

# The Impact of Horizontal Integration on Mediterranean Container Port Competitiveness

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**Abstract**— Seaport management has been suffering for decades to keep pace the rapid changes in maritime development, specially shipping lines and container, as freight market power moves toward Fast, Reliable, Secure transport . Global port operators have played a significant role in the dynamics of container port terminals to provide terminal operation facilities that meet their shipper and shipping line requirements. Meanwhile shipping industry already dominated by larger vessels, mergers, acquisitions and strategic alliances, to meet their customer requirements, on the other hand container ports need to improve its services in order to compete and increase efficiency and its competitiveness position.

**Index Terms**—Horizontal Integration, Mediterranean, Container Port,

## 1 INTRODUCTION

The competitive position of a container port is determined by its competitive offering to the host of shippers and shipping lines. (Haezendonck and Notteboom 2002). Container ports must be able to effectively organize their business activities by offering nowadays appropriate range of services. Also there is a need for regular evaluation of the effectiveness of port operations in order to facilitate future growth. (Rijkure et al 2016).

Horizontal integration referring to a strategy in which a firm Merge, acquires or takeover a similar company. The Benefits of horizontal integration to both the firm and society may include economies of scale and economies of scope. A number of worldwide organizations use the horizontal Integration as a strategy to increase its market share. (Rompotis, 2014).

Horizontal integration strategy could be a good solution to get over the required port investment, while creating benefits of lowering the cost and increasing economies of scale as well as reducing the duplication of resources within the integrated ports. Horizontal integration can lead to an increases or add new market segments, within the same market in addition the possibility of increasing the port competitiveness. Horizontal integration as business management strategy can solve the fast moves of the market. It can be a good solution for the service competition and the dynamic of the container market. (Esper et al 2009).

## 2 THE MAIN TYPES OF INTEGRATION:

1. Vertical integration Involves an entity, such as a shipper (manufacturer), trying to acquire or take control of the activities that are upstream or downstream of the stage it is involved in. So, a sea port may try to acquire some of its suppliers or the distributors or shipping company it is selling to. Forward/Backward such as shipper-port-shipping company
2. Horizontal integration As shown in Malmö-Copenhagen experience, that occur when sea ports acquisition of a similar or a competitive port it may be acquire, merge with or takeover, another port to grow in size or capacity, to achieve economies of scale or to reduce competition and risks, also to increase markets, or to enter new markets.

## 2.1 Port Horizontal integration

Port Horizontal integration - cooperation - Coopetition; aims at increasing the competitiveness of individual ports in integrating systems throughout the region, simplifying of proposed integration model, and the improvement of port infrastructures or the integration between port authority and privet terminal make a potential to manage public and private infrastructure and superstructure investments in parallel to mitigating the investment risk. Different requirement could lead port authorities to cooperate: a marketing objective, an economic optimization of operations, the exchange of know-how, land use planning, etc.

The intensity of the links established between two or more port authorities can be variable, from simple partnership to more formal cooperation schemes, leading to shared commercial strategies, joint promotion or pooling of certain resources (e.g. North Adriatic Ports Association, Haropa, etc.). The strongest cooperation link is represented by a real merger of two or several port authorities and the consequent formation of a joint venture company (e.g. Malmö-Copenhagen, Kotka-Hamina, Umeå-Vaasa etc.). As the Fact Finding 2016 shows, cooperation and partnerships amongst European seaports represent a growing trend. End 2017 one expects the completion of another important and cross border merger between the Port of Ghent and Zeeland Seaports. The concept of coopetition attained popularity in game theory and was picked up in strategic management by Brandenburger and Nalebuff (1996) who suggested that managers overcome traditional competitive thinking by cooperating with competitors in order to create value.

## 3 IMPORTANCE OF STUDYING PORTS' HORIZONTAL INTEGRATION AND COMPETITIVENESS

Horizontal integration is the management process to increase production of the services at the same industry. Horizontal integration reform may internal expansion, acquisition or merger. For maritime horizontal integration, shipping Alliance (also known as Ocean Alliance) is a group of ocean carri-

ers joining forces to create a cooperative agreement forming a strategic alliance covering various trade routes through cooperation between its members on a global level.

