



Deloitte-ESPO

Europe's ports at the crossroads of transitions

Indra Vonck – Deloitte Port Advisory 25-05-2021



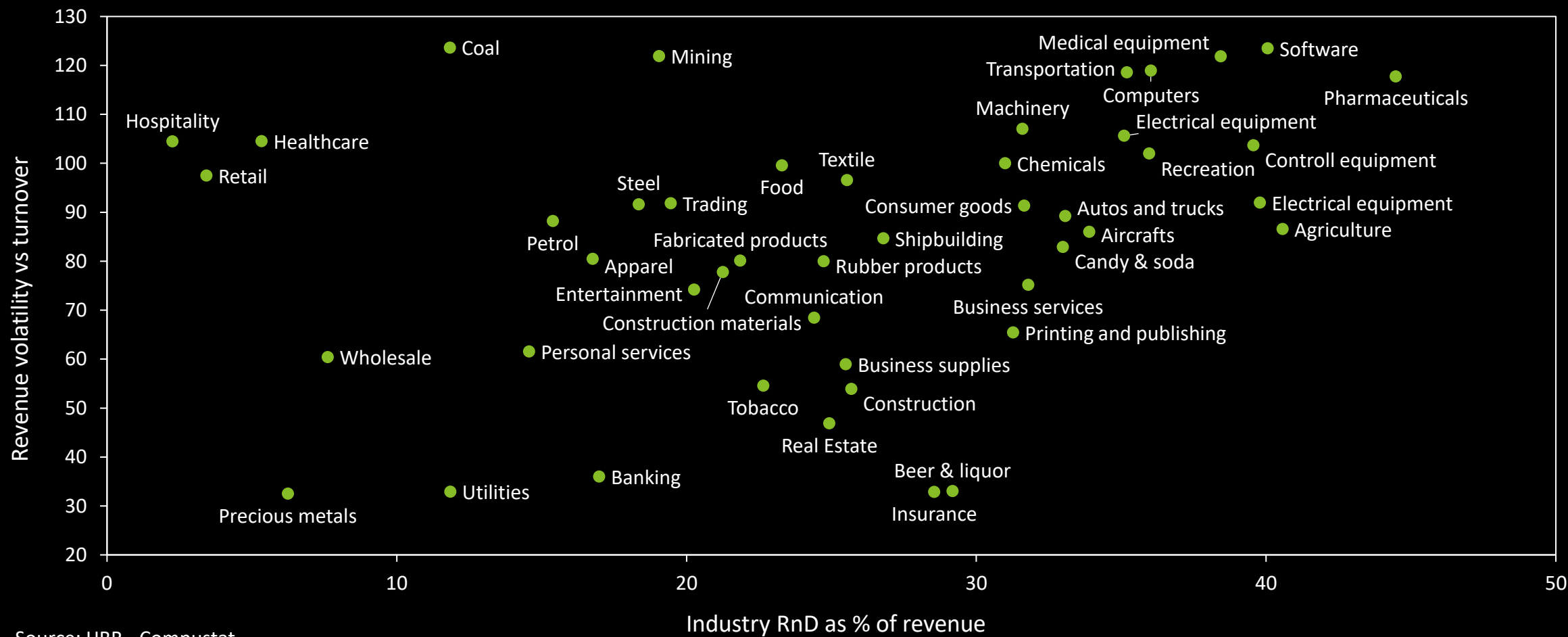
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Introduction of the Deloitte-ESPO future role of European port authorities – “*Europe’s ports at the crossroads of transitions*” study



Ports – and port authorities have always been at the forefront of countering uncertainty by providing critical infrastructure and guaranteeing stable environments for trade...

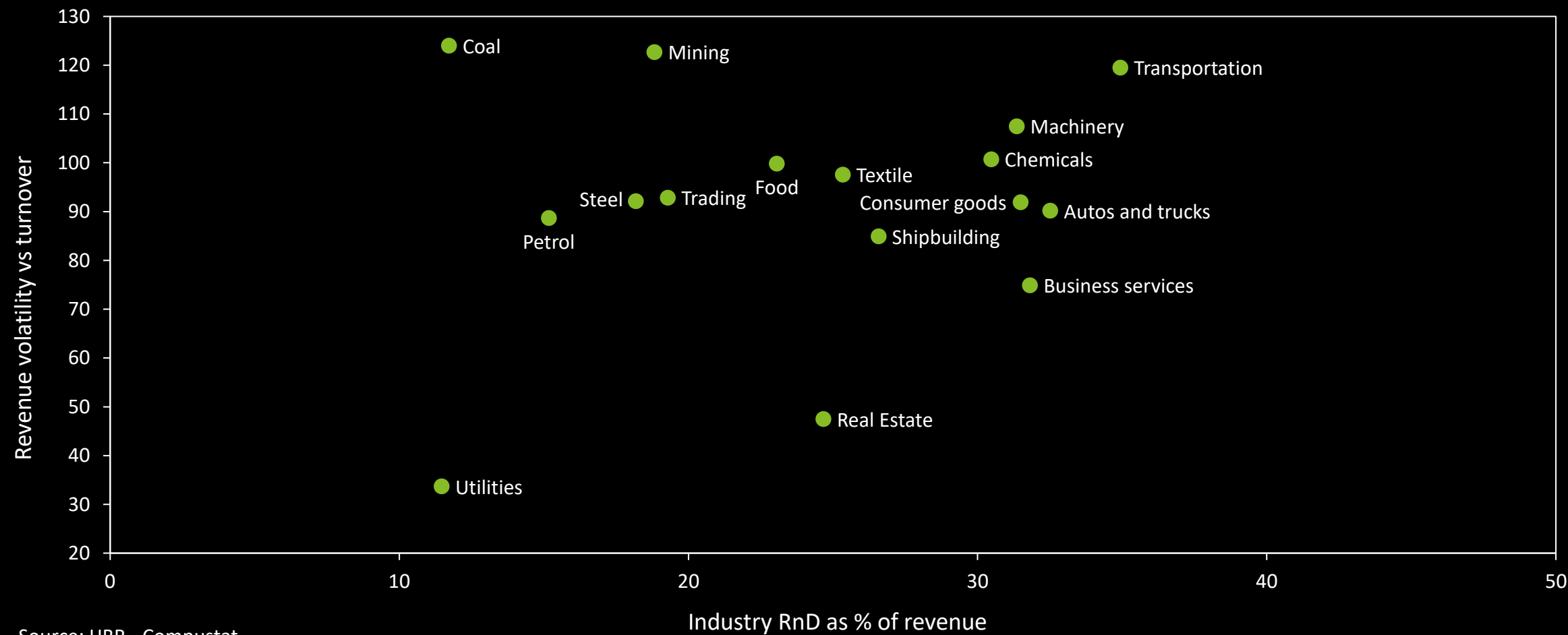
Demand and technological uncertainty by industry



