



The Rise of the Netcos

M&A & Telecom Engineering Centre of Excellence (TEE)

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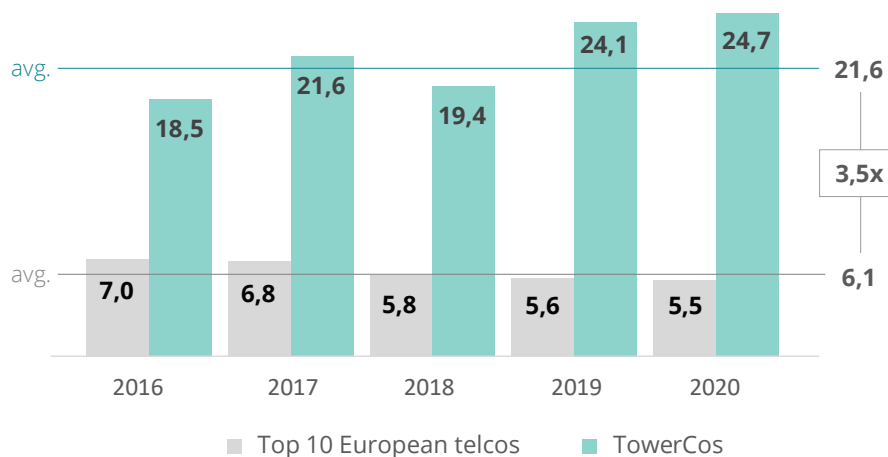
As debt-laded telecoms operators spin off much of their infrastructure, the industry is changing fundamentally. Thanks to the magic of multiple differentials, we will see more of the so called netcos, infracos or towercos growing in the telecom ecosystem. Why are netcos likely to become dominant players and what will be their playing field? How will the demarcation line between netcos and servcos evolve? And how will netcos interact with other ecosystem players and create win-win relationships?

The big picture

For many investors, it is time to rethink what a telco is and what it does. Indeed, as the telecoms industry evolves, it is attracting a completely new set of investors, for whom the traditional, vertically-integrated behemoths were far too unpredictable and risky.

Equity markets are rewarding companies that focus on just part of the telecoms puzzle, rather than trying to do everything from buying land and building cellphone towers to creating consumer apps and running call centres.

Figure 1: European telcos versus towercos valuation multiples



Netcos growing attractiveness

Whereas most traditional telecom operators are valued at six to seven times their annual operating margin¹, companies that focus on owning telecoms infrastructure (known as infracos, netcos or towercos) can be worth 15 to 20 times their margin (see Figure 1). Why the disparity?

Netcos are regarded as low-risk businesses that will generate steady cash flows over long periods by leasing their infrastructure to service providers.

Serving a small number of customers on long-term (often inflation-protected) contracts, netcos are relatively straightforward and predictable businesses that share many similarities with utilities – only with less regulation. Typically, a netco

will own either just the infrastructure (towers, fibre, datacentres, or undersea cables) or both the infrastructure and the network management layer.

As they expand geographically and into adjacent sectors, netcos' growth prospects may actually be better than those of the customer facing operations – the servcos. Their ownership of hard-to-replicate infrastructure also means they are much less vulnerable to competition – especially from energetic cloud-based start-ups.

¹ Netcos are achieving enterprise value/EBITDA multiples of 15-25x opposed to 6-7x of traditional telcos