The horizontal integration policy of the shipping liner companies, and protects their market through alliance. However, the recent pace of consolidation could be driven not only to overcome their financial deficiencies but for geopolitical reasons as well. (El Kalla et al, 2017). During the period of late 90s, many companies disappeared, being alliance or merged with other companies. Table 1 showed the market share cover as a result of integration.

TABLE 1  
the market share cover as a result of integration

Year	1997	2011	2014	2017
Market Share	50 %	70%	50%	75%

Horizontal integration is a type of integration strategies pursued by organization in order to strengthen its position in the industry. A corporate that implements this type of strategy usually mergers or acquires another company that is in the same industry. Also Horizontal integration not only for maritime and shipping industry but it distributed among too many different industries, for example, Disney merging with Pixar (movie production), Exxon with Mobile (oil production, refining and distribution) or the infamous Daimler Benz and Chrysler merger (car developing and manufacturing).

The purpose of horizontal integration (HI) is to grow the organization in size, increase product or services differentiation, achieve economies of scale, reduce competition or access new markets. When many firms pursue this strategy in the same industry, it leads to industry consolidation (oligopoly or even monopoly) which make Put suppliers and service recipients in difficult situations in terms of put more investment to meet the uncertainty of the free market especially in the field of maritime transport.

Container port can make plans to face integration of shipping lines (shipping Alliances), the vertical integration of ports may be one of the solutions in particular to benefit from horizontal integration advantages such as:

1. Lower costs due to the greater economies of scale and higher efficiency.
2. Increased differentiation because the combined company can offer more service features.
3. Increased market power due to power over its suppliers and distributors/customers.
4. Reduced competition. The result of consolidation the services within the fewer companies operating in the industry and less intense competition.
5. Access to new markets. New markets and distribution channels can be accessed by integrating with a company that produces the same goods but operates in a different region or serves different market segment.

### 3.1 Types of port cooperation

Types of port cooperation differ not only between involvement of port authorities and/or terminal operators but also

between trade corridor, port function, and port location.

Port authorities cooperate with each other with the main intention to facilitate and intensify trade links in order to increase port throughput, which can be categorized as follow;

1. Popular basic cooperative commitment between port authorities is a signed Memorandum of Understanding. Cooperation between neighboring competing ports is referred to as coepetition. Port integration comes with foundation of joint venture companies between port authorities and terminal operators or even the full disposal of port property rights, duties and obligations to private sector organizations (privatization). Cooperation between seaports and inland ports has the intention to enlarge the hinterland region of the seaport to and from the customer.
2. Hub and feeder port networks contain close business relationships between liner carriers and terminal operators. Cooperation between port authorities and/or terminal operators is not directly applicable.

### 3.2 Port cooperation experience:

Elbe river seaports, as Five German Elbe seaports cooperate. The seaports' authorities, business development organizations and a private terminal operator cooperate in marketing, sourcing of services and land space, and infrastructure planning. In the cross-border cooperation "Rhein Ports" founded between three upper Rhine inland ports, the ports cooperate in marketing of services and information exchange, transshipment of goods, customs, and container repairing. Representing seaport and inland port cooperation the port authority of Antwerp, Belgium and the owner and operator of the inland port in Duisburg cooperate through a rail hinterland shuttle.

The ports of Malmö/Copenhagen, Sweden and Denmark agreed to the closest possible form of cooperation through a joint venture company responsible for cargo handling and storage. The company acts as port and terminal operator in both cities and leases the necessary infrastructure from the authorities. Limitations of port cooperation:

1. On national level it looks port cooperation seems not to be a major issue in the most of countries policy.
2. Legal restrictions on port cooperation start with the discussion on sovereign tasks of the authority and economical tasks of the operating actor. Classification

### 3.3 Potential synergies of port cooperation:

Port authorities and terminal operators profit from cooperation to different extents. Authorities' intentions have a strong link to public welfare generation and social benefit maximization. Terminal operators' intentions are company specific but are highly correlated with revenue generation and profit maximization.

Proposes of cooperation in ports. The "Marketing, for instance initiative represents an expandable basis for port authorities as independent and achievable commercial entities without further structural changes. The impact of cooperation in public infrastructure investments is low. The handling of goods and their storage remains accessible to operators of pri-

vate stations, however, the decision on most tariffs and fees. The opportunity is to access large infrastructure funds or fund appropriate research as joint partners. Potential synergies arise through cooperative functions in functional areas that deal with strategy development, marketing, public relations, port planning, investment, business activities, engineering, human resources, environmental protection and information technology.

