

# IMPACT OF GLOBALISATION AND INTEGRATION PROCESSES ON THE DEVELOPMENT OF THE EU SEAPORTS

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## ABSTRACT

The EU seaports are under a very strong influence of the globalisation and integration processes. Vertically integrating transport chains make them vulnerable to rapidly changing contemporary environment. As a response to those global challenges, the European Commission elaborated the Green Paper on a Future Maritime Policy of the EU. The holistic approach is to ensure better future also for ports in the EU. The obsolete seaport administration and management systems as well as port policy objectives and requirements, based principally on the concept of exclusively port-oriented management forms, do not comply any more with the new logistic management challenges and growing competitive transport environment. The seaport administrations are forced to adjust and get much more global and transport chain oriented. The paper examines some substantial reasons of the ongoing changes in the international trade and transport and also analyses the possible strategies for survival of the EU seaports.

## I. INTRODUCTION

In 2005, one of the Polish Gdynia Port container terminals has been taken over by Hutchison Port Holdings Group (HPH). HPH handled that year 51,8 mln TEU on 251 quays in 43 ports. This global operator has shares on the terminals in 21 countries all over the world: in Asia, Africa, both Americas and Europe. In Europe, they are present in Belgium, Germany, Spain, the Netherlands and Great Britain.

The above example reflects the ongoing globalisation and integration processes that influence the international transport, affecting directly the world maritime transport and seaports, as well. Some nowadays existing traditional seaport administration and management systems as well as port policy objectives and requirements based princi-

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pally on the concept of exclusively port-oriented management forms, do not comply any more with the new logistic management challenges and growing competitive transport environment. The traditional concepts and models of national seaport policy are being steadily evolved, getting much more global and transport chain oriented.

Each European port must find its own strategy, depending on its particular situation, to survive in such a dynamic environment in order to remain competitive. In particular, they have to make plans in a climate of market uncertainty, confront the growing power of the shipping lines, justify expensive public investments, satisfy environmental issues and manage effectively under various regulatory changes.

## 2. GLOBAL FACTORS INFLUENCING THE DEVELOPMENT OF THE EU SEAPORTS

European ports, like all ports in the world, are being confronted by forces of change and uncertainty that are reducing their abilities to control their own destinies. Since several years, other actors in the transportation industry (the shipping lines in particular) are shaping port development. More than ever before, as intermediate points in transport chains, linking shipping with road and rail modes, ports are vulnerable to developments on both land and water. These developments have brought about uncertainty and change that has made port planning extremely difficult. Inter-port competition has been heightened in unanticipated ways (Slack 2001).

EU seaports' development is influenced by many factors (see fig. 1). Especially, the globalisation and integration processes affect the evolution of their management systems and models.

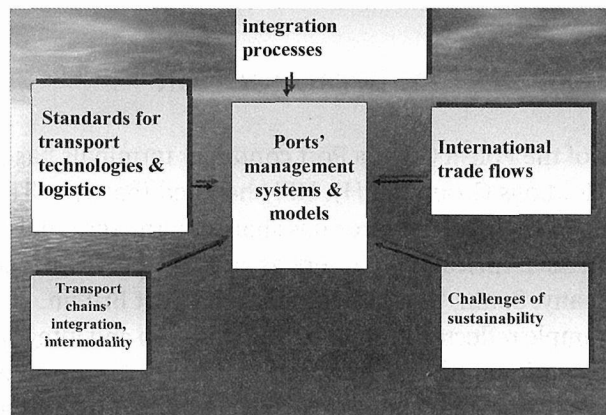


Fig. 1. Factors influencing the development of seaports

Source: Grzelakowski & Przybylowski 2006, p. 3.

The ongoing growth of the world economy in terms of GDP and industrial output accelerates the growth of the international trade and as a consequence boosts the increase of the world seaborne trade (UNCTAD 2005). According to WTO calculations, it accounts for more than 80 % of the world total trade in tonnage terms. The growth rates of the seaborne trade were especially high in the recent twenty years of the 20.th century. In 2004 it reached 6,76 billion tones of loaded goods. The annual growth rate reached 4.3 % over that of 2003, and the increase of the world merchandise exports volume was 13% higher at that time. The world merchant fleet grew in deadweight tons (dwt) up to ca 900 million that represents 4.5% increase. The rapid increase of the world seaborne trade boosts the development of the maritime transport. As a result, it accounts nowadays ca. 90 % of the world transport in ton-miles. As a consequence the total throughput of the world sea ports has been growing considerably, reaching (according to the provisional data) more than 14 billion tones (loaded and unloaded) (Grzelakowski & Przybylowski 2006).