Source: HBR - Compustat

... but the diversity of industries active within port areas generate a complex environment with varying degrees of uncertainty

Demand and technological uncertainty by industry

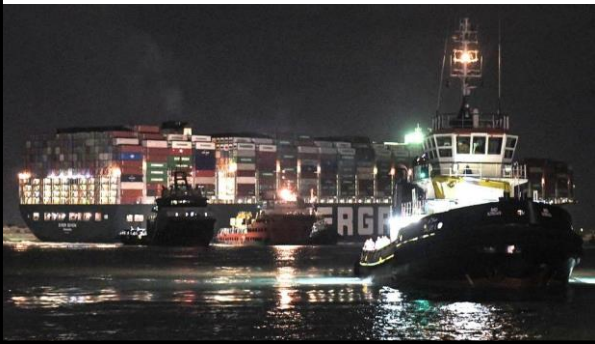


2020 has been a challenging year for the port industry with many short term shocks...

Suez canal blockage

The impact of the Ever Given running aground and becoming lodged sideways across the Suez waterway.

Data from Lloyd's List showed the stranded ship was holding up an estimated \$9.6bn of trade along the waterway each day.



COVID-19

The European port industry was indispensable in offering a strategic stockpile when supply chains were disrupted, today they act as strategic buffers to provide necessary slack in cases where global supply chains are less aligned.

