



Executive Summary

Private Networks for Warehousing and Distribution

Connecting assets and people.
Delivering transformation.



Putting Private Networks to work

Increasing safety, boosting security and accelerating digital transformation.

With digital transformation and ever-smarter operations promising new levels of efficiency, business performance and competitive advantage, the need for guaranteed connectivity across your sites is critical.

While it's the applications that ultimately deliver the business value – the automated processes, remote control operations and smart sensor data feeding advanced analytics engines – it's the communications infrastructure that enables operational continuity and underpins your success.

To drive this transformation, the right coverage and capacity is required to ensure round-the-clock real-time connectivity. Cellnex UK's resilient and built-for-purpose 4G and 5G Private Networks deliver your use cases by connecting your applications, assets and people.

As one of the largest telecommunications providers in Europe, and a market leader for Private Network deployment, Cellnex offers an assured, end-to-end solution.



Why Private Networks?

The scale and complexity of many of today's warehousing and logistics facilities means that conventional public network and WiFi options struggle to meet connectivity needs.

Many are in semi-rural or remote areas where public mobile coverage is limited, while those in urban locations are forced to compete for bandwidth with many thousands of consumers and business users.

WiFi networks offer an alternative. However, these are less secure, less able to support seamless mobility of connected devices, and can often be prone to interference or contention problems caused by other systems using the same radio frequencies. Added to which, deploying WiFi networks at scale requires extensive cabling and device infrastructure that can be costly to install and difficult to maintain.

In contrast, a purpose-built, dedicated 4G or 5G private network – designed and optimised for the specific requirements of your assets, equipment and people – overcomes the coverage, capacity and contention limitations common to both public mobile and WiFi networks.

In short, a Private Network will deliver the low latency, high bandwidth connectivity that today's logistics applications need.





Key features of a Private Network in warehousing and distribution

Purpose-built 4G/5G network
delivering the coverage and capacity
you need, where you need it

Enables automation, AI and robotics
to increase efficiency, streamline
operations and reduce cost

Guaranteed, always-on connectivity
eliminates service outages and
assures continuity of operations

**Delivers the ability to track and
monitor assets** and employees to
increase site and worker safety

**Secure, private spectrum restricts
access** from outside and delivers
data protection and compliance
as standard

**Managed by a single, experienced
partner** to cut through the complexity,
deliver a bespoke solution and
eliminate investment risk

Seven business critical applications

Private networks enable a vast range of performance-enhancing applications and use cases across the sector by guaranteeing connectivity. Typical use cases in warehousing and distribution include:

- 1 Operational continuity.** Deliver guaranteed, always-on connectivity to production, inventory and distribution management systems.
- 2 Data analytics.** Monitor operations in real-time and utilise smart sensor data – increasingly in combination with artificial intelligence and machine learning – to adapt operations in real-time.
- 3 Video surveillance and geolocation.** To secure sites and show the location of workers. 'Wrong place' alerts can be sent to keep people away from dangerous operations.
- 4 Tracking moving assets.** Leverage autonomous vehicle technology and software guidance systems to provide 360° situational awareness of mobile assets.
- 5 Automation.** Monitor independently operating robots to streamline processes and remove the need for manual handling.
- 6 Predictive maintenance.** Assure operational continuity through assisted and proactive maintenance.
- 7 Environmental monitoring.** Use sensor data to identify the presence/leakage of contaminants such as chemicals, gases and flammable liquids, and trigger alerts.

A collaborative approach to partnership

Against a background of growing competitive threats, increasing regulatory compliance and the need to streamline operations and reduce costs, logistics organisations are investing in Private Networks to ensure operational continuity through a new generation of digital services and applications.

Cellnex specialists will work with you to build your Private Networks business case based on your specific operating environments, locations and use cases – and offer flexible commercial solutions to suit your financial model.



