



PORTS AND MARITIME TRANSPORT IN HISTORY AND ACTUALITY: FOCUS ON INTERMODALITY AND THE ITALIAN SITUATION

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ABSTRACT

In this article, I will consider the history of ports and maritime transport and how both have changed over the centuries, passing through the great innovation represented by transport via container and arriving at the current situation. Therefore, the focus will shift to the relationships between maritime and land infrastructures and intermodality, analyzing the connectivity that unites these different infrastructures. Finally, the focus will be placed on the current Italian situation regarding intermodal logistic connections and its competitiveness in the global maritime transport market.

Keywords: ports, transport, intermodality, logistic connections, Italy

1. Introduction

In this article, the author will present the optimal strategies for Italy that will lead to greater competitiveness in the global maritime market. For preparing this, it is first necessary to understand how port spaces and maritime transport modes have changed over time and what these changes have entailed.

The word "port" defines a natural or artificial inlet able to guarantee the protection of boats from the movements of the sea and, therefore, allow a safe anchorage that allows disembarkation.

Historically, the bays have been those places considered most suitable for this purpose by man to allow an easier landing. The role that ports have had diversified according to the historical period of reference, in particular concerning the agro-mercantile, industrial and post-industrial periods (Soriani, 2002).



In the first period, the port was also where trade took place, and different cultures met. The largest and most important ports in the Mediterranean were built in Athens, Rhodes, Ostia, Genoa and Marseille.

These places had geographical advantages concerning the coastal environment and To the surrounding territories, which allowed to convey many sea routes (Soriani, 2002).

The Mediterranean is the area around which the first encounters between local and isolated realities took place, which, thanks to this sea, emerged from their isolation and met with the others. From these meetings, a kind of global village has arisen that crosses the paths of different people who remain fond of their respective differences (Matvejevic, 1987).

In the Mare Nostrum, Italy could boast a central role in maritime trade, thanks to the avant-garde works of the Roman era and the power of the Maritime Republics. These advantages were also guaranteed by the geographical location and the favourable environment. These factors made the peninsula an important centre of economic exchange and geostrategic region (Soriani, 2002).

However, this changed following the discovery of America, which caused the shifting of the centre of gravity of sea routes from the Mediterranean to the Atlantic Ocean. The most important ports became those that allow a more rapid reach of the American continent, particularly Hamburg, Antwerp, Amsterdam and Rotterdam. The centrality of the Mediterranean was favoured again with the Industrial Revolution. The development of railway networks and steam navigation had a strong impact on this. This effect was also amplified by trade liberalization policies and the opening of the Suez Canal in 1894, which allowed a direct maritime connection between Europe and Asia (Soriani, 2002).

This new phase has favoured the birth of land-sea connections, new commercial relationships and connections with the territories that took advantage of the port space. Thus, the port became a place of union between different territories divided by the sea. These changes have also favoured a new conception of the Mediterranean, previously seen as a closed sea, allowing it to remain at the centre of international trade (Soriani, 2002).

With the exponential increase in competition and technological innovation, the twentieth century confirmed the role of ports as centres of international traffic on a global level and their indispensable role in reducing distances and travel times between different places. In this period, the development of eastern states, especially Asia, favoured a new shift in the centre of gravity of sea routes which became the Pacific Ocean (Soriani, 2002).

The post-industrial phase arrived, the ports involved ever-larger spaces and different modes (Soriani, 2002). Countless authors have highlighted the importance and strategic role of ports, in particular, the Theory of Maritime Power has shown that the great extension of the sea, greater than that of the mainland, and the cost-effectiveness of maritime transport, has favoured the proliferation of trade routes, and conferred political power, economic and military security to the states that managed to impose themselves on the seas and oceans (Mahan, 1880).

As proof of this, the competition between states to control maritime spaces has always been heated. An important role in this competition is played by chokepoints or bottlenecks that represent forced passages whose control is very important from a strategic point of view (Mahan, 1880) (i.e. Strait of Gibraltar and Suez Canal). Hence, they play a key role both at the geopolitical and geo-economic levels.



The factors that favour the ability to implement maritime traffic and commercial hegemony on the seas are numerous. The quality of logistics activities, optimal space management, information systems, new technologies and efficient marketing tactics play an important role.

Northern Europe and South East Asia would seem to be the geographical areas in which the implementation of these factors is the subject of greater efforts. China, in this sense, can boast six ports in the list of the top ten worldwide in the acquisition of market share. On the other hand, in the Mediterranean, and primarily in Italy, there would be a need for greater coordination, improved infrastructures, and more efficient policies regarding the management of resources (Harlaftis, 2002).

2. Modern sea transport

The second half of the twentieth century was characterized by a revolutionary innovation in transport: the container (Sellari, 2013). A large container of standardized dimensions has significantly reduced the time required for port operations and improved intermodal transport. As a result, during the 90s, it came to play a fundamental role, being used in 90% of world transport.

