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DOCKSTHEFUTURE
defining the concept of "Port of the Future"

Stakeholders Consultation Proceedings

Deliverable 1.2

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1 Executive summary

The goal of this deliverable is to present the main outputs and outcomes of a stakeholder consultation launched the 14th of September, aimed at collecting their vision about the Port of the Future. This deliverable describes the main characteristics of the involved stakeholders, the methodology followed to carry out the consultation, the key findings and results obtained, an analysis of the stakeholders'' feedback and a focus on the main outcomes deriving from the bilateral meetings occurred with the Directorate Generals (DGs). This document, and other work products of work package will be reviewed during the meeting with experts, which will take place in Oporto the 29th and 30th of October 2018.

2 Engaging stakeholders - rationale behind stakeholder engagement

The main objective of Deliverable 1.2 is to sum up the results of the "Consultation" related to all activities where the DocksTheFuture will have formal contacts with individuals and organisations in order to collect their opinions and find out their views about the "Port of the Future" concepts, topics and projects.

Stakeholders Engagement is a continuous and systematic process by which an organisation establishes a constructive dialogue and a fruitful communication with its key stakeholders. The purpose of involvement is to contribute both for decision makers' expectations and interests of stakeholders, so that the former can take the gathered inputs into account in decision making. Ports, indeed, represent areas where different conflicting interests (environmental, social and economic) meet. Ports are not just an organisation by themselves, separated from their environment, but are also is embedded in the local, regional, national and international environments and this has to be reflected in the stakeholders' engagement. Stakeholders are not static entities. They change over time and space (Dooms, et al., 2013). They are also embedded in complex environments that shape e.g. their visions and values. Their actual knowledge, resources, needs and interests, for example, can differ from their knowledge, resources, needs and interests in just a short period of time.

Stakeholder analysis, as highlighted by Freeman (1984) deals with the identification and prioritisation of stakeholders as individuals or stakeholder groups. Stakeholder analysis represents "an approach for understanding a system by identifying the key actors or stakeholders in the system, and assessing their respective interests in that system" (Grimble et al. 1995)

Stakeholder engagement in the DocksTheFuture project can be diverse, as the definition of the vision of the Port of the Future requires involvement of a wide range of practitioners: from researchers to funders, from ministerial policy makers to port authorities, and from the industry to cities.

The consortium partners have all been active in the transport and maritime domain for a number of years and have developed a wide network of transport stakeholders across (and beyond) the EU, including Member States authorities and EU and international policy makers.

During the stakeholders' engagement stage, the consortium identified the stakeholders which may be able not only to contribute to the project but also to motivate them to become involved. In order to identify all the interested parties, it was essential to deliberate all people, or group of people who may affect or/and can affect, or/and may have an interest in the project However, the

stakeholder identification process should be reassessed frequently throughout the project, in order to be ensured that no groups or individuals have been missed. This means that it might be required to identify new stakeholders that need to be engaged through the project duration or as stakeholder needs and priorities change over the course of project implementation. The stakeholder mapping process aimed at identifying which stakeholders need to be engaged, in order to achieve the highest impact for the project. The stakeholder's selection was carried out having as a basis the content, the expected results and the impacts of the project, as well as the available resources, the objectives of the engagement, and the willingness or the ability of the stakeholders to engage and to be involved to the project.

Other methods used for identifying key stakeholders were:

- Brainstorming and consulting with project partners and with other organisations that have been involved in similar activities
- Utilising existing stakeholder lists and databases of the project partners in order to identify other groups, networks and agencies

The survey was administered to 1585 stakeholders. Stakeholders are grouped according to (and were asked to select) the below criteria:

1. **Type of organisation stakeholders are connected with:**
    - Port –Related (e.g. Port Authority)
    - Ship-related[1]
    - Multi-modal logistics operator
    - Terminal-Operator
    - Technology provider
    - Authorities (e.g. Customs)
    - Member States
    - Cities, Municipalities
    - Association
    - Universities, Research Associations

2. **Size of the company/organisation stakeholders are connected with:**

– Micro-enterprise (<10 persons employed, up to €2 million turnover)

[1] e.g. Shipping Agent; Ship-owner; Broker

- SME (Small-Medium enterprise) (from 10 to 249 employees, up to €50 million turnover, or balance sheet total up to €43 million)
- Big company or organization (250 employees or more, more than €50 million turnover, and balance sheet total of more than €43 million)

3. **Country to which stakeholders belong**
4. **Company/organisation they work with**
5. **Activities of the organisation/company stakeholders are connected with:**

Terminal Operations (container or multipurpose) (e.g. Container handling; storage of containers; container transhipment; weighing containers; Loading/discharging of bulk cargo vessels; Mooring and unmooring; Warehousing; Receipt and delivery (gate control); Grab hire)
Territorial planning of the port area
Address, planning, coordination, promotion and control of port operations and other activities carried out in the ports (e.g. identification of the port development strategies)
Ordinary and extraordinary maintenance of the common parts in the port area
Assignment and control of activities aimed at providing services of general interest in the port area, not strictly connected to port operations
Shipping Agents activities (e.g. Requesting a berth for the incoming ship, fulfil reporting formalities before arrival and departure on behalf of the ship master Arranging for storage bunkers if these are needed, Arranging for the necessary repairs; Conveying instructions to and from the ship owner, Organising the supply, transport and the handling of the goods, Collecting freights, cargoes, contacting shippers and the receivers of the goods etc.)
Shipbroking activities
Freight forwarding
Chartering
Equipping ships (ship-owner)
Logistics and Transport Operations as freight forwarder

Logistics and Transport Operations as NVOCCs
Ship technology providing (e.g. diesel and engines, engineering, icebreakers, Emission reduction systems for ships etc.)
Port technology providing (e.g. container terminal automation, IT solutions and terminal operating systems etc.)
Regulatory, administrative, patrimonial, organisational, accounting and financial activities
Custom agencies procedures (e.g. administration of customs duties; management of customs services, border control etc.)
Transport Association related activities
Research Activities
Other

Table 1 Activities of the organisation/company stakeholders are connected with

The abovementioned criteria enabled the Consortium to precisely outline the respondents' profiles.

3 Survey method used to engage stakeholders and main features of the online survey

The stakeholders' consultation was carried out through an online survey based on the Google forms platform.

The online survey was launched the 14th September 2018 and remained open until the 1st of October. After the first launch, a second reminder was sent on the 26th of September. The official survey was preceded by 5 interviews that were aimed at testing the stakeholders' answer. The interviews were partially close to the current survey since they were mainly based on open questions. After this "testing phase", the consortium decided to administer an online survey, made up by both open and closed questions, a smaller number of open questions and a greater adherence to deliverable D1.1 Desktop analysis of the concept including EU Policies, that, in the meantime, was submitted and completed.

To reach out a larger community of interested stakeholders, the link to the web-based survey has been disseminated using:

- The official project website

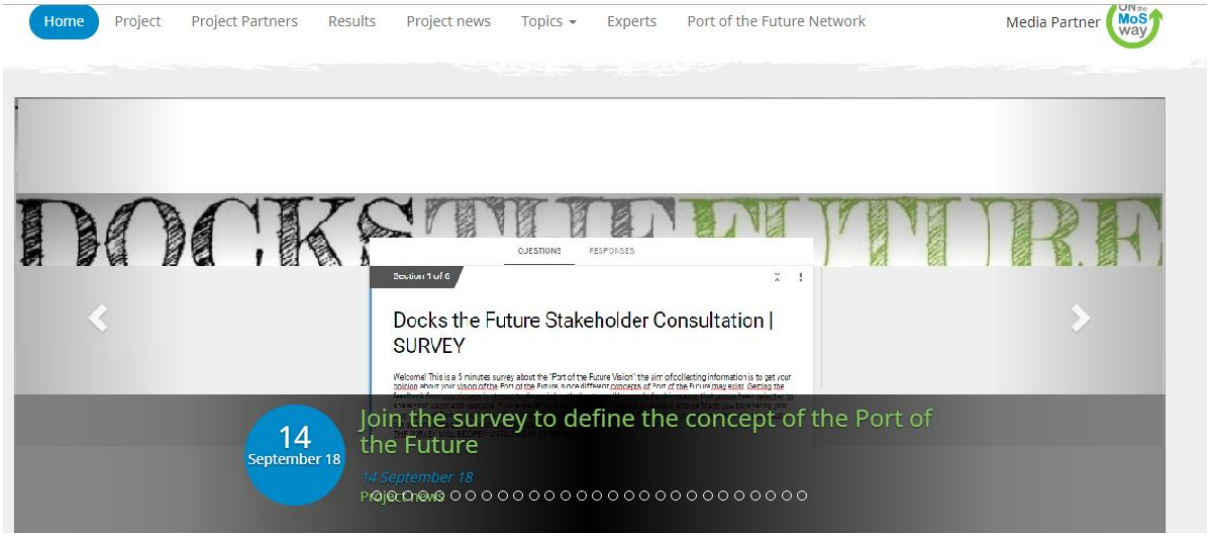

Figure 1 Survey published on the official website

- The official project newsletter

Figure 2 Survey sent through the official DocksTheFuture newsletter

- Dedicated emails to the selected stakeholders

The online survey has been closed on the 1st of October 2018 with 72 complete individual answers.

The online survey was made up by both open questions, multiple choices and yes/no questions and it was structured in the following main sections:

- **Informed consent:** this section has the main purpose of explaining the goal of the survey as well as asking respondents if they want or do not want to remain anonymous. If the participants in DocksTheFuture wish to remain anonymous, indeed, their personal information will be kept strictly confidential and will not entered into the research data. If they are willing to be open about their identity, their personal information may be included in the data and the research outcomes. In other words, personal information possessed by DocksTheFuture may become personal data only under the informed consent and active willingness to be named from the participants involved. These data will be carefully stored and protected. Data collection will be done in compliance with Article 8 of the Charter of Fundamental Rights in the European Union (specifically the article concerning the protection of personal data). In addition, the collection of data will be conducted in compliance with data protection acts, legislation, and directives, both at the European and the national level (for example, Directive 95/46/EC of the European Parliament and the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data: current legislation GDPR (General Data Protection Regulation). The coordinator will ensure that data will be stored securely during the project's lifetime, and provisions will be made to ensure that the data will be secured safely beyond the lifetime of this project. Confidential information will therefore be securely stored to prevent breaches of confidentiality.
- **Information about the stakeholder organisation or company**: as previously highlighted, this section is aimed at identifying as precisely as possible the respondents' profiles.
- **The Port of the future:** this section is composed of two open questions where the stakeholders are asked to express their idea on the port of the future
- **Tactical objectives**: in this section, stakeholders are asked to rank (from 0 to 4) 9 categories of tactical objectives deriving from the desktop analysis presented in Deliverable 1.1 - Desktop analysis of the concept including EU Policies. Tactical objectives are what we propose to be realized by the ports and its stakeholders by 2030. The tactical objectives are linked to strategic objectives which define the picture of a desired future for ports by 2030. This section is also complemented by more detailed yes/no and open questions related to specific tactical objectives.

