Deliverable 11.6

Benchmarking Tool

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1 INTRODUCTION

This document presents a summary of the contributions and challenges that were addressed by the project team that is responsible for the Portopia ICT. In a brief overview, it is presented what has been accomplished, in line with what is defined in the Description of Work (DoW).

Due to the technical nature of the developed work in WP11, and according to the DoW, deliverable 11.6 is not a formal report. Instead, the deliverable exists as a web based platform, already online and being used by the European ports.

The previously developed WP11 deliverables defined the structure of the platform, as well as the main functional modules that allow ports to provide their individual information and receive a set of tools, that allows them to benchmark their performance with other ports (or a set of aggregated ports).

This report will show how port authorities can use the Portopia Service Cloud platform to achieve several types of data analysis, using deliverable 11.5 (and its annexes) as the knowledge base necessary to understand the business logic of each implemented functionality.

Additional information can be found in deliverable 9.5 – Implementation of the benchmarking and weighing tools in the ICT system.

2   BENCHMARKING TOOL

As explained in deliverable 11.5, each Portopia Service Cloud functional module allows port authorities to benchmark their own performance with other ports' performance. Sometimes, they can make a head-to-head analysis with other ports, if the provided data is public, but, in some modules, the benchmark can only be achieved by aggregating several ports' data and comparing the individual port KPI's with European or regional averages, due to the confidential nature of the data.

2.1   Rapid Exchange System (RES)

The developed RES tool provides two different benchmark approaches:

1. **Dashboard** – a dashboard with a predefined set of implemented KPI's
2. **Data Analysis** – a business intelligence tool that allows ports to produce head-to-head analysis

For regional comparison, a set of ranges was defined, according to deliverable 9.2, that grouped ports based on geography and competitiveness:

- Atlantic: Norway + Iceland + south of Le Havre - Gibraltar
- Baltic: north of Hamburg - border of Norway
- UK & Ireland
- Hamburg - Le Havre: south of Hamburg - north of Le Havre
- Mediterranean: Mediterranean area, east of Gibraltar
- Black Sea

2.1.1   RES Dashboard

In the RES Dashboard functionality, it's possible to see a direct comparison between the evolution over time of a given indicator for the port, for the range the port is included in and for the whole system (EU average). For instance, for the Growth per Year indicator, an evolution of the European Union GDP growth was also included.
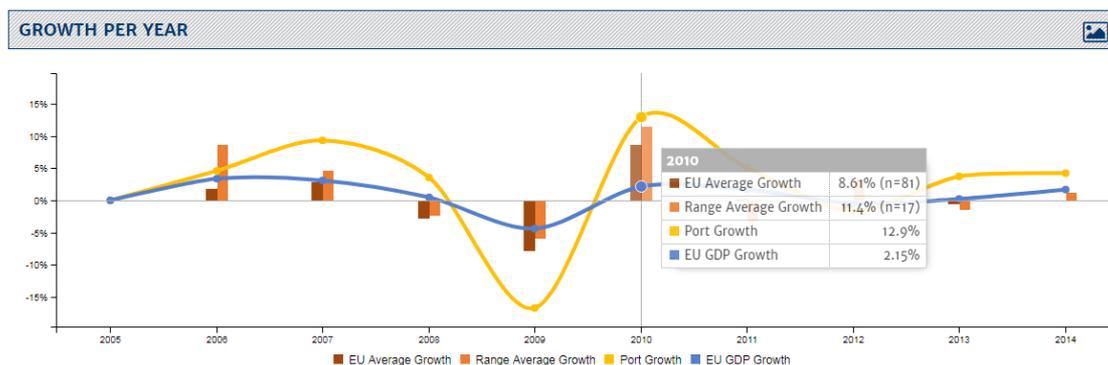

Figure 1 - Growth per Year

For the Share within Port Range indicator, it is also possible to see how the port measures against the top 5 ports in its range.
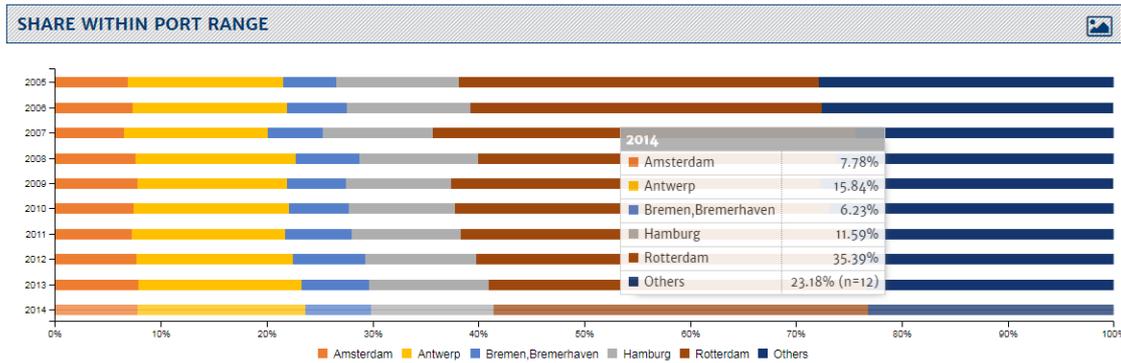
Figure 2 - Share within Port Range