Call for netcos spin-off

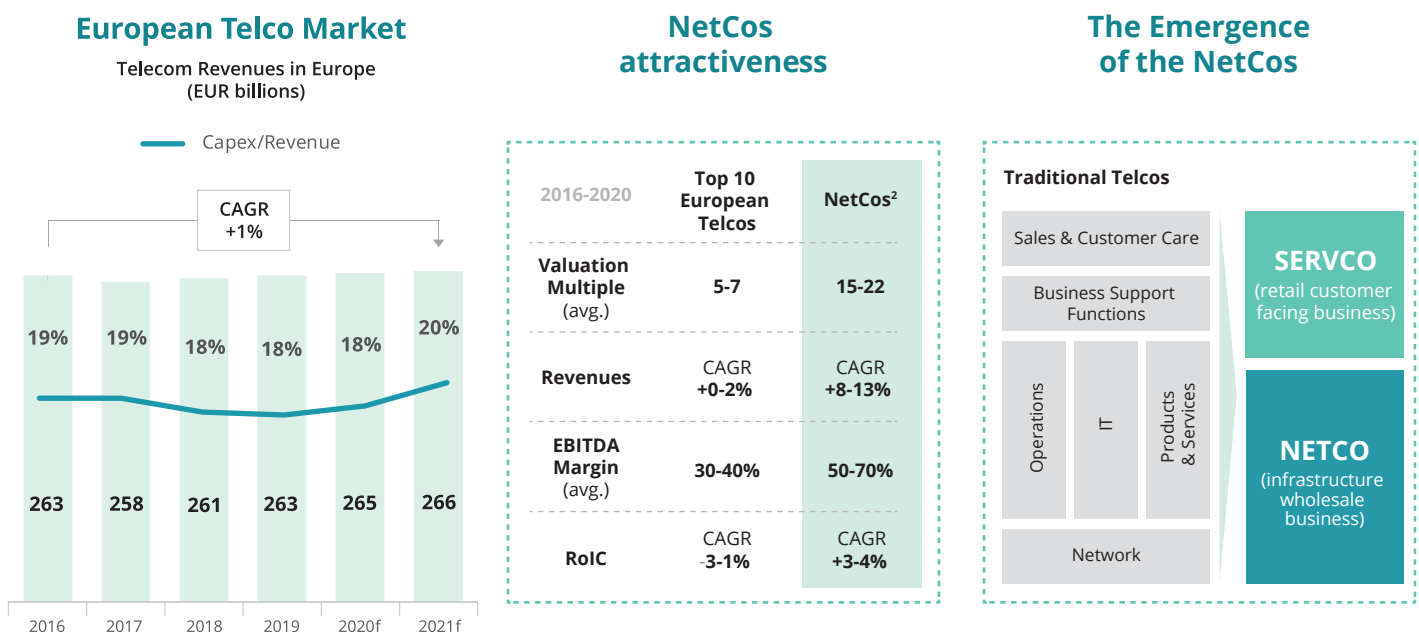
By contrast, traditional telecoms operators are technologically complex, multi-faceted businesses that face mounting competition from new entrants. In some regions, the telecoms industry has gone ex-growth. The aggregate revenue for European telcos, for example, has been slowly growing with a constant rate of about 1% for the past five years. The pressure on the top line is being exacerbated by competing cloud-based services delivered over data connections. Unlike telcos, these cloud players don't rely on highly vertically-integrated and bespoke systems stacks.

Often saddled with large debt loads and facing significant new investment requirements (e.g.: 5G and FTTH deployment), many telcos are spinning off their mobile phone masts into so-called

towercos or are selling them to specialists. For example, Vodafone floated 19% of its newly-formed towerco Vantage Towers for €2.3 billion in a recent IPO - Vantage, which runs 82,000 towers, now has a market cap of €12.1 billion. More recently, Telefónica completed the sale of over 30,000 towers in Germany, Spain and Latin America to American Tower Corp. for €6.2 billion.

In April 2021, investment bank Credit Suisse estimated there had already been €15 billion worth of tower sales in this calendar year, up from €13 billion across 2020. In the fixed telecoms sector, about €5 billion worth of assets have been sold in 2021, and Credit Suisse expects sales of fibre infrastructure to accelerate. The leading netcos are becoming major companies in their own right – American Tower, which was formed in 1995, now has 214,000 sites around the world. Its market capitalisation is half that of that of AT&T.

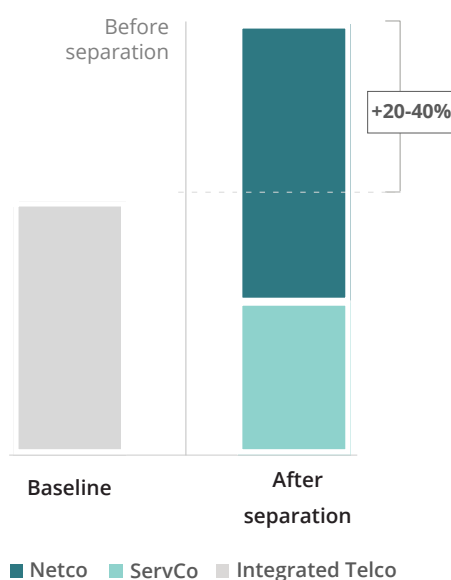
Figure 2: Some of the financial factors behind the emergence of the netcos



In most cases, these towercos are responsible for the site and the so-called passive infrastructure, such as the tower, the mast, the pole, the fencing, the power supply and security cameras. But they don't generally operate the active network components that actually carry traffic. The model is to focus on providing telcos with the low complexity assets that make up so-called passive infrastructure.

As investor interest in netcos grows, their market capitalisation and valuation multiples have been increasing. That is encouraging more telcos to separate their infrastructural assets into netcos, as the value of the resulting parts tends to be much greater than that of the original mother company. After separation, the netcos' sum of the parts' market capitalisation can increase up to 40% when compared with the original integrated company (see Figure 3).

