



The Global CEO Advisory Firm

# Taking it Private:

## The opportunities and challenges of 5G private & semi-private networks

Telecoms operators possess a combination of network management experience and trusted expertise across key regulatory domains, positioning them to benefit from the new opportunities being opened by 5G across hybrid public and private networks. In this paper, Teneo explores the implications for the competitive environment, and how operators can leverage their unique position to win the future

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# New 5G opportunities

The advent of 5G is creating many new applications for both consumers and organisations. In particular, the enhanced capabilities of private and semi-private networks open up exciting possibilities for businesses and governments

## 5G and the new world of possibilities

The emergence of 5G brings major enhancements in terms of speed, density, latency and flexibility. With these come new capabilities – Ultra Low Latency Connectivity (uRLLC), Enhanced Mobile Broadband (eMBB) and Massive Machine-Type Communications (mMTC) – and exciting new use cases.

From applications with broad appeal (e.g. Fixed Wireless Access), to high-value, vertical-specific solutions (e.g. Smart Powerplants), 5G will enable telcos to further empower customers with new connectivity-enabled solutions.

Many of these new use-cases will host commercially sensitive data, and be deployed across geographically confined, virtual private networks.

As such, companies will be seeking partners to support them, an area where telecoms operators have a significant advantage compared to other technology players. They combine the ability to seamlessly bring together 5G WAN and the virtualisation of private/campus networks (including for applications that extend beyond the factory/hospital boundary), with relevant policy expertise across privacy and network security. This unique position means telcos should be able to both win business as a trusted intermediary, while also playing a proactive role in helping policymakers adapt cybersecurity, critical infrastructure and privacy rules for electronic communications in a way that supports these B2B use cases.