2.1.2   Data Analysis cube

Historically, RES data has been published every quarter, by ESPO, in a report that compiles all the figures from European ports. Because this data is already public and accessible to anyone, Portopia Service Cloud implements an OLAP cube that allows users to make any analysis on their own, with aggregated figures or head-to-head analysis.
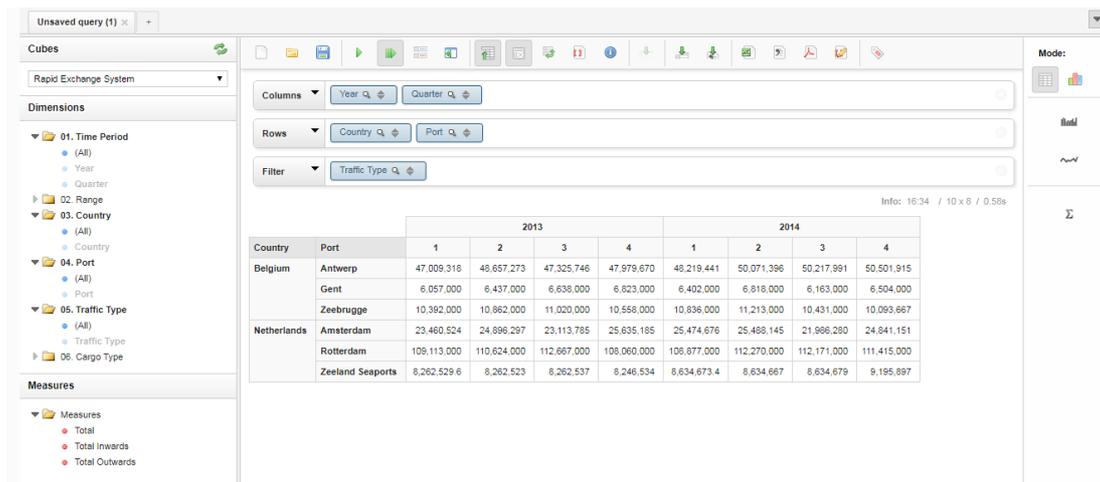

Figure 3 - Total throughput benchmark for Belgian and Dutch ports (2013/2014)

