

DIGITAL PLATFORM FOR DOCUMENTS EXCHANGE IN MARITIME TRANSPORT

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Abstract: *The paper steps including the topic of digital transformation in maritime transport. Maritime transport is a vital sector worldwide and also one of the European Union's priority sectors. The digitalization in maritime transport is one of the important issues for international maritime organizations to achieve the goals of Maritime 4.0. The research methods are applied legal analyses of documents and comparative method. The article examines the reasons and the need for digital data exchange, as well as the benefits of digitalization in maritime transport. Specially attention is paid to the documents on the European level such as EU regulation 123/9 and EU directive 2010/65; and Union's collaboration between DG MOVE and DG TAXUD reasons to establishing of Single Window for customs and also defined the meaning of the WTO and IMO – Facilitation and Convention main goal of a paperless transfer of information for the development of Single Windows.*

Keywords: *Digital transformation, maritime 4.0, international maritime documents and maritime transport sector.*

JEL CLASSIFICATION: O3

1. INTRODUCTION

One of the main challenges facing the maritime industry is to adopt and put into practice the achievements of fourth industrial revolution in order to optimize maritime transport. Digitalization in maritime transport is radically changing the traditional forms of document flow. Industrial Revolution or Industry 4.0 is characterized in the development of automation and data exchange in production technologies. The maritime industry is critical to social and economic development, accounting for roughly 90% of the EU's external freight trade with more than 400 million passengers embarking and disembarking in European ports each year. In an effort to facilitate and increase the competitiveness of the European maritime sector, lessons learned from the manufacturing and vessel industry have served as a key element in future development. This includes the incorporation of new technologies, materials and optimization processes into the engineering and design practices of the greater industry. Digital data exchange is a necessity that is pushing shipping from traditional industry to maritime 4.0. Digital data exchange pushes the maritime industry beyond its traditional boundaries and provides many new opportunities to increase the productivity, efficiency and sustainability of logistics. This article discusses the goals of IMO - Facilitation and Convention and at European level towards the transition to paperless data exchange, namely the implementation of the European Maritime Single Window in European ports.

2. DIGITALIZATION IN MARITIME TRANSPORT AND MARITIME 4.0

Maritime transport is a very specific sector and the key element of world trade economy, which constantly needs to facilitate and unify the current ways of informing between related institutions and private firms. Digitalization and new developments in artificial intelligence, blockchain, the Internet of things and automation, are of increasing relevance to maritime transport. Digital opens the new windows for shipping to strengthen their straight relationships with end customers, further reduce their costs, including for fuel, vessel operation, and customer

service. Furthermore, it pursues new revenue streams beyond traditional shipping services. On the other hand the digital transformation of maritime transport provides new business opportunities and transform supply chains and the geography of trade. Developing countries need to ensure that they will remain competitive and that their seaborne trade will benefit from improvements that can be achieved by digitalization. They will also need to invest in human, institutional and technological capacities so that their traders and service providers can seize new business opportunities.

If we categorize stages of digitalization in maritime transport, they can be divided into the following three stages:

1. Optimization – maximizing efficiency and reliability in existing processes to reduce the costs of trading.

2. Extension – moving beyond efficiency to produce opportunities for new services and businesses.

3. Transformation – reinventing logistics, trade and business models, based on data-driven revenue streams and shifts in trade flows (Newsletter no.75 by United Nations Conference on Trade and Development, UNCTAD, 2019).

This three stages are one of the main goals of IMO – Facilitation and Convention and Maritime industry 4.0, that ensure to fully transformation of the paperless and implementation on the new technologies and data helps business grow and contributes to the overall economy.

In an age of digital transformation, maritime data digitalization and standardization have become paramount to supporting changes along the entire chain of information processing (Digital transformation of data, <https://www.porttechnology.org>). Maritime 4.0 allows the entry of IT technologies in maritime transport like Internet of Things (IoT), Big Data Analytics (BDA), Blockchain, that ensure reduction of bureaucracy and easy access to the information. Digital innovations are transforming the global economy. The decline in search and information costs, rapid growth of new products and markets, and emergence of new players ushered in by digital technologies have the promise of boosting global trade flows (Smeets, M.).

Maritime 4.0 includes in itself all of participants of supply chain in maritime sector and also including increasingly connected ports, the emergence of autonomous ships and the growth of alternative fuels. There are still no clear principles and characteristics for M4.0. On the base of a interviews conducted practitioners and academics Maritime 4.0, refers to;

- The automated integration of real data into decision making;
- The adoption and implementation of connected technologies for design, production, and operation;
- Reduction of vessel environmental impact, related to production, operation, disposal (including emissions, underwater noise, and material utilization);
- Affordable and sustainable operation; and
- Reduction of risk, increasing safety and security (Sullivan Brendan P., et al., Shantanoo Desai, Jordi Sole, Monica Rossi, Lucia Ramundo, Sergio Terzi).

These principles are defined as a result of done interviews and literature.

The data below predict the expected digital transformation according to the regions from 2019 to 2027.