Shipping, being the most important mode of transport in terms of volume, gets an important support from the EU. In fact, the common transport policy favours the development of environmental friendly modes of transport in compliance with the idea of sustainable development (Lisbon and Goeteborg Strategy). The EU, through a set of political actions, legal and financial instruments, promotes intermodal transport (Marco Polo Program) and creation of motorways of the seas, for instance.

Furthermore, as a result of its geography, its history and the effects of globalisation, maritime transport will continue to be the most important transport mode in developing EU trade for the foreseeable future (Maritime transport 2006). The Green Paper on a Future Maritime Policy for the European Union intends to launch a broad debate on the development of an overall maritime policy which combines an integrated, cross-sector analysis with effective policy co-ordination and common action. According to the Commission, such a policy should combine the competitiveness and employment objectives of the Lisbon agenda with improving the health of the marine environment.

The Green Paper puts forward five concrete areas for discussion (EC Commission 2006):

- sustainable maritime development,
- quality of life in coastal regions,
- ocean management tools,
- maritime governance,
- European maritime heritage and identity.

Seaports feature prominently in the Green Paper and are identified as ‘multifunctional areas, being key-elements in the logistics chain as well as business locations, but equally providing residential space and tourist facilities’. The Green Paper further acknowledges that the growth in trade and shipping is dependent on having adequate port capacity and recognises that this need is under competition from environmental objectives.

The Green Paper proposes that Member States would implement a system of spatial planning for maritime activities on the waters under their jurisdiction or control. This would create greater legal certainty for investment decisions. The proposal is based on the Thematic Strategy for the Marine Environment the Commission published last year which introduced eco-system based spatial planning. It also builds on the principle of Integrated Coastal Zone Management (ICZM).

The coastline of the European Union is many thousands of kilometres in length and contains well over 600 individual ports. These handle around 90% of EU external trade and more than 35% of trade between EU countries. This involves handling 3.5 billion tonnes of goods and 350 million passengers being transported on millions of ship journeys each year ([www.emsa.europa.eu/end](http://www.emsa.europa.eu/end), 25.02.2007).

The ongoing process of cargo flows concentration benefits to the biggest EU ports, mostly in the northern part of the continent. The table 1 displays the total volume (in tonnes) of goods handled in all the major maritime ports of the EU. A big part of the increase over the years can be attributed to the increase of import of oil and oil products (<http://epp.eurostat.cec.eu.int> 2006).

**Table 1.** *Transshipment in EU countries (million t)*

	2004	2005
EU (25 countries)	3505	:
EU (15 countries)	3305	:
Belgium	188	:
Bulgaria	23	:
Czech Republic	-	:
Denmark	100	:
Germany (including ex-GDR from 1991)	272	:
Estonia	45	:
Ireland	48	:
Greece	158	:
Spain	373	:
France	334	:
Italy	485	:
Cyprus	7	:
Latvia	55	:
Lithuania	26	:
Luxembourg (Grand-Duché)	-	:
Hungary	-	:
Malta	4	:
Netherlands	441	:
Austria	-	:
Poland	52	:



Portugal	59	:
Slovenia	12	:
Slovakia	-	:
Finland	107	:
Sweden	167	:
United Kingdom	573	:
Croatia	41	:
Iceland	5	:
Norway	198	:
Switzerland	-	:

Source: Sea transport of goods, <http://epp.eurostat.ec.europa.eu/portal/>, 10.03.2007.

Containerisation that has given shipping lines greater freedom to serve markets from a wider choice of ports, thanks to so-called transferability (Fleming et al. 1994), deepened the globalisation process. Ports have no longer control over inland markets and can not be sure of the trade even in their own local areas. They have to invest huge sums of money in superstructure and infrastructure to participate in the container industry. However, it is not a guarantee to take profits from this business as some of them, despite having a container terminal, may be bypassed because of the reasons linked to the whole transportation chain, like hinterland connections.

The shipping lines, being the most important players in the logistics chains, widen their maritime services and extend control over landward movements. They certainly do not take into consideration the specific merits of a particular port, but the economies of scale and conditions of the entire chain. For instance, services in the Mediterranean have concentrated in southern entirely new pivot ports, such as Gioia Tauro and Algeciras, bypassing direct services with northern reputed ports as Livorno and Marseilles. Thus, port operations can be compared to a lottery (Slack 1993).

Actually, the most dynamic increase of the handled volume of the biggest EU ports concerns the container traffic. There is a high level of correlation between the EU ports development and their container handling volume. On the list of top 20 container terminals only three EU ports are named, i.e. Rotterdam, Hamburg and Antwerp, ranked 7, 9, 11 respectively (see table 2). However, the percentage change of container throughput in the EU container terminals is above the world average level.