Our experienced team will work with you to understand your business objectives, conduct detailed site surveys then deliver back a Private Network blueprint tailored to your specific sites and use cases – considering both coverage and capacity needs.

As a technology-neutral provider, we partner with appropriate third-party equipment and applications providers to deliver a complete lifecycle of services to drive continuity of operations and maximum business value.





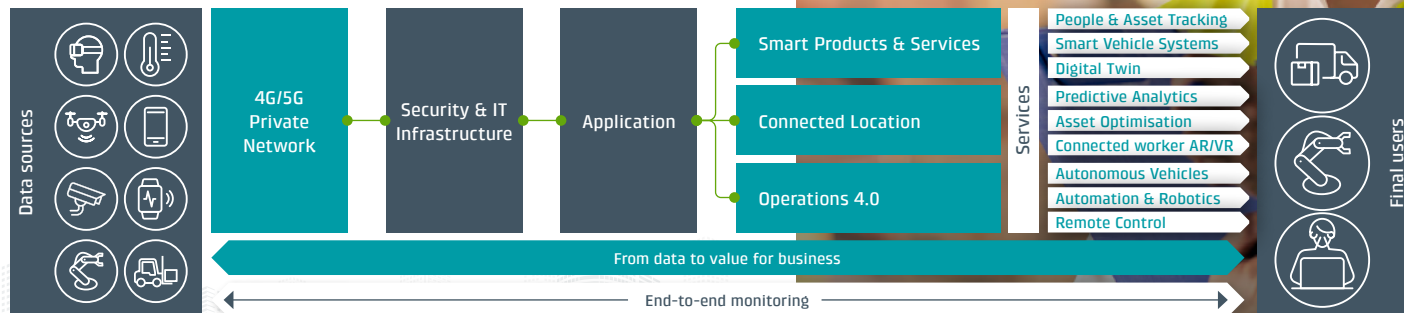
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Collaborating to achieve the desired outcomes

From project design and engineering, through coverage and capacity planning to operational monitoring and ongoing performance optimisation, we're with you all the way.

The criticality of continuous operations

Of the 82 percent of manufacturing companies that have experienced unplanned downtime over the past three years, outages lasted an average of four hours and cost an average of \$2 million.¹



¹ <https://www.machinemetrics.com/blog/the-real-cost-of-downtime-in-manufacturing> (May 2018)



Business impact of automation

Incorporating technologies such as robotics or IoT into the digitisation of production lines can significantly impact bottom line performance. While the metrics vary based on the specific operating environment, commonly seen returns include:

Logistics costs

▼ 10-20%

Manufacturing costs

▼ 10-20%

Inventory costs

▼ 30-50%

Complexity costs

▼ 60-70%

Maintenance costs

▼ 10-20%

The technologies driving this impact must be supported by dedicated communications networks, with guaranteed bandwidths to enable digitisation throughout the value chain. To explore the business value of a more connected environment, get in touch with our Private Networks specialists at PrivateNetworks@cellnextelecom.co.uk

No one knows Private Networks better

Together with market-leading provider Edzcom, a wholly owned subsidiary of Cellnex, we have deployed more Private Networks in more places than anyone else – supporting the mission-critical operations of major industrial customers across Europe.

As a UK Critical National Infrastructure Provider and one of Europe's leading telecommunication companies with annual revenues of more than €1.5Bn, and drawing on our extensive 5G, public safety and smart city expertise, you can count on us to be with you for the long term.

1995

Mission critical Private Network deployed in Catalonia for public safety and emergency services

2007

Private Network delivered for the Barcelona underground's train operating company

2018

4G Private Networks deployed in Finland for Boliden Mining and Port of Oulu

2020

Edzcom became a wholly owned subsidiary of Cellnex

2020

5G Private Network deployed at BASF's chemical plant in Tarragona, Spain

2021

Cellnex UK secured an agreement to deploy a 5G Private Network at Bristol Port



For more information,
contact our specialist team at:

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www.cellnextelecom.co.uk