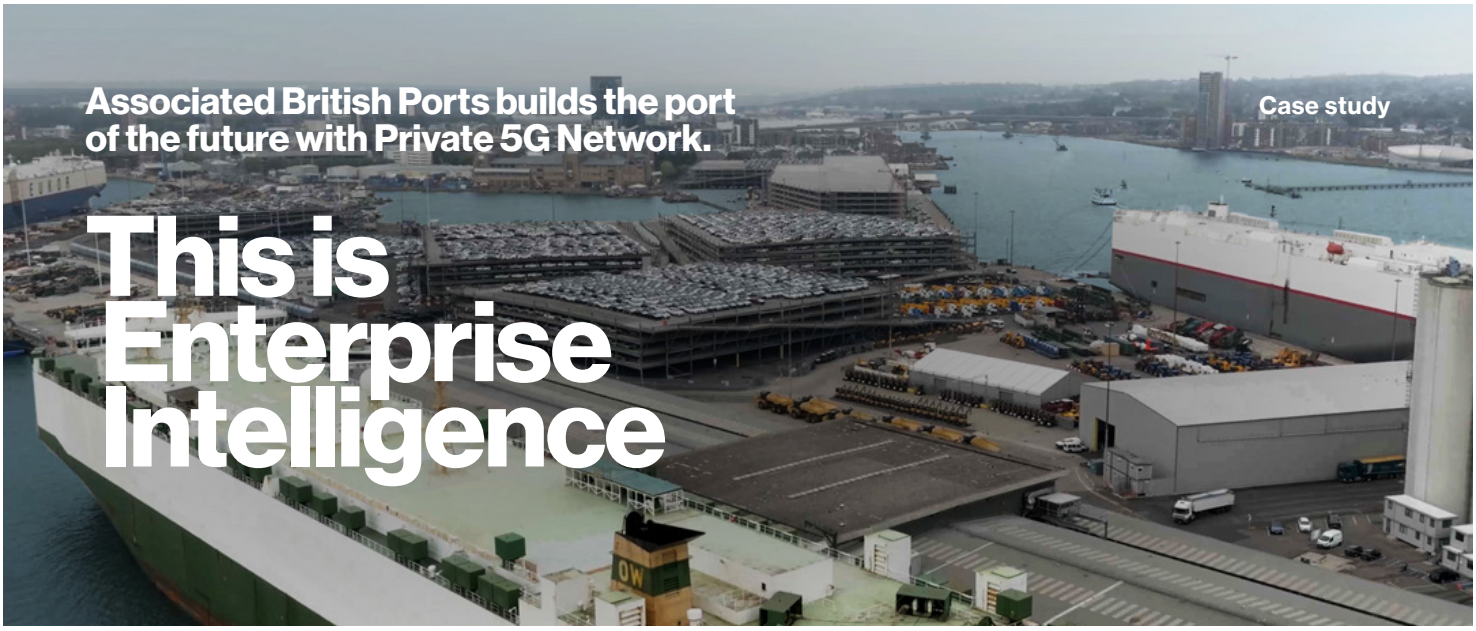


Associated British Ports builds the port of the future with Private 5G Network.

Case study

This is Enterprise Intelligence

The pressure on ports—and all links in the supply chain—is possibly higher than it's ever been. As a mixed-use port handling a huge volume of commercial, industrial and passenger traffic, the U.K.'s Port of Southampton faced these challenges. Port operator Associated British Ports (ABP) knew its current ways of working and public 4G connectivity wouldn't help it overcome future challenges.

ABP needed to streamline processes, get a consistent view of operations and enable new technology. In short, it was looking to move toward the faster, smarter decision-making we call Enterprise Intelligence. And it started with a private 5G solution.

Port of Southampton by the numbers:

Nearly 600 K vehicles per year

1.2 M+ cruise-ship passengers per year

U.K.'s #1 automotive export port in 2014

£40 B in exports in 2014

Overcoming connectivity challenges

The Port of Southampton covers hundreds of acres, including berths for cargo ships and a terminal for cruise ships. Across this vast area, there was only a little off-and-on public 4G coverage.