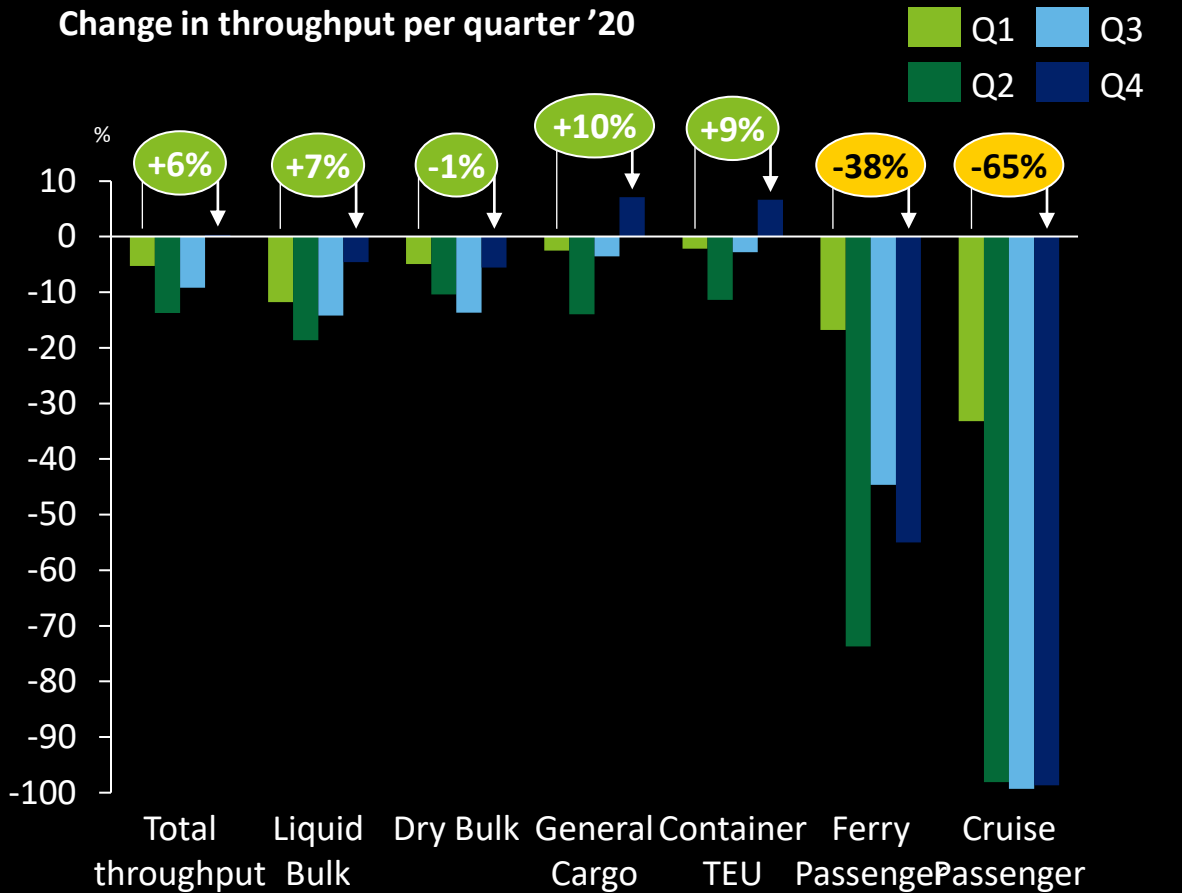
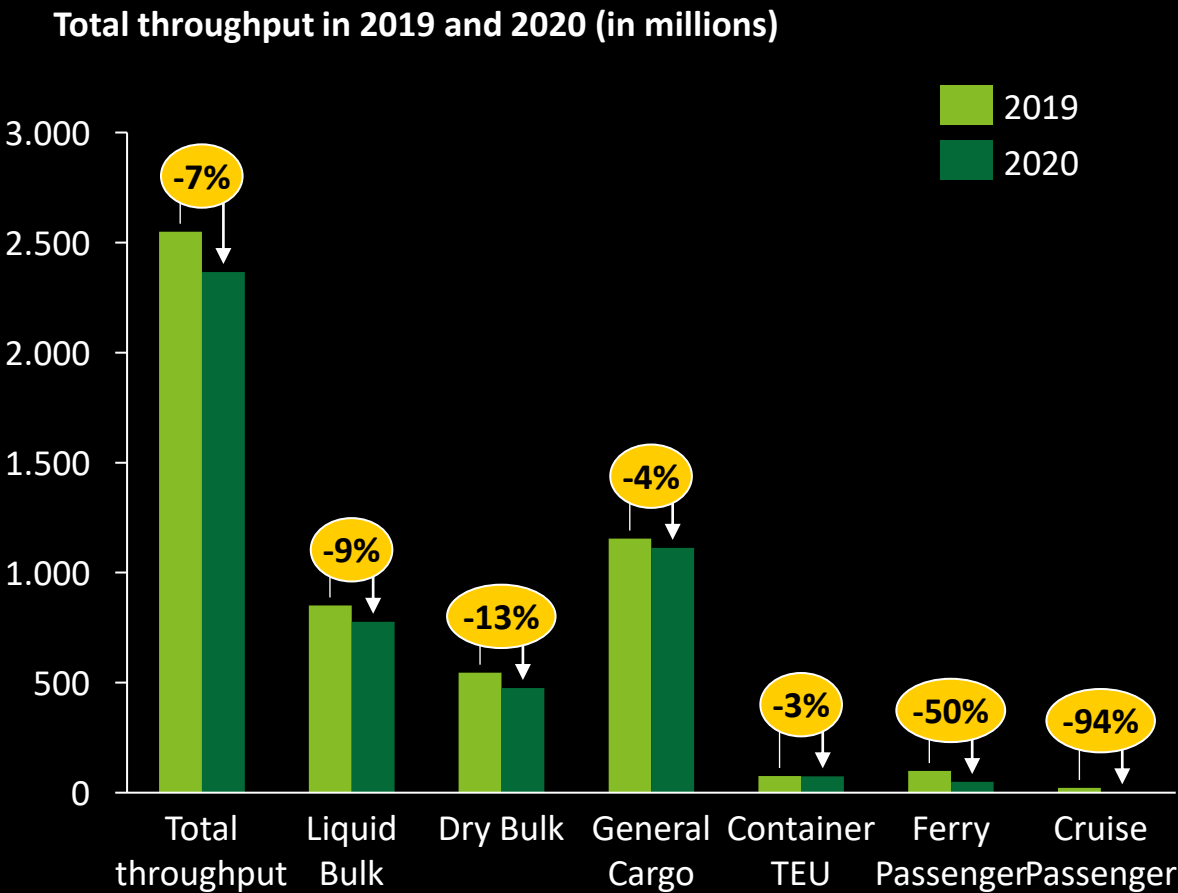


Brexit

Official UK figures in March '21 showed the UK recorded a record fall in trade with the EU in January, as the economy struggled with post-Brexit rules and the pandemic. Goods exports plunged by 41% and imports by 29% as the UK's departure from the EU's single market had a major impact.



... resulting in a pressure on ports to keep Europe trading, both in case of highs and lows of cargo movement



Source: PortinSights, 2020

The report and the presentation follow the same structure, and have been created with the help of the European port industry