**Table 2.** Top 20 container terminals and their throughput, 2004-2002  
(millions of TEUs and percentage change)

Port	Millions of TEUs			Percentage change	
	2004	2003	2002	2004/2003	2003/2002
W U I £					
Hong Kong (China)	21.93	20.82	19.14	5.33	8.78
Singapore	20.60	18.41	16.94	11.90	8.68

Shanghai	14.57	11.37	8.81	28.14	29.06
Shenzhen	13.65	10.70	7.61	27.57	40.60
Busan	11.43	10.37	9.45	10.22	9.74
Kaoshiung	9.71	8.81	8.49	10.22	3.77
Rotterdam	8.30	7.10	6.52	16.90	8.90
Los Angeles	7.32	6.61	6.11	10.74	8.18
Hamburg	7.03	6.14	5.37	14.50	14.34
Dubai	6.43	5.15	4.19	24.85	22.91
Antwerp	6.06	5.44	4.78	11.40	13.81
Long Beach	5.78	4.66	4.52	24.03	3.10
Port Klang	5.24	4.80	4.50	9.17	6.67
Qingdao	5.14	4.24	3.41	21.23	24.34
New York	4.40	4.04	3.75	8.91	7.73
Tanjung Pelepas	4.02	3.50	2.67	14.86	31.09
Ningbo	4.00	2.77	0.00	44.40	n.ii.
Tianjin	3.81	3.01	0.00	26.58	n.a.
Laem Chabang	3.62	3.18	2.66	13.84	19.55
Tokyo	3.58	3.28	2.71	9.15	21.03
Total top 20	166.62	144.40	121.63	15.39	18.72

**Source: Containerisation International, March 2005, p. 77.**

In the maritime transport sector the changes concern not only the growing volume of commodity flows and the structure, but also ships' size, specialisation, containerisation and transport chain organisation.

The growing ships' size involve huge capital expenditures in ports. They refer to extensive dredging, much more dockside and handling capacity, for example. However, such an anticipation may be a risky undertaking, as there is an uncertainty over the ultimate vessels' size.

As far as the organization of the maritime transport is concerned, some forms of cooperation such as strategic alliances (SAs) and equity merger and acquisition activities (M&As) have been developed. They refer mainly to the international container transport - Hanjin/Senator, P&O Nedlloyd, Hamburg-South-Group, etc (see table 3). The main result of the capital integration and other forms of cooperation is enhancing the competitive position by improving learning capabilities and the timely access to technological knowledge and also vertical integration, control of intermodal and logistic cycles and logistics outsourcing, as well. Thus, the transport of goods by sea costs have been decreasing and the effectiveness of the international combined transport

chains is steadily growing. This process is still going on, despite huge unavoidable ports investments (Grzelakowski & Przybylowski 2006).

**Table 3. Emerging Port/Terminal Groupings in European Ports**

HUTCHISON	P&O	PSA	GATE
Felixstowe	Southampton	Genoa	Hamburg
Thamesport	Tilbury	Venice	Bremen
Rotterdam	Larne	Rome	G. Tauro
Trieste	Naples		La Spezia
	Cagliari		Lisbon

Source: Slack 2001, p. 14.

Major shipping lines formed strategic alliances because of the pressures of globalisation requiring to be present in all the major markets of the world. As a result, formerly separate services of members are being integrated and create new service configurations that ports are unable to predict the outcome (see table 4).

**Table 4. Shipping Alliances, 1999**

Alliance	Grand	New World	United	SeaLand/Maersk
Members	H-L, MISC, NYK, OOCL, P&ON	APL, HMM, MOL	CY, DSR, Hanjin, UASC	SeaLand, Maersk
# ships	79	75	61	199
#TEUs	299,224	289,399	190,235	483,000

Source: Slack B., 2001, p. 4.

Meanwhile, ports operations become more capital intensive, labour saving and space consuming. Due to liberalization of the EU transport markets the seaports are under the huge competitive pressure put mainly by container transport operators committed in the logistic transport chains. Not all of them are able to face such a competitive environment. The adjustment to the above mentioned globalization processes needs huge additional public investment in port infrastructure and lowering of the operational handling costs. Only the biggest terminals and port handling operators can meet those challenges and requirements set by the growing competitive environment (pressures from container operators, liners). Due to the relatively low port tariffs ports are unable

to increase their income. Therefore, they need to apply for a huge public money and the access to the capital of parties involved in the multimodal transport chain. However, such a strategy is very often connected with the change of their contemporary role in a transport chain and the evolution of their model of administration and management, in particular. The EU ports should consider specific approaches depending on the environment they are operating in to face the ongoing challenges.

### 3. SURVIVAL STRATEGIES FOR PORTS IN THE EU COUNTRIES

The EU port authorities, confronted with the abovementioned processes, must adopt efficient survival strategies in order to resist global and integration pressures. Slack mentions two possible reactions: keeping pace with market demands or pursuing customer-driven strategies. Porter and Robinson works suggest providing superior value-delivery to targeted customers at a cost that provides acceptable profit levels.

