

# Smart Ports & Port Optimisation

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British Ports Association



# The British Ports Association



## Who are we?

- The British Ports Association represents 350+ ports, terminals and port facilities across the whole of the United Kingdom
- We also represent ~100 associate members
- UK: second largest port sector in Europe, handling 95% of UK trade
- UK ports are independent, diverse and competitive
- Ports in the UK each operate under very different models of ownership, integration: circumstances different, so solutions to environmental challenges often need to be bespoke

# The UK Ports Industry

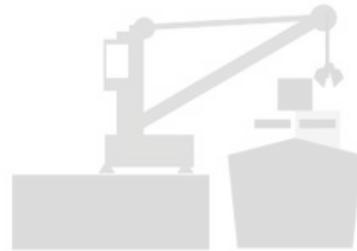
UK ports are independent, diverse and competitive

452 Statutory Harbour Authorities in the UK

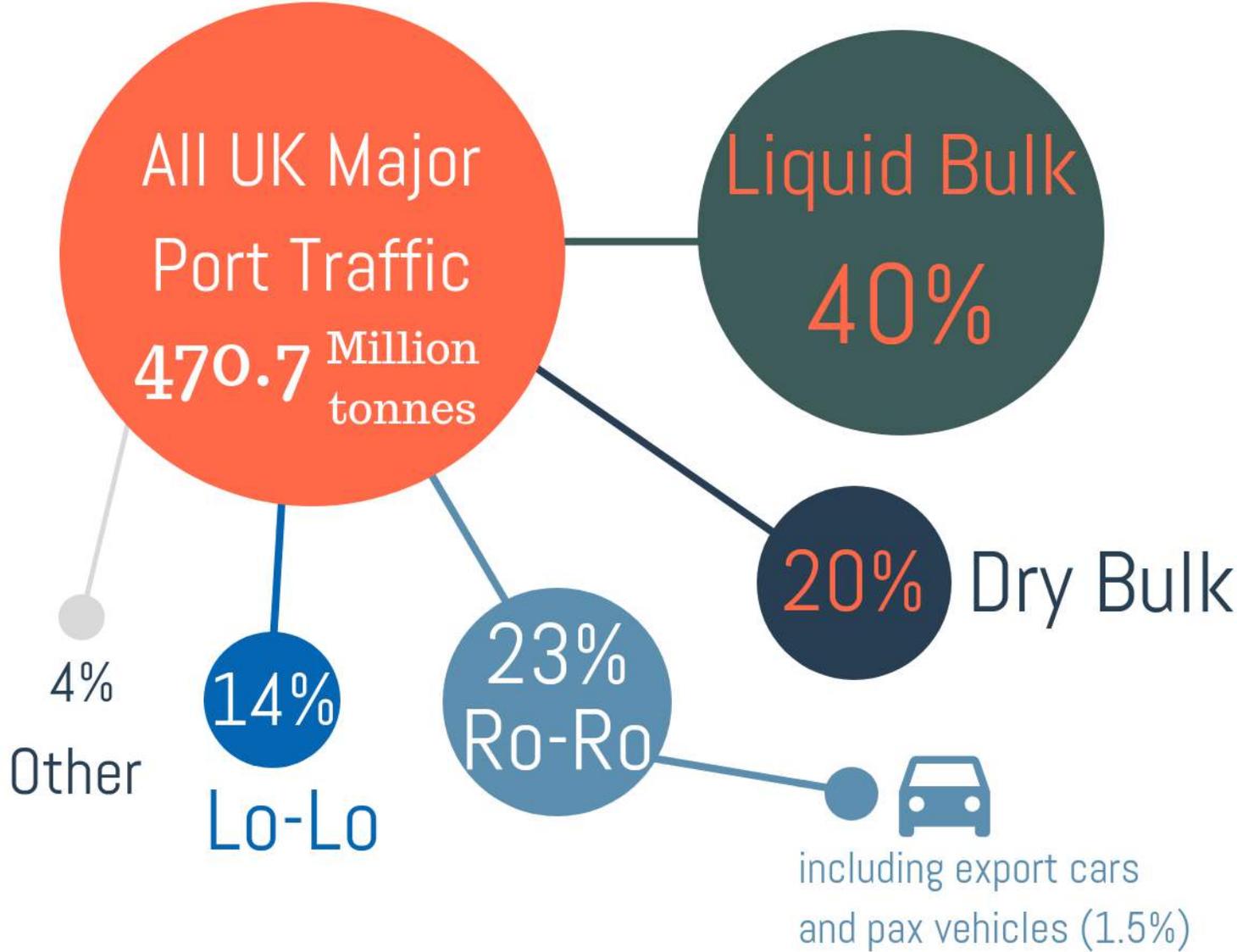
125 Cargo-handling ports

65 'Major' Ports

Diverse range of ownership, cargo, activity, size and geography



# UK Trade Summary & Trends



# Smart Ports



## What are they?

- More of a way of operating than a particular technology
- Broadly, we are talking about data driven innovative processes or technologies that improve the efficiency or operation of a port
- Being a 'smart port' is a means not the ends

# Smart Ports

The many organisations found within a 'port'

- Harbour Authority
- Terminal Operator(s)
- Government Agency (customs, border force, etc)
- "Intermediaries" (port agents, freight forwarders, etc)
- Wider logistics operators (warehousing, storage, rail, etc)
- ...Customers

All generating and collecting data on a multitude of different things...

# Smart Ports

What is driving the development of 'smart' ports?

Three primary drivers:

- Safety and security concerns and regulation  
e.g. monitoring of lock gates, facial recognition technology
- Environmental concerns and regulation (and scrutiny)  
e.g. monitoring of air and water quality, noise
- Commercial reasons  
more efficient operations and improved service

# Smart Ports

## Data: what is collected in ports?

- Ports could, can, and do collect a lot of different types of data
- Harbour Authority: vessel calls, cargo manifests, metrological conditions, climate data, environmental data – noise, water & air quality, customs
- Terminal Operator(s): cargo movements, noise, air quality, plant and machinery performance and emissions