## Key 5g Network Enhancements



### Speed

10-100x data rates compared to 4G



### Density

Connect up to 1m devices/km<sup>2</sup>, 10-100x more than 4G



### Latency

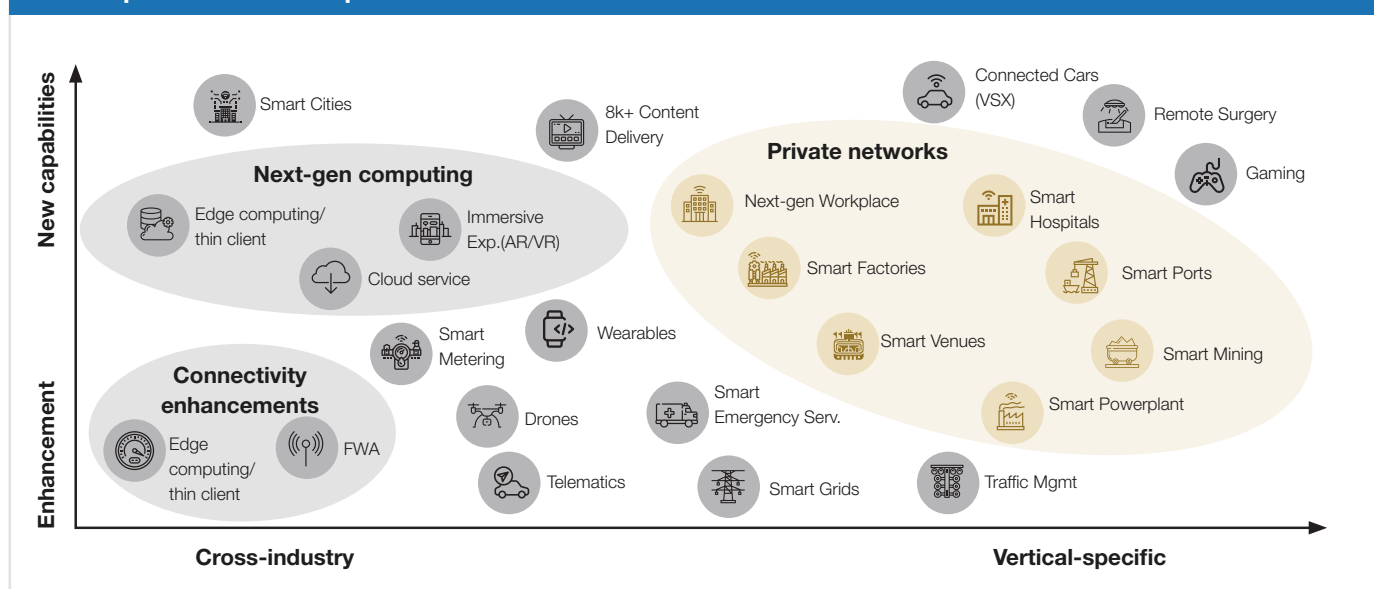
1ms latency & real-time connectivity



### Flexibility

Multiple application-aware networks on the same infrastructure

## 5G and private and semi-private networks use cases



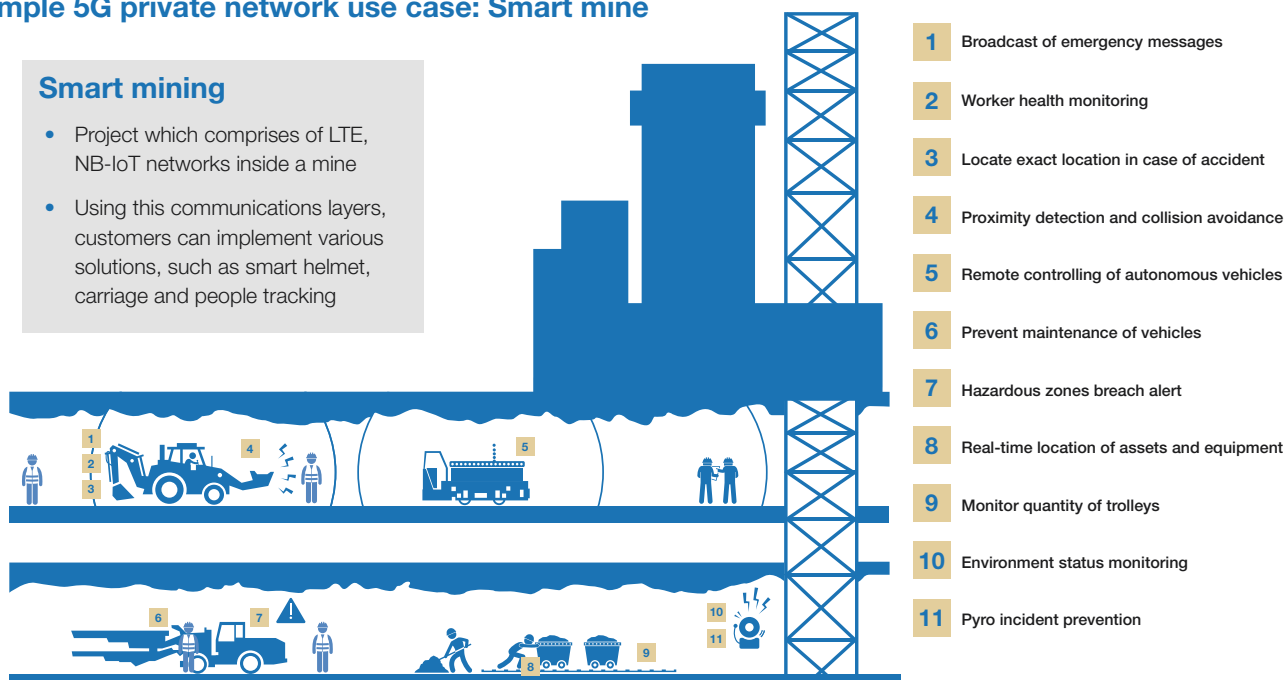
## Private networks customer matrix

Businesses typically require localized, secure and scalable networks to run applications and host data. Existing wireless technologies for this come with several shortcomings – including insufficient range, high power usage and throughput limitations – and are typically costly to build and manage. 5G brings the ability to deploy dynamic, application-aware infrastructure, opening up a set of industries ready to benefit from customized deployments.

