Network Technology Investment & Techno-economic Consulting

Make informed decisions on network investment, technology migration and vendor selection.
MCNS combines techno-economic analysis, RAN expertise and field benchmarking to compare deployment options, validate performance and optimise CAPEX and OPEX for mobile broadband and FWA.

Every operator has different infrastructure, spectrum, traffic, budget and service requirements.
We work with engineering, operations and procurement teams to compare realistic options for coverage, capacity, 5G introduction or vendor replacement—and clarify what each option delivers and costs to deploy and operate.

- Our recommendations draw on 4G, 5G and emerging 6G mobile broadband and FWA experience, including vendor evaluation, Proof of Concept (PoC) testing and field benchmarking.
- Investment choices must meet coverage and capacity needs, integrate with the existing network and remain operationally and economically viable as demand grows.

We assess technical benefits alongside deployment costs, conditions and risks, giving operators a documented basis for technology selection, vendor comparison and network modernisation.

Deliverables are tailored to each decision and may include:

Network baseline and requirements assessment.

Techno-economic feasibility study and scenario comparison.

Financial model with documented assumptions and sensitivity analysis.

Vendor evaluation and selection matrix.

PoC test plan, acceptance criteria and benchmarking report.

Combined coverage and capacity assessment.

Deployment risk register and mitigation plan.

Phased modernisation roadmap and management recommendation.

We assess the technical feasibility and economics of new deployments, expansions and upgrades, linking service needs and traffic forecasts to spectrum, sites, equipment and rollout costs.

Scenarios are compared over an agreed period using transparent assumptions. Where relevant, we assess TCO, incremental CAPEX/OPEX, discounted cash flow, net present value and payback, with sensitivity analysis for traffic, pricing, energy, timing and service uptake.

The assessment identifies the preferred investment and the conditions that could make an alternative more attractive.

The assessment identifies the preferred investment and the conditions that could make an alternative more attractive.

We translate network objectives into clear technical requirements and measurable vendor evaluation criteria.

Vendor proposals are compared for coverage, capacity, features, interoperability, scalability, energy use and operational support, including equipment, software, licensing and infrastructure requirements.

We support RFI/RFP preparation, bid assessment, vendor clarifications and weighted evaluation matrices, distinguishing proven capabilities from features still requiring validation or delivery.

Recommendations outline migration stages, prerequisites and technical or commercial risks to resolve before wider rollout.

MCNS designs, coordinates and assesses PoC campaigns for 4G/5G mobile broadband and FWA solutions.

We define test scenarios, KPIs, measurement methods and acceptance criteria, accounting for differences in spectrum, power, antennas, software, devices, network load and radio conditions.

Tests can measure throughput, uplink/downlink coverage, cell-edge performance, latency, mobility, stability, multi-user capacity and energy consumption.

We quantify and explain performance differences and their deployment relevance. Any unavoidable test limitations are documented to keep procurement decisions evidence-based.

Coverage and capacity must be assessed together to understand the value of a network investment.

We assess how spectrum, site density, antennas, massive MIMO, propagation and traffic affect availability and busy-hour performance, including uplink, indoor and cell-edge experience and combined MBB/FWA demand.

For FWA, we consider serviceable premises, customer equipment, subscriber loading and required capacity. For mobile broadband, we assess traffic growth, mobility and user performance across the service area.

The findings inform site upgrades, additional carriers, sectorisation, densification and the use of FR1/FR2.

We identify risks in network expansion, equipment replacement and technology migration before they affect rollout or service performance.

The review covers integration, feature maturity, interoperability, transport, site readiness, power/cooling, operations and service continuity, including device compatibility, migration sequence and rollback where relevant.

Each risk is documented with its impact, mitigation and verification actions, helping define deployment prerequisites, pilot stages and wider-rollout decisions.

MCNS identifies opportunities to reduce investment and operating costs while maintaining agreed service and performance levels.

We review equipment/software, site works, infrastructure reuse, transport, energy, maintenance and operational complexity, including whether savings in one area create costs or constraints elsewhere.

Options are compared against a consistent baseline with clear assumptions for loading, asset life and future expansion, showing the financial impact of each technical choice over the assessment period.