Figure 3: Market capitalisation expected evolution: Netco and Servco versus Integrated Telco



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Context for netcos to thrive

With strong investor backing, the leading netcos are becoming more ambitious. In the U.S., which is 2-3 years more advanced than Europe in this domain, netcos are seeking to diversify their portfolio to support distributed antenna systems, small cells, edge data centres and open radio access network (RAN) systems. U.S. netcos are now enabling hyper-scalers and 'players without infrastructure', such as DISH, to provide 5G services by renting towers, fibre and edge data centre locations. One leading infrastructure investment firm, Digital Colony, recently announced a joint venture (AtlasEdge) with Liberty Global to build up a European edge data centre business.

While Europe's telecoms market is more fragmented and regulated than its U.S. counterpart, the diversification trend

is crossing the Atlantic. In a November 2020 presentation to investors, Vantage Towers said it has about €1 billion with which to acquire additional tower sites and related assets, such as small cells, Internet of Things infrastructure and edge data centres. On a continent with a plethora of local mobile operators, but an increasingly concentrated set of dedicated towercos, the latter group are well placed to invest in trans-Europe networks.

As netcos look to become more than utilities, they could become a disruptive force. If multiple netcos move up the value chain and begin to supply connectivity and computing resources, there could be a radical shift in the telecoms market. The net result is that the many servcos could become much leaner businesses, focused on sales and marketing, rather than operating a network. However, there is a line that netcos are unlikely to cross - they won't generally want to license nationwide spectrum and shoulder the associated regulatory responsibilities. At the same

time, it is in netcos' interest to make sure that servcos do become more profitable and successful in the future – the two have a completely symbiotic relationship.

Why netcos are on the rise

The context is just right for netcos to grow with multiple opportunities for telecom infrastructure densification in the next 5-10 years and the ability to stand-up new and lean organisations capable of capturing multiple growth paths in an agile way.

Growing demand for infrastructure

Demand for telecoms infrastructure continues to grow rapidly. In most countries, 5G spectrum is becoming available, enabling telcos to deploy very versatile wireless infrastructure with high capacity and ultra-low latency. GSMA forecasts that telecom operators

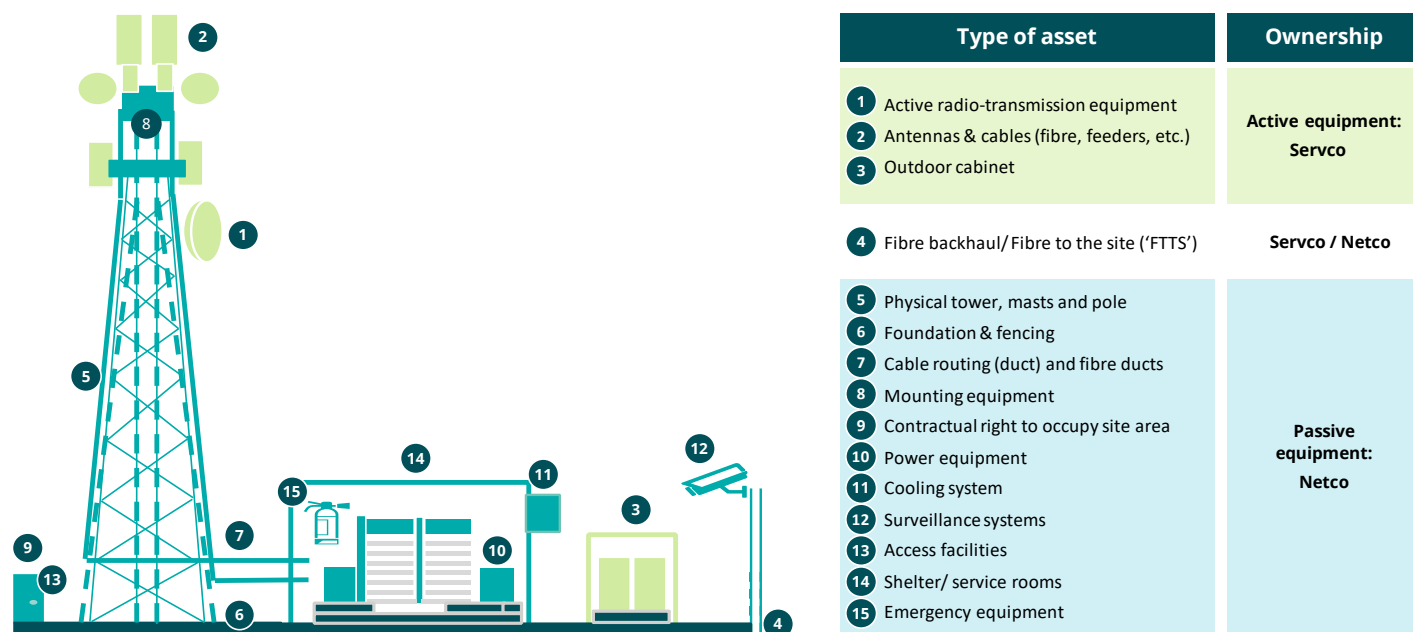
worldwide will spend 80% of sector capex on 5G networks over the next five years, reaching 45% population coverage.