### Example private network customers

	Hubs & Ports		Industry		Offices & campuses		Venues	
Core network requirement	Speed	Flexibility	Speed	Flexibility	Speed	Flexibility	Speed	Flexibility
	Density	Latency	Density	Latency	Density	Latency	Density	Latency
Description	<ul style="list-style-type: none"> <li>High connection densities to connect arrays of sensors and devices, often outdoors</li> <li>Examples include shipping ports and logistics hubs</li> </ul>		<ul style="list-style-type: none"> <li>Vast arrays of IoT devices (e.g. sensors, switches, and machinery) to drive ultra-precise automation, predominantly indoors</li> <li>Examples include mines, factories, O&amp;G facilities and power plants</li> </ul>		<ul style="list-style-type: none"> <li>High-speed network access and real-time data feeds for thousands of mobile users and other IoT applications</li> <li>Examples include MNC offices and university campuses</li> </ul>		<ul style="list-style-type: none"> <li>Multiple UHD video streaming devices and other activities with high bandwidth with ultra low latency requirements</li> <li>Examples include stadiums and concert venues</li> </ul>	

### Example 5G private network use case: Smart mine





# 5G hybrid networks: opportunities and challenges

Private and semi-private networks present a series of potential new opportunities and revenue streams for telcos. However, the ecosystems which will emerge present a new set of competitive challenges

## 5G networking – players, products, observations and challenges



# How to play in the private / semi-private network arena

Telcos need to target their investments, create new commercial partnerships, and reassess their existing operating models to maximise their ability to win the future 5G private network battle

## 5G private networks: How can telcos respond?



### Invest in targeted proposition development

Resource and funding constraints mean telcos cannot possibly support multiple 5G use cases from day one. To do so risks creating a suite of sub-scale, low-quality offers. Instead, they must **identify the key opportunities in their markets, and funnel investment into developing targeted, market-leading solutions** where they can achieve scale



### Develop a vertically aligned go-to-market strategy

The wide array of 5G private network use cases require different characteristics and high levels of customization to serve businesses individual needs. Therefore, telcos will **need industry-specific expertise. This will likely require them to restructure their B2B sales function into a set of vertically aligned teams**, each focused on serving a key customer segment.



### Develop new propositions alongside key customers

Telcos cannot rely on a 'build it and they will come' mentality, especially for the new applications enabled by 5G. Instead, they should **partner with key customers to develop proof-of-concept solutions. These can then be productized and deployed at scale**, while ensuring development investment goes towards services with proven market appeal



### Foster an open ecosystem of commercial partners

The breadth of capabilities required to offer many 5G services is complicated diverse, with most telcos poorly equipped to cover the whole value chain. Instead, they should **build an ecosystem of commercial partners** with whom they can work on complex deployments. This will require identifying **the best partners and forming strong, long-standing relationships** with them



### Broaden their approach to spectrum usage

Telecom operators should **explore the appropriate mix of fixed and wireless connectivity**, whether based on exclusively licensed, shared or unlicensed spectrum, that best fits the needs of their B2B customers, and **use their expertise in network architecture** to ensure that the **infrastructure deployed meets all expectations** from a service quality, sustainability and resilience perspective



### Explore alternative financing models

With ongoing margin pressures and incessant demand for network capex, telcos do not have an unlimited ability to finance investments in private and semi-private networks. Instead, telcos should **look beyond their own pockets** and consider **new financing models**, both with customers and members of their partnership ecosystem

# About Teneo

Teneo is the global CEO advisory firm, providing strategic counsel to CEOs and senior executives across their full range of key objectives and issues

Teneo has deep expertise and experience within the telecoms sector. Our work covers organisational transformation, operational improvement, market analysis, strategy development, and investor relations

## Management Consulting

Advisory focussed on strategic decision-making and business plan implementation, to help companies fully realise their business goals through recovery

### Management Consulting

### Strategy & Communications Advisory

## Strategy & Communications Advisory

Advisory focussed on managing reputation and protection and enhancing shareholder value during recovery

## Risk Advisory

Advisory focussed on helping corporations anticipate and mitigate risks associated with the pandemic as businesses transition from response to recovery

### Risk Advisory

### Capital Advisory

## Capital Advisory

Leading global independent investment bank that provides innovative, unconflicted strategic advice to US-based businesses

### CEO Advisory; Telecoms Expertise

## Getting in touch:

If you would like to talk about any of the content of this publication, please feel free to reach out to us at the contact details shown above. We would be delighted to arrange a call with you to discuss how some of the specific actions detailed might be relevant to your organisation.

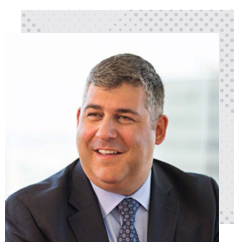


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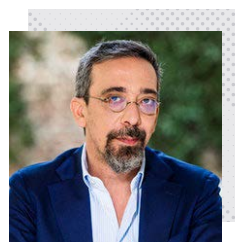


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