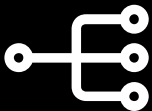
Goals of the study



Provide an overview of the **perspective of the port authorities**



Increase knowledge about- and **visibility of the industry's challenges**



Describe the evolving role of port authorities

Structure of the study



Describe the drivers of uncertainty



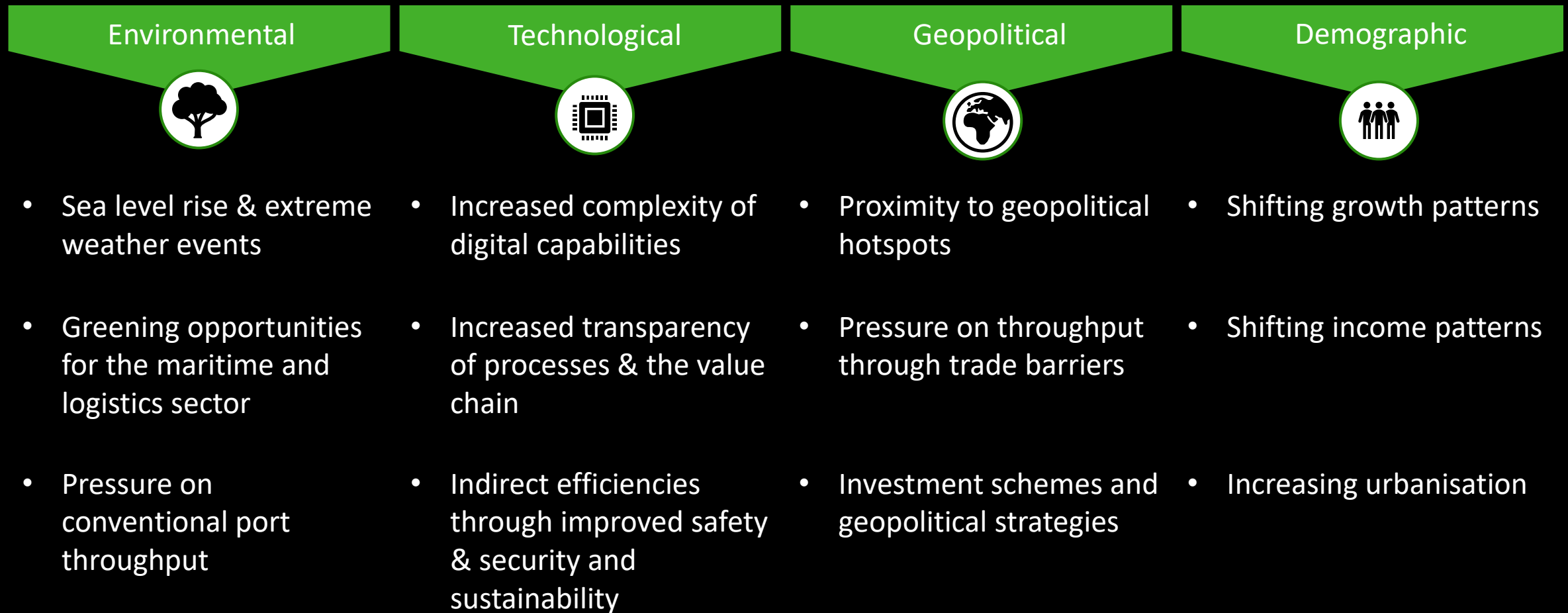
Outline the **impact of the drivers** on the ports



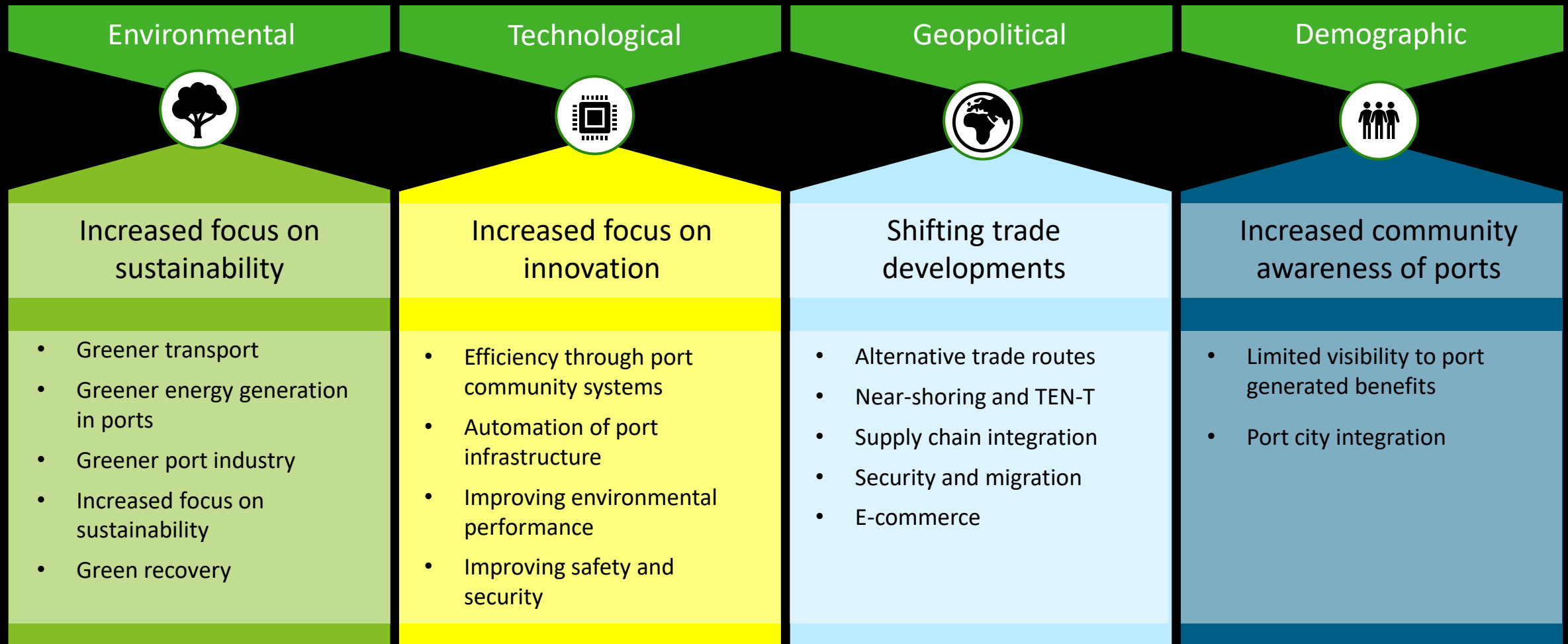
Investigate the **actions undertaken** by port authorities

Through a number of workshops we gathered the insights of 55 senior port leaders and experts from a variety of ports across the EU

Four drivers have been identified which affect the European port industry



Each of the drivers generates a number of trends and developments within the respective ports







































Climate change and energy transition have moved to the forefront of the ports' environmental priorities of the past 10 years

