THE TURNING POINT FOR SMART PORTS

Wolfgang Lehmacher, Head of Supply Chain and Transport Industries, World Economic Forum, Geneva, Switzerland

Turning profits by turning digital. This could be the mantra for tomorrow's ports. Across the world, ports have engaged in numerous projects deemed to drive the industry to higher levels. The automation behind the loading and unloading of ships, as well as moving cargo and containers in, through and out of the ports, benefits from paperless customs clearance, traffic information to drivers, connecting refrigerated containers to the internet, and securing gates and yards with cameras equipped with facial recognition capabilities.

Robotic process automation, advanced analytics, the Internet of Things (IoT) and artificial intelligence (AI) are on the list of digital tools that are driving our intelligent global supply chains towards a smart tomorrow and unlock the US$17 billion optimization potential in container shipping. 'Smart', however, does not only mean efficiency, but also responsibility, sustainability and transparency.

THE SMART PORT

Data is the oil of the digital economy that powers trade, logistics, shipping and ports, but smart ports also require a digitized ecosystem in order to flourish.

For the shipping industry to capitalize on digitization, it needs to move from the very limited and largely siloed automation of terminals, to comprehensive technological advancements that foster clean, paperless, connected, intelligent and finally smart supply chains. Only then can a port consider itself 'smart'.

The modern smart port also needs to conceptualize itself as part of a greater chain. Today's consumers wish to know the 'where, how and who' with regard to the making of products. The massive public protests sparked in April 2018 by the arrest of the two black men at a Starbucks in Philadelphia, who refused to buy coffee while waiting for a friend, shows the potential repercussions of unethical corporate behaviour.

Smart ports can also help companies to protect their brand value. For instance, the maritime industry can play an important role in stopping illicit trade through collaboration and technology. Immutable distributed ledgers are a good place to start as the technology makes it hard to trade goods that lack an identity registered on the chain. Only those concepts, which consistently cater for the needs of all stakeholders, directly or indirectly concerned, will scale.

Collaboration is also essential to a modern smart port. The digital transformation requires more parties than ports alone. It is the shipping industry as a whole and the entirety of players along the chain that have to progress towards common goals. Those failing to move from manual and polluting, to automated and clean, to electronic and paperless, to connected and collaborative, and to intelligent and smart, will fall behind.

DATA POWERED PORTS

Digitization of processes is the ground for new growth. Ports can provide digital services to a range of business, including shipping lines, beneficial cargo owners (BCOs) and in-port businesses. Services could include real-time visibility of shipments and track and trace capabilities, booking of available slots, the scheduling of appointments, as well as payments and processing of invoices.

This is what APM Terminals offers on their new online platform launched mid-2018 at Khalifa Bin Salman Port (KBSP) in Bahrain to give customers more control over their supply chain.

The real power of data lies in its exchange. The Port of Rotterdam and the Port of Hamburg have entered into a data partnership for this reason. Both ports have started to share port call data to optimize calls of liners in the North Europe area; although being competitors, the two ports connected their systems. Maersk Line initiated the project to improve the running of its vessels between the two ports.

CONNECTIVITY FOR VALUE
Creating value through data exchange requires information to flow. In high need are communication networks, seamlessly connected sensors and intelligent devices under performant and trusted digital architectures. International shared and commonly accepted protocols are urgently needed to ensure interoperability between the different solutions and impartial providers would facilitate the broader acceptance of the platforms.

After Maersk and IBM announced a collaboration to use blockchain technology to transform global supply chains on March 5, 2017, distributed ledger technology tests have been flourishing. PSA International, Pacific International Lines, and the Port of Antwerp have all carried out blockchain experiments and pilots.

INTELLIGENCE: THE NEW CRYSTAL BALL
Tracking fixed and mobile assets is not enough; avoiding delays and additional costs often requires anticipating disruptions. Many factors can influence and disrupt the smart port supply chain, starting with a sudden failure of an automated terminal or vessel, a storm, or a labour dispute. When containers don't show up or appear in much higher quantities than expected, port operations and shipping lines struggle to keep their promises as well as costs at low levels. Knowing the expected volumes early on, and at a specific day at a certain time, can ease life for the benefit of all. This is where AI will help to predict the future.

Flex – which counts Apple, Microsoft and Ford Motor as customers – has pioneered software that generates real-time alerts of supply-chain disruptions throughout its 14,000-strong network of global suppliers. The AI-based system helps predict actual and potential challenges, such as supplier delays, peaks, congestion, strikes, earthquakes or tsunamis, and allows the relevant teams to make informed decisions to keep inventory moving and consumers happy. This could be a model for ports and the natural proliferation of their data initiatives.

CYBER RESILIENCE
In many large enterprises, building cyber resilience has moved from the responsibility of information technology (IT) departments to risk management teams that report directly to the board. Conjointly with law enforcement agencies, companies are in the process of setting up cross-industry resilience networks. The International Maritime Organization (IMO), the Baltic and International Maritime Council (BIMCO), Maritime and Coastguard Agency (MCA), United States Coast Guard (USCG), Recognised Organisations (ROs) and many other industry stakeholders have issued guidance and best practices to address the dark side of the digital economy and society. However, ports and the shipping industries need to collaborate with partners across the entire economy to quickly and efficiently ramp up their cyber protection and pre-emption competencies.

CONCLUSION
By becoming smart, ports have the chance to remain the vital node in the world of global commerce. Smart ports move goods more consistently through automation, more fluidly through capturing, analyzing, using, and exchanging operational and big data, more transparently through connecting fixed and mobile assets, and more efficiently through data availability, algorithms and computing power.

These advancements are the foundations for a broad range of digital services that ports can offer to parties along the global supply chain – APM Terminals' 'Lift' portal marks the beginning of this new era.

Ports are ideally positioned as future service centers for the global supply chain. A digitally-connected network of ports would even be more performant and appealing.

Ports can make themselves compatible to Jack Ma's Electronic World Trade Platform (eWTP) vision of efficient digital free-trade zones where small and medium-sized enterprises (SMEs) can plug into global trade via e-commerce.

eWTPs are zones with simple and straightforward regulations, and lower barriers for entry into markets. They provide SMEs with easy access to financing. Why should eWTPs only be located at airports, like in Malaysia or Liège in Belgium? They could also be the perfect fit for seaports.

Hence, ports have room for redefining their position in the global value chain. Once again, in its long history of continuous contribution to world progress, trade and prosperity, ports and the shipping industry have reached an important turning point for change.

ABOUT THE AUTHOR
Wolfgang Lehmacher is an author, global chief executive, advisor, entrepreneur, and expert in the field of global supply chains, transport and logistics. Lehmacher has been involved in various major change initiatives in the supply chain industry. He has been President and CEO of GeoPost Intercontinental and Director: Supply Chain and Transport Industries at the World Economic Forum.

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