To consult the full online survey, please refer to Annex I.

4 Summary of findings

The stakeholder consultation sought to mobilise relevant stakeholders in order to (a) generate knowledge about the project, and to (b) get opinions from the most relevant stakeholders about their vision of the Port of The Future. This Chapter is a summary of the main results of the stakeholder's consultation as well as the profile of the respondents.

4.1 Profile of respondents

Geographical coverage

The geographic coverage of the consultation was broad. Survey respondents came from16 Countries, mainly in the EU, as shown, with a large participation from Italy (20,3 %), Belgium (12,5%) and Spain (15,6%). Figure 4 shows the country-specific percentage

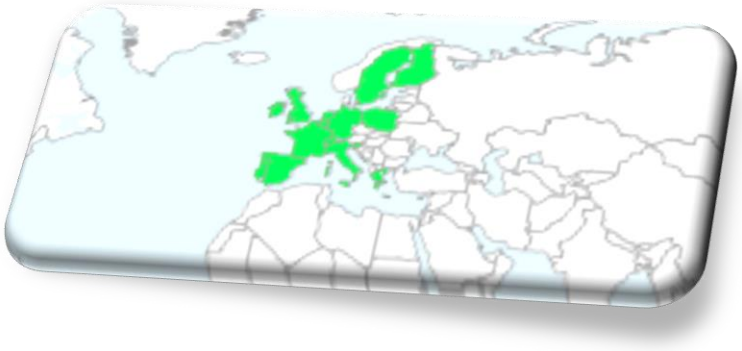

Figure 3 Geographical distribution of the survey respondents

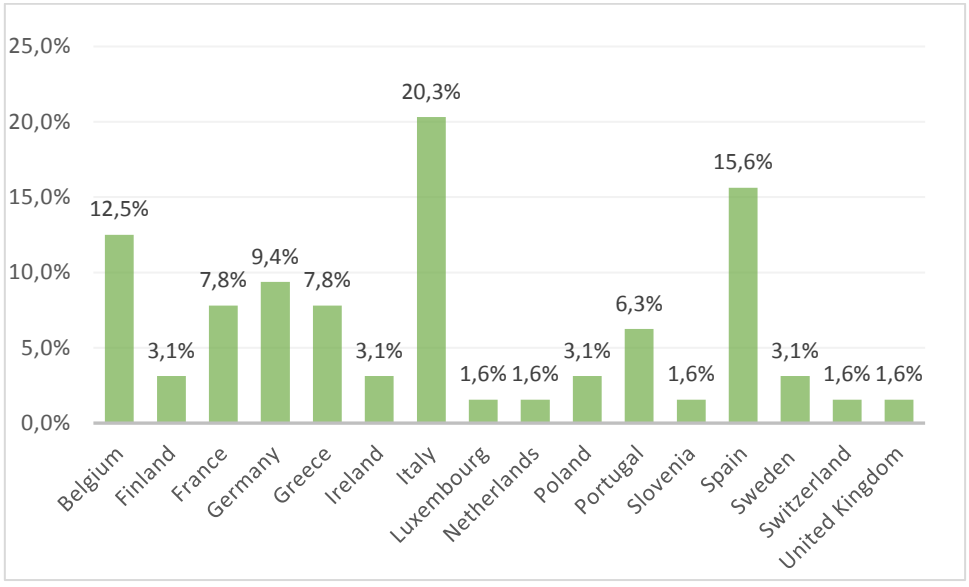

Figure 4 Country-specific percentage

Representation of stakeholder groups

As shown in figure 4, the majority of respondents belong to the Port –related sector (23 %), followed by Universities and research associations (22 %), consultants (14 %), and technology providers (11%).

As for the activities carried out by the stakeholder's groups, table 1 shows that the vast majority of respondents (26,98 %) perform research activities, followed by the territorial planning of the port area (17,46 %) and, with an equal percentage (11,11 %), the following two activities:

- Address, planning, coordination, promotion and control of port operations and other activities carried out in the ports (e.g. identification of the port development strategies);
- Terminal Operations (container or multipurpose) (e.g. container handling; storage of bulk containers; container transhipment; weighing containers; loading/discharging of bulk cargo vessels; mooring and unmooring; warehousing; receipt and delivery (gate control); grab hire).

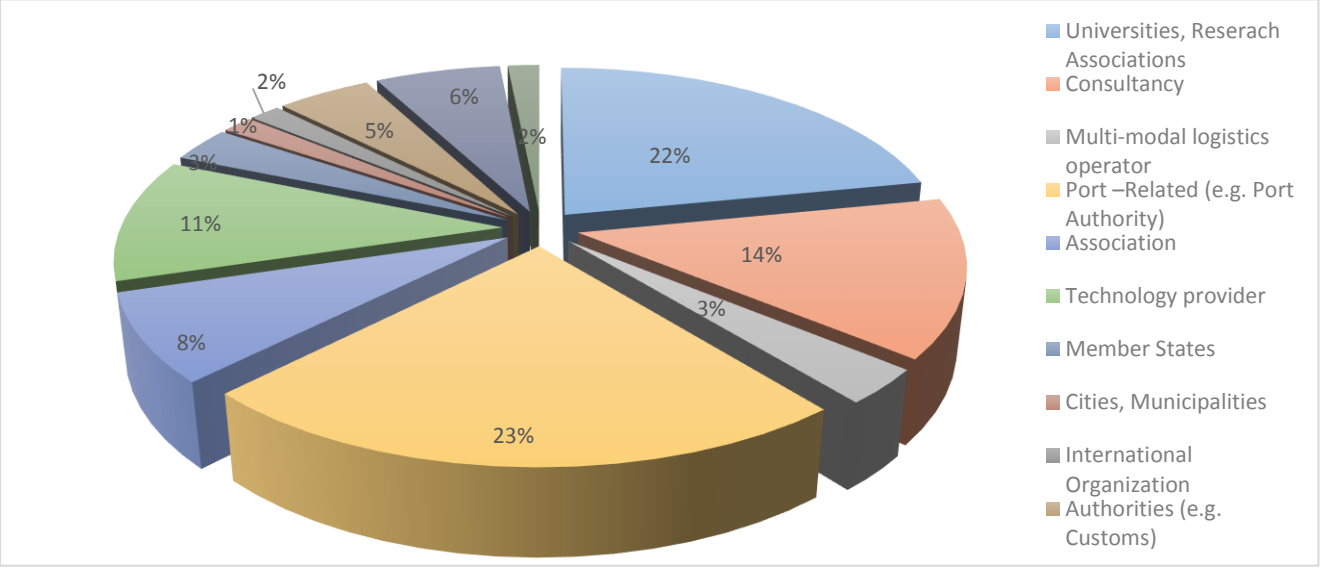

Figure 5 Representation of stakeholder's groups

Activities carried out	Percentage of Respondents
Address, planning, coordination, promotion and control of port operations and other activities carried out in the ports (e.g. identification of the port development strategies)	11%
Terminal Operations	11%
Territorial planning of the port area	18%
Logistics and Transport Operations as freight forwarder	1,6%
Shipping Agents activities	3%
Research Activities	27%
Assignment and control of activities aimed at providing services of general interest in the port area, not strictly connected to port operations	3%
Ship Technology Providing	1,6%
Regulatory, administrative, patrimonial, organisational, accounting and financial activities	3,17%
Port technology Providing	3%
Transport Association related activities	8%
Custom Agencies procedures (e.g. administration of customs duties; management of customs services; border control etc)	1,6%
Equipping ships (ship-owner)	1,6%
Other	6%

Table 2 Activities carried out by respondents

4.2 Feedbacks from the survey

Tactical Objectives

The stakeholders were asked (refer to section 3 of the survey) to score 9 categories of tactical objectives with scores between 0 (no importance) and 4 (the highest importance). The below topics are what the consortium proposes to be realised by the ports and its stakeholders by 2030.

Performance and quality of service: as highlighted in figure 5, 59,38 % of respondents attributed the highest importance to this tactical objective, followed by a medium –high score (37,5 %) while only 3,13 % respondents attributed a medium-low importance.

Hinterland, multi/synchro modality, supply chain integration, modal shift[2]: as shown in figure 6, as many as 65,08 % of respondents attributed the highest importance to this tactical objective, followed by a 37,50 % of them that attributed a medium-high importance.

Mobility and accessibility: This tactical objective refers to the consistency between urban mobility plans and port connections. In this case, there is a higher percentage of respondents attributing a medium-high score to this tactical objective (45,91%) than those attributing the highest the highest importance (35,94%).

TEN-T Networks: This is about the realisation of TEN-T core and comprehensive networks. In this case, 3,13 % of respondents believe that the connection of a port to the TEN-T network has a very low importance.

Sustainability: This topic covers all aspects of the traditional 3P perspective on sustainability: planet is environmental sustainability, profit is the economic sustainability and people is the Social sustainability. In other words, initiatives to improve the environment should not have a considerable negative effect on the economy and on the social welfare. A high percentage of respondents attributed the highest importance to this tactical objective (68,75 %), followed by a medium-high importance selected by the 23,44%)

Safety and security: almost half of the respondents (46,88%) attributed the highest score to safety and security.

