



Setting the scene

Innovation challenges in the European Ports

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CHALLENGES

OPPORTUNITY



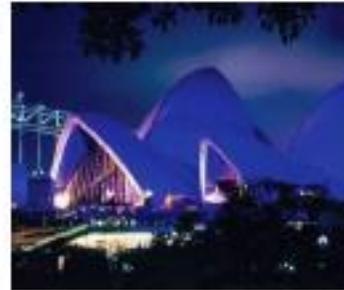
Population Rise And Urbanisation

Our cities are growing at an unprecedented speed



Surging Demand For Energy And Resources

Concerns over the price, availability and sustainability of increasing needs for energy and resources



Competition for People and Businesses

Increasing competition among cities for people, businesses and opportunities



Growing Connectivity and Digitisation

Opportunities to improve urban life and allow more efficient use of resources and provision of services through intelligent and connected networks

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Outline

- R&I challenges
- Fundraising
- Proposals for a sustainable development approach

R&I challenges

- Efficient connections with the hinterland transport network
- Multimodal optimised cost-effective and flexible operations
- Low environmental impact, climate change adaptation and mitigation: zero emission mobility and circular economy actions
- Energy transitions including electrification
- Port security including cybersecurity
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Efficient connections with the hinterland transport network

The fact / the context:

«there has been an explosion of interest in intermodal transport and inland terminals in the last decade»

The optimal solution to all the problems is:

Rationalisation of transport requirements

Efficient connections with the hinterland transport network

The question:

Which circumstances actually favour a port-centric strategy, and in which cases ports can overcome the strong centralising tendency observed in most countries ?

The changing situation (we live in a world where the only constant is change):

Traditional location selection criteria have emphasized cost-related variables such as economies of scale and transportation costs.

Nowadays, however, non-cost-based variables have taken a more prominent role, such as infrastructure support, local labour market characteristics, environmental considerations, and institutional factors.

Multimodal optimised cost-effective and flexible operations

- Re-engineering of **port operational processes** via process analysis
- Identification of **interoperable ICT systems** to improve the level of integration among all actors (Port Authorities, terminal operators, shipping companies, customs, security forces, city authorities, etc.) and facilitate critical decision-making.
- **Sustainable maintenance**, repair and reconfiguration (e.g. AGV – automated guided vehicles in Hamburg Port).
- Better **capacity management** with reduced costs and land use.
- Monitoring the results:
 - Identification of real-time indicators to improve the quality of services provided

Low environmental impact, climate change adaptation and mitigation: zero emission mobility and circular economy actions

With the **Paris Agreement on Climate Change** in force, the transition to a modern and low-carbon economy has to be accelerated.

The June 2017 European Council recognised the Paris Agreement as a '**key element for the modernisation of European industry and economy**'.

It is spurring increasingly intense global competition for market shares, technology and the **brains** that will come up with the **low-carbon innovations of the future**.

Low environmental impact, climate change adaptation and mitigation: zero emission mobility and circular economy actions

Action plans outlines a number of actions to support an accelerated roll-out of alternative fuels infrastructure in the EU.

They are part of a **mobility policy package to tackle vehicles, infrastructures, the electricity grid and user services together.**

By 2025, the EU should have completed the backbone of **recharging and refuelling infrastructure** (*fast electric charging points, LNG and Hydrogen refuelling points*), providing full coverage of the TEN-T core network corridors.

Low environmental impact, climate change adaptation and mitigation: zero emission mobility and circular economy actions

To accelerate the transition to low and zero emission mobility, decisive action to speed up the roll out of infrastructure for alternative fuels in all Member States is needed now.

Energy transitions including electrification

Smart grids:

- increasing digitalisation of infrastructure
- smart management of the grid

Energy transitions including electrification

This makes '**smart charging**' possible: charging at the most convenient time for the electricity grid and at the lowest cost for consumers.

Examples of future scenarios as a key enabling condition for zero-emission mobility:

Vehicles to grid: batteries in electric vehicles will also be used for electricity system operations.

Second-life use of car batteries in building stock as well as *renewably generated hydrogen*.

