

The essential foundation of smart ports

By [Vino Govender](#)

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Modern ports are transforming and digitalising, but high-speed connectivity remains the backbone of any attempt to create a genuinely smart port.



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As digitisation drives a wave of technological innovation and integration, so an increasing number of industries and businesses are seeking to transform themselves into enterprises that are more data and insights driven. The port industry is no exception.

A modern port no longer only undertakes the traditional load and discharge, storage, and transfer functions, but is now becoming the catalyst for the development of the surrounding region's economy, trade, and finance. Furthermore, the port has now become a key node of the modern logistics chain and thus has transformed into a focal point for the flow of commodities, capital, technology, and information.

“ Being part of both the larger transport and logistics supply chains and, in itself, being a cluster of companies and businesses active in these sectors, the modern port is in a unique position to fully leverage the efficiencies generated by digital technologies. ”

Ports can apply technology to address specific challenges in the areas of asset management and utilisation as well as operations uptime. Technology can also enable more effective levels of collaboration between port management, suppliers, and customers, which can lead to improved efficiencies in capacity planning and service delivery.

Security

The critical areas of security can also be improved through IP-based security devices and access-control systems, which are integrated via security platforms to the broader security ecosystem, including border control, private security, and the police services.

The use of high-definition camera monitoring and biometric-based identity- and access-management systems provides tighter control and visibility on access and movement patterns within the port. In addition to this, the implementations of wireless networks that can be backhauled by fibre are extremely useful in respect of asset tracking and vehicle monitoring.

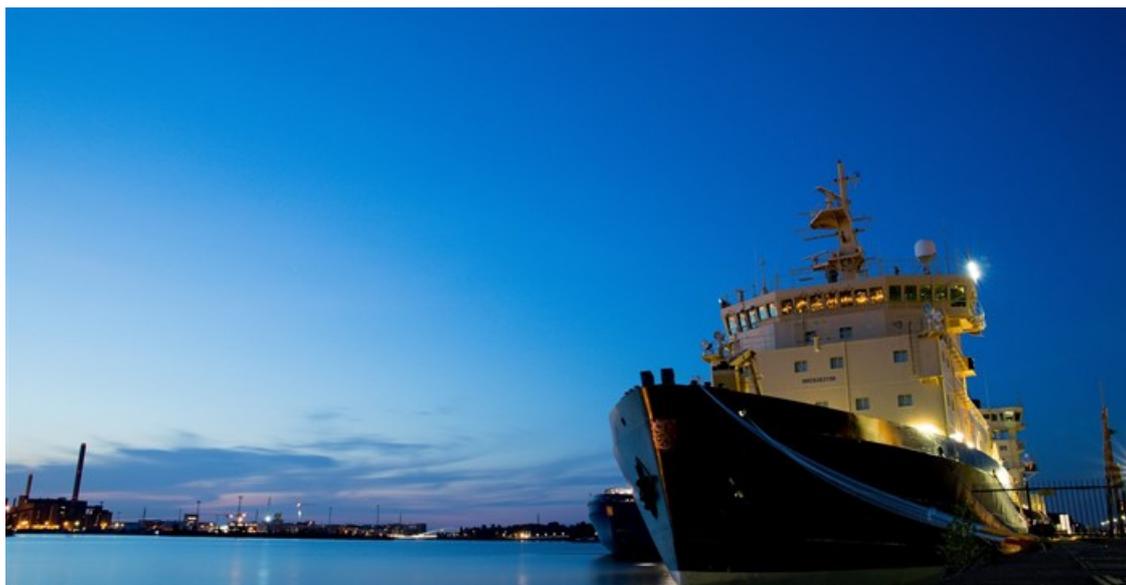


Photo by Dorian Mongel on Unsplash

Of course, the most critical requirement for any port seeking to transform itself from merely a node in the goods journey to one that serves as an integrated logistics supplier is a backbone of high-speed broadband connectivity.

The essential foundation

High-speed connectivity is the essential foundation for the transmission of any and all information related to port operations. It is necessary for stakeholders who need access to systems as it enables access to common cloud-based business applications for port administration.

There is no doubt that a strategic shift is taking place in respect of these facilities, where size is no longer the primary focus, but rather efficiency and effectiveness of operations.

“ In the near future, it will no longer be the largest port that gets all the business, but rather the smartest one. ”

The advantages of a backbone of high-speed connectivity, backed by the relevant IT systems, are multiple. Such an implementation can enable these new ‘digital ports’ to:

- Improve cargo handling efficiency, as well as collection and distribution capabilities
- Support the kind of reliable and uninterrupted IT services required for 24/7 operations
- Play a vital role in connecting the port to the rest of the region it supports, enabling it to truly integrate its logistics chain
- Provide a massive boost to the operation management system, thereby assisting with increasing load and discharge and yarding efficiency, improving overall port performance, and reducing operating costs

- Deliver the backbone for a high-definition, real-time CCTV monitoring system that significantly boosts the safety and security of the port, helping to protect it against both criminal and terrorist intent
- Deliver business collaboration services for terminal, shipper, consignee, forwarder, shipping line, customs, and other shipping stakeholders, boost the overall performance of the maritime logistics chain, and assist the port in providing more efficient and quality services to its customers and suppliers.

IoT

With a high-speed connectivity backbone in place, ports will also be positioned to undertake the next phase of digitalisation, where new services either replace or augment traditional port operations. The most notable of these will be the connection of everything of relevance within the port to the internet of things (IoT).

IoT technologies are already being applied in diverse settings – from last-mile transport optimisation to warehouse- and transport-management systems. IoT is equally useful in terms of the logistics value chain, assisting management to understand more clearly not only what has been delivered and to where but also when it left and when it arrives at its destination.

The combination of IoT, smart data solutions and high-speed connectivity will enable ports of the future to identify and take advantage of new business models within the larger ecosystem. It will also create opportunities for new, non-traditional parties - such as technology companies and developers - to create applications and solutions for stakeholders targeted at improving performance or enhancing the business of the port itself.

Looking at this, there is no doubt that a backbone of high-speed connectivity, allied to a vision that fully capitalises on the application of digital technologies, including the IoT, data- and insights-driven processes and business applications and IP-based communications and collaboration services, will be the driving force that creates the world's first true smart ports.

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