Digitalisation and digital transformation: Digitalisation is the automation of existing manual and paper-based processes, enabled by the digitisation of information. Digital transformation is about changing business operations, business models and even revenue streams and new business opportunities. A high percentage of respondents attributed the highest importance to this tactical objective (70,31%) followed by a medium-high importance selected by the 23,44% of respondents.

Port –City and human element: this tactical objective refers on how the port infrastructure and port activities can be integrated with the city and the surroundings. Almost the half of respondents (45,31%) attributed a medium-high score to this Tactical Objective.

Financing and funding: this tactical objective refers to all financial issues of all private actors and authorities operating in the ports. This includes also funding by local, national, European and international authorities. It covers both the initial investment costs (CAPEX: CAPital EXpenditure)

[2] Multimodal transport refers to the use of different means of transport on the same journey
Synchro modal transport is the service which, through informed and flexible planning, booking and management, allows to make mode and routing decisions at the individual shipment level, as late as possible in the transport planning process including the trip itself.

and recurrent costs (OPEX:OPerating EXpenditure) This is the only tactical objective which received a no importance score (by the1,56 % of respondents).

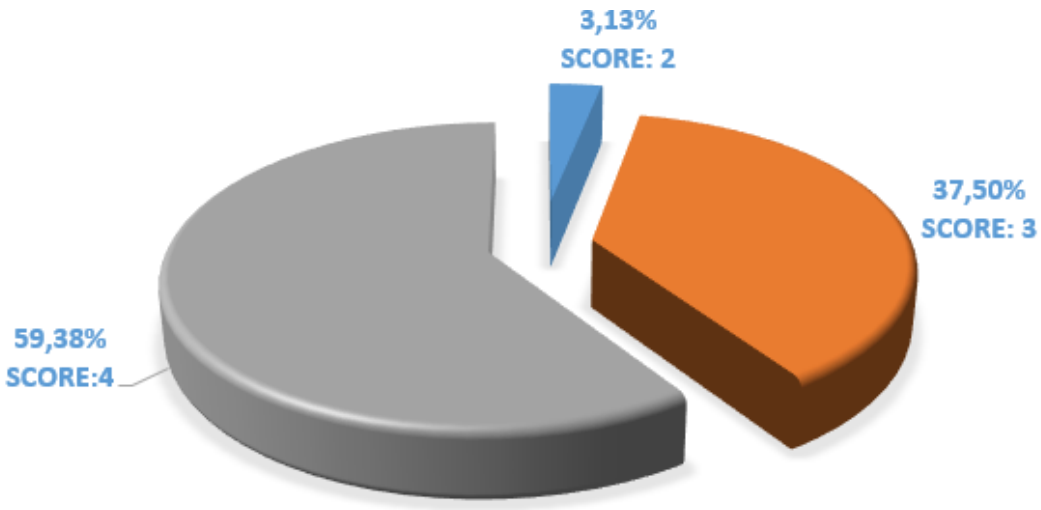

Figure 6 Performance and quality of service

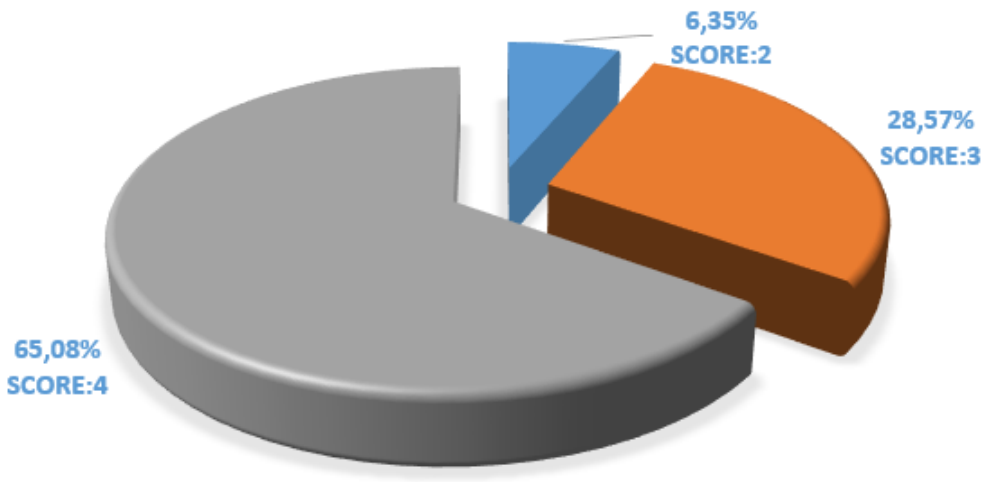

Figure 7 Hinterland, multi/synchro modality, supply chain integration, modal shift