In Europe, for example, fibre-to-the-home penetration is likely to double between 2020 and 2025, while mobile data traffic growth is set to increase fivefold over the same period. Despite the growth of network sharing, these trends are set to drive 4% CAGR² in the number of conventional towers and 16% CAGR in the

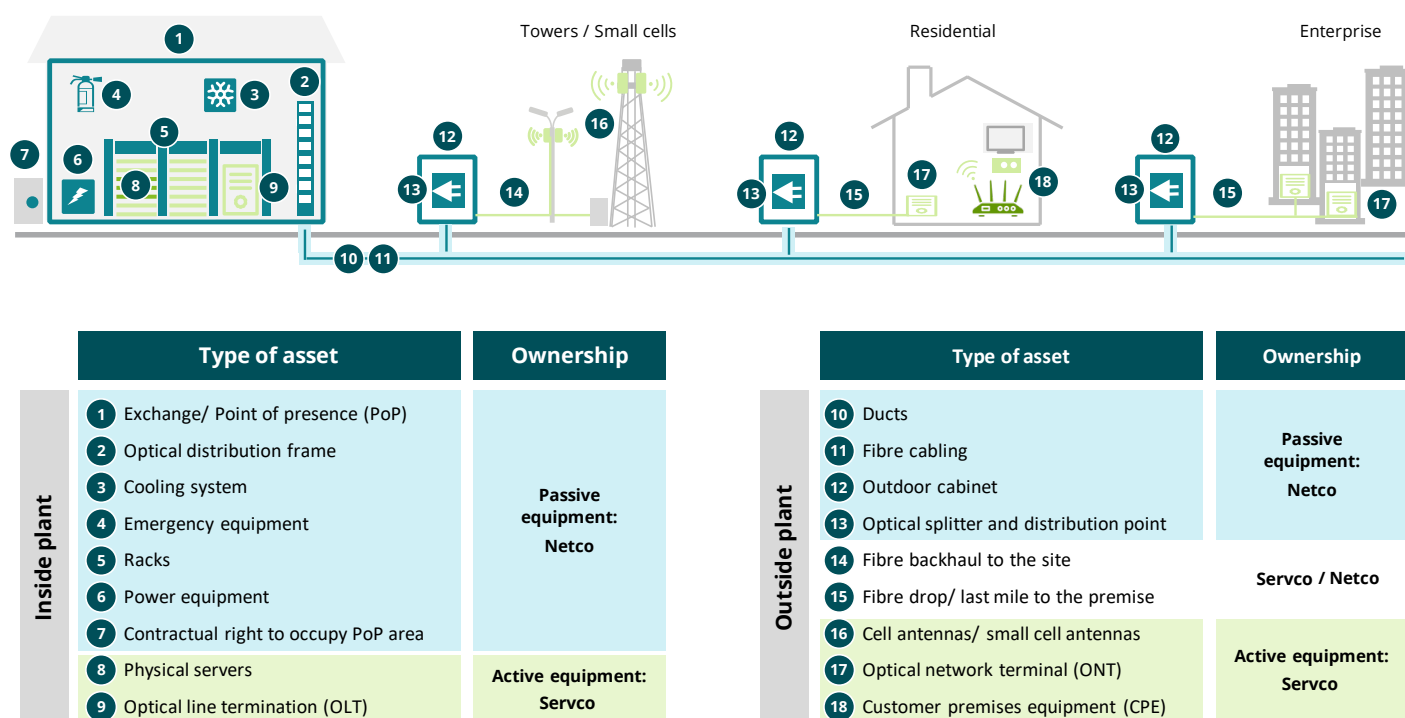
number of small cells in Europe. This will also trigger an increase in fixed and mobile infrastructure densification.

The demand for greater connectivity in the wake of the pandemic is also prompting governments to subsidise the broader deployment of high-speed broadband networks, mainly in rural/remote areas where commercial attractiveness is lower.

Figure 4: Towercos tend to run the passive infrastructure, while telcos run the active infrastructure



²Compound annual growth rate

Figure 5: Passive fixed infrastructure owned entirely by netcos

Lean and agile business

If it is run well, a netco can be a very efficient and lean business. As a wholesale business, they are relatively straightforward to manage – providing millions of consumers and small businesses with telecoms services tends to be much more complex than entering into wholesale agreements with other telcos. As they have few core processes, netcos don't need large numbers of staff and IT systems and the management team can focus on serving a relatively small number of customers really well. As a result, they can operate on simple, agile and cost-effective system stacks.