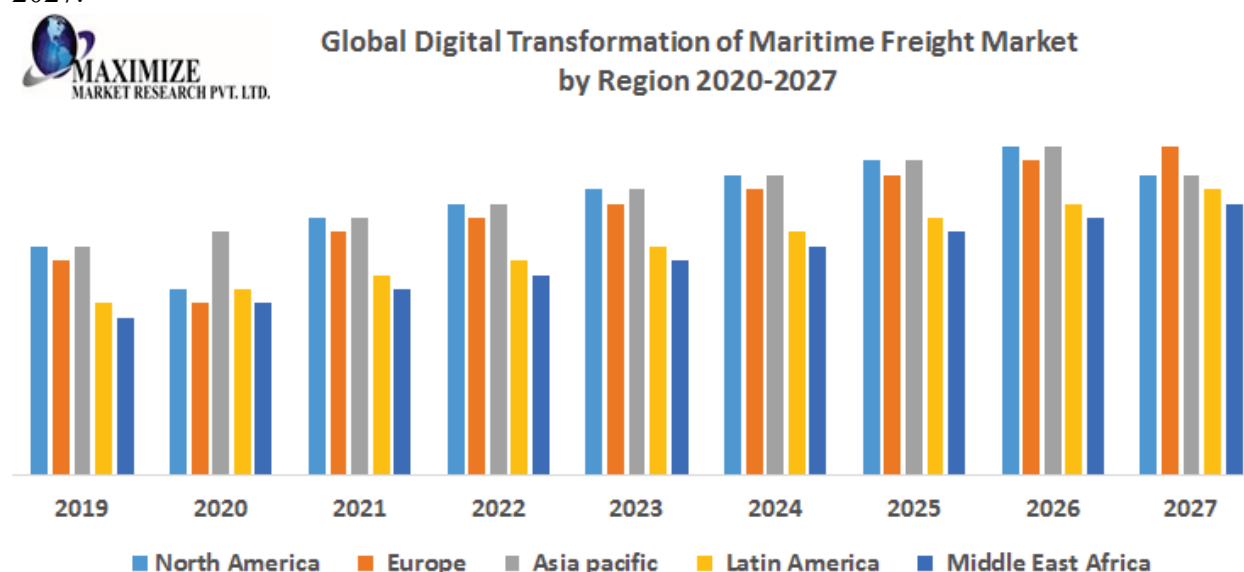


Figure 2.1. Global Digital Transformation of Maritime Freight Market: Industry Analysis and Forecast (2019-2026)

Source by: <https://www.maximizemarketresearch.com/market-report/global-digital-transformation-of-maritime-freight-market/40600/>

Countries with non-digitized maritime transport sectors are exposed to resilience risks, business continuity risks, more significant inefficiencies, higher transaction costs, higher trade costs, lower competitiveness, economic growth, and employment.

3. THE ROLE OF THE WTO AND IMO – FACILITATION AND CONVENTION OF PAPERLESS TRANSFORMATION IN MARITIME TRANSPORT

The role of the WTO is a great importance for the development of international trade, and maritime transport is the main mechanism for contributing to the whole cycle. The WTO is the only international body dealing with the rules of trade between nations. The declaration, adopted since 1998, calls for the transition to e-commerce between the parties. For the implementation of this practice it is necessary to establish an electronic platform through which the electronic data exchange takes place. It is the main reason to rising of the conception of a single window. The concept of a Single Window is widely known among international trade and maritime organizations.

The most commonly applied definition of the term Single Window is the following:

A single window is defined as a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single point to fulfill all import, export, and transit related-related regulatory requirements (Recommendation 33, ECE/TRADE/352).

The Single Window reduces administrative burden imposed by national institutions, which complicates data transmission between parties. In the same time the Single Window begins to implement in maritime transport, namely in the form Maritime Single Window. According to the requirements of the Standard 1.3bis from 8 April 2019, under the FAL Convention all national governments have to transmission to electronic information exchange between ships and ports calls. In addition, Recommended Practice 1.3 quin encourages the use of the "single window" concept, to enable all the information required by public authorities in connection with the arrival, stay and departure of ships, persons and cargo, to be submitted via a single portal without duplication (IMO Electronic Data Exchange). Implementation of the Single

Window in maritime transport changes the previous form of data reporting. The Figure below shows before and after using of Single Window in maritime transport.