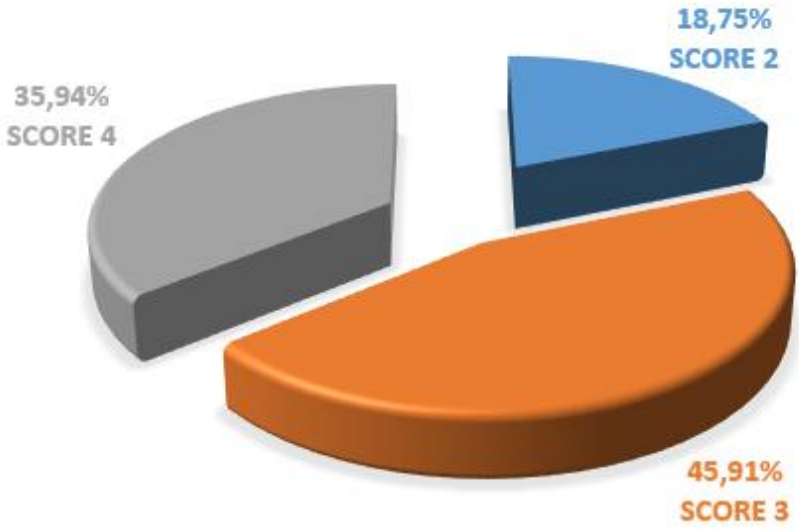

Figure 8 Mobility and accessibility

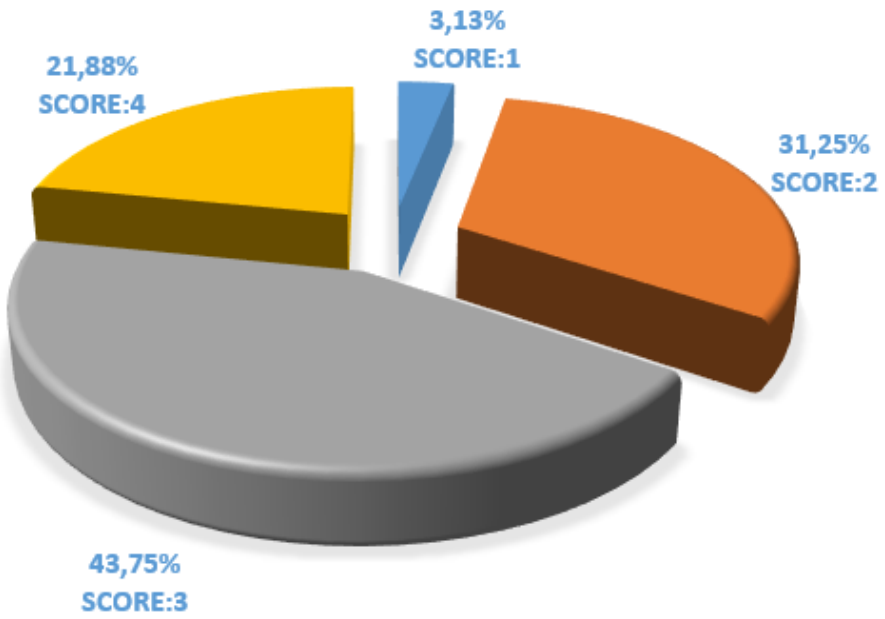

Figure 9 TEN-T Networks

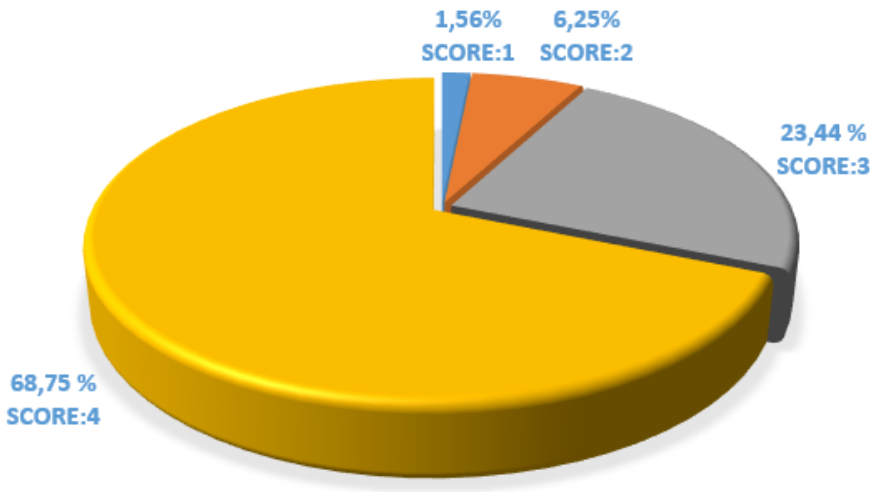

Figure 10 Sustainability

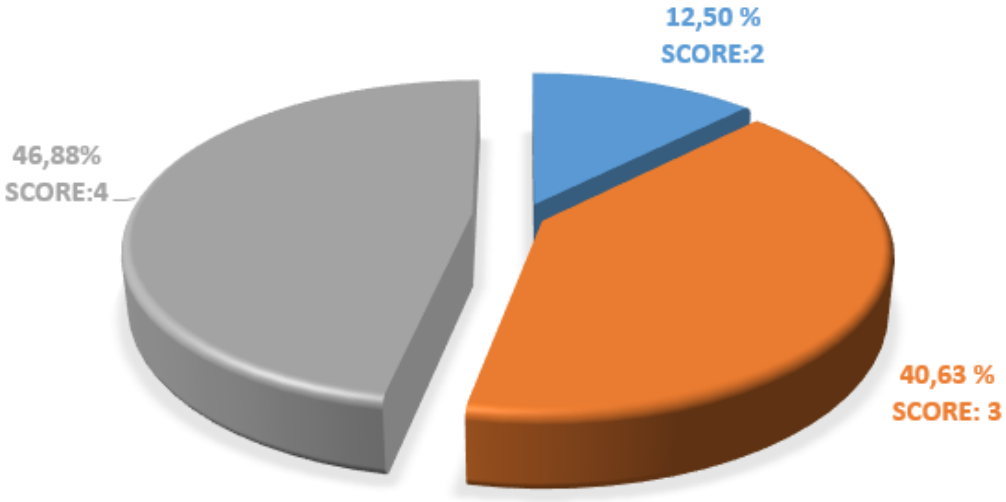

Figure 11 Safety and security

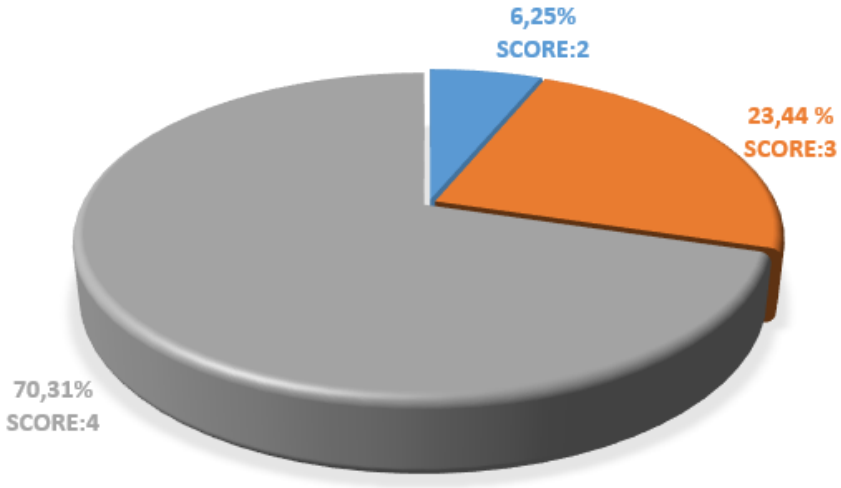

Figure 12 Digitalisation and digital transformation

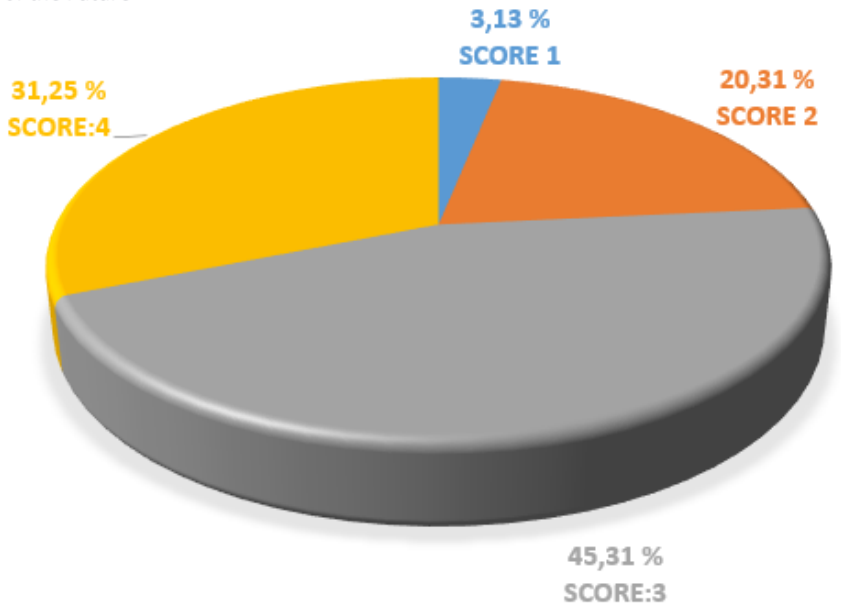

Figure 23 Port city and human element

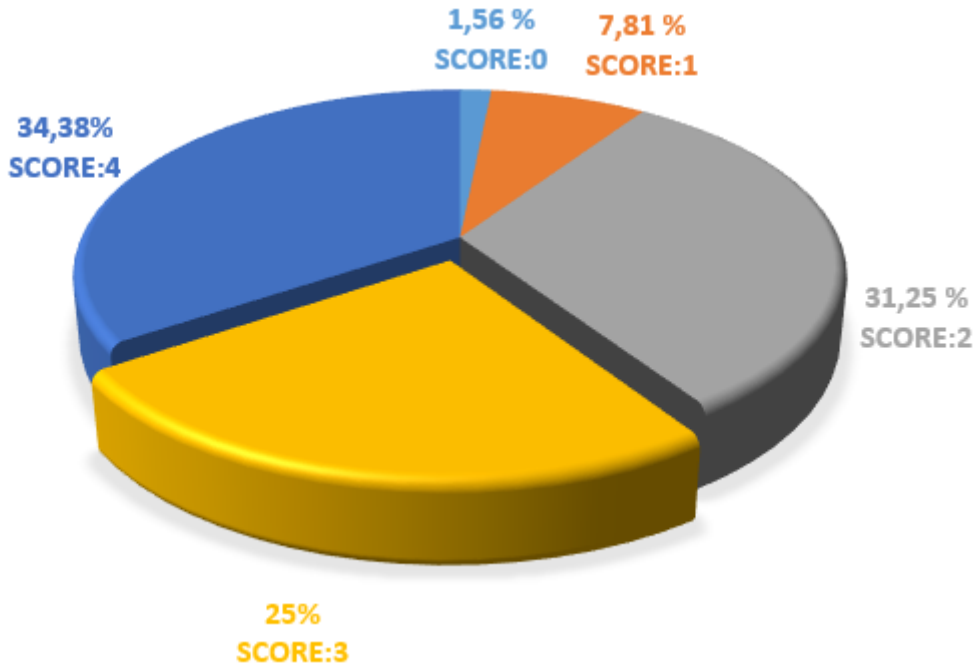

Figure 14 Financing and funding

To summarise:

- Digitalisation and digital transformation is the tactical objective to which it was attributed the highest importance by the majority of the interviewed stakeholders (70,31 %)

- The second tactical objective believed as the most important is Sustainability (68,75%)
- The third tactical objective believed as the most important is Hinterland, multi/synchro modality, supply chain integration, modal shift (65,08%)
- Financing and funding is the only tactical objective which received a 0 importance score by the 1,56 % of respondents.

4.2.1. What is the stakeholders' vision of the Port of The Future?

The high importance attributed by the stakeholders to the above-mentioned tactical objectives, is fully confirmed and deeply explored in the open questions section, where they were asked to define their own vision on the Port of the Future.

The following table collects all the answers to the question "Please describe your idea about the Port of the Future - meant as near future (2030)". The first column collects all the answers received. The main key words related to these answers have been included in the second column. The third column presents the Tactical Objectives which can be associated and that are more linked to these key words. To give an example: if a stakeholder's vision of his/her port of the Future refers to a less polluted port, such a statement has been connected to the key word "less pollution" which, in turn, is connected to the SUSTAINABILITY tactical objective. Analysing the answers and the related keywords, it was noted that these answers can be associated to the following Tactical Objectives groups, meaning that some answers can be connected to only one tactical objective (e.g. sustainability), while other can be connected to two tactical objectives (e.g. SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION), up to a maximum of 3 tactical objectives (e.g. SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION AND PORT-CITY AND HUMAN ELEMENT).

1. SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
2. SUSTAINABILITY
3. PORT-CITY AND HUMAN ELEMENT
4. DIGITALISATION AND DIGITAL TRANSFORMATION
5. SUSTAINABILITY AND SAFETY AND SECURITY
6. PERFORMANCE AND QUALITY OF SERVICE
7. HINTERLAND, MULTI/SYNCHRO MODALITY, SUPPLY CHAIN INTEGRATION, MODAL SHIFT
8. SUSTAINABILITY AND HINTERLAND, MULTI/SYNCHRO MODALITY, SUPPLY CHAIN INTEGRATION, MODAL SHIFT
9. SUSTAINABILITY AND PORT-CITY AND HUMAN ELEMENT
10. SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION AND PORT-CITY AND HUMAN ELEMENT

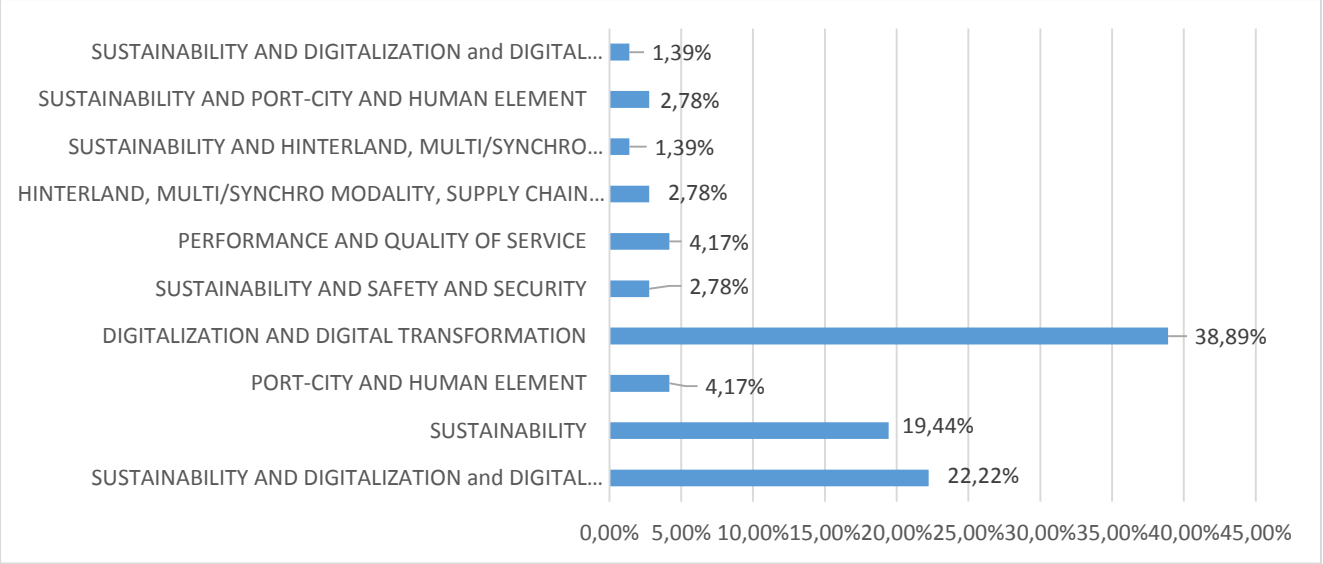

Figure 15 Main tactical objectives linked to the first open question

As it can be seen in the above graphic, the vast majority of respondents (38,89%) gave answers which can linked to the digitalisation and digital transformation tactical objective; the 22, 22 % of them have a vision of the port of the future which can be linked to both sustainability and digitalisation and digital transformation objectives; followed by a group of stakeholders (19,44%) for which sustainability is the main objective.