Top 10 environmental priorities of the port sector over the years

	1996	2004	2009	2013	2016	2017	2018	2019	2020
1	Port development (water)	Garbage/ Port waste	Noise	Air quality	Air quality	Air quality	Air quality	Air quality	Air quality
2	Water quality	Dredging operations	Air quality	Garbage/ Port waste	Energy consumption	Energy consumption	Energy consumption	Energy consumption	Climate change
3	Dredging disposal	Dredging disposal	Garbage/ Port waste	Energy consumption	Noise	Noise	Noise	Climate change	Energy efficiency*
4	Dredging operations	Dust	Dredging operations	Noise	Relationship with the local community	Water quality	Relationship with the local community	Noise	Noise
5	Dust	Noise	Dredging disposal	Ship waste	Garbage/ Port waste	Dredging operations	Ship waste	Relationship with the local community	Relationship with the local community
6	Port development (land related)	Air quality	Relationship with the local community	Relationship with the local community	Ship waste	Garbage/ Port waste	Port development (land related)	Ship waste	Ship waste
7	Contaminated land	Hazardous cargo	Energy consumption	Dredging operations	Port development (land related)	Port development (land related)	Climate change	Garbage/ Port waste	Water quality
8	Habitat loss/ degradation	Bunkering	Dust	Dust	Water quality	Relationship with the local community	Water quality	Port development (land related)	Garbage/ Port waste
9	Traffic volume	Port development (land related)	Port development (water)	Port development (land related)	Dust	Ship waste	Dredging operations	Dredging operations	Dredging operations
10	Industrial effluent	Ship discharge (bilge)	Port development (land related)	Water quality	Dredging operations	Climate change	Garbage/ Port waste	Water quality	Port development (land related)

There are hundreds of use cases for technological developments in ports, each with their own benefits

Use cases of digital and innovation in ports based on industry 4.0

		Use case (non-exhaustive)	Example of use case in ports	Value generation
Connectivity	Internet of things	Sensorising of infrastructure and assets	Computer vision solutions e.g. smart harbour master systems	   
	Wearables	Tracking for safety and security	IoT and 5g applications for on terminal security	   
	Augmented reality	Virtual twin of infrastructure	Virtual twin of terminal or of entire port	   
Big data	Optimisation and prediction	Optimisation of transport flows	Just-in-time port call optimisation & port community systems	   
	Machine learning	Self improving algorithms	Addition to other use cases	   
	Cyber security	Preventive cyber units	Port wide cyber prevention and response teams	   
Advanced manufacturing	Additive manufacturing	3d printing for parts and commodities	3d printing of spare parts for port assets	   
	Advanced materials	High tensile materials, smart materials	New materials for quay/flood wall	   
	Robotics	Automation of processes	Automation of port processes (e.g. locks) and terminals	   



Increased efficiency through platforms



Increased efficiency through automation



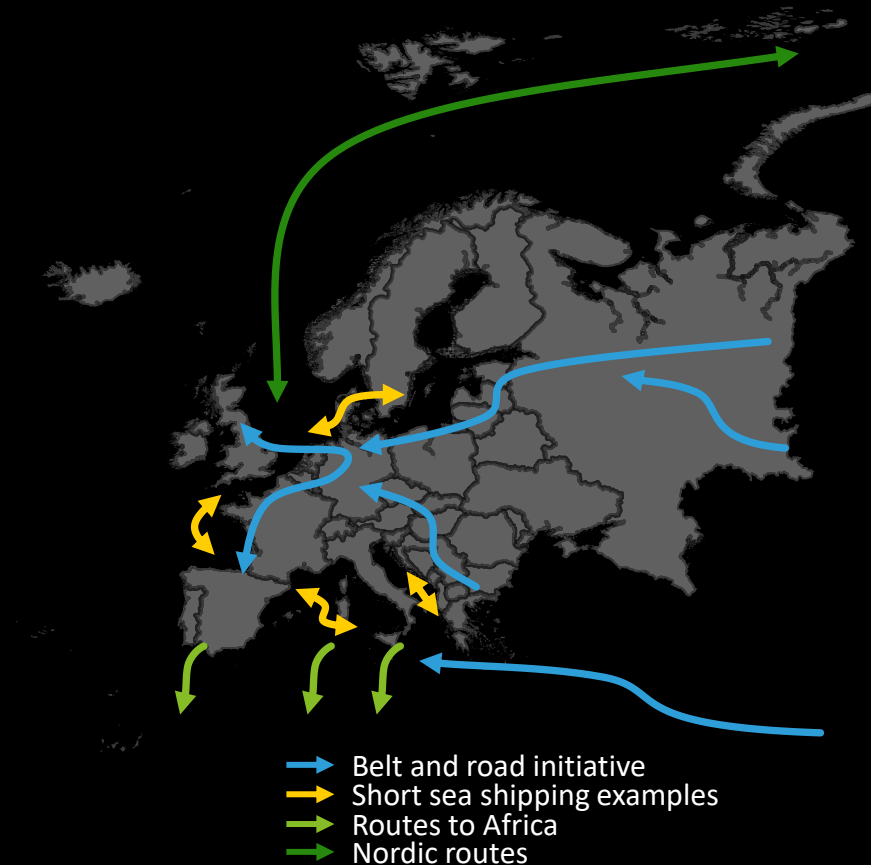
Improving environmental performance



Improving safety and security

Geopolitical and demographic shifts are causing a shifting market environment for ports with new trade routes, supply chain integration and issues such as security and migration

Visual representation of examples of changing and new trade routes (Non-exhaustive).