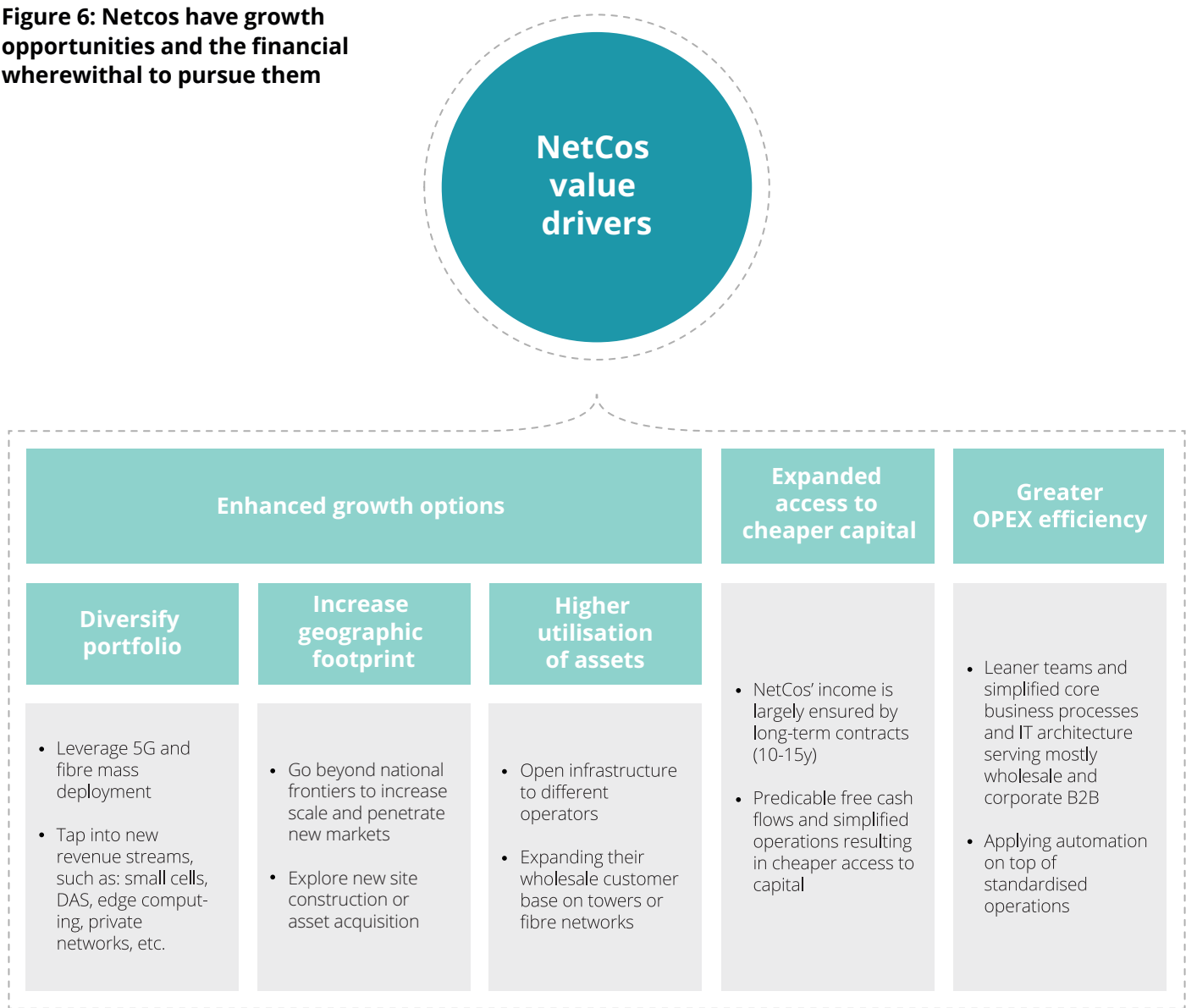
Crucially, netcos don't have to acquire spectrum and obtain licences, which means they can avoid the associated regulatory obligations, such as supporting emergency calling and providing connectivity to a specific proportion of the population. As

it is highlighted by Fitch Ratings, CETIN in Czech Republic has been gradually increasing the diversity of its wholesale customers and experienced a reduction in regulation in some areas due to its customer neutral wholesale business model.