As it can be seen, the recurrent key words refer to environment and digitalisation. The port of the future is, for the majority of stakeholders, a less polluted/environmentally-friendly/green/carbon neutral/zero emission and connected/digital/digitised/smart and interoperable port.

Environmental concerns and the importance of seizing the opportunities provided by digital progress are further confirmed and elaborated in the question where stakeholders were asked to describe the most important external factors and market trends, which have an impact on their vision of the Port of The Future. Recurrent mentioned market trends are technologies such as block chain, internet of things, 5G and machine learning, big data and cybersecurity.

Please describe your idea about the Port of the Future - meant as near future (2030)	Key words	Tos
Zero emissions - adaptation of renewable energy. Online scheduling of truck arrivals. Full connectivity with rail and inland waterway if it exists. Port community system with shared information on all port stakeholders. Circular economy adopted in port operations/asset/waste/water management.	zero emissions, renewable energy. PCS (Port Community system). Circular economy	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
Increased productivity with dramatically less pollution	less pollution	SUSTAINABILITY
Connected, Multi operations, Competitive, Environmentally sensible	connected; environmentally sensible	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
advanced communication and implement IOT to make ports smarter and more efficient implement global SDG standards for example for onshore power supply of vessels to reduce emissions in the port rethink if bigger is always better what is the external cost	advanced communication; IOT, reduced emissions	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
acceptance as active member of society, bringing wealth to the area	(port) as active member of the society	PORT-CITY AND HUMAN ELEMENT
A port facing challenges related to simplification and digitalisation of processes, emission reduction, energy transition, electrification, smart grids, port-city interface and the use of renewable energy management.	simplification, digitalisation, renewable energy management	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
The port of the future will be a full automatic place where autonomous ships berth and load discharge by autonomous means.	full automatization	DIGITALISATION AND DIGITAL TRANSFORMATION

For me a port of future should be a sustainable port, in which the economic development could coexist with the environmental protection and ensure the welfare of the neighbour citizens	sustainable port; environmental protection	SUSTAINABILITY
The port should offer the fastest and tailored service in a sustainable way and preserving safety and security issues	sustainable port; safety and security issues	SUSTAINABILITY AND SAFETY AND SECURITY
Until 2030 the Port of the future should be carbon-neutral and get its power-supply from renewable energies. Smart Grid-concepts had made it possible to connect the energy sector with the transport- and the Heat/Cold-sector; port infrastructure Manager and port suprastructure/terminal Manager work closer together in their energy-management to balance their power supply with local production. Mobile engines will be powered by hydrogen or battery or with other alternative fuels (e.g. CNG, LNG, Bio-LNG, synthetic LNG; ...); in ports are the necessary fuel & power stations. Air emissions are reduced especially GHG-Emission.	carbon-neutral, renewable energies, smart-grid	SUSTAINABILITY
Fully digitalised services based on international standardised data sets.	fully digitaliSed	DIGITALISATION AND DIGITAL TRANSFORMATION
Zero emissions vessels and operations, clean waters, essential partner in energy transition	zero emissions, clean waters	SUSTAINABILITY
Port of the Future means an scenario in which infrastructure will be more important than infrastructure.	infrastructure	DIGITALISATION AND DIGITAL TRANSFORMATION
Port as a Service	port as a service	PERFORMANCE AND QUALITY OF SERVICE
Shared data and analytics which enable strategic efficiencies and operational excellence. A 'Green' powerhouse, utilising infrastructure and seabed resources to provide energy to create a self-sustained eco port	green powerhouse, eco port, data analytics	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION

Un port résilient, inscrit dans un territoire et répondant aux besoins de l'hinterland. Soucieux de réduire l'impact environnemental de ses activités et de contribuer à la réduction des GES en développant les liaisons, y compris courtes.	reduced environmental impact	SUSTAINABILITY
A full digitally enabled experience where all stakeholders cooperate according to the Physical Internet principles	fully digitalized; physical internet	DIGITALISATION AND DIGITAL TRANSFORMATION
The Port of the Future is a sustainable eco-system, serving as a catalyst for regional development in an economic, environmental and social point of view. It is driven by cutting-edge technologies, in order to meet the needs of port users with a greater level efficiency, transparency, and value while at the same time aims at a lower environmental footprint of port operations and reduction of the disturbance to local communities.	sustainable eco-system	SUSTAINABILITY
Intermodal Port	intermodality	HINTERLAND, MULTI/SYNCHRO MODALITY, SUPPLY CHAIN INTEGRATION, MODAL SHIFT
A transport and logistic hub that is digitalized and is connected to various multimodal hubs for exchanging information between various stakeholder in the logistic chain.	digitalised and connected	DIGITALISATION AND DIGITAL TRANSFORMATION
An intermodal platform where flows of people and goods are governed through seamless technology	seamless technology	DIGITALISATION AND DIGITAL TRANSFORMATION
sustainable, efficient, connected to European rail and road networks. The prevision is a doubling of the current handling of containers, ships with engines with low environmental impact (LNG), eco-sustainable docks, a lot of automation in port work	sustainable, efficient, conneced	SUSTAINABILITY AND HINTERLAND, MULTI/SYNCHRO MODALITY, SUPPLY CHAIN INTEGRATION, MODAL SHIFT
Facilitate conditions for sustainable maritime supply chains	sustainable supply chains	SUSTAINABILITY

Definition of the total environment of the port sector and how it is to evolve over the coming 12 years	port sector	PERFORMANCE AND QUALITY OF SERVICE
New settlements and renewed concession agreements will include not only capacity and performaNce goals but also safety, security at work and environmental targets for the operation of the respective site and the services provided by it.	safety, security environmental targets	SUSTAINABILITY AND SAFETY AND SECURITY
Fully integrated in the logistic chain, at all levels, clean, digital and sustainable.	fully integrated, digital and sustainable	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
The Port of the Future will use new ICT, data analytics and IoT technologies to optimize traffic flows, operations and safety while operating sustainably within its surrounding environment and hinterland	ICT, data analytics, IOT technologies, sustainability	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
Ports as blue economy and technology hubs; New approach - The analysis and treatment of data and big data will be crucial, to anticipate the market trends.	blue economy, big data	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
Semi-fully automated activities, with the possibility to integrate real time planning and optimization. An integrated Information Exchange platform for all stakeholders to share Information and activities.	semi-fully automated, real time planning and optimization	DIGITALISATION AND DIGITAL TRANSFORMATION
The digital port. By improving efficiency through new technologies (notably AI, IoT, and cargo tracking), negative externalities will be reduced.	digital port, IOT	DIGITALISATION AND DIGITAL TRANSFORMATION

MY "PORT OF THE FUTURE" IDEA IS BASED ON THE CONCEPT OF INTEGRATION, BOTH FUNCTIONAL AND SOCIAL. THE PORT OF THE FUTURE MUST BE SUSTAINABLE BOTH ECONOMICALLY AND ENERGY-ENVIRONMENTAL LEVEL (GREEN PORTS) WITH OPPORTUNE STUDIES THAT INTEGRATE THESE COMPONENTS. A FUNDAMENTAL ASPECT is THE CITY-PORT INTERACTION THAT MUST BE STUDIED IN DETAIL FROM THE ANALYSIS OF THE LAND-USE, EVALUATING THE RECIPROCAL IMPACTS BETWEEN CITY AND PORT, MINIMIZING THEM. THE PORT MUST BE INTEGRATED WITH THE TERRITORY THAT HOSTS IT AT SOCIAL AND CULTURAL LEVELS, VALORISING THE PECULIARITIES. INTEGRATION MUST BE THE MAIN CONCEPT ALSO IN THE MANAGEMENT OF PORT SECURITY/SAFETY WITH APPROACHES AND INNOVATIVE METHODS. THE MAIN INTEGRATION MUST WILL BE BETWEEN THE DIFFERENT ACTORS OF THE PORT COMMUNITY WHICH MUST OPERATE SYNERGICALLY FOR A COMMON END.	sustainable port, port-city interaction, integration with the hosting territory	SUSTAINABILITY AND PORT-CITY AND HUMAN ELEMENT
In 2030 the port of the future will be more integrated on the maritime leg and especially on the land side of it. This implies a strong integration with the port city, with the logistics activities in the hinterland, both for the physical flows and for the data transmission.	integration with the port city	PORT-CITY AND HUMAN ELEMENT
My idea of the Port of the Future consists in hyper-connected hubs, sharing information with all entities around affecting all their activities. In the Port of The Future, advances on machinery should be hand-to-hand with ICT infrastructure, sensoring, controlling, monitoring and process optimization based on newest methodologies.	hyper-connected port, ict	DIGITALISATION AND DIGITAL TRANSFORMATION
a Port capable to increase its efficiency and productivity by using technology and by interacting with the other public and private operators, while monitoring and reducing its environmental impact on the surrounding area	environmental impact	SUSTAINABILITY