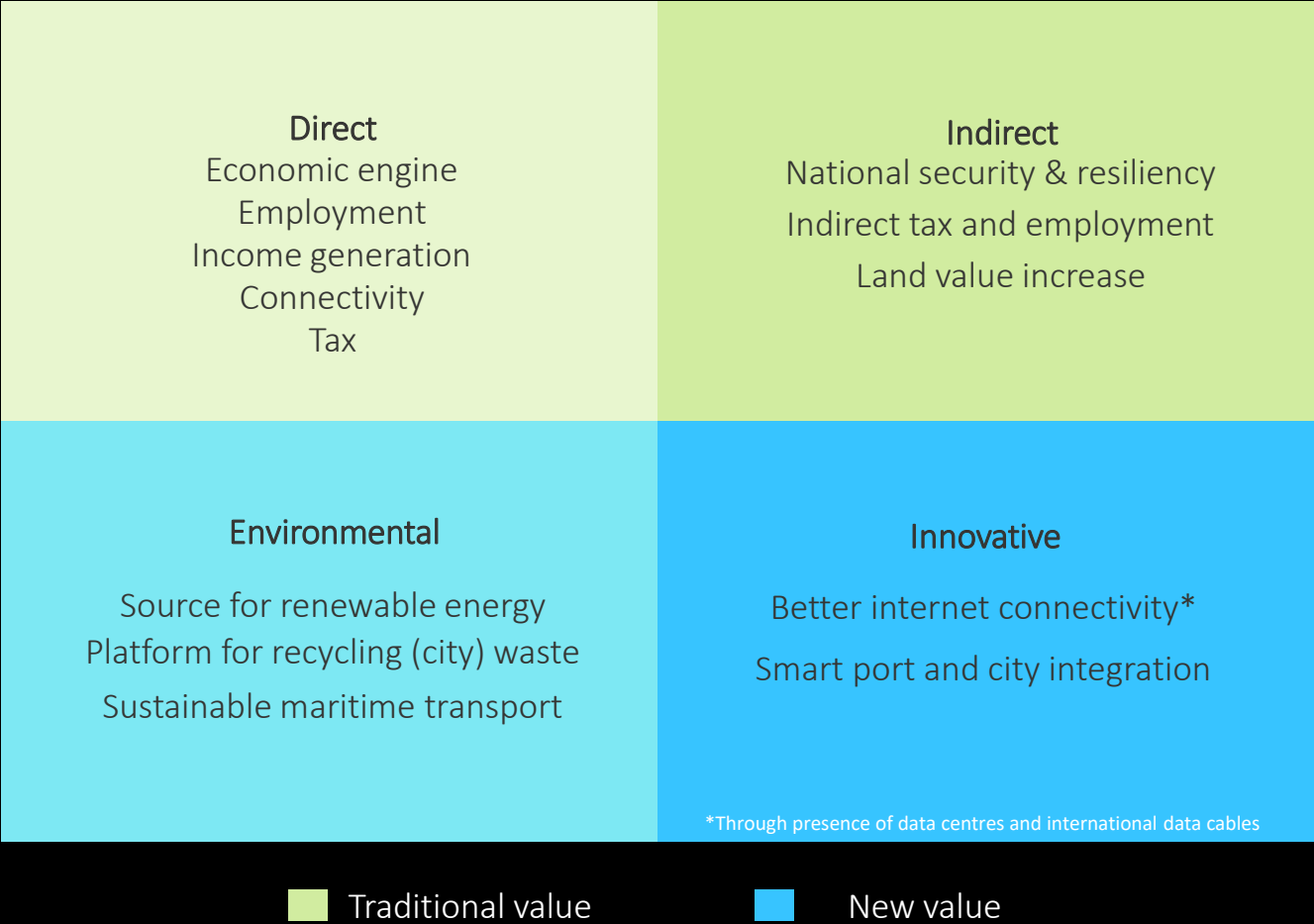
Both the vertical and horizontal integrations have resulted in changing power balances. On the demand side, horizontal collaboration is increasingly done through alliances, and through digital ecosystems

For ports, the **migration and adjoining security** issue is expected to only grow in the coming years. Geopolitical tensions show no short term outcome and climate will force a lot of groups to relocate to more temperate areas

E-commerce and short sea shipping and/or near-shoring, can go hand-in-hand. E-commerce consumers require quick delivery times, which can benefit from the shorter travel distances due to the closer proximity of the supplier, allowing for greater flexibility

Communication on the benefits that the port – and port ecosystem brings to its surroundings, is growing in importance due to a lower “integration” between port and city

Benefits generated by modern ports (non-exhaustive)



When considering the future role of port authorities it is important to understand the large diversity and complexity of the European portscape

Port environment, stakeholders and interests

Shift from looking at the port as cash cow and polluter to **green and innovative employer and generator of value**

Optimal hinterland connections and connectivity remain the core focus of port authorities

Ports will **remain energy hubs** but will facilitate more renewable energy generation



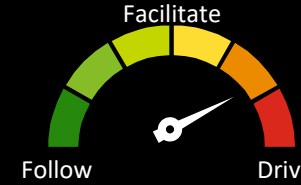
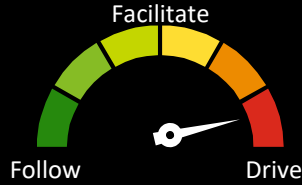
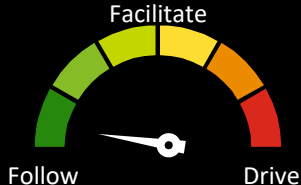
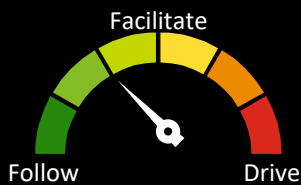
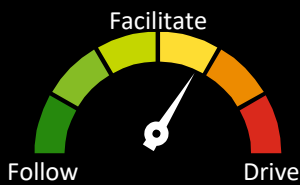
The public function of ports is growing – port authorities are going back to their roots

Managing a port is becoming more complex, with more activities on limited space with limited resources

Each port authority will determine the degree of digitisation in line with budget and strategic goals