This meant loss of data. One of Southampton's large uses is the import of automobiles. Stevedores drive new imports off the ships and into large parking decks for temporary storage. Ideally, staff used handheld devices to scan each car and track its arrival and parking location. But without consistent connectivity, staff had to log key pieces of information manually. That led to big inefficiencies, including valuable port real estate not being used optimally.

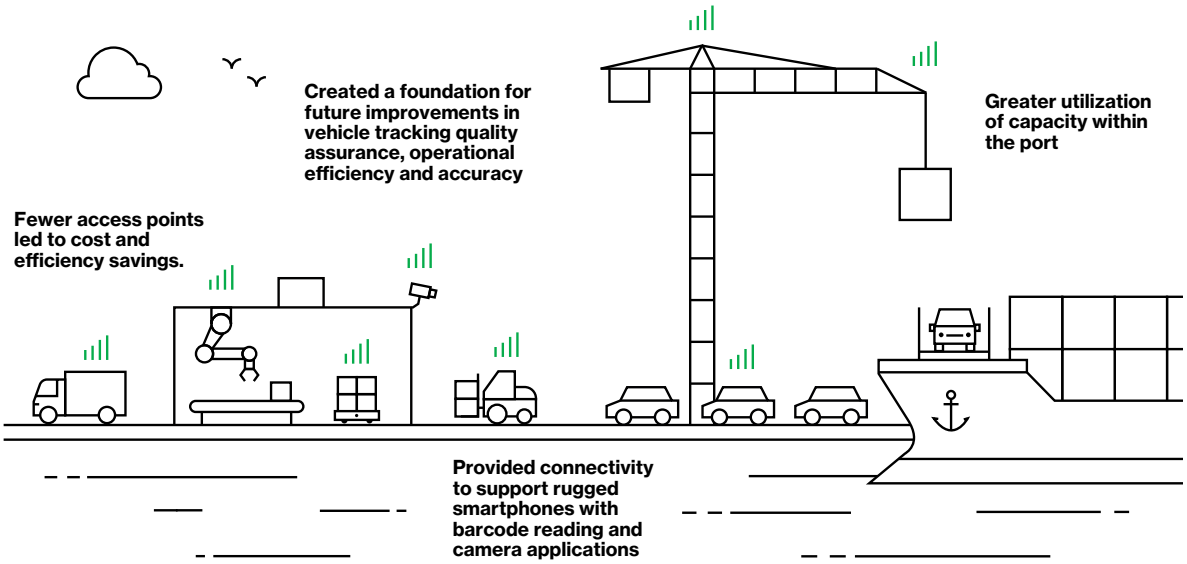
Like most industries, the port industry's biggest challenge is to capture, process and analyze large quantities of data quickly and securely.

ABP was facing another challenge as well. Ports around the world have been under increasing pressure to evolve their services and to overcome the issues facing the rest of the supply chain by becoming more efficient. Putting new technology to work would be the only way to become as agile and innovative as ABP knew it needed to be. It just needed a foundation to do that.

Leveraging a Private 5G Network for strategic goals

Southampton plays a critical role in the U.K. economy, contributing £40 billion in British exports every year. This made it the ideal location to start the 5G journey. ABP saw the deployment of a Private 5G Network as a strategic opportunity that could provide operational improvements and the potential to offer new services to its customers.

verizon business



With near real-time data collection capabilities, ABP wanted to share information from drones, cameras, sensors and other devices. Near real-time data collection could also help power innovative predictive analysis technologies such as artificial intelligence and machine learning that could pinpoint where goods were offloaded or delivered and enhance customer services.

ABP reached out to Verizon because of our longstanding strategic approach to connectivity in the U.S. and deep knowledge and experience with 5G networks.