The Port of the Future should be an high technologic and automized multimodal terminal, directly linked via rail to the regional intermodal platforms and international hubs. It should use electricity as the only power to carry on port activities/movimentation as well as lightning and ship power forniture. The energy should be created by green solutions (photovoltaic, eolic..) installed inside or nearby the port.	high technologic port, automised port, green solutions	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
Real single window between ports, Environmental friendly, Sustainable, Integration of logistics between landside and seaside, Automatization of processes including regulatory issues	automatisation of processes, sustainability	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
fully automated operations on warf and yard side. New technologies used to minmise the impact of refitting or changing lifting equipment, use of algorithm to optimise container yard space and equipment use. Use of block chains to improve security of e.d.i. messages.	fully automated operations	DIGITALISATION AND DIGITAL TRANSFORMATION
Ports support of reducing the impact of climate change and the environment coming from the port activities; to improve logistics efficiency and integrate the port in the surrounding socio-economic area, focusing on city-port relations and the smart urban development of Port Cities. Incorporate innovative solutions for low-carbon emissions, development of hinterland transport networks, contribute to sustainable Smart Port Cities	reduced impact on the environment, port-city relations, innovative solutions	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION AND PORT-CITY AND HUMAN ELEMENT
The Port of the Future in 2030 will be a completely digitised business, where all the involved information for a port will come in digital format directly from its source in real-time, including documents, sensor-based data, facility and infrastructure data, business events, etc. Each organisation in a Port Community will provide the data they are responsible for in terms of being the origin of the information, and will decide the level of privacy and which specific information is to be shared with each specific stakeholder. This common infrastructure that goes beyond state-of-the-art PCS's will foster new	completely digitised	DIGITALISATION AND DIGITAL TRANSFORMATION

businesses and will allow to optimize operations and activities all along the value chain.		
Decarbonised and fully interconnected port. Use of electrification and alternative fuels as well as implementation of real-time information exchange technologies, cloud computing and predictive analysis for better decision making. Better intermodal connections, more efficient and faster. Synchronised port calls, just-in-time operations. Circular economy.	decarbonised and fully interconnected	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
A port fully integrated in its environment and considering/monitoring natural environment	monitoring natural environment	SUSTAINABILITY
The port of the future is smart, interconnected and interoperable. It is aligned with main trends in innovation and sustainability, by reducing the overall impact of port costs on the logistic chain and improving less polluting technologies. The port of the future relies highly on real time monitoring and control of operations, to better plan port development and to assess the impact of port activities on the environment and local economy. The port of the future puts together data, physical flows and infrastructural components as asset for boosting value added activities, not only in relation to logistics, but also in connection with smart manufacturing and circular economy's opportunities.	smart, interconnected, sustainability	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
higher automation, higher share of containers, fewer operators	automatiSation of processes	DIGITALISATION AND DIGITAL TRANSFORMATION
Modern, efficient, environmentally friendly, safe, smooth operations	efficient and environmentally friendly	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
The port of the future will be fully integrated in th city, with low environmental impacts.	integrated with the city, low environmental impacts	SUSTAINABILITY AND PORT-CITY AND HUMAN ELEMENT
Port is the node and the gate between the ship and the city. Therefore a common action and planning si need in order to strengthen the activities. Also in relation to big data, energy security and supply chain.	big data	DIGITALISATION AND DIGITAL TRANSFORMATION

A Port of the Future should be an infrastructure created and optimized to deliver services that can raise the standard of port operations to a new standard of efficiency, safety and speed. This means that new solutions and technologies should be developed in order to increase automation and predictability. For instance, the usage of quay LIDARs that could use standard information exchange with ships and thus provide highly accurate positioning information.	new technologies	DIGITALISATION AND DIGITAL TRANSFORMATION
The Port of the Future will be able to enhance sustainable development and to manage the resources to be invested and their employment for a competitive advantage.	sustainable development	SUSTAINABILITY
Intermodal port	intermodality	HINTERLAND, MULTI/SYNCHRO MODALITY, SUPPLY CHAIN INTEGRATION, MODAL SHIFT
IoT supported port operations with basic analytical capabilities	IoT	DIGITALISATION AND DIGITAL TRANSFORMATION
Fully automated	Fully automated	DIGITALISATION AND DIGITAL TRANSFORMATION
Customer friendly port that meets with its users, listens to their needs, adopts to the current shipping trends, transparent and environmentally friendly. The Ports should compete between them and stop being publicly owned.	environmentally friendly	SUSTAINABILITY
Further consolidation in shipping, more data generation & data sharing	data sharing	DIGITALISATION AND DIGITAL TRANSFORMATION
Seamless & efficient vessel call in a port and throughput of the cargo to local and hinterland destinations	seamless technology	DIGITALISATION AND DIGITAL TRANSFORMATION

Our vision is that by 2030 we will have transformed Dublin Port into a highly land efficient port, an attractive destination in its own right and permeable to the people of Dublin to enjoy and experience the port's heritage in all its diversity from the natural environment, to arts, to local history.	port citu relation	PORT-CITY AND HUMAN ELEMENT
Fast transit	fast transit	DIGITALISATION AND DIGITAL TRANSFORMATION
fully automated	fully automated	DIGITALISATION AND DIGITAL TRANSFORMATION
Provides a seamless integration of information that is shared between shippers, port operations and carriers operating in multiple modes of transport	seamless technology	DIGITALISATION AND DIGITAL TRANSFORMATION
Efficient and sustainable port with sufficient cargo handling capacity in all directions.	sustainable port	SUSTAINABILITY
- increasing degree of automation, not just equipment, but also processes - unchanged logistical processes, and thus, no major changes in equipment types and operating systems -	automation	DIGITALISATION AND DIGITAL TRANSFORMATION
Automation, Lean Procedures, Green Technologies, Renewable energy resources, Efficiency, Speed, Sustainability	automation, green technologies	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
Automated, autonomous, connected, and sustainable	automated and sustainable	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
Serving the nearest hinterland to avoid unfair competition	avoid unfair competition	PERFORMANCE AND QUALITY OF SERVICE

More consideration for environment (air pollution, waste, noise, water and soil pollution) and more digitalisation. This will result in more different energy sources (LNG, LPG, methanol, biogas..) that will be used by trucks, ships, equipment. More respect for working conditions and environmental protection (dust prevention, air quality, soil and water protection). Information sharing without sending additional messages. Meaning info on central database and shared (depending on the user rights) between public and private sector.	less pollution and more digitalisation	SUSTAINABILITY AND DIGITALISATION and DIGITAL TRANSFORMATION
fully automated	fully automated	DIGITALISATION AND DIGITAL TRANSFORMATION
Sustainable part in the transport chain	sustainability	SUSTAINABILITY
Near future 'smart' and 'AI' projects necessitate a Port in which port authorities, shipping companies, shipping agencies, ... are aware of the imminent automation processes on hand and sustain this awareness by actively participating and investing in the development of the European Maritime (Single Window) Environment as a benefit for all partners taking an interest in a steady, secure and safe maritime transport	automation	DIGITALISATION AND DIGITAL TRANSFORMATION
automated	automation	DIGITALISATION AND DIGITAL TRANSFORMATION
Seaport as a socio-economic space of the multi-faceted impact on the environment combining the processes of transport, thanks to the technical and technological equipment, the sea to the mainland, which are realized interpenetrating, interdependent and interrelated, objective and spatial functions related to with trade and movement of people.	environment	SUSTAINABILITY
fully automated	automation	DIGITALISATION AND DIGITAL TRANSFORMATION

High degree of digitalisation of documentary processes especially in container trade, but also RORO and eventually also breakbulk and bulk will quickly follow. Money spent in software rather than in human capital, human work as much as possible outsourced to low wage countries.	digitalisation	DIGITALISATION AND DIGITAL TRANSFORMATION
Paperless and data sharing which integrates processes of port stakeholders plus higher level of automation and business analytics	paperless and data sharing	DIGITALISATION AND DIGITAL TRANSFORMATION

Table 3 Idea about the port of the future

Moving to the second open question, which consisted in asking the partners what are the most important external factors and market trends having an impact on their vision of the port of the future, the following table shows the answers. The answers have been associated to the main six following categories:

- Regulatory issues and policies
- Environmental issues
- Political issues
- Digitalization
- Economic Issues
- Historical Issues

As shown in Figure 16, more than half of respondents gave answers which can be associated to the "Digitalisation" category, followed by Regulatory issues and policies (17 %) and environmental issues (15 %).

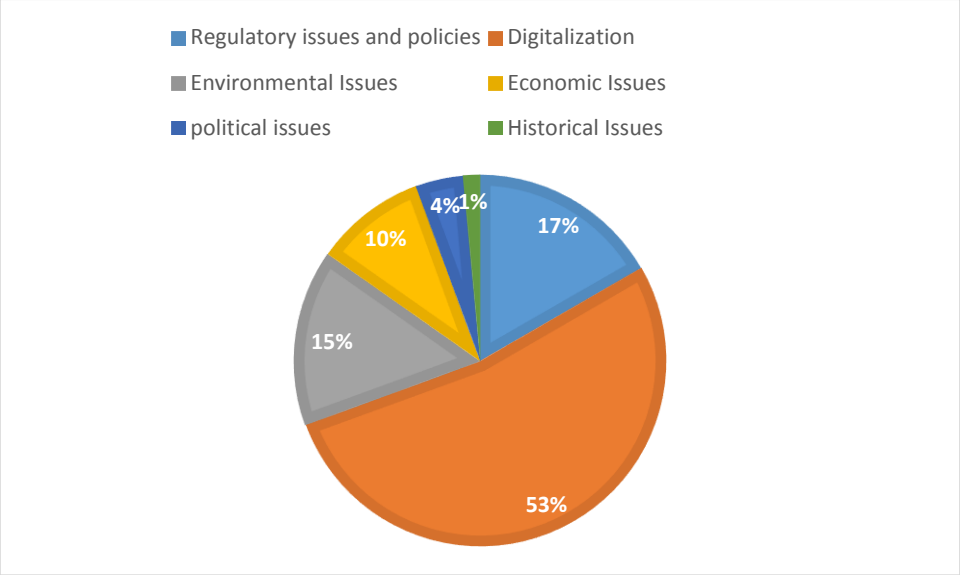

Figure 16 External factors and market trends, main categories

Please describe the most important external factors and market trends which have an impact on your vision of the Port of The Future	Main categories
Regulatory issues, capacity issues and alignment with city policies.	Regulatory issues and policies
Digitalisation, protectionism, environmental awareness	Digitalisation
Regulatory issues	Regulatory issues and policies
we move from traditional ports to digital smart ports with changes in communication whereby data is the oil of the 21th century trend of building bigger and bigger ships so ports have to follow but ask critical questions do we have to follow this trend if the big vessels only drop/load part of the cargo on board what is the cost for the society as a whole	Digitalisation
environnemental issues, digitalisation, social acceptance	Environmental Issues
Sustainability and renewables	Environmental Issues
Robotisation and the need for better productivity/costs	Digitalisation
Economic Issues are key for the ports but sometimes they can be a problem for the environmental protection.	Economic Issues
Concentration of actor along the supply chain. Forward and backward vertical integration. Increasing international trade with new emerging partners. Energy transition…	Environmental Issues
The maritime economy everytime needs a level playing field for all actors. For a sustainable and decarbonisation development we need "real" prices (through introduction of external costs) esp. for fossil fuels as soon as possible. Therefore politicians are needed to work on international agreements	Environmental Issues