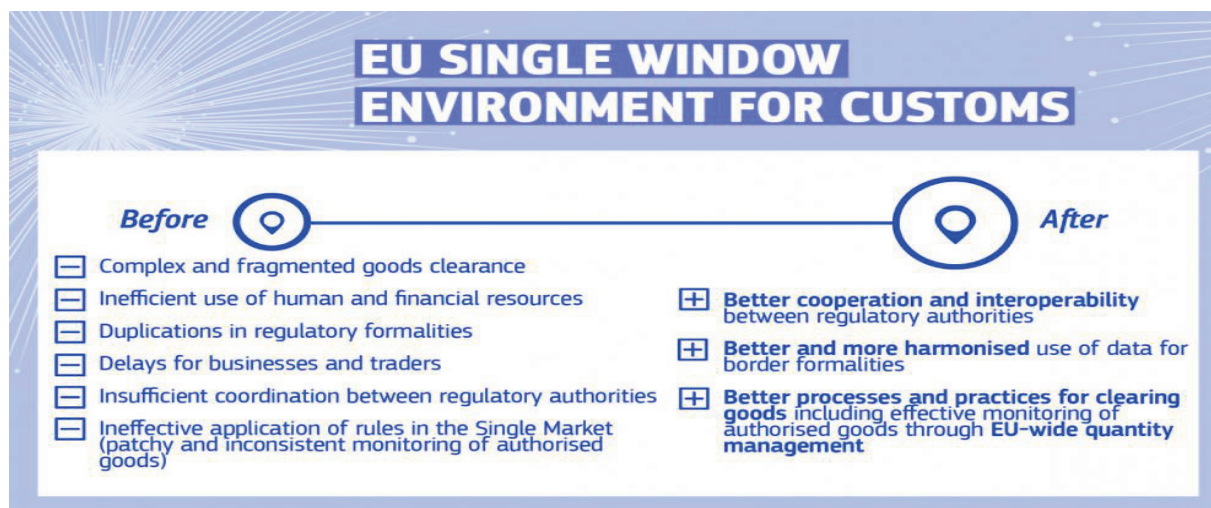


Figure 3.1. Implementation of Single Window in maritime transport

Source: https://ec.europa.eu/taxation_customs/eu-single-window-environment-customs_en

The Single Window improves and facilitates the currently issues in maritime transport through gathering all data in one point. Using of Single Window eliminates the obligation of filling out the same documentation upon arriving at each port along the route. It aims to improve the European maritime transport sector's competitiveness and efficiency by reducing administrative burden, introducing a simplified digital information system to harmonize the existing national systems and reduce the need for paperwork (EU Regulation 123/9).

3. LEGAL INITIATIVE EU SINGLE WINDOW ENVIRONMENT

The general objective of the initiative is to create a harmonized and future-proof digital European Maritime Single Window (EMSW) environment in order to reduce the administrative burden on ships and to facilitate the use of digital information with the aim of improving the efficiency, attractiveness and environmental sustainability of the maritime transport.

The objectives are:

1. To establish harmonized rules for the provision of the information that is required for port calls;
2. To endorse and facilitate the re-use of data and information;
3. To facilitate the transmission of information between declarants, relevant authorities and the providers of port services in the port of call, and other Member States (REGULATION (EU) 2019/1239).

As the result from these aims are expected to reduce the amount of time that ships spend on reporting procedures during European port calls (1-3 hours per calls). According to the European Commission, reusing the reported data ('reporting only once'), harmonizing IT interfaces and combining customs and maritime reporting procedures could cut this time by about 50% (European Maritime Single Window: Port community advocates the continuation of Port Community Systems).

The European Maritime Single Window is a digital platform that will be a bridge between business and institutions, developed for decades at various levels, including local, national, European and international levels. With the currently Directive 2010/65 / EU did not

achieve maximum efficiency and simplicity in the Union's maritime transport due to the fact that not all national electronic platforms work equally efficiently and there are differences between the electronic exchange of information in different Member States. Researches by the European Commission shows that the use of paper reports still exists in more than 50% of ports and also the same information is sent several times to different bodies and representations to remove this burden between institutions. data provision leads to the creation of the European Maritime Single Window environment.

Existing collaboration between DG MOVE and DG TAXUD is in line with the general objective of an European Maritime Single Window integrated environment for the international trade in goods. This scenario focuses on the strategic vision behind the integrated EU Single Window environment for customs (DG TAXUD) and the EU maritime Single Window for Transport (DG MOVE). It foresees the establishment of a pan-European electronic environment for international trade operations, allowing a harmonized access for businesses to fulfil regulatory obligations and high-performing mechanisms for exchanging information between the competent authorities involved (Marsili, M., DG TAXUD Unit B1)

The increased digitalization of customs and regulatory procedures has opened up new opportunities to improve the interoperability and cooperation between customs and partner competent authorities. The EU's new maritime single window environment is focused on customs procedures, but its objective is more ambitious. The idea is to facilitate filing information required by both customs and non-customs law for logistical operators when transporting EU goods across borders (Europe simplifies customs with the European Maritime Single Window, <https://www.bilogistik.com>).

5. CONCLUSION

With increasing of freight traffic in maritime transport implementation of digital platforms in maritime transport allows faster and more efficient services of goods. Digitalization and Maritime 4.0 are the steps to facilitate and improve the transmission of information between national institutions and businesses. The use of digital platforms reduces human error and speed up trade flows. With the implementation of electronic platforms increase the capacity of port services by reducing the cost of ships wasting their time waiting for a port call.

The latest regulation 123/9 adopted by the European Commission, which aims at a full transition to digital data exchange between all actors in the logistics chain, namely through the implementation of Single Window. Through this digital platform is expected the data only be sent once, avoiding duplicates and unnecessary copies. In this way, technological progress is coming to European logistics to eliminate cumbersome bureaucratic hurdles that unnecessarily complicated commercial transactions.

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