This type of standardized transport has favoured the integration of markets and stimulated the growth of the economies of developing countries, which previously struggled to be significantly included in world trade, especially in the Mediterranean. (Sellari, 2014).

This led to the construction of ships dedicated to the exclusive transport of cargo by a container. Originally derived from oil tankers, now these types of vessels represent a class of their own and are the largest ships in the world (Saccà, 2012).

This has helped amplify the phenomenon of naval gigantism, which, by increasing load capacities and reducing stopovers, has allowed a progressive reduction in transport times, also thanks to the reduction in costs made possible by the use of the containers themselves. However, this has also influenced the relationship between supply and demand and the cost of building ships which have increased significantly (Saccà, 2012).

With the complicity of the global economic crisis of 2008, these factors caused, in the same year, a reduction in world transport demand of more than 10%. However, the increase in the transport offer did not receive feedback concerning the volume of goods traded (Saccà, 2012).

In order to reduce losses, the transport companies have modified the services offered and, often, reduced, interrupted and stopped orders to shipyards. In addition, cost reduction strategies have been adopted, such as slow steaming, i.e. the reduction of navigation speed to obtain savings relating to the fuel used (Saccà, 2012).

Despite this, the phenomenon of naval gigantism has not waned and, on the contrary, has led to profound structural changes in ports around the globe. However, the greater speed, computerization, and rationalization of the port space have produced a detachment from the territories behind the ports themselves. This made it necessary to create multifunctional areas capable of connecting ports to the most important industrial and commercial activities of greater reference through intermodal connections (Saccà, 2012).

The growing need for speeding up and reducing transport costs has led to the birth of transshipment ports, which exclusively involves the transport of containers (Foschi, 2005).

Transshipment transfers goods from large vessels, called mothers, to smaller vessels, called feeders, or between mothers on different routes. Regarding the first type, we are talking about relay ports, such as Algeciras in Spain, while in the second, hub ports, such as Gioia Tauro in Italy (Foschi, 2005).

Through this practice, these ports favour less congestion in maritime traffic, acting as an intermediate stop between the port of departure and the port of destination. However, to carry out this activity optimally, these ports need to be equipped with large docks that facilitate the handling of loads (Saccà, 2012).

On the other hand, the ports of destination, known as regional ports, require efficient intermodal services, well-organized hinterlands, and adequate connections. Therefore, most containers are sorted by other means, passing from sea transport to rail or road transport (Saccà, 2012).

Furthermore, transshipment ports must necessarily be located on routes of greater importance, from the point of view of speed and travel costs, such as, for example, the port of Malta. The small island represents a crossroads between Suez and Gibraltar. From here, loads can be redirected to minor ports, particularly the Black Sea, Greece and Turkey (Saccà, 2012).

Regional ports have a strong employment impact, contributing to the creation of 42 jobs for every 1000 containers handled on an average while, according to a 2011 study conducted by Trenitalia, hub ports contribute to the creation of 5 jobs for every 1000 containers handled on average (Sellari, 2013). The two types of ports do not compete, as they have different and complementary functions. However, the former, having less dependence on large companies and being subject to greater implementation and innovation of infrastructure and transport, have a more important impact on the national economy (Sellari, 2013).

While in Northern Europe we are witnessing an implementation of regional ports, to the detriment of transshipment ports, which represent about 30% of the total, there is a reverse trend in the Mediterranean. This would be the efficiency and innovation that characterizes the hinterlands of the ports of Northern Europe, as opposed to the Mediterranean, where it is difficult to equip itself with suitable infrastructures to achieve better results (Sellari, 2013).

3. Intermodality and shipping companies

Loading and unloading operations have undergone a significant increase in inefficiency. They have been greatly facilitated by the systematic use of containers, allowing greater coordination and optimization of connections with other means of transport necessary to reach final destinations.

The combination of maritime, rail, and road modes of transport in commercial traffic management is called intermodality (Midoro e Parola, 2013). Intermodality, to date, is essential to obtain the necessary competitiveness within the transport market. Today, efficiency is assessed on the entire logistics system that allows goods to reach the destination places, not about the individual elements that make it up (Midoro, 2000).

Global transport has become a chain of which maritime transport is only one link. For efficiency, it is not only possible to consider that of the naval section, but that of the connection system between terminals, the logistics structures organized for transshipment, and the

hinterland is also indispensable (Sellari, 2013). The rear port, i.e. the infrastructural set with territorial continuity with the port itself, and then interpret the set of services suitable for the exchange of goods between one mode of transport and another, play a fundamental role in connecting the system maritime to that land. Infrastructures and different means of transport, therefore, become complementary rather than competitive. The fundamental determinants are temporal efficiency and cost-effectiveness (Sellari, 2013).