A "Hierarchy of port cooperation" is proposed. The "Marketing" initiative represents an extendable basis pursued by port authorities acting as independent commercial entities and is possible without bigger structural changes. The impact of cooperation on public infrastructure investments is low. Cargo handling and storage remains in the hand of private terminal operators, and therewith, the decision on most tariffs and charges. Opportunity is to gain access to large infrastructure funds or to appropriate research funding as joint partners. Potential synergies arise through cooperative tasks in the functional areas dealing with strategy development, marketing and PR, port and investment planning, commercial activities, engineering, human resources, environmental protection and information technology.

Another form of port cooperation ("Joint venture") takes place between port authorities operating in a commercially oriented manner and one/several private port terminal operators by foundation of a joint venture company responsible for cargo handling and storage. It requires fundamental structural changes of the port governance and is not easy to accomplish without a strong economic and societal necessity. Sovereign tasks are supplemented by commercial tasks with clear financial goals. Revenues of cargo handling and storage are shared. The impact on public infrastructure investment savings is considered to be considerably large as investment projects could be better coordinated between locations. Possible benefits for the joint venture partners are efficiency increases in port handling and increase of international competitiveness.

Finally, it is anticipated that the future of port cooperation lies with initiatives at regional level rather than national level; and with cooperation of port authorities fulfilling their sovereign tasks by agreeing on joint supporting activities. Cooperation of terminal operating companies in proximity refers to a joint venture company improving services for the port's main customers - the liner carriers active in global alliances. The joint venture does not overtake the key port services of cargo handling and storage; instead division of other tasks is more likely referring to traffic management or standardization of information exchange processes.

### 3.4 Examples for Port integration

A more stringent term for the closest form of cooperation is integration. Revenues generated by cargo handling are jointly distributed according to the underlying legal arrangement. One example of port integration is the joint venture of the ports of Malmö, Sweden and Copenhagen, Denmark or the ports of Kotka, Finland and Hamina, Finland. Full integration examples of several inland ports represented by one port authority are the port of Liège, the Flemish waterway managers, the ports of Paris, and the ports of Neuss-Duesseldorf.

Port privatization and deregulation is different way to implement integration, as nations encourage privatization and attracting direct investment, port policy has been towards disposal of port property rights, duties and obligations to private sector organizations. Worldwide Major port authorities are no longer public agencies or government departments but private companies. Ownership structures changed from national ports governed to private ports owned and controlled by local or government authorities, to ports owned and run by private companies. One of the biggest private companies acting as port owner and operator is the Peel Ports Group Limited. Other commercial ports or terminals are Associated British Ports for example, Belfast Harbor Commissioners, the Bristol Port Company, DP World London Gateway, Forth Ports, Hutchison Ports UK, PD Ports.

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Container ports competition has become increasingly complex and intense, which leads to add more capital intensive in order to maintain competing and protect their market share, for that they must be able to effectively organize their business activities by offering appropriate range of services, also the requirements for the maritime and shipping customer increase due to the complexity of the process in shipping and container market, therefore port managers must well utilize their resource to determine the level of effectiveness in order to remain in its competitiveness position. Market share is one of the main key pillars of international competitiveness as the actual determinants efficiency enhancers of market quotas and thus a key objective of competitiveness is to push more investment and new management policies.

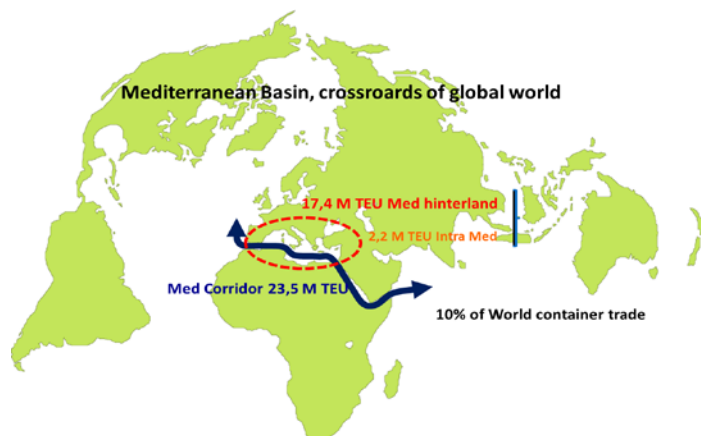
## 4 THE MEDITERRANEAN RANGE

### 4.1 Definition of range

The Mediterranean Sea is the main maritime passage for trade between the Far East (India, China, Indonesia, etc.) and continental Europe. The role of the Mediterranean has strengthened gradually over the last twenty years to become the focal point for international maritime shipping as the change in round-the-world routes due to the quick increase ships size, which has resulted in ships bypassing the Panama canal, has made the trans-Mediterranean route via the Suez canal the privileged freight route for trade with the Far East especially with the new Suez canal expansion.