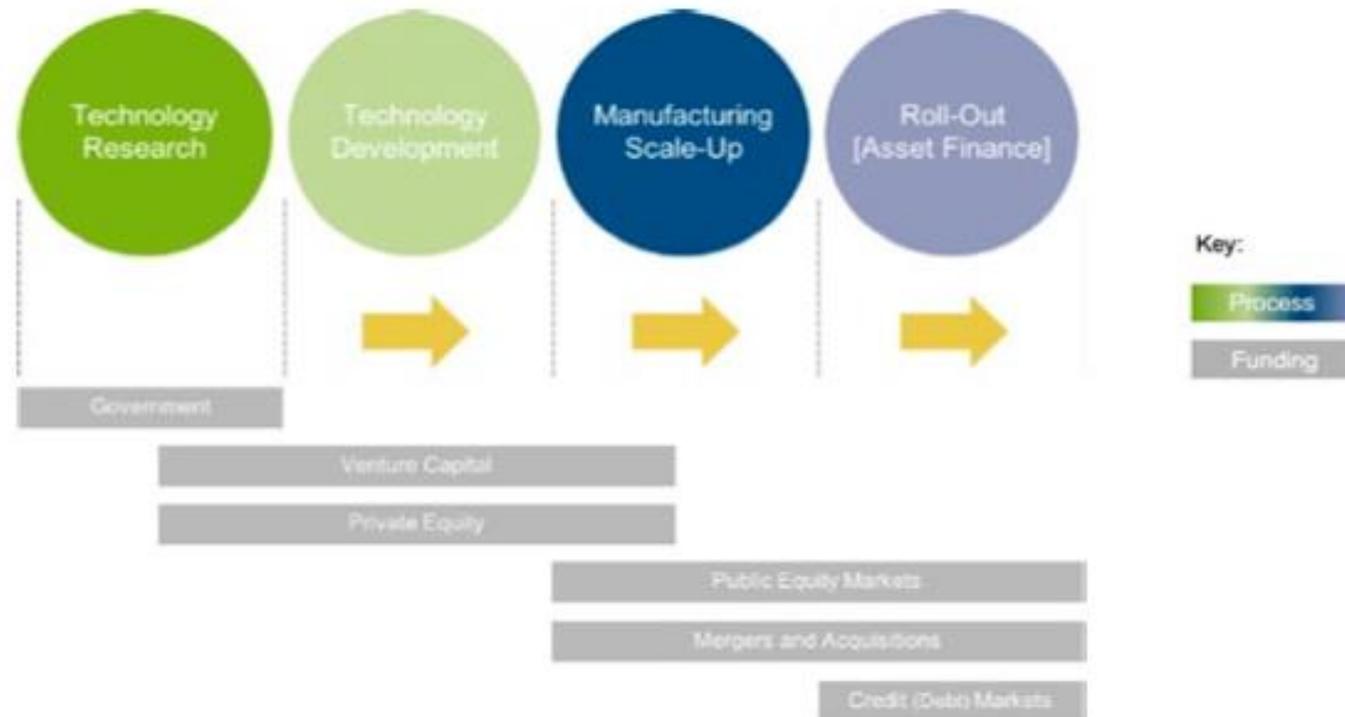
Port security including cybersecurity

Modern commercial shipping ports are highly dependent on the operation of complex, dynamic ICT systems and ICT-based maritime supply chains, making these central points in the maritime supply chain vulnerable to cybersecurity threats.

Nowadays there is a paradigm shift in the way ports assess cyber risks and vulnerabilities, as well as relevant risk management methodologies.

Fundraising

It's all about money and people.



Fundraising

Blending grants and loans is a great opportunity to leverage public and private investment.

Examples:

NER300 funds

Development of innovative financing mechanisms such as the Green Shipping Guarantee Programme (GSGP), supporting the European shipping industry in accelerating investments in sustainable technologies

The EIB implements the programme under specific arrangements with the Commission

Fundraising

- Better collaboration and coordination of projects is needed to create a suitable project pipeline in the TEN-T and beyond, with a particular focus on urban areas.
- Guiding city authorities in urban planning towards the achievement of Smart Port Cities.

Proposals for a sustainable development approach

- For the EU to successfully make the transition to sustainable development, an **integrated approach is needed**. It requires a common policy framework for vehicles, infrastructures, electricity grids, economic incentives and digital services working across EU, national, regional and local levels.
- Openness and innovation to achieve interconnection in the value chain

Thanks for your kind attention

Q&A