Intermodality, therefore, assumes greater importance than the efficiency of the port itself. Ports are subject to an increasing dependence on shipping companies. The private interest of these companies was fundamental in determining successes and failures in the implementation of port facilities. Thanks to globalization, there has been a gradual loss of power of governments in economic dynamics, in favour of the most important logistic operators in the world, which are, in fact, shipping companies. These subjects have a profound effect on the fate of port spaces, pushing them to compete with each other through the reduction of the prices of the services they offer and the offer of tax advantages (Sellari, 2013).

Over half of the world's goods, by monetary value, are handled by sea transport: in containers for 52%, as liquid bulk for 22%, as general cargo for 20% and as solid bulk for 6% (Sellari, 2013). All this is accompanied by an ever greater concentration of the maritime transport market. The twenty largest shipping companies in the world control 80% of global container traffic. Also, their behaviour towards the market changes: from the prevalence of pure carriers, i.e. to operate in the name and on behalf of transport organizers, to a prevalence of merchants, i.e. the case in which the shipping company itself assumes responsibility for the entire flow of transport through a contractual relationship with the industrial shipper of the goods (Sellari, 2013).

4. Intermodal logistic connections in Italy

Numerous production and consumption centres are characterized by differentiated specializations throughout the Italian territory, with central and northern Italy prevalence. This concerns product chains that also differ according to logistical needs. We observe the centrality of actors such as logistics operators, stakeholders and urban planners, both on a business and territorial level (Robiglio, 2010). This is verifiable based on the concentration of port terminal operations, entrusted to large companies in all major ports through mergers and acquisitions (Bologna, 2010), but also concerning the corporate reorganization for land rail terminals or concentrations within the context of Multimodal Transport Operators in Interporto (IRER, 2009).

Following the spread of intermodality, there was a need to build hierarchical network architectures at a higher level (hub and spoke), leading to necessary reconversions and reusing the transport field (Robiglio, 2010). In addition to the more common structures such as industrial, commercial and transshipment ports, other structures are located in the national territory, such as interprets, intermodal terminals, auto ports, inland and freight terminals (Robiglio, 2010). Among these are the aforementioned interprets, the auto ports, functional structures for road carriers and also used for customs purposes, the inland terminals, the rear ports, and the freight terminals, structures having the function of stopover for the connected public airport. In addition, conventional railway structures or industrial or commercial areas are served by railway connections (Robiglio, 2010).

In addition, the terrestrial organization of the nodes generated a selection process that led to the identification of terminals with the function of terminal gateway concerning the hub and spoke logic (Robiglio, 2010).

Furthermore, we are witnessing an ever-greater settlement of special economic zones behind the port. Naturally, this entails an ever greater bond with international investors. This, however, often does not translate into adequate connections capable of favouring the development of the territories in which they are located, which makes it impossible to generate a true development of the local economies of reference (Berlinguer, 2016). When, on the other hand, this development of the port space, and the relative economic growth of the territory, occurs, it often depends on uncertain conditions connected, for example, by the dependence on the strong presence of Chinese exports that involves the entire Mediterranean maritime economy and that may not maintain current levels (Amodio, 2018).

The Italian port reform has identified strategies related to the environmental and economic characteristics of the context, identifying the need to focus on the short shipping segment to avoid open competition in the transshipment sector with other port regions (Amodio, 2018).

It is then necessary to consider the positioning of the Italian airports in the Euro-Mediterranean panorama. This has created the need to guarantee greater opportunities to private subjects, establishing areas characterized by advantageous taxation and planning others to be built soon; such scenario aims to induce positive effects concerning the location of production and logistic settlements within the rear port areas and, consequently, to the development of the host regions (Amodio, 2018).

5. Conclusions

Short sea shipping is the delivery of goods by sea over a short distance, usually within the same continent. Deepwater transports are intercontinental deliveries where part of the route crosses the ocean. In the maritime sector, a process of mergers and acquisitions has been going on for several decades. Long-distance shipping companies acquire short-sea shipping carriers. This leads to an increase in the supply of delivery ports by ocean-going carriers. A new trend has emerged in recent years: before large companies bought small ones, now large companies also buy slightly smaller ones. As a rule, the short sea is chosen for the transport of large shipments. The goods are shipped in one batch. This facilitates the practice of documentation and consequently reduces the risk of errors. In addition, a wide range of containers is available on the market, which allows you to choose the appropriate loading volume and obtain an affordable transport price. Intra-EU maritime transport is cheaper in terms of price than direct road transport. The rates for sea shipments are fixed for a period of 1 to 12 months. Thanks to this stability, expenses for logistics services can be easily planned. Based on these results and what is stated in the article as well the geographical position of Italy, positioned in the centre of the Mediterranean, therefore with longer navigation times to reach the oceans than other port regions, a profitable strategy could be to focus on the short sea shipping sector and grant advantageous tax regimes capable of making Italian ports competitive concerning neighbouring port regions. Furthermore, it is necessary to implement and develop port spaces, rear ports, interports and all infrastructures functional to intermodality, following what has been done for North European and Asian ports, with particular attention to the Chinese ones.

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