Time to re-think
the Network division

A tipping point
for networks

TELECOMMUNICATION NETWORKS HAVE NEVER PLAYED SUCH A CRITICAL ROLE IN SOCIETY.

The pandemic highlighted the need to have a reliable connection, enabling individuals to be able to socialise with loved ones in the absence of being physically present and businesses to continue trading. Yet to underpin the Critical National Infrastructure (CNI), operators are faced with an unprecedented set of competing demands. To succeed in the future, they need to challenge the way investments are planned and managed to balance coverage, capacity, capability and cost.

Today, consumers and businesses expect to have a connection that works anywhere. The Department for Digital, Culture, Media & Sport (DCMS) has set bold targets to back this up with its ambition for the UK to become a world leader in digital connectivity; 15 million premises connected to full fibre by 2025 (with nationwide coverage by 2033) and 5G coverage deployment to the majority of the country by 2027[1]. In its simplest terms, this means operators are required to roll-out faster than before, perform maintenance and upgrades to existing infrastructure, transition to new technologies and all whilst responding to regulatory change and maintaining the highest levels of cybersecurity. A tall order!

Network divisions are also having to get their heads around the latest innovative technology landing in the market as well as understanding potential efficiency savings to be gained. The adoption of targeted virtualisation, automation, the use of AI and machine learning are some of the key capabilities which need to be developed if operators are to keep pace and remain competitive.

Further targets have also been set by the operators themselves to accelerate the net zero agenda (the industry is globally aiming for net zero by 2050) through focusing on carbon emission reduction and energy consumption. Recent estimates have suggested that energy consumption is responsible for 15 to 40 per cent of an operator's OPEX[2] and therefore will increasingly influence the choice of suppliers and equipment in the supply chain to meet decarbonisation targets.

Operator's supply chains have had a lot of attention over recent years. The UK's National Cyber Security Council (NCSC) mandated the removal of all high risk vendors from the UK's telecommunications networks at an estimated cost of £1.5-2 billion[3]. It is our belief that a more strategic approach to supply chain management will be crucial to keep costs down and enable operators to become more agile in their response to regulation changes.

To address some of these challenges and build a sustainable network for the future, there are three immediate practical steps a network division can take:

1. Define a network strategy which re-positions the role of the network division to drive greater customer and commercial value and support net zero targets
2. Invest in new technology, data usage and analytics to drive operational execution
3. Start now to map out the key transition steps to move away from traditional network planning and operations to a network division for the future

1. Department for Digital, Culture, Media & Sport - Future Telecoms Infrastructure Review - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732496/Future_Telecoms_Infrastructure_Review.pdf

2. Mobile Net Zero - State of the Industry on Climate Action 2021Efficient network equipment (P31)- https://www.gsma.com/betterfuture/wp-content/uploads/2021/04/Mobile-Net-Zero-State-of-the-Industry-on-Climate-Action.pdf

3. Enders Analysis – 'Huawei ban - Counting the cost 2020'

The importance of
a 360 Network strategy

IT IS BECOMING INCREASINGLY HARD FOR NETWORK OPERATORS TO ESTABLISH THE BEST WAY TO MAXIMISE AVERAGE REVENUE PER USER (ARPU), REDUCE CHURN AND INCREASE ACQUISITION.

Customer expectations are becoming more sophisticated, varying by customer personas and geography. As operators increase investment to scale faster and smarter networks, they need new ways to recoup their investments, differentiate, and to provide higher value services to customers that are willing to pay a premium. This is further complicated by the transition of capex to opex requirements with the shift to cloud-enabled services, and strategic decisions being made around split off of Infrastructure companies or TowerCo.

To do this, network plans need to be much more closely linked to customer outcomes and support new monetisation opportunities. For example, wholesale and enterprise package solutions could include advanced security and contingency provision, value-added metrics or data streams which help towards reporting (e.g. carbon performance).

The net zero agenda will increasingly feed into the customer narrative, providing an additional reason to choose one brand over another. Every operator must state their net zero ambitions if they are to remain competitive. A recent example has seen the new Virgin Media and O2 joint venture announce market leading targets as part of their launch story: *"Our goal is to achieve net zero carbon operations (scopes 1 and 2) by the end of 2025. We're also committing to reduce our other environmental impacts and our gigabit and 5G services will power smart technology to lay the foundation for a low carbon future for the UK.[4]"*

Infrastructure and technology decisions are a major factor if operators are to meet their net zero targets, support cost reduction and enhance performance. Environmental considerations now have a direct bearing on the financing of rollouts and the cost of borrowing. In addition, the network division must evaluate the latest ways to use renewable energy supplies, generate their own power and form collaborative approaches to network sharing (e.g. tower sharing deals such as CTIL & MBNL in the UK) or siting 5G equipment on existing street furniture.

To plan more effectively and deliver across multiple priorities, we believe network divisions must move away from traditional, large-scale capital-intensive programmes that treat all customers the same and are highly dependent on hardware infrastructure upgrades, which bring long cycle times and delivery risk. They must adopt a smarter and more strategic approach to decision-making to meet changing demands, based upon having greater flexibility from decoupling physical upgrades from logical to flex capacity and performance where most needed, and using data to model and choose between different scenarios. Capex and opex investments must be balanced across the overall portfolio to move effectively with pace to enable this capability.