At the same time, separation from the telco's customer-facing operations (the servco) can open up opportunities for growth (see Figure 6). As an independent operation, the netco can rent its infrastructure to more tenants, thereby generating revenue. No longer constrained by the servco's licenses, the netco can also increase its geographic footprint organically or by buying existing assets from telcos, while diversifying its infrastructure portfolio. Through acquisitions and new construction, netcos are able to build economies of scale and scope.

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Figure 6: Netcos have growth opportunities and the financial wherewithal to pursue them



As they are responsible for the provisioning and operations of underlying infrastructure components, netcos' IT layer will be focused on physical operations and management. This generally entails a network orchestration overlay solution. A netco can also provide application programming interfaces (APIs) that servcos can use to interface with its infrastructure. This kind of automated interface layer will reinforce a netco's positioning as a neutral infrastructure provider able to host multiple servcos.

How will netcos evolve?

As demand for connectivity continues to rise inexorably, investors are likely to encourage netcos to expand their infrastructure to help generate economies of scale. There will also be opportunities to innovate. **As computing power moves towards the edge of the networks, there will be a need for more infrastructure densification in the access layer, where netcos can play a leading role.** In China, Japan and South Korea, the rapid rollout of 5G has been accompanied by a marked increase in network densification as bandwidth and data volume demands rise.

Portfolio diversification

This new denser infrastructure tends to include distributed antenna systems, small cells (mounted on street furniture) and edge data centres, all of which could be provided by a netco to multiple servcos. Rather than just providing a site, the netco would deploy enabling infrastructure that a servco could use to provide a holistic solution to end-customers.

In the fixed segment, netcos are likely

to continue to build out fibre-to-the-home (FTTH) or to-the-cabinet (FTTC) for both consumers and enterprises currently constrained by copper or cable connections. Moreover, an expansion in fibre coverage will be critical to enable more 5G sites to be deployed – these sites need a high-bandwidth and reliable connection to the servco's core network.

Netcos investing in fibre to the premises may also be interested in running the network management layer. This could see them encroaching into full wholesale services – a step up from their towerco

comparators. The fixed and mobile telcos markets differ, in that the fixed-line regulatory regime facilitates large numbers of servco competitors. Therefore, even if one servco were to fail, another will quickly take on the same end customers – again requiring the service and bandwidth from the netco.

Figure 7 shows how the perimeter of some netcos is expanding. However pursuing these opportunities will need to be carefully managed not to damage their relationships with their current main clients – servcos (see next section).

Figure 7: How netcos' perimeter is evolving

“non-exhaustive”

Passive Perimeter 1.0	Passive Perimeter 2.0	Active and Passive Perimeter
Focused in lease back model where operators rented access to 'basic' tower structures (standalone or JVs) - Created to serve telecommunication providers by mainly focusing on towers infrastructure - Specialist in passive infrastructure management, including landlords - Infrastructure footprint expansion connected to the needs of the main anchor Telcos	Evolving towards a larger asset base to support 5G, IoT, fibre, private networks, edge datacentres, etc. - Core focus on mobile and fixed infrastructure, such as towers fibre and datacenters - Neutral host model (open access) for serving communication providers or ISPs - Expansion into adjacent areas: edge data centers, small cells, DAS, private networks or satellite	Move up in the value chain by integrating active equipment with existing passive infrastructure - Integration of active equipment management (e.g. radio access networks, core platforms) 'Turnkey' private networks offer for enterprise customers (including mobile edge computing) - Directly impacted by the emergence of virtualisation and new technologies as Open RAN
Example: CTIL/ Cornerstone; Helios Towers; Deutsche Funkturm	Example: Cellnex; CityFibre; Inwit; Vantage Towers; American Tower	Example: Net4Mobility; Cetin; Eurofiber

Open networks opportunity

Meanwhile, new open standards, virtualisation and cloud-based platforms are making it easier to disaggregate network hardware and software components, paving the way for netcos to deploy active infrastructure, such as antennas and radio transmission equipment, that can be used by multiple servcos - what is referred as a neutral host model.

This disaggregated infrastructure tends to be more cost-effective and flexible than that used by traditional telecom operators. Proponents claim that open greenfield RAN systems require 40% less capex and 30% less opex than a conventional radio access network, while a virtualized radio site can

be deployed in as little as 10 minutes. As they acquire expertise, netcos could play a leading role in open RAN deployment, particularly to support private networks covering campuses, venues and other facilities. Vodafone has estimated that Europe could have as many as one million private cellular networks by 2030.

