



TRANSFORMING
TRANSPORT

MOBILITY MEETS BIG DATA



NEWSLETTER

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TODAY'S PORTS ARE BEING
TRANSFORMED INTO TOMORROW'S
INTELLIGENT LOGISTICS HUBS

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The logistics sector, along with mobility and transport, will see significant improvements over the next years. One of the key drivers behind these changes is the rise of Big Data analytics, which will have a major impact on how ports operate.

Under the EU's Horizon 2020 Framework Programme, the EU-funded TransformingTransport project represents one of the key projects in this direction. The project is enhancing the role of ports as intelligent logistics hubs that adapt continuously to support multimodal supply chains. In parallel, supported by smart interconnected devices, the Internet of Things (IoT) has led to exponential growth in the

information available that can be fruitfully analysed within the port sector. All this is leading to a transformation of port operation and logistics processes.

Against this backdrop, Transforming-Transport is exploring and validating the technical and economic viability of using Big Data in the ports domain. It is working on exploiting Big Data to reshape port processes and services to radically boost operational efficiency, create a better experience for all involved, and promote new business models that use data as a valuable resource.

To achieve this goal, two European ports are testing how Big Data technologies could improve operations. An initial pilot

Ports are already generating a huge amount of data, both historical and in real-time, from a variety of port information systems.



▲ Overview of a container terminal ©Shutterstock

is currently being deployed in Spain's Port of Valencia, which is known for its high container traffic. The pilot is led by four notable organisations in the field, namely Instituto Tecnológico de Informática (ITI), Valenciaport foundation, Noatum Terminal Ports and Órbita Ingeniería. The initial results will be replicated in Duisport (Duisburg, Germany), the world's largest inland port, by project partners paluno, Software AG and Duisburger Hagen Hafen AG.

Both ports are already generating a huge amount of data, both historical and in real-time, from a variety of port information systems. While the datasets are currently being analysed in isolation, combining them is expected to lead to invaluable information that can be exploited by transport carriers, terminal operators, legal entities and others involved in the port ecosystem. In this vein, the two pilots are assessing the huge potential of merging, processing and accessing data for different stakeholders as they require it. This will lead to three main positive results:

- Improving performance and productivity of container handling services. This is achieved through better traffic management, scheduling and allocation systems based on estimated arrival times for vessels, trains and trucks, as well as factors such as weather and traffic flows.
- Increasing the longevity of equipment and reducing maintenance costs by introducing a predictive maintenance approach to the yard equipment (cranes, spreader, trucks, etc.) supported by big data.
- Improving yard utilisation and maximising labour and equipment usage based on a new web-based cockpit for better decision-making, including a predictive decision support system that considers all the historical data available for each terminal operator.



▲ Maintenance of cranes



▲ Crane operations at Duisport © duisport/Frank Reinhold

The models and tools developed in the TransformingTransport project will enhance current port processes and raise the awareness of the potential benefits of Big Data for ports. Lessons learned, new models and better software solutions will be exploited in other port-oriented environments, continuing to introduce Big Data technologies even after the project is completed.



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TransformingTransport - Big Data Value
in Mobility and Logistics Group



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This project is part of
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