"Seeing Verizon's approach to their connectivity strategy and wanting to broaden their exposure into the U.K. and Europe made them a perfect partner for a Private 5G Network."

—Luke Stamp, Information Technology Business Partner, ABP

The solution was Verizon's Private 5G Network. Verizon added eight access points covering between 200 and 230 acres at the port.

"The implementation with Verizon was excellent from start to finish, from the management of the program to the actual physical infrastructure. There was very minimal disruption to any of the operations across the whole of the port," said Luke Stamp, Information Technology Business Partner for ABP.

Scott Sier, the port authority's Head of Technology and Digital Experience added, "We were delighted with the implementation of our Private 5G Network in Southampton; from contracts to production use in under six months was a real feat of engineering and a great example of teamwork and velocity."

"The Verizon team were instrumental in not only allowing us to conceptualize the idea of our Private 5G Network, but also in the planning, the solution, the design and the application for spectrum in the U.K."

—Scott Sier, Head of Technology and Digital Experience, ABP

Connectivity where it's needed

ABP has been thrilled with the coverage the new network provides.

Verizon's Private 5G Network has allowed ABP to mitigate latency. The port authority has consolidated parts of its network and the way it gathers communications for employees and customers, which also enhances security.

"The network delivers low latency, which really helps us to give better service, better reliability and more consistency to our customers."

—Beatriz Moore, Head of IT Strategy & Architecture at ABP

The new network has enabled fast data exchange and near real-time analytics, allowing ABP to update customs with real-time information, whether it's loading or discharging a vehicle or releasing it to the end customer.

More efficient connectivity also has boosted morale—employees no longer fear drops in service that would force them to resort to writing operational notes on paper.

With the superior coverage provided by Private 5G Network, ABP can keep track of where every vehicle is, allowing the port authority to move cars off ships, into parking and out to buyers far more efficiently.

A foundation for the future

The advanced capabilities of a Private 5G Network, specifically its reliability, throughput, security and low latency, can help ABP enable new technologies. One innovation ABP is potentially looking at in the future is using computer-vision cameras to capture raw video data and then use artificial intelligence applications to make recommendations. Computer vision could constantly view port storage areas and report on inventory that has been sitting too long, or let managers know where space is available.

Computer vision could also improve safety around the port. The port's service roads are not designed for pedestrians or cyclists, but that doesn't always stop people from using them. Computer vision could spot these instances and alert port staff, who could redirect pedestrians or cyclists away from dangerous freight traffic and heavy equipment.

A key aspect of testing computer vision using 5G is the ability to trial the cameras in different positions. This can be done more easily without reliance on a wired network.

"The Port of Southampton is Britain's gateway to the world, and [a] Private 5G [Network] can enable us to become the port of the future, supporting reliable sharing of information across all the devices that will be connected at our ports, starting with sensors, people, machinery and other types of equipment in a very reliable and secure way."

—Beatriz Moore, Head of IT Strategy & Architecture, ABP

Two ports in one

Consistent, port-wide connectivity can allow ABP to build a digital twin of the port in the future. This digital model could provide a virtual testing ground for new ideas—for example, developing autonomous shipping trials and enabling artificial intelligence and machine learning to help make decisions. That can remove much risk and allow for rapid testing of different configurations, making future improvements faster and less expensive.

"Historically, it would have taken us months or even years to deliver infrastructure to some of the further locations within our port," said Sier. "Now we can do that within a day, and that's agility that we've never had before."

More than a private network

Verizon Private 5G Network is giving ABP and the Port of Southampton more than just a private 5G network. It's a foundation for future innovation that can enable better insights and greater efficiency far into the future. That is Enterprise Intelligence.

Learn more:
verizon.com/enterpriseintelligence

verizon business

ABP utilizes a Private 5G Network in the U.K., where customers are responsible for procuring wireless spectrum. A Private 5G Network is available in select areas outside the U.S. and prequalification is required. Terms apply. Network details & coverage maps at vzw.com. CS5220922