Consolidation and expansion

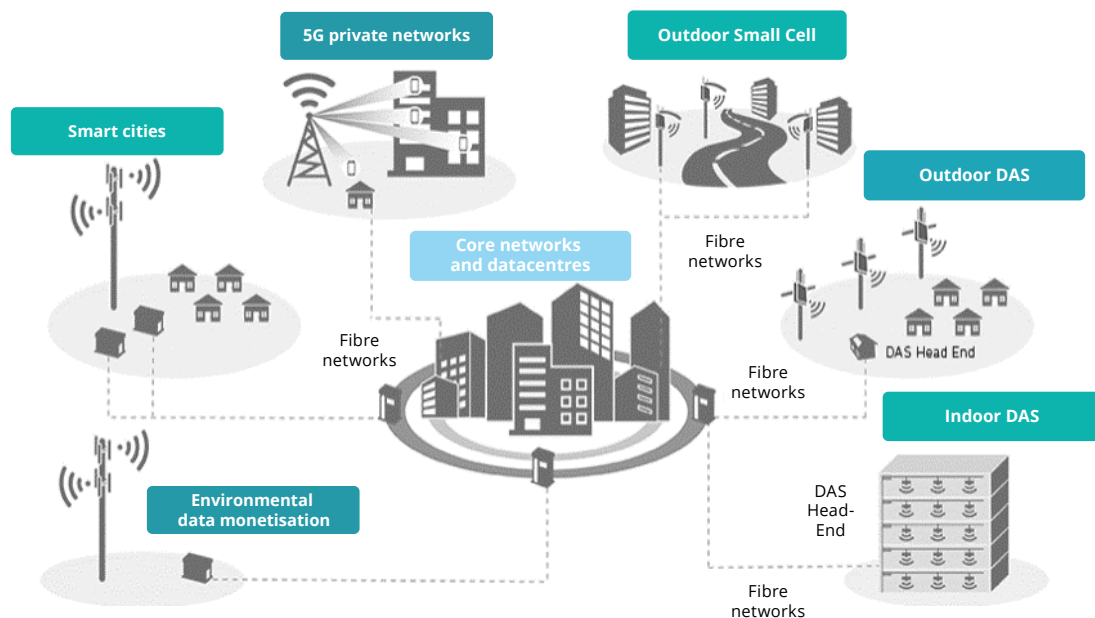
In the decade to 2030, a handful of major netco players are likely to consolidate most of European telecoms infrastructure, mirroring events in the U.S. As they pursue economies of scale, these netcos will continue to push for network sharing among servcos to increase tenancy ratios

and asset footprint rationalisation.

As American Tower has done, the largest netcos are likely to expand into markets beyond Europe and the U.S., acquiring assets in Africa, Latin America and South East Asia. The latter could be a key market for netcos to diversify their geographic footprint, given the region's growing population and income, together with its appetite for advanced technology.

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Figure 8: Significant opportunities for netco portfolio expansion



As well as expanding into adjacent business segments, such as edge computing, private enterprise networks and localised distributed antenna systems, netcos could also use their physical assets to venture

into other markets, such as electric vehicle and drone charging, outdoor advertising, environmental data monetisation and even warehousing/cold storage. In each case, the business model would be to provide the

underlying infrastructure on a wholesale basis, while earning as much revenue as possible from each site.

Netcos will be ecosystem players

As netcos are spun out of traditional telcos, they will need to re-invent their culture and become more agile. As separate entities, netcos may increasingly look to drive technological experimentation and innovation to reduce costs. This would see them engaging with a broader set of players in the telecoms ecosystem, which can be as large as their ambition to explore new partnerships and deploy new solutions.

Managing a broader ecosystem

Rather than trying to innovate in-house or in a partnership with a single vendor,

netcos are likely to participate in the ecosystems emerging around the Open RAN movement and other initiatives to modularise and democratise telecoms infrastructure. Building on the success some telcos have already achieved in this

domain, netcos could help these innovation ecosystems to flourish further. Large enterprises are potentially a major target segment for this kind of innovation as their need for improved connectivity services grows exponentially.

Figure 9: Netcos are one more player in the telecommunications ecosystem



The complex landscape of vendors of legacy and new IT and network architectures can make it difficult for traditional telcos to co-operate with competitors. But netcos should find

co-operation with peers (who aren't generally direct competitors) easier to manage and more straightforward to implement. Indeed, **collaboration with external players could open up new**

revenue streams for netcos and their innovation partners, if they can become orchestrators or system integrators for private networks or Open RAN deployments.

Engaging with hyperscalers

An integral part of the broader connectivity ecosystem, hyperscalers (such as Amazon Web Services, Google Cloud and Microsoft Azure) will also provide a valuable piece of the overall puzzle - as more and more

of network functions become software enabled, they can also be virtualised and run in the cloud.