Port authorities have a variety of roles, towards the future the core roles are expected to remain but will be transformed and one new role will arise

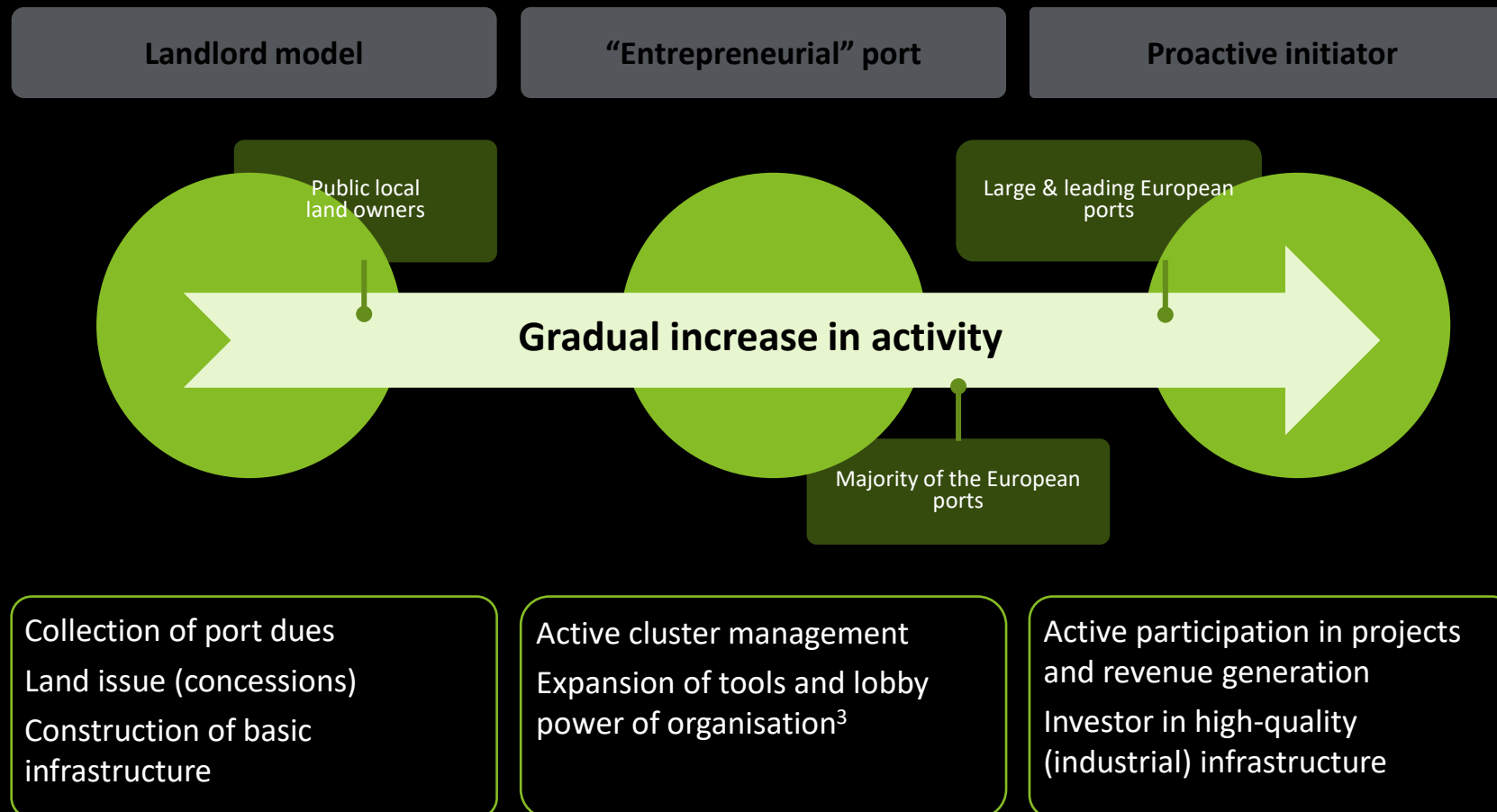
	Regulator*	Landlord	Operator	Community builder	Investor
Traditional role	<ul style="list-style-type: none"> Safety and security of ship and cargo operations (VTS) Local regulation 	<ul style="list-style-type: none"> Management, maintenance, and development of the port area Provision of infrastructure 	<ul style="list-style-type: none"> Focus on technical-nautical services 	<ul style="list-style-type: none"> Focus on aligning different stakeholders in and around the port area to improve the business climate and cohesion with city 	n/a
Expected evolution of role	<ul style="list-style-type: none"> Possible expansion of traditional role through: <ul style="list-style-type: none"> Cyber regulation Green incentives Autonomous drones regulations 	<ul style="list-style-type: none"> More hands on planning of port area leading to a strategic landlord role (such as strategic/pro active attraction of port industry, new industries/sectors, etc.) 	<ul style="list-style-type: none"> Increased depending on the chosen revenue model behind the sustainability and the digital transition) 	<ul style="list-style-type: none"> A driving (e.g. PCS) and entrepreneurial role going beyond the port area and the port stakeholders Facilitating role in external logistics and maritime data sharing initiatives 	<ul style="list-style-type: none"> Active investments in sustainable and digital solutions increase