A strategic investment leap and operating model change is now required across many operators to counteract decades of technical debt which has been accumulated. Future network divisions must be more closely aligned with commercial functions, strategic objectives, and product roadmaps. In doing this, the business can adapt plans and activities together on a regular basis to respond to network technology changes and unlock customer value. This is a very different approach to the current model of fixing plans for the year or years ahead in siloed functions.
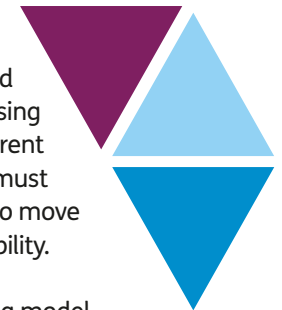
4. Virgin Media O2 - https://news.virginmediao2.co.uk/responsible-business/

# To build a 360-degree network strategy, **we would recommend the following:**
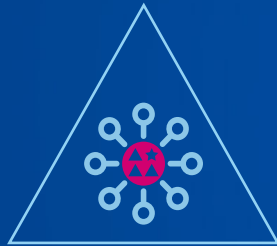
DEFINE A NETWORK VISION THAT WILL SUPPORT THE DIFFERENTIATION OF THE BRAND

- Be clear about strategic priorities and the role of the network division. For example, does the organisation seek customer acquisition through expansion or via improved speed/quality? Is there an ecosystem with a separate TowerCo to consider?
- Form a consistent approach to net zero and create a strong brand story for consumers
- Focus on how the supply chain can be a strategic differentiator to meet speed to market and resilience challenges, getting the right kit to the right places at the right time
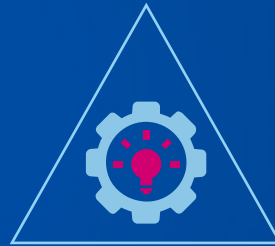
RE-INVENT THE OPERATING MODEL

- Align the network division more closely with commercial functions, placing innovation and commercial considerations at the core
- Embed intelligent execution across end-to-end operations, using data to inform network planning & rollout, data modelling to maximise return on network investments, and automation of support processes where possible
- Define and implement the right skill mix and insource / outsource model to retain core skills and flex non-core capabilities
- Optimise supply chain operations by better integrating business planning, strategic partner management and intelligent asset management whilst pushing for a net zero supply chain
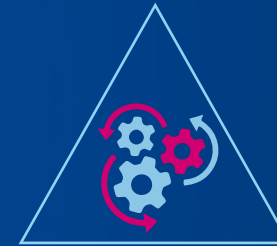
BUILD IN AGILITY BY DESIGN:

- Compare and test Capex use and Return on Investment (ROI) delivery with advanced data modelling
- Build in agility to react more quickly to changes, understand impacts and re-adjust plans
- Move away from the annual planning to continuous improvement, balancing commitment to strategic objectives with evolving priorities and be prepared to alter course

A pivotal role for **data in execution**

ALTHOUGH OPERATORS ARE AWARE OF THE MOUNTING CHALLENGES AHEAD OF THEM, BREAKING OUT OF OLD OPERATING MODELS AND REMITS IS EASIER SAID THAN DONE.

Many feel stuck with rigid plans, long cycle times and tenuous links between rollouts and their eventual ROI. Through targeted investment in data use and analytics enablement, a step change in operational execution is possible.

However, this could prove a greater leap than would first appear. Currently, many network divisions are unable to accurately track their performance against existing core KPIs, either as a result of a lack of appropriate data or the means to appropriately use this data efficiently. This needs resolving first before smarter and more elaborate decisions can be made.

Data needs to be collected not just across the network division but also from outside the function to enable a joined-up view of performance across the business. Measurements often include but are not exclusive to: capacity, coverage, cost, customer experience, energy consumption and ROI. To achieve this, a data culture across the business needs to be developed and evolved over time, with investment in sensors and probes to appropriately measure and understand the true impact of changes.

Once operators have the basics in place, advanced analytics techniques can be utilised to model different scenarios and constraints (e.g. rollout speed, coverage, capacity). The use of AI, machine learning techniques and digital twins can test different scenarios and provide an understanding of the costs without complex trials and manual effort. Automation will be critical in future network planning, with feedback loops gathering data from field teams on how successful the planning function has been. Smart networks will also enable automatic reconfiguration and self-heal.

The ability to overlay and cross-analyse multiple interrelated data sources will allow for more commercially-focused decision making and will accelerate the delivery of services that matter to customers.

As operators distance themselves from the traditional approaches to network planning and operations, they can take inspiration from adjacent industry sectors such as the likes of Google, AWS and Microsoft. They have made advances in balancing multiple priorities such as sustainable, secure infrastructure growth and carbon offsetting. Not only do they use the most energy efficient equipment and cooling technology in their data centres, machine learning controls allow for the optimisation of settings to reduce energy consumption and subsequent running costs. Indeed, a recent study highlighted that AWS's infrastructure is 3.6 times more energy efficient than the median of surveyed U.S. enterprise data centres.[5] Improvements are also measured and reported on to impress customers, shareholders, investors, and regulators with their progress over time against net zero ambitions.