2.2 User Perceptions

The main purpose of the User Perception tool is to allow ports to see how their users perceive them. Still, one of the outputs of the User Perceptions tool is an interface that allows ports to see, for all phase I criteria, the ones they selected and the percentage of ports that selected every available criterion, so that the ports can try to understand if their initial selection was in line with the rest of the European ports.
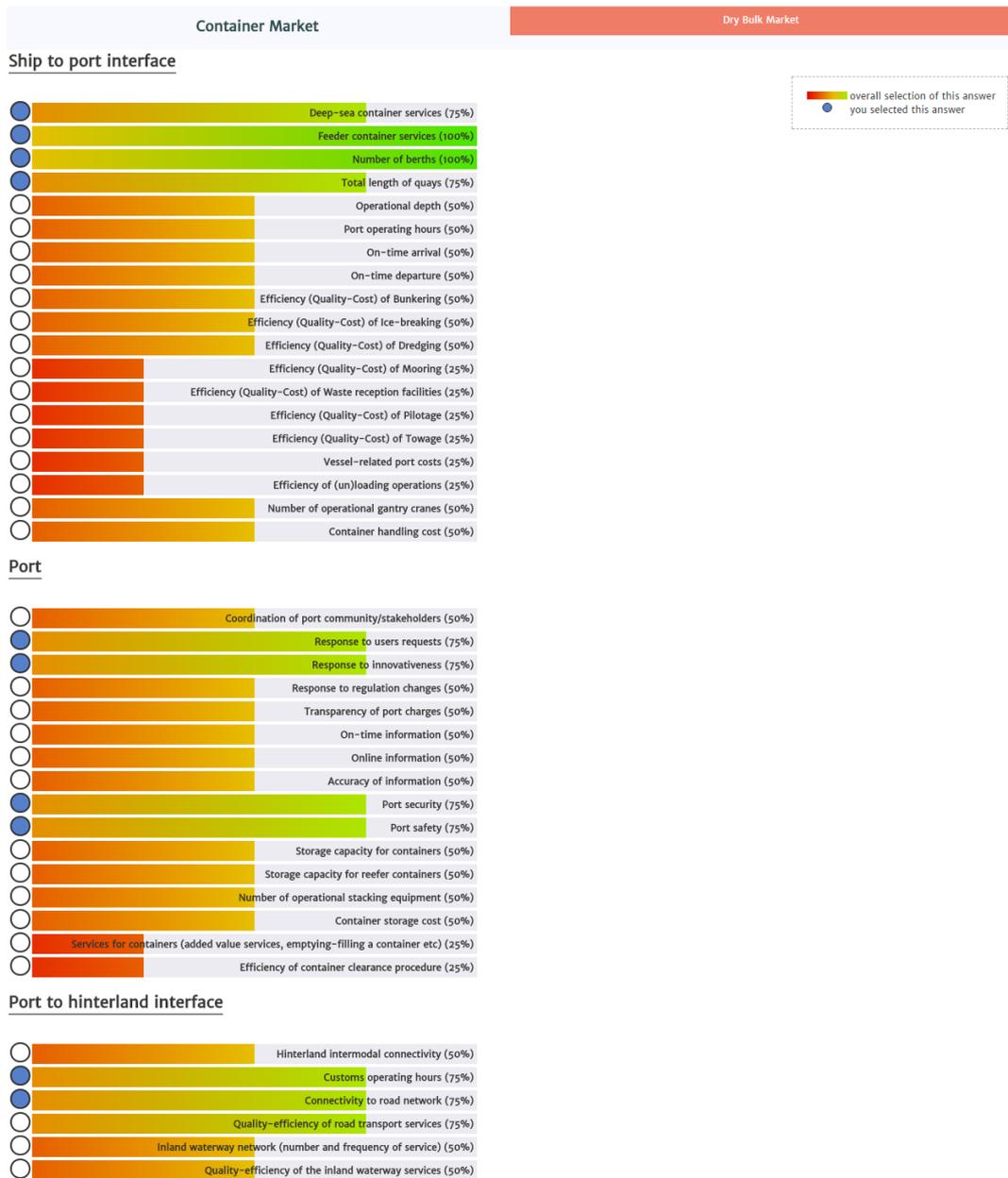
Figure 4 - User Perceptions Phase I benchmark

2.3 Environmental

While the implemented Environmental module does not include an interface for the ports to report data, Portopia Service Cloud is integrated with the EcoPorts system and provides a Port Dashboard, where the ports can benchmark their EcoPorts' SDM answers against the European averages, for each implemented indicator.
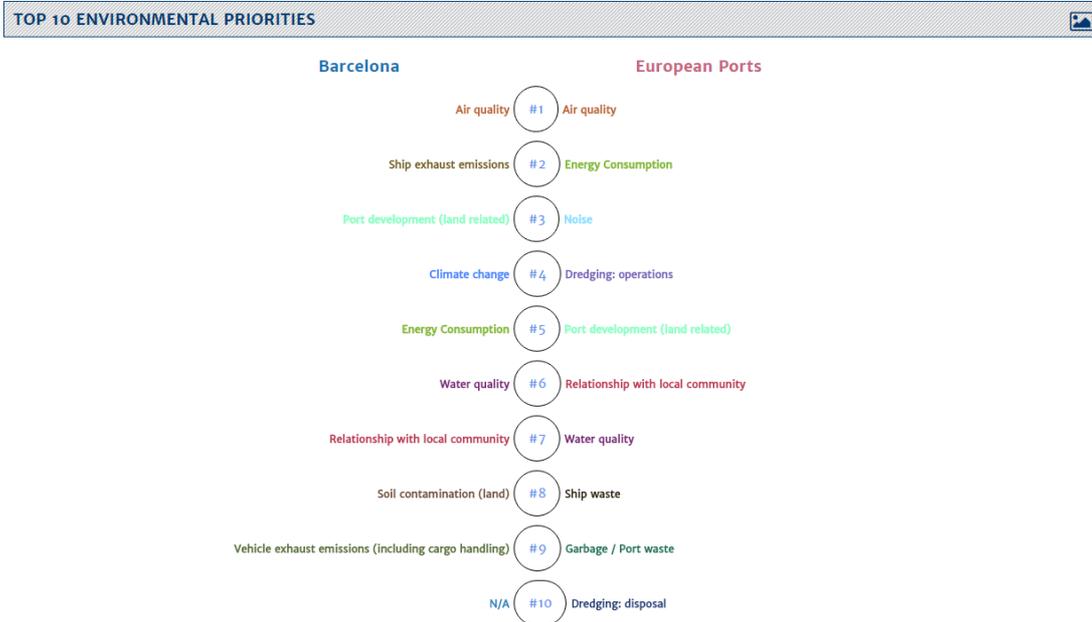
Figure 5 - Environmental Management Index

Figure 6 - Top 10 Environmental Priorities

Even though this dashboard only benchmarks a specific port and European averages, a dedicated data analysis OLAP cube was designed to allow certain users (not port users) to analyse individual data and/or provide regional aggregated reports.