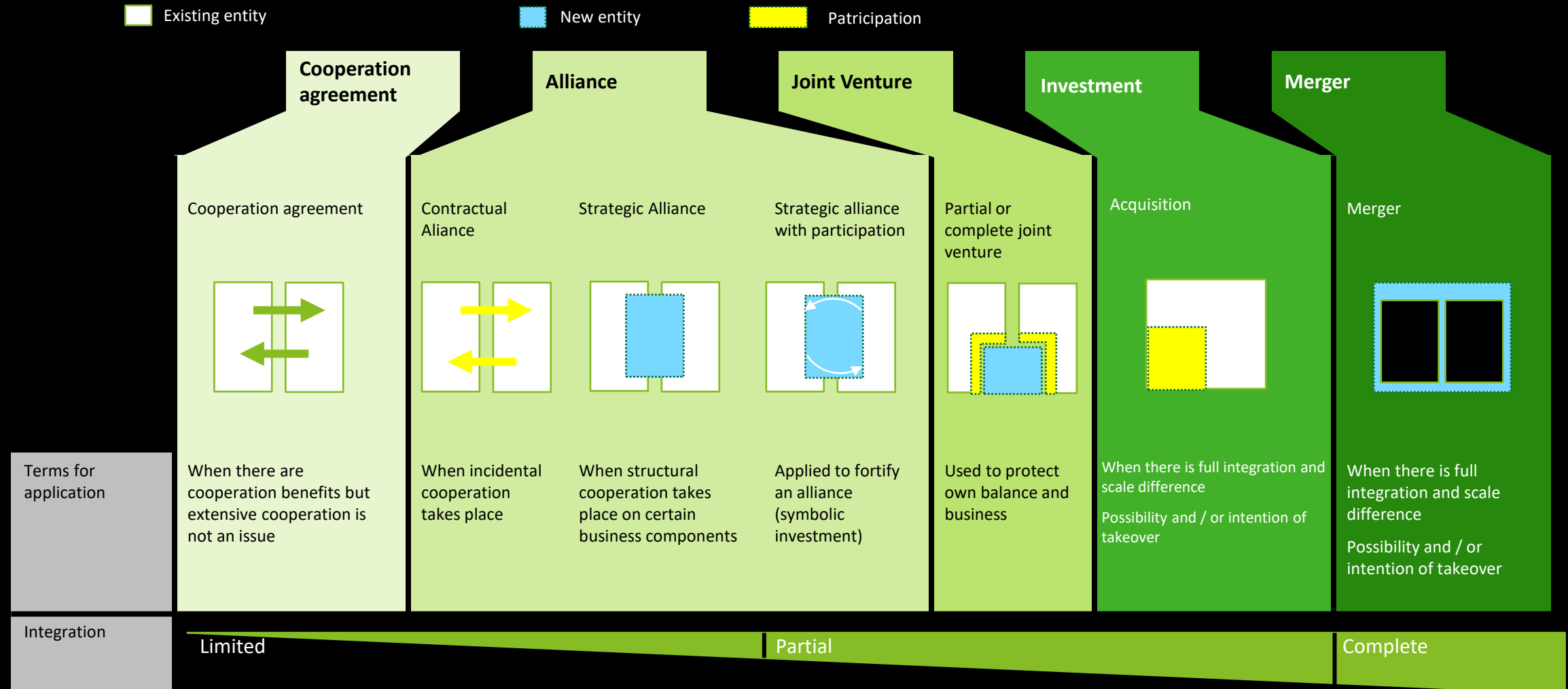
* Very limited and dependent on port in question
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The port authority role has moved from public to more entrepreneurial/proactive, today this is even more the case but the public role of ports is also growing

The evolution of the port governance model



Cooperation is used frequently both between ports and between ports and external stakeholders to improve the competitive position and navigate the growing uncertain environment



Conclusions

Ports do more than before

Port authorities are **still neutral players** but they are also developing **new roles such as investors** to better serve customers, to increase added value to customers, to meet general interest obligations.

Nodes of critical infrastructure and strategic value

Ports are essential multimodal nodes, hotspots for industrial activity, hubs for information, clusters for blue growth, etc

It is therefore crucial that **ports remain public critical infrastructure** on top of their commercial activities

Ports do things differently than before

Port authorities are **taking a more hands on approach, especially with regards to energy transition.**

By utilising technological innovation solutions **port authorities can optimise their insights into the port cluster,**

Diversity is key within- and amongst the ports

External diversity allows for regional specialisation, well balanced and diverse connectivity and a spread of strategic industrial activities

Internal diversity, diversity in a port ecosystem reduces the risk of economic shocks and can be beneficial in the set-up of circular economies

The public importance of ports is growing (again)

Due to the **increased importance of ports as strategic assets** and the role they can play (and already play) in the greening of transport, industry and energy generation.

The rising uncertainty requires flexible solutions

The **traditional long-term perspective and planning of ports is under** pressure because of short term (overnight) changing environment

When looking for supportive solutions in the future, it is important that flexibility is guaranteed, and **sufficient autonomy of ports is respected.**

Conclusions

Doing more with less

Due to the high costs involved for developing and implementing large scale digital platforms, **port authorities need to pick and chose which solutions to pursue.** Ports are also faced with **less direct resources** due to for e.g. corporate taxation policies, higher dividend payments to shareholders, etc.

Cooperation is central

The increased geopolitical, energy transition and technological complexity, enlarges the case for (port) cooperation.

Between port (authorities) cooperation is a key tool to either share knowledge or improve their respective competitive position

The revitalisation of the port city relationship

Due to the **increased importance of ports as strategic assets** and the role they can play (and already play) in the greening of transport, industry and energy generation.

Increased transparency towards the ecosystem and the value chain

Digitisation allows stakeholders to cooperate and integrate along the supply chain, and to optimise, manage and automate processes.

Port authorities can **generate a competitive edge by being more transparent towards local communities** (including the business community) on financial and sustainable actions.

Restoring maritime passenger transport

Port Greening transport is impossible without promoting a modal shift.

Towards the future, **ferry transport can take a more prominent leveraging on the sustainable tourist, commuter, and traveller, being an alternative to flights.**