The increasing virtualisation of the network, use of software-defined networking technology, data availability and asset management will more closely mirror that of the major IT infrastructure/cloud providers. Whilst recognising key infrastructure differences between network operators and tech giants, we believe that by following a similar strategy to the likes of Google, Microsoft and AWS, network divisions can use data to make a step change in operational execution.

5. 451 Research 'The Carbon Reduction Opportunity of Moving to Amazon Web Services' https://sustainability.aboutamazon.com/carbon_reduction_aws.pdf

Transition now

THE CONVERGING PRESSURES ON OPERATORS WILL GROW EVEN MORE INTENSE OVER THE FORESEEABLE FUTURE, LEAVING NETWORK DIVISIONS NO CHOICE BUT TO FIND A NEW WAY TO BALANCE COMPLEX DEMANDS AND PLAN WITH THE RESOURCES AVAILABLE.

However, there is still so much to play for as long as operators can keep their ROI in clear sight and a priority as new investment requirements from across the enterprise soar.

As ever, there is no easy solution, but network divisions can give themselves the best chance of success by creating a vision that drives brand differentiation, by updating their operating model and investment plans to more closely align with the rest of the business, and by embedding agility. With the right blend of multi-disciplinary skills, energy strategy, strategic supply chain management, process automation, insight-driven planning and network technology innovation, operators will be able to keep pace and exceed market expectations.

The following 6 steps provide a practical guide of what to do next if you are a leader in the Telecommunications industry:

1. DEFINE A 360 NETWORK STRATEGY

Network strategy is no longer a purely technical architecture exercise, it requires input and challenge from a broad set of stakeholders across the business. Ensuring a 360-degree view of both strategic network challenges and opportunities is critical to ensure delivery of customer value, ROI and improved operational execution.

2. UNDERSTAND YOUR BASELINE

Set the strategy with a clear view of the baseline capability today and measure relative maturity versus that of competitors and leaders in adjacent markets. Ask the question: What are other companies achieving that you have not or cannot?

3. INTEGRATE NET ZERO

Ensure the company's net zero pledges form an integral part of the network division's future planning, decision-making and ongoing KPI monitoring so that targets can be planned for. For example, what is the most energy efficient and P&L impacting infrastructure portfolio?

4. FUTURE-PROOF YOUR OPERATING MODEL

Consider whether the current network division's operating model is structured in the right way to deliver against evolving customer-centric market demands. Can priorities and plans be easily adjusted based on changing market demands and opportunities? What skills need to be brought into the team to supplement, diversify, and re-invigorate the engineering capability and how are these skills sourced? How can the supply chain be more resilient and support net zero targets? Determine the extent of change needed and define an operating model transition plan.

5. ENABLE DATA TO PLAY A PIVOTAL ROLE

Check the current data capability in the network division as well as the broader organisation and prioritise changes that implement the basics first improving reporting, forecasting, key automation and modelling. Keep focused on the target outcomes including ROI and customer and shareholder value. Continuously measure, improve and proactively course-correct plans based on data analysis.

6. DEVELOP ROADMAP AND TRANSITION PLAN

Create a 3-year roadmap to enable the strategy and rolling quarterly plan to implement the transition steps in the right priority order, based on ROI. This requires having a single view of the investment portfolio, balancing demand and supply, and a clear understanding of the operational constraints and dependencies across the wider business. Set up regular governance to manage change and impacts in close collaboration with wider business divisions.

Now is the time to set up the network division for the future.

Our team is passionate about helping operators to **optimise their network strategy and operations to set up for success**.
We would love to hear your thoughts on the topics we've discussed in this article, and how you see these challenges impacting your organisation.

DAN NICHOLSON
PARTNER
Dan.Nicholson@baringa.com

JAMES BRIDGEMAN
PARTNER
James.Bridgeman@baringa.com

Baringa Partners is an independent business and technology consultancy. We help businesses run more effectively, navigate industry shifts and reach new markets. We use our industry insights, ideas and pragmatism to help each client improve their business. Collaboration is central to our strategy and culture ensuring we attract the brightest and the best. And it's why clients love working with us.

Baringa launched in 2000 and now has over 700 members of staff and more than 65 partners across our practice areas Energy and Resources, Financial Services, Products and Services, and Government and Public Sector. These practices are supported by cross-sector teams focused on Customer & Digital; Finance, Risk & Compliance; People Excellence; Supply Chain & Procurement; Data, Analytics & AI; Intelligent Automation & Operations Excellence; and Technology Transformation. We operate globally and have offices in the UK, Europe, Australia, US and Asia.

Baringa Partners have been voted as the leading management consulting firm in the Financial Times' UK Leading Management Consultants 2021 in the categories Energy, Utilities & the Environment, and Oil & Gas. We have been in the Top 10 for the last 13 years in the small, medium, as well as large category in the UK Best Workplaces™ list by Great Place to Work®. We are a Top 50 for Women employer, and are recognised by Best Employers for Race.

www.baringa.com