KYX: TRANSPARENCY, TRUST AND EFFICIENCY FOR THE GLOBAL SUPPLY CHAIN OF TOMORROW

✓ Container Safety Verified

✓ Approved for Green Lane

**"THIS NEW KYX OFFERING AIMS TO MEET SUPPLY CHAIN TRANSPARENCY, COMPLIANCE AS WELL AS SUSTAINABILITY DEMANDS."**

Werner Fontanive, Fellow at the Center for the Edge, Deloitte, and **Stefan Kalmund**, CEO, Nexxiot

The global supply chain, a dynamic web connecting the farthest reaches of the world, orchestrates the movement of goods with precision and efficiency. Within this complex environment, international ports serve as gateways and nerve centres through which the ecosystem is orchestrated, thereby ensuring the seamless flow of commerce across borders. European ports are facing significant challenges that are affecting their efficiency and competitiveness, similar to ports around the world. These challenges include:

1. **Infrastructure:** Many European ports are facing infrastructure challenges, including outdated facilities, insufficient capacity, inefficiencies and hence underleveraging the actual capacity they have available, and inadequate connections to other transportation modes. This leads to congestion, delays, and increased costs for shippers.
2. **Environmental regulations:** Notably European ports are subject to strict environmental regulations, which can increase costs and limit the types of cargo that can be handled. For example, ports may need to invest in new equipment or technologies to reduce emissions or comply with waste disposal regulations.
3. **Competition:** European ports increasingly face competition from other ports around the world, particularly in Asia and the Middle East. These ports may have lower costs, more modern facilities, and better connections to other modes of transportation,
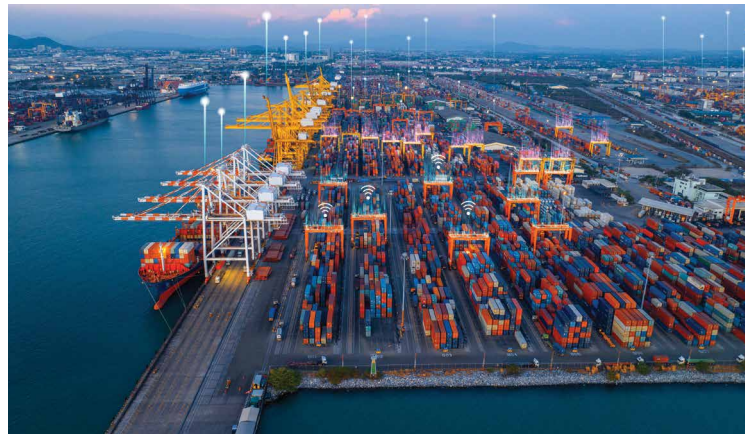
making them more attractive transit hubs to shippers.
4. **Security:** European ports must comply with strict security regulations to prevent terrorism, illicit trade, contraband, trafficking, and other threats. This can increase costs and lead to delays for shippers, particularly if cargo needs to be inspected or screened and this is done in a sub-optimally organised manner.
5. **Digitalisation:** European ports are increasingly adopting digital technologies to improve efficiency and competitiveness and they still rely heavily on human-based processes. However, this requires significant investment in new technologies and infrastructure, as well as training and development for staff.

All together, these challenges require significant investment in new infrastructure, technologies, real-time data-driven insights, training,

and more to ensure that European ports can continue to meet the contemporary needs of the global supply chain and remain successful in an increasingly competitive market.

Over recent years, one could witness the emergence of a broad range of initiatives and stand-alone solutions. For these to be truly successful and reach their full potential, at Deloitte we are convinced that a high level of integration into a wider and broadly adopted ecosystem is quintessential. To date, a positive trend in this direction can be recognised; with several European ports leading the way by having launched several initiatives to address these challenges.

To carry this further, optimise investments and be cost-efficient, Deloitte has devised an overarching and agnostic industry approach, allowing it to extrapolate existing and proven market capabilities into one common service model, called the "Deloitte KYX offering". Combining Deloitte's Know Your Client (known

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"THE IMPLEMENTATION OF THE KYX SOLUTION, EVEN IN A PARTIAL MANNER, CAN EFFECTIVELY LOWER THE RISK OF FRAUDULENT ACTIVITIES AND ENHANCE SECURITY MEASURES IN PORTS."

as KYC) concept and expertise with its views on knowing your cargo, the KYX concept brings new and broadly adaptable data-driven services, utilities, and platforms into the market – combining with existing services where applicable.

As a starting point for exploring and further designing the KYX offering, amongst others, Deloitte is currently teaming with the companies Nexxiot and Pairpoint. By combining Deloitte's Know Your Customer (KYC) capabilities with Nexxiot's insights around Asset Intelligence Devices and Pairpoint's knowledge on EoT technology and data verification capabilities, a best practice standard is being established with the ambition to allow each party in the logistics chain to gain real-time insights; which in their turn will open the door for a myriad of relevant use-cases such as around enhanced data provenance, cargo transparency, improved operations, increasing

regulatory compliance, and others. This new KYX offering aims to meet supply chain transparency, compliance as well as sustainability demands. It is designed as an open standard and open platform, to ensure broad future development and deployment as well as strong market penetration and acceptance.

KYX involves collecting, verifying and making available information about the cargo being transported, including its provenance, destination, contents, status, location, exporter, importer, Ultimate Beneficial Owner (UBO) and many more information elements. This information is then used by stakeholders in the ecosystem to ensure that the cargo complies with all relevant regulations and standards, for example.

