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Analysis of the physical and non-physical bottlenecks in Italy and Croatia

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Introduction

This analysis is part of WP3 that aims at eliminating or reducing bottlenecks through harmonization of data. In particular this analysis has the scope of identifying the physical or non-physical bottlenecks at partner level that can be tackled within the Charge project in the WP4 with the relative pilot actions.

Defining the scope of study

The scope of the analysis is to define any possible way to overcome port bottlenecks, increase its efficiency and productivity in the port of Venice.

It was drafted by internal staff of the Strategic Development Dpt of the North Adriatic Sea Port Authority as this is the public body in charge of the port traffic development.

Defining the area under study and characterizing respective area

The identified area is the Lagoon of Venice in particular the navigation channels coloured in blue in the following picture.



Listing of all bottlenecks and undesirable effects

For the port of Venice one of the main bottlenecks is the low visibility due to weather conditions, that hampers if not prevents the navigation even for few days in a row in case of fog. The delays and route changes cause loss of productivity for the port. This bottleneck is not bound to infrastructural improvement, but rather to an organizational/management solution.

A further problem is caused by the mix of commercial and private/leisure maritime traffic. To maintain a safe navigation implies again delays, loss of efficiency and thus productivity.

Analysing of listed bottlenecks and their causative relations

Besides the common and well-known accessibility restrictions determined by shallow waters, for many ports there are other conditions that, de facto, are impediments to a smooth and continuous navigation in the port and within the port areas. Fog and lack of clear visibility, are two examples of weather conditions that may heavily affect the port functioning, reducing its attractiveness for vessels to call. This is particularly true for ports with reduced natural accessibility (e.g. river or lagoon ports) or for those ports with high traffic compared to their size.

While in some other transportation means such as road or air transport, technology made several steps forwards in term of digital application and self-driving, the maritime sector is still rather conservative. Although some technological solution are already tested and available, there is not an international data exchange standard to connect ship to ports and to guarantee a communication between them, as it is for example from airplane to airport.

The concept consists in overcoming the vision of a single user needs considering instead the overall needs, in particular in the scheduling of port arrival/departures.

Improving the nautical accessibility of the port, means removing both physical and operational constraints that reduce the port full functionality and thus increase port effectiveness, reliability for the market and reducing operation costs. This goal may be achieved by deploying in ports technologies and tools that allow a better and continuous communication between port and vessels, as to ensure a safe navigation within the port areas in every weather conditions. This

would definitely strengthened the relations among port operators and would allow a more efficient use of the port infrastructures.

Proposing solutions of bottlenecks and analysing how it will affect future freight flows

Improving the port accessibility and, in turn, its efficiency should lead to an increased vessel traffics and to longer periods of port activities. Ensuring full functioning at night-time would extend the port terminals working time, determining a more intense use of port equipment and requiring a smoother integration with other port operators, both at sea and inland. Port functioning effectiveness has to guarantee cost-effective solutions that require an extensive use of management tools that to optimize port operational issues and reduce their costs

The solution has to be seeked by the adoption of “soft measures” as promoted by the National Logistics Strategic Plan and suggested by a general management approach that prefers operative and light infrastructures investments to the large infrastructures projects.

The Charge pilot Activity is recognize as crucial for the development of the maritime traffic in the port of Venice for the overall management of the port and to increase port efficiency and safety.

Through the development of the Charge pilot activity, a solution of the above explained bottleneck is tackled.

The pilot foresees a data exchange focused on the seaside and on the navigation channels system in the port area. It has a maritime accessibility insights and a much broad extension of fruition.

The result of the pilot consist in a “free mobile application” that will give to all port users the possibility to have easy and free access to real time data related to:

- weather condition
- port accessibility (port entry/exit conditions)
- maritime traffic data (presence of other vessels)
- special notice to navigators

It is a new system to share maritime data among all port users that will bring innovation to the project and that can easily be replicated.

Conclusion

Considering the accessibility difficulties in the port of Venice, considering the fact that the traffic is of a mix nature (commercial ships and private/leisure boats) and having assessed the lack of ports technologies and tools that allow a better and continuous communication between port and vessels, as to ensure a safe navigation within the port areas in every weather conditions, the development of a “free mobile application” that will give to all port users the possibility to have easy and free access to real time data that allow a safe navigation and thus an increase of port efficiency.



It is a new system to share maritime data among all port users that will bring innovation to the project and that can easily be replicated.

The mobile application is developed among other light infrastructure investments co-financed by INTESA project (ITALIA-CROATIA), and GreenC project (CEF Programme).