to fuel pricing; ship size standards and sustainable reporting. Frontrunners and pilot innovation projects as well as network improvements should be pushed by public subsidies.	
New technologies such as AI, IoT, Blockchain, etc.	Digitalisation
Energy transition, increased transportation of goods, societal awareness	Environmental Issues
4.0 technologies such as blockchain, internet of things, 5G and machine learning	Digitalisation
Port 4.0 And blockchain	Digitalisation
Increased Environmental obligations imposed by regulators on maintenance Dredging for the Port. No clear industry direction from ship owners as to 'what' future green power solution will adopted by the industry. In particular, what a Port has to implement for shore power or vessel feeling that is a 'one' solution for calling ships. Future Environmental legislation to protect communities and residential housing which have clustered around ports ie: 24/7 Operational Noise / Lighting and traffic movements	Environmental Issues
Une fiscalité des transports moins favorable à la route qui prenne en compte les externalités.	Regulatory issues and policies
Digital Transformation	Digitalisation
Legislation Technology Limitations Environmental Footprint Societal Acceptance	Regulatory issues and policies
Regulatory issues	Regulatory issues and policies
Standarisation of information, multimodal information flows and trust between different stakeholders within those flows.	Digitalisation

Digitalisation - delayering/disintermediation of services to reduce costs/efforts	Digitalisation
digitalisation	Digitalisation
Digitalisation and near-sourcing	Digitalisation
technological development (to be incorporated in the port sector), availability of capital for investments	Digitalisation
The Port of the Future is challenged by a couple of external factors and market trends including the competition between ports and trade lanes where the "internal" and the "external" coincide. Among others the decarbonisation will - already by 2030 - change the type and size of commodities for European import from primary energy and raw material to higher value goods because the first valorisation steps have been carried out already in the export country. Uncertainties in the global trade lanes, the further increase of recycling and a shorter time-to-market will encourage intra-European trade including short sea shipping. On the other hand further signals of climate change (increase of sea-level, higher frequency and intensity of extreme weather (storm, rain, floods, temperature) will call for action to prepare the infrastructure and its operation.	Environmental Issues
Sustainability challenges & logistics approach (client driven: low cost, flexible & feasible)	Environmental Issues
environmental policies	Regulatory issues and policies
Digitalization and digital transformation; E-commerce - use of different channels than conventional ones - change of transport unit - door-to-door logistics; Physical products could be transformed into digital content that can be printed on 3D printers anywhere in the world - changing transport networks - reducing stocks;	Digitalisation
Digitalisation of the market	Digitalisation
Ensuring interoperability e.g. through global standards. It will be important to encourage technological innovation, albeit avoiding monopolies.	Digitalisation
IMMATERIAL INFRASTRUCTURE FOR THE MANAGEMENT OF PORT COMMUNITY SYSTEM IN ORDER TO GUARANTEE MORE FLEXIBILITY TO A DYNAMIC MARKET AND STRONGLY EVOLVENT	Digitalisation

TOOLS FOR THE INTEGRATED MANAGEMENT OF URBAN AND PORT PLANNING SYSTEMS	
Environmental concerns, world trade and economical trends, technological developments, data management	Environmental Issues
Advances in software technology, computation capacity and the possibility to have everything connected.	Digitalisation
Eu and national policies on environment and transport; large-scale economies	Regulatory issues and policies
IOT - automization	Digitalisation
regulatory issues across countries	Regulatory issues and policies
regulatory issues	Regulatory issues and policies
Globalisation, the tourism together with the growth of cruise ship industry, the production and servicing of mega container vessels affect my vision of the Port of the Future	economic Issues
IoT, AI, Big data, blockchain, enterprise data spaces	Digitalisation
Technology maturity, financial feasibility, commitment of the industry	Digitalisation
Climate change as Sea-level rise and other effects	Environmental Issues
Internet of things deployment in logistics; New technologies to make the exchange of data smoother and more secure (e.g. Blockchain); increasing automation in logistic and transportation processes	Digitalisation
shipping line concentration, size of vessels	Economic Issues
automation/digitalisation	Digitalisation
Laws about environmental impacts, hydrocarbure market evolution	Regulatory issues and policies

Awareness, Regulation and Financial barrier.	Economic Issues
The most important external factor should be the regulatory aspects that will determine the viability of autonomous ships. The study and development of autonomous tugboats and their control methods, in isolated operations and in swarms should be promoted in order to take advantage of other sector market trends.	Regulatory issues and policies
adoption of ICT technologies, interoperability of ICT, availability of low cost ICT solutions, external pressure for cost efficiency	Digitalisation
ICT improvements	Digitalisation
ICT support for ports	Digitalisation
Cybersecurity--Digitalisation	Digitalisation
Governments	political issues
digitalisation	Digitalisation
technology (data sharing mechanisms)	Digitalisation
Firstly, on external factors, there are three: Air quality mitigation policies and measures; climate change policies and measures; protection and enhancement of habitats. Secondly, on market trends, the big factor is economic growth in Ireland due, in part, to population increase leading to inexorable growth in import volumes of cargo.	Environmental Issues
Performance of maritime Supply chain	Economic Issues
History is one major external factor. Everyone is returning to the history and thereby holds back developments Weather is another external factor. Drawing parallels to airports then in nice weather everything works	Historical Issues

finds while in nasty weathers there are some troubles. But looking over the whole year cycle it is luckily not bad weather every day	
Saturation of western-Europe road network	Economic Issues
Trade - Environment	political issues
- digitalisation and automation	Digitalisation
ICT development	Digitalisation
The so-called digital revolution and rising environmental awareness	Digitalisation
The end of the oil era	political issues
Economic crises, security incidents and a more 'nationalistic approach" of certain (big) countries can impact the cooperation in data sharing.	Economic Issues
1) Digitalisation (port as part of digital logistics chains, less paper, faster transit, better use of space and hinterland infrastructure - how fast can port 'plug in'). 2) Open data (port as generator, owner, provider, manager, miner of data). 3) New technologies such as self driving cars, autonomous ships, 3D-printing, drones (port as laboratory for new technologies and innovation hub, less people on the ground, urgent need for different profiles in the port sector).	Digitalisation
Regulations	Regulatory issues and policies
EES, ETHIAS, EMSWe, API, PNR,... the (near) future development of the smart borders and the application of AI.	Digitalisation
Digital Transformation	Digitalisation

Further development of the electronic data exchange platforms in supply chains using Big Data and blockchain technologies.	Digitalisation
digital transformation	Digitalisation
further digitalisation, growing automatisation, need for enhanced security, looking for cost saving e.g. by outsourcing	Digitalisation
availability of new technologies, new entrance of companies from every corner of the globe. Also acceptance and adopting of new technology due to new generation who expect the same benefit from smart solutions as in private use	Digitalisation

Table 4 External Factors and Market Trends

5 Conclusions

The multidisciplinary stakeholder consultation exercise was embarked on by the DocksTheFuture project to gain a greater understanding of how the port of the future concept relates to their work operation, their organisation and the wider community. The abovementioned results showed that there is almost unanimity among stakeholders in believing that Sustainability and Digitalisation are the most important tactical objectives a port should aim at.

Sustainability, in the stakeholders' vision, has different meanings. A sustainable Port is less polluting, greener, environmentally friendly and zero emissions. Digitalisation and Digital transformation, has also different meanings and embraces the adoption of several technologies (e.g. BlockChain, Cybersecurity, Internet of Things).

These results are utmost because they made the voice of the stakeholders heard and represent the basis for further investigations and in-depth analyses.

6 Bilateral meetings-inputs from DGs

In order to complement and get further ideas for future consultations and main areas of interest related to the Port of the Future, the abovementioned survey has been shown to several DGs through bilateral meetings. Further potential consultations may be carried out in the next months to further explore the outputs from the DGs.

The main outcomes from such meetings are summarised below:

DG RTD — Directorate General for Research and Innovation

The Directorate General for Research and Innovation stressed the importance of including the Expert Group of Port Forum in the survey. More in details: ESPO (The European Sea Ports Organization), EFIP (The European Federation of Inland Ports), FEPORT (Federation of European Private Port Operators) , MEDCRUISE (The Association of Mediterranean Cruise Ports) , EMPA (European Maritime Pilots' Association), , ECSA (European Community Ship-owners' Association), CLECAT (European Association for Forwarding, Transport, Logistic and Customs Services) , ECASBA (The European Community Association of Ship Brokers and Agents), BPO Euroshore International.

DG Home-

Main interests of DG Home:

- Implementation of the Community maritime policy
- Border controls for both passengers and goods
- Permanent evaluation of the Schengen area
- Efficiency of external borders
- Suitability of port facilities dedicated to security Schengen evaluation to make ports as safe as airports.

Some solutions of interest:

- Technological solutions for ports that are recognised as boarding crossing points
- Mobile biometry flow management
- Automated border crossing point with simplified and user-friendly access, dedicated interoperability systems
- Solutions to improve the efficiency of organisational capabilities for border controls and information controls-connectivity systems within ports.

- Strong interest in risk analysis systems, development of IBM (Integrated Boarding Management) for the homogenisation of procedures in EU

They highlighted how often is some ports (e.g. Italian ports) there are problems and no risk analysis on the border crossing in particular coming from Far EAST and North Africa. For this reason, a joint analysis could increase the level of forecast.