The economic growth in the Far East and the emerging countries along the North African shores has resulted in an increase in maritime trade along the routes from/to Europe and between the two.

FIG.1: MEDITERRANEAN BASIN, CROSSROADS OF GLOBAL WORLD

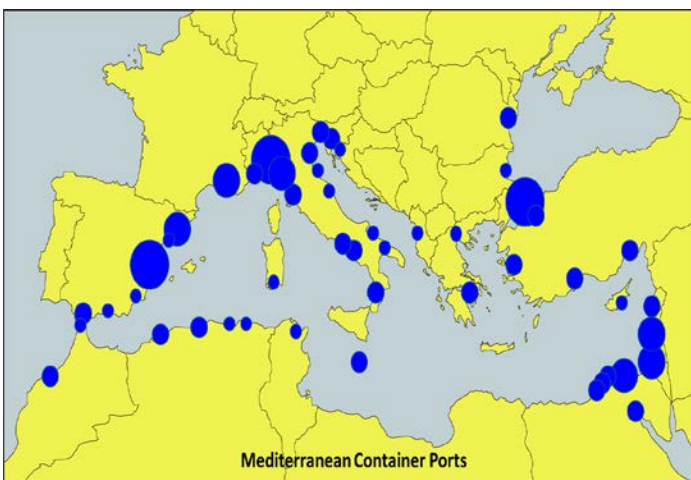


#### 4.2 Mediterranean ports.

The competitive advantage of Mediterranean ports lies primarily in their geographic position. In terms of transit time this means that supply to European markets from Suez competes very favorably with the North European ports. Thus the Mediterranean basin represents an essential port of call for reaching destination markets as quickly and economically as possible. Notwithstanding this, only 40% of trade volumes for Europe pass through Mediterranean ports, the remainder being bound for North European ports via the Atlantic routes.

To understand the development of Mediterranean seaports, and trade generated along its shoreline, it is necessary to assess the difference between each area towards the whole system, and the present relevance of each for the future maritime transport development. Indeed, the importance of transport costs and infrastructure explains trade, access to markets, and increase in income per capita.

FIG.2: MEDITERRANEAN CONTAINER PORTS



Regarding geographical asymmetries, we can easily appreciate the differences between three maritime entrances: the Gibraltar, Suez and Bosphorus straits. Gibraltar is the natural and main gate to world from the Mediterranean Sea, and so far new logistical technologies cannot avoid this evidence. Algeciras, on the Spanish side, and Tangier, on the Moroccan side, are competing to capture maritime transport and are investing to enlarge their transport facilities. As a consequence, small ports in the area compete for the rest of the trade, like Melilla and Beni-Anzar harbors, with very different strategies. Suez has become more relevant because of the energetic dependence of the European Community countries to the Middle East and Arab and Gulf countries. Finally, Bosphorus is the path to Black sea countries that unfortunately suffer from the weakness and instability of the Caucasian area, but the opportunity to communicate, through Turkey, to high potential growing areas.

#### 4.3 Reasons for the focus on the Mediterranean container market

The reasons for the focus in the Mediterranean is the future trend in maritime trade in the Mediterranean over the medium-to-long term will be determined and significantly influenced by a number of factors, that have led to the formulation of more or less prudential estimates, for the different traffic segments. But the general consensus points towards an increase. These factors are:

1. The constant increase of the population along the southern Mediterranean shores, estimated to reach 420 million by 2020.
2. The growth of Eastern European countries and the role of the Black Sea for connections with them.
3. The growth of Far East countries and the new trade routes to Europe via the Suez Canal.
4. The coming into effect of the Mediterranean free trade area.