As they expand their public cloud offerings, hyperscalers are also pushing the telecoms industry to increase its network footprint. For example, AWS is working with Verizon in the U.S. and Vodafone in Europe to deploy edge computing locations that

can support low latency connectivity for demanding applications. Such a development could see multiple ecosystem players interlinking among each other, with netcos deploying the underlying infrastructure, servco providing the connectivity, hyperscalers offering their cloud services and a system integrator running the whole IT integration.

What is the future for servcos?

As they expand and the cost of network components falls, netcos may be tempted to equip their sites with active components. However, any major push into active infrastructure by the netcos would have major implications for servcos. There is a danger they could be relegated to the role of a mobile virtual network operator, reliant on another company to provide the connectivity that is at the core of their customer proposition.

Lighter and agile servcos

As network engineering capabilities and active equipment are core for their service differentiation, most servcos are likely to resist any push by netcos into active infrastructure by lobbying regulators. The regulatory framework will differ market by market, but there is a case for maintaining competition between servcos in the infrastructure layer. Indeed, many regulators will be wary of allowing a single netco to gain too much leverage.

In any case, servcos' primary concern will be creating and maintaining a close relationship with the end customer, especially by further exploring the B2B segment leveraging on new 5G capabilities (e.g.: slicing or ultralow latency). To that end, the servco will naturally own the IT

application layers and need to evolve their NetOps to DevSecOps, as the focus moves from infrastructure/ hardware to software/applications. Servcos will also need a robust organisational structure to provide all the required IT, commercial and customer care services, whilst trying to minimise the effort of their field operations (installations, repairs and maintenance).

Still, servcos' future strategy is less clear than that of netcos. To grow the top line, servcos will need to become better at monetising their customer relationships. If they can get closer to their customers and forge partnerships with other service providers, they could yet expand their revenue models beyond connectivity, mainly in B2B. Indeed, the separation of the network infrastructure could help servcos to simplify their business, be more innovative and raise the required cash to explore new opportunities.

In any case, their ongoing ownership of spectrum licences may be enough to ensure that servcos aren't commoditised in the wireless sector. The finite nature of spectrum naturally limits competition in wireless markets, particularly in countries where there is relatively little licence-exempt spectrum available.

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B2B opportunity and further disruptions

Netcos are highly unlikely to acquire their own spectrum licenses and compete directly with their own customers (the servcos). However, some netcos may help enterprises with their own spectrum to deploy their own private networks. As many servcos are not yet exploring the full

potential of the B2B market, netcos may use open RAN technologies to provide dedicated connectivity to factories, campuses, ports, airports and other major facilities.

On the B2B opportunity, TM forum disclosed a survey conducted to telecom operators where respondents said they are currently generating 10-20% of their revenue from B2B services, which they expect to increase for over 50% of total revenue in the long term (5-10 years), mainly empowered by 5G capabilities.

However, it is also quite possible that servcos, particularly in the mobile sector, will restructure again. Such a move could result in a wholesale network management layer that serves many suppliers, both local and global, as well as the own-branded servco. Such a split would likely happen in tandem with the development of netcos with both mobile and fixed line infrastructure, providing a one-stop-shop through which hyperscalers can connect to end customers anywhere and everywhere.

Conclusions

The search for a win-win separation

Netcos have significant scope for growth in their core market. But there is clearly a risk that these players will disrupt adjacent sectors. A confluence of financial and technological factors could lead to a perfect storm, in which multiple players – servcos, netcos and hyperscalers – end up competing over the same turf.

A line must, of course, be drawn between netcos and servcos that allows for both groups of companies to differentiate themselves and pursue growth opportunities. Ideally, netcos and servcos will form alliances to harness new technologies, such as Open RAN and private 5G networks, in ways that ensure both groups benefit, and that their natural symbiosis flourishes.

Netcos and servcos need to be invested in each other and work as a partnership to be mutually successful. They also need to work closely with hyperscalers, which are increasingly critical players in this market.

Netcos should focus on maintaining, upgrading and diversifying the network infrastructure, expanding coverage and building faster and more resilient networks. To that end, they will need to adopt new technologies and innovate by partnering with larger vendor ecosystems.

On the other hand, servcos should focus on the customer facing and applications layer, aiming to get close to consumers and business customers. They too will need to invest in innovation to differentiate their services, which will be supported by the

netcos' infrastructure and technology. Through partnerships with specialists (e.g. content providers, application developers), servcos can develop broad "over-the-top" and Internet of Things propositions that are independent of the network infrastructure.

Underpinned by this commercial logic and financial imperatives, telecom infrastructure carve-outs are likely to continue in Europe and elsewhere. As the new netcos consolidate over time, they could become all-embracing digital infrastructure providers. Armed with an array of physical assets that can be harnessed by a wide range of service providers, they will reinvent what it means to be a telco – or perhaps the term 'telco' will go the same way as the rotary dial telephone.

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