DG CLIMA

Topics of interest:

- All the topics related to the low carbon economy
  - Air quality
  - Slow steaming
  - Carbon footprint
  - Port transition in terms of climate change
  - Sustainable shipping vs sustainable incentives

DG MARE

Stakeholders to involve according to DG MARE:

- Fisheries associations
- offshore companies;
- Win port

EASME

Topics of interest to be explored:

- dredging
- waste management
- vessel maintenance
- noise
- change behaviours
- Reduction of human pressure
- maintenance biology system
- Development of industrial technology in ports.

They are strongly interested in risk analysis in environmental terms (sustainability-financing-development of technology).

Stakeholders to involve according to EASME:

- Hand users: military-fishery-security
- Agencies: EMSA-JRC-EMU
- Industrial partners: autonomous shipping

DG DEVCO

Priority topics emerged:

- all the issues related to pollution in the ports
- rapid and efficient management of loads to reduce the stay in the port, including personnel training aspects
- all the clean and renewable infrastructures for the production of electricity in port
- common standards for energy transition
- the survey of data on the transport corridors with China and the Far EAST ports

DG TAXUD+DG MOVE

Main points emerged:

- possible interconnection with the SESAR 2020 project on the security maritime area.
- they see more strategic effects on cargo owners and the monitoring of goods

DG TAXUD

Main topics of interest:

- Risk analysis
- New goods increasing
- Data processing/ securing
- Transition number adoption
- Detection data (process training to adapt the procedures at technological level)
- Risk Management Action plan:
- Difficulty in dialogue between stakeholders for operations in port
- Blockchain
- Port Authority control
- Legal activity shift equipment

Co-funded by the Horizon 2020 programme
of the European Union

Annex I- Online stakeholders Consultation survey

DOCKSTHEFUTURE
defining the concept of "Port of the Future"

This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 770064

Welcome to the survey,

DECLARATION OF INFORMED CONSENT: DATA COLLECTION

About the project

DocksTheFuture will receive, from the European Commission, a contribution of about 1.2 million Euros, to define the **Port of the Future,** meant as a near future (2030), which should face challenges related to simplification and digitalisation of processes, dredging, emission reduction, energy transition, electrification, smart grids, port-city interface and the use of renewable energy management. The EU's Innovation and Networks Executive Agency (INEA). under the Horizon 2020 programme, selected the DocksTheFuture project within the 'Smart, green and integrated transport' challenge, which includes areas such as aviation, infrastructure, green vehicles and 'Blue Growth.' The 1.2 million EUR and 30 months' long project, kicked off in January 2018. Circle (Italy) leads the group consisting of academic partners (the University of Genoa (Italy) and consulting companies (Institut für Seeverkehrswirtschaft und Logistik - ISL (Bremen, Germany) Magellan (Portugal) and PortExpertise (Belgium). Project Subcontractors include: AIVP, the worldwide network of Port Cities AIVP (Association Internationale des Villes Portuaires, Canada) assisting on specific port/city aspects, University of Delft (Netherlands) for the Port of the future concept and Lloyds Register for sustainability issues.

The project focuses on research needed to implement new port concepts, new management models, innovative design, engineering, construction and operation technologies solutions for full customer satisfaction in future ports. The project sets out to refine the Port of Future concepts topics and their related targets in 2030, identify appropriate Key Performance Indicators (KPI), monitoring and evaluation leading to the 'Port of the Future Road Map for 2030.'

See http://www.docksthefuture.eu/ for more info on the project. Contact us at info@docksthefuture.eu

Duration, funding and partners

Docks The Future is funded by the European Commission under Horizon 2020, running from 1st January 2018 to 30th June 2018, with an overall budget of 1,275,562.50 €. The project gathers five partners: Circle (Italy) leads the group consisting of academic partners (the University of Genoa

(Italy) and consulting companies (Institut für Seeverkehrswirtschaft und Logistik - ISL (Bremen, Germany) Magellan (Portugal) and PortExpertise (Belgium).

Purpose of the data collection in which you are involved

The aim of collecting information is to get your opinion about your vision of the Port of the Future, since different concepts of Port of the Future may exist. Getting the feedback from practitioners is utmost to do our job in the best possible way. Is for this reason that you've been selected to share your vision and opinions. Your experience and knowledge is incredibly valuable and we thank you for sharing your own vision of Port of the future.

The results coming from the surveys will feed into the project results, more specifically the stakeholders consultation proceedings deliverable,

Data collection and storage

_____

Anonimity

I want to remain anonymous ☐

I do not want to remain anonymous ☐

_____

Refusal or cessation of participation

Participation in this study is voluntary. You do not have to participate in the study if you do not want to. If you choose to participate, you can nonetheless choose to withdraw or leave the study at any time without consequences for you and without being required to provide any explanations.

I hereby consent:

Name: _____

Organisation: _____

Date: _____

Signature:

SECTION 1- INFORMATION ABOUT THE STAKEHOLDER ORGANISATION OR COMPANY

Type of organisation you represent

Port –Related (e.g. Port Authority) ☐

Ship-related[3] ☐

Multi-modal logistics oprator ☐

Terminal-Operator ☐

Technology provider ☐

Authorities (e.g. Customs) ☐

Member States ☐

Cities, Municipalities ☐

Association ☐

Universities, Reserach Associations ☐

Please describe the size of your company or organisation :

Micro-Enterprise (<10 persons employed, up to €2 million turnover) ☐

SME (from 10 to 249 employees, up to €50 million turnover, or balance sheet total up to €43 million) ☐

Not SME (250 employees or more, more than €50 million turnover, and balance sheet total of more than €43 million ☐

[3] e.g. Shipping Agent; Ship-owner; Broker

Do not know ☐

Other, please specify

Activities of your organisation

Multiple answers possible

Terminal Operations (container or multipurpose) (e.g.container handling ; storage of containers ; container transshipment ; weighing containers ; Loading/discharging of bulk cargo vessels ; Mooring and unmooring ; Warehousing ; Receipt and delivery (gate control) ; Grab hire)	
Territorial planning of the port area	
Address, planning, coordination, promotion and control of port operations and other activities carried out in the ports (e.g. identification of the port development strategies)	
Ordinary and extraordinary maintenance of the common parts in the port area	
Assignment and control of activities aimed at providing services of general interest in the port area, not strictly connected to port operations	
Shipping Agents activities (e.g. Ensuring a berth for the incoming ship ; Drawing up the documents for the customs and harbour services ; Arranging for storage bunkers if these are needed ; Arranging for the necessary repairs ; Conveying instructions to and from the ship owner ; Organising the supply, transport and the handling of the goods ; Collecting freights, cargoes ; Contacting shippers and the receivers of the goods etc)	
Shipbroking activities	
Freight forwarding	
Chartering	
Equipping ships (shipowner)	

Logistics and Transport Operations as freight forwarder	
Logistics and Transport Operations as NVOCCs	
Ship Technology Providing (e.g. diesel and engines ; engineering ; icebreakers ; Emission reduction systems for ships etc)	
Port technology Providing (e.g. container terminal automation ; IT solutions and Terminal Operating Systems etc)	
Regulatory, administrative, patrimonial, organisational, accounting and financial activities	
Custom Agencies procedures (e.g. administration of customs duties ; management of customs services ; border control etc)	
Transport Association related activties	
Research Activities	
Other	

SECTION 2- The Port of the Future

Please describe your idea about the Port of the Future - meant as near future (2030).

Please describe the most important external factors and market trends which have an impact on your vision of the Port of The Future

Section 3- TACTICAL OBJECTIVES

Please score the following categories between 0 and 4 (4 representing the highest importance). Tactical objectives are what we propose to be realised by the ports and its stakeholders by 2030. The tactical objectives are linked to strategic objectives which define the picture of a desired future for ports by 2030.

Performance and quality of service

0 1 2 3 4

Hinterland, multi/synchro modality, supply chain integration, modal shift

0 1 2 3 4

Mobility and accessibility

0 1 2 3 4

TEN-T networks;

0 1 2 3 4

Sustainability

0 1 2 3 4

Safety and security

0 1 2 3 4

Digitalization and digital transformation

0 1 2 3 4

Port-city and human element

0 1 2 3 4

Financing and funding

0 1 2 3 4

Name	**Performance and quality of service**
Description	
Multi select options (radio buttons)	Please define what category of KPI's you use to measure performance and quality of service 1. Operational performance indicators about productivity; 2. Operational performance indicators about throughput; 3. Financial performance indicators (e.g. operating cost, maintenance cost, CAPEX, OPEX, etc.); 4. Quality of service indicators (e.g. damages, waiting times, etc.); 5. Environmental indicators (e.g. energy efficiency, use of alternative fuels, etc.); 6. Safety indicators (e.g. Number of incidents and accidents); 7. Other (please specify);
Yes/no questions	-
Free text entry	What are the main actions you propose by 2030 to improve the performance and quality of the services you deliver.
Name	**Hinterland, multi/synchro modality, supply chain integration, modal shift**
Description	

Free text entry	What are the main bottlenecks to shift a higher volume of cargo off the road by 2030
Name	**Sustainability**
Description	
Multi select options (radio buttons)	Please tick the once that are actionable for your organisation • People • Planet • Profit
Yes/no questions	My organisation disposes of a strategic sustainability plan
Name	**Digitalisation and digital transformation**
Description	
Multi select options (radio buttons)	The following technologies are considered most relevant by 2030 1. Mobile internet, mobile devices; 2. Cloud computing; 3. Block chain; 4. Internet of Things; 5. Artificial Intelligence; 6. Advanced robotics; 7. 3D printing; 8. (Near) autonomous vehicles; 9. Big data; 10. Social media.
Yes/no questions	1. Having the business processes described and optimised is a precondition for digitalisation and digital transformation; 2. My organisation disposes of a strategic sustainability plan; 3. Cybersecurity is one of our main concern;

	4. The bandwidth of the current mobile network is insufficient to enable the digital transformation. We urgently need 5G networks; 5. We currently have insufficient qualified human resources to help us with the digitalisation; 6. Digital transformation is disruptive for your business as we know it because completely now players will become active in our market.

Thank you for your cooperation,

The DocksTheFuture Consortium

References

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