2.4 Governance

Similar to the Environmental module, a Port Dashboard was built to allow the comparison between a specific port Governance profile and the European averages. Also, a new data analysis OLAP cube was implemented, to give some users a more flexible data analysis approach.

Here, instead of using the ranges defined for the RES benchmarks, a new set of ranges was created, to aggregate ports based on their countries (and neighbouring countries) legal frameworks:

- English Channel
- Baltic
- Atlantic
- West Mediterranean
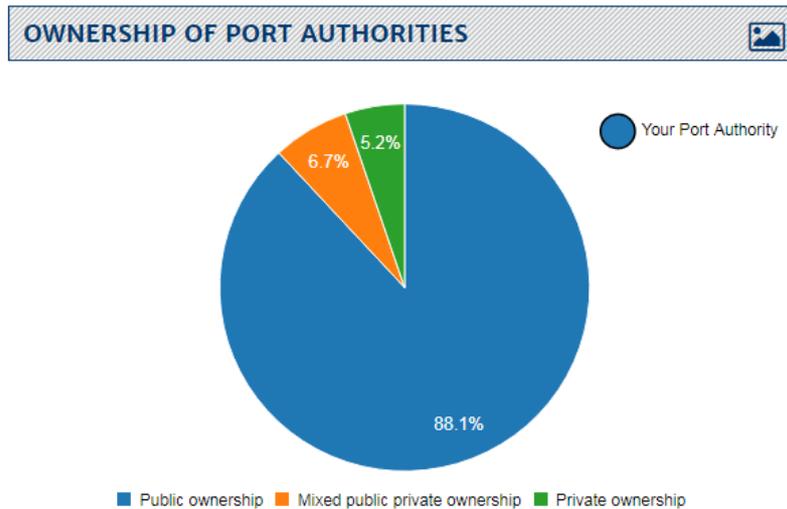- East Mediterranean
- North Sea
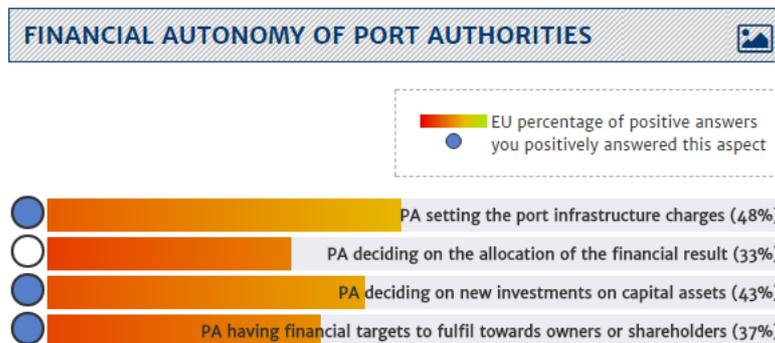- Black Sea

Figure 7 - Ownership of port authorities

Figure 8 - Financial autonomy of port authorities

2.5 Benchmark with non-European ports

Nowadays, European ports want to know their competition and that competition goes beyond the European space. While some ports already manifested their interest in the implemented platform, they also said that it would be nice to expand it to include data from non-European ports.

Portopia Service Cloud is a flexible platform and allows the creation of users from all over the world. Because the ports database is based on the United Nations UN/LOCODE convention, the system already has a dataset with every port in the world, which allows the creation of port authorities for any country.

While some European geographical ranges were created for the implemented modules, creating new ones is just a matter of system configuration, by adding new data to the system background tables. So, with new configurations, it's possible to create new data aggregations.

3 CONCLUSIONS

After 4 years of development, the Portopia project is able to deliver a fully functional and ready to use web platform, endowing port authorities with a new set of tools that help them to better understand their performances, in different activity areas.

But one of the most recognizable added values that the Portopia Service Cloud provides is its benchmark capacity, via several dashboards and its business intelligence functionality, the Data Analysis tool, a flexible and dynamic tool that allows ports to create customizable reports.