The section output should identify the governing source, contract, asset, model line, accountable owner, warning threshold and capital consequence. This creates a traceable bridge from convergence thesis to realised cash.

29. Build the thirty-month execution roadmap

The roadmap should move from diligence and perimeter confirmation through closing, service continuity, system integration, pilot sites, customer conversion and scaled deployment. Each workstream needs an owner, dependency, evidence requirement, budget, decision date, warning indicator and fallback action. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Board gates should control customer risk, capital release, leverage, regulatory commitments and the pace of physical conversion. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central case until enforceable evidence supports it. Evidence should remain traceable to site, route, power allocation, workload, customer, product, order, asset, invoice, cash receipt and forecast period. Board and lender reporting should reconcile to the same operating records.

Figure 4. Illustrative thirty-month convergence roadmap



Capital release follows verified operational and customer evidence.

30. Define the investable convergence case

An investable case combines contracted demand, suitable sites, diverse fibre, deliverable power, repeatable products, secure operations, disciplined capital and credible governance. The final memorandum should present the asset perimeter, customer evidence, site register, network map, operating model, synergy register, integration budget, downside liquidity and exit options. The analysis should distinguish observed technical, commercial, contractual, regulatory and financial evidence from management assumptions and connect each material judgment to customer demand, service quality, capital efficiency, financing and transaction value. Commitment conditions should close material evidence gaps before adjacency, scale or technology narrative is treated as transaction value. The work should test central and correlated downside cases for customer timing, site eligibility, power, fibre diversity, utilisation, pricing, vendor concentration, integration cost, operating cost, maintenance capital, interest rates, liquidity and regulatory change. Exceptions require a named owner, source, due date and decision consequence. Unsupported demand, synergies, utilisation, savings, premium valuation or refinancing remains outside the central 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 is edge infrastructure convergence?

It is the coordinated ownership or operation of tower sites, fibre transport and distributed compute facilities to deliver connectivity and processing closer to users. A credible thesis identifies the workloads, customers, sites, network paths, power and operating capabilities that create cash flow.

Does combining towers fibre and edge data centres automatically create value?

No. Value depends on site suitability, fibre diversity, deliverable power, contracted demand, product-market fit, integration cost and operating execution. Portfolio adjacency without these conditions can produce stranded capital and additional complexity.

Which sites are suitable for edge deployment?

Suitable sites have enforceable land and use rights, physical space, structural capacity, reliable power, cooling, secure access, diverse fibre, proximity to demand and a financeable customer use case. Each site should pass documented technical, legal, commercial and financial gates.

How should revenue synergies be underwritten?

Build a customer-level register containing the product, sites, capacity, price, probability, contract milestone, sales owner, implementation cost and contribution margin. Give central-case weight only to signed or strongly evidenced opportunities.

How should a converged platform be valued?

Use asset-specific cash flows for towers, fibre, edge facilities and platform services, then add only synergies supported by evidence and achievable cost. A sum-of-the-parts model makes differing capital cycles, risks and terminal assumptions visible.

What are the main integration risks?

Material risks include customer disruption, incompatible systems, unclear service ownership, power and fibre delays, vendor lock-in, security gaps, regulatory remedies, capital overruns and slower utilisation. The integration plan should assign owners, gates and fallback actions.

How should acquisition debt be sized?

Size debt to downside cash after operating cost, maintenance capital and required integration spending. Include delayed synergies, customer churn, interest-rate stress, reserves, covenant headroom and committed liquidity.

When is a partnership preferable to an acquisition?

A partnership may be preferable when the required benefit comes from access to selected sites, routes or services and ownership would add regulatory, integration or capital risk. Compare partnership, joint venture, acquisition and internal build using the same customer and cash-flow evidence.

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Chennakeshav (CK) is a corporate finance and investment banking executive with 25+ years of global experience in deal origination, structuring and execution across M&A, growth capital and corporate strategy. He has led value-creation mandates for founders, corporates and funds — bridging the boardroom view to hands-on execution and closure.

His career spans Morgan Stanley, HSBC, Lloyds Banking Group, EWEC, ADQ portfolio companies and Emirates Growth Fund, across TMT, real estate, fintech, deeptech, cleantech, infrastructure and energy. He has partnered with C-suite leaders, private equity and venture funds, sovereign wealth funds and family offices to finance complex fund raises and scale-up ventures, and has led M&A due diligence, post-merger integration and business-transformation initiatives to create value.

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