- Government Agency (customs, border force, etc): passenger information, customs declarations...

# Smart Ports

## What's happening: some examples

- Automated plant and machinery
- Infrastructure monitoring: dock/lock gates, mooring bollards
- Weather and climate monitoring, including sea conditions combined with tide, as well as monitoring of air quality, water quality, noise – predicting when issues might arise
- Traffic management
- Smart energy use: automatic lighting etc
- Security: facial recognition, networked biometric systems, compulsory safer working, pattern recognition
- Customs clearances

# Port Optimisation

The background of the slide features a grayscale image of a port. On the right side, a large gantry crane is visible, with its complex metal structure and cables. To the left, the dark hull of a ship is partially visible, docked at a pier. The overall scene is slightly blurred, giving it a professional, industrial feel.

## What is it?

- Another nebulous term...
- General term for a number of products, innovations and systems that allow ports and others in the supply chain to use a single platform to organise port calls more efficiently
- Supports transparency
- Lowers costs for ports and (some) shipping lines and improves services
- Lends itself well to container ports but can be applied more generally

# Smart Ports & Port Optimisation

## What next?

- Continued investment in smart solutions...?
- Wider applications – smaller ports?
- Lower costs?
- Ports sharing data and information with each other, with local stakeholders, with the wider supply chain to drive further efficiencies?

# Smart Ports & Port Optimisation

## Challenges

- Multiple data sources
- Difficulties or reluctance to share data between organisations
- Costs
- Regulation often dictates what and how data is collected
- Cyber security: relatively low level of maturity
- Scale of some UK ports
- Culture?

A large blue container ship is docked at a port. The ship's hull is blue with a white star logo. It is loaded with colorful containers. Several yellow gantry cranes are positioned along the dock. The dock has yellow and green markings. A white car with 'PORT MASTER' written on it is parked on the right. A white pickup truck is also visible. The sky is blue with some clouds.

Thank you

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