To feed KYX, Asset Intelligence devices can be used to oversee the payment-goods transport cycle. These devices provide complete traceability of all movements,

changes and handling of the asset across its entire journey. They have the capability of pinpointing delays in the supply chain to certain parties and locations, as well as confirming that transhipments were made at approved or official transhipment stations, such as free ports. Additionally, they can substantiate that the cargo did not unexpectedly and suspiciously stop somewhere along the route, where it could have been contaminated or exfiltrated.

As an additional feature, these devices can ensure that containers and the assets they contain are always sealed during the journey, except on approved occasions. As such, KYX also involves meeting inspection and screening of cargo requirements. Cargo must be inspected and screened to ensure that it complies with relevant regulations and standards. This includes checking for prohibited items, such as drugs and weapons, and ensuring that the cargo is

consistently, fully labelled and packaged.

Meeting the aforementioned container security and tracking requirements necessitates the use of smart technology, such as GPS tracking and RFID tags, to monitor the location and condition of the container.

One specific use case for the solution is the efficient processing of goods in ports and the clearance from customs on the on- and off-boarding, within the framework of so-called green lane objectives. The KYX solution can help ports speed up the clearance process for goods, reduce waiting times and improve the overall efficiency of the port, including cargo inspections. By using smart connected sensors, KYX provides real-time data on the location and condition of cargo, allowing port authorities to quickly identify any issues and take the appropriate action.

The implementation of the KYX solution, even in a partial manner, can effectively lower the risk of fraudulent activities and enhance security measures in ports. It also leads to more efficient interventions and operations. By verifying the provenance of data on the movement, content and status of cargo, KYX can ensure that only legitimate goods are cleared for entry into the port. This helps to prevent the entry of counterfeit goods and other illegal items, making it less dependent on the intervention of stakeholders and thereby also improving the overall safety and security of port workers and the wider hinterland community.

KYX is designed to support the needs of customs and other regulatory authorities in European ports whilst at the same time bringing benefits to global supply chain efficiency and transparency for all other stakeholders involved, including port authorities and operators themselves. These ports have specific requirements for cargo entering and leaving their facilities, and these requirements must be met to ensure that the cargo is transported safely and efficiently.
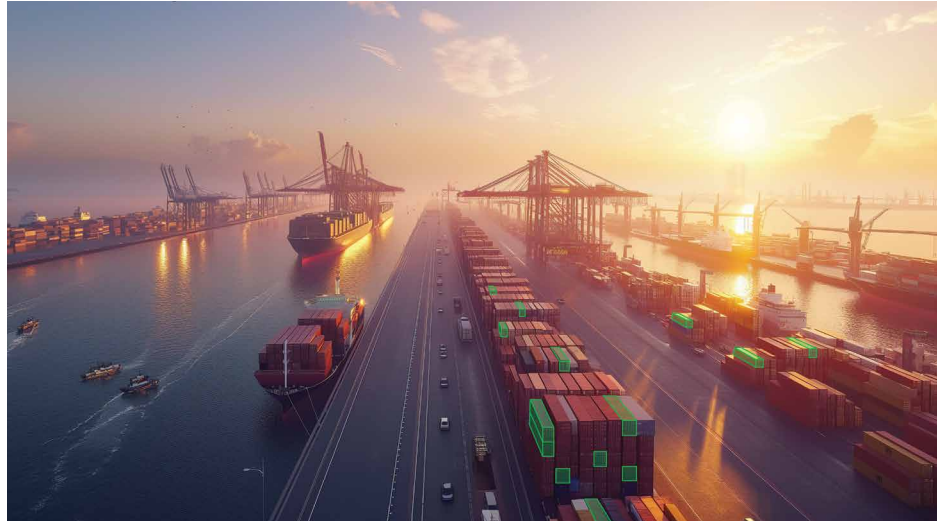
ABOUT THE AUTHORS:
Werner Fontanive is a Deloitte Fellow at the Center for the Edge identifying and exploring opportunities on the edge of business and technology. As a transformation partner, he engages company leaders, unlocks innovation potential and drives growth.

Stefan Kalmund is the CEO of Nexxiot. Passionate about technology, growth and making a positive impact on how cargo is shipped, Stefan captures global megatrends and constantly searches for ways to deliver unparalleled insights to clients.

ABOUT THE COMPANIES:
At the Deloitte Center for the Edge, we connect edges to accelerate impact. We partner with senior executives to make sense of and profit from emerging opportunities on the edge of business and technology. We help leaders understand the fundamental changes shaping the world, navigate the short-term challenges and identify long-term opportunities.

Nexxiot is digitalising freight transportation with technology that now oversees the world's most extensive network of connected shipping containers and railcars. Clients gain access to unparalleled real-time data, which streamlines fleet management and automates logistics processes. Our devices, built for resilience, withstand extreme conditions and provide long-term, detailed insights into events affecting containers and railcars, including impacts, delays, security incidents and loading activities.

"KYX IS DESIGNED TO SUPPORT THE NEEDS OF CUSTOMS AND OTHER REGULATORY AUTHORITIES IN EUROPEAN PORTS WHILST AT THE SAME TIME BRINGING BENEFITS TO GLOBAL SUPPLY CHAIN EFFICIENCY AND TRANSPARENCY FOR ALL OTHER STAKEHOLDERS INVOLVED."