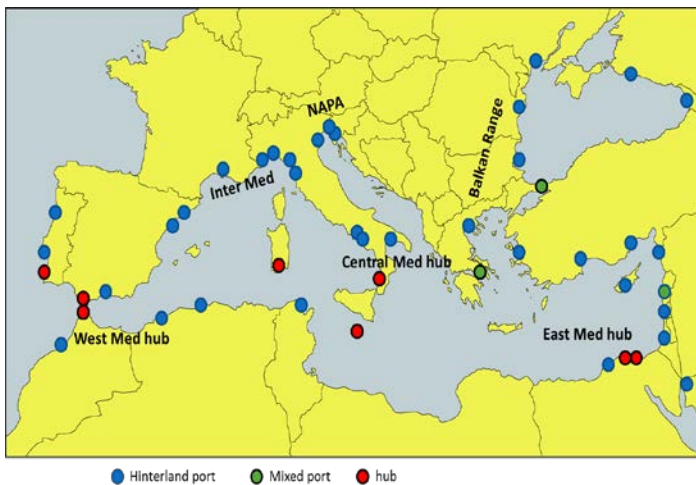
However, one factor that will restrain this growth process is the widening of the Panama Canal. The opening of the new Canal needs to be associated with the opening of the planned new mega port at Mumbai which together with the Cochin port are the gateways for India's expanding economy towards the Suez Canal. These aspects, together with the fierce competition already existing between the Mediterranean and northern range ports for Europe-bound traffic from the Far East and the American Pacific ports, will be decisive in establishing the future re-balancing of sea freight traffic. In addition, over the last few years Mediterranean ports have begun to compete with one another struggle to increase their share of traffic.

Intra-port competition in the Mediterranean is in fact a false problem insofar as the Mediterranean basin is not perceived as comprising the single ports operating therein. For the large transoceanic ships sailing along routes connecting the Far East, the northern range and North America, shipping companies view the Mediterranean as a single transit area where one or at the most two calls are made. For this reason common cooperation strategies need to be put in place and internal competition processes discouraged. Integration of seaports could provide the answer to maintaining competitiveness in

an ever-expanding and fiercely competitive market.

A new concept of port cluster is gaining ground, intended as the conditions in which different ports, also located within the same geographic region are closely interconnected and have common targets, objectives and management bodies.

FIG.3: TYPES OF CONTAINER PORTS



#### 4 RESEARCH PROBLEM

Shipping industry has witness dynamic changes in the last decade such as acquiring larger vessels, adopting some strategic policies like alliance to meet customer requirements.

The high dynamic of the competitive shipping market forced shipping lines to find new approach to increase their profit. In order to keep base with customer requirement (shipping lines), ports need to optimizing their resources, reduce their operating cost and most importantly, enhance their competitive position; ports are trying to find a strategic alternative for new investment which is the horizontal integration.

Most of the ports apply vertical integration strategy in order to have the linkage of the supply chain management strategy, but few ports apply the horizontal integration in order to increase their competitiveness level. Ports which perform horizontal integration strategies that port authorities can adopt to manage the dynamics of container market and shipping requirements.

Port horizontal integration is an optimal situation to study the impact of port competitiveness, to reveal implications for managerial concerns, and to enhance the understanding of Port horizontal integration in general. A lot of key issues emerge naturally in the context of collaborative relationships where interdependence and risk are constitutive. Alliance partners aim to be co-innovative and want to enhance existing capabilities of each partner. The context of strategic integration helps to examine the availability between cooperation and competition and efficiency and competitiveness.

Horizontal integration might cover the gap between container port development and driven demand of economics of vessel's operation by building larger vessels to improve their services based on economic of scale operations. That leads to

classifying and ranking the container ports to hub (Global), main (Regional) or feeder (small - minor) ports based on port facility, throughput volume and KPI indicators. With continues challenges of high capital investment facing container ports to stay competitive, horizontal integration is a solution to over-come the problem.

The problem of this study is to find the relationship between container port competitiveness and container ports integration based on controllable factors such as the technical efficiency, in a particular, geographical area to maintain or increase a market share and profitability, while reducing investments.

#### 5 CONCLUSION

The high dynamic of the competitive shipping market forced shipping lines to find new approach to increase their profit. In order to keep base with customer requirement (shipping lines), ports need to optimizing their resources, reduce their operating cost and most importantly, enhance their competitive position; ports are trying to find a strategic alternative for new investment which is the horizontal integration.

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