The first strategy consists on carrying out expensive investments in superstructure and infrastructure in order to keep pace with shipping lines expenses on larger vessels. The second one is a response to concrete demands coming from shipping line clients. Certainly, investing huge money is not a guarantee of success and may not be even economically and economically sustainable. The third approach requires important adjustments in ports functions to fit better into local, regional and global markets (concentration on passenger business or container feeder port role, f. ex.). A port authority may be not only a port operator but also a land developer. Sites that have no more a port-use character can serve for urban redevelopment. Such an alternate use of port sites may bring a lot of income, because waterfront land is of a great value (Slack 2001).

The majority of the major EU ports systems were created a long time ago, based mainly on the inside port-oriented factors connected with the land ownership. This criterion was decisive for the establishment of the port management systems. Consequently, the EU seaports management systems vary from the public models - landlord (autonomous ones) through municipal models to private systems. The administrative function is taken over by maritime authorities (security, terrorism prevention, protection of the environment).

It is obvious that those models dominating in most of the EU ports do not comply any more with the contemporary requirements of the logistics transport operators. The biggest EU ports, like Rotterdam, Hamburg and Antwerp, acting not long ago as a typical municipal ports, under the growing pressure of the globalisation and logistic integration of the supply chains, are going more towards the autonomous models. The typical local dimension of the port management system which to a great extent hampered the adjustment process, was partly abandoned. Nevertheless, such a step is not sufficient to meet the criteria set by the global trade and transport sectors (Grzelakowski & Przybylowski 2006).

As mentioned above, the next one is to be a full integration of those entities into the transport chains is necessary. Such a process has already started. It is performed by horizontal and vertical forms of integration. The first one is caused by the ongoing process of privatisation of the ports terminals, mainly container ones. The global container operators, like HPH, take over container terminals becoming their owners in the world scale. The reason of this is an increasing rentability of port container terminal companies. According to Drewry Shipping Consultants, the leading container operators like HPH, CSX WT, PSA Corp., ICTSI and P&O Ports reach turnover rentability of 33%, 29%, 25%, 18,8% and 17,4% respectively (Grzelakowski 2004).

The vertical integration is based on capital concentration among the ports terminal companies and other logistic transport operators such as global container alliances (Maersk). Till now, the ports behaved passively being taken over by other operators players/ carriers. Thus, despite the growing concentration of the commodity flows in the main EU ports which strengthen their competitive position on the open European seaport market, the majority of them seem to be unable to resist the enormous global challenges. However, since the mid 90. some European seaports are getting much more pro-active on the global transport market. The simplest form is the EU biggest container terminal operators (Eurogate) set together with the strongest railway companies container railway services which operate as a global player on the European transport market. Such services connect the main European terminals (Bremen, Hamburg) with the main consumer and production centers in Europe.

Consequently, European ports binds huge area of the hinterland and the main initiative is overtaken by the container terminals. The wider concept, based on stronger position of container terminal operator in land transport relations is aimed at strengthening its position in relation to the container transport operator (container alliances). Nevertheless, the port container operators are partly overtaken by still stronger maritime transport operators. In fact, the shipping lines become multimodal logistics providers controlling the routing of the flows in conjunction with the ocean services of the consortia. Thus, a port is an incidental entity in this global network system.

Containerisation has reduced the economic impact of ports on cities, because ships crews are smaller than they used to be, spend little time in port and dock labour considerably diminished. As local economic benefits (employment) are declining, it is no longer justified to invest huge public money in the port area. The European Commission wants to minimise subsidies in accordance with proper competition policy and a restrictions on public state aid.

The increased competitiveness of the European ports can be achieved by establishing port clusters either via their port authorities or via municipal governments. The port cluster may be defined as 'the set of interdependent firms engaged in port related activities, located within the same port region and possibly with similar strategies leading to competitive advantage and characterized by a joint competitive position vis-à-vis the

environment external to the cluster’ (Hong-Seung-ROH 2004). There is an urgent need to enhance the relationships between the port and associated companies in the port area in order to create an added value (Notteboom T. E. 2005). Moreover, the strategies for port competitiveness must take into account local impact in order to strengthen the link between the port and its city/region (Pando J. et al.2005).

Port management systems should also meet the criteria of sustainability, i.e. combining economical, ecological and social factors. The sustainable composition will be reached if all stakeholders having different goals are taken into account (Musso E. 2006). It is not an easy task, as ports authorities may be often in conflict with legislation, environmentalists and the general public while trying to accommodate their sites to growing economic needs (f. ex. access to water depths requiring a frequent dredging).

There is a need for more partnership solutions as regards port management, implementing ecological systems preventing pollution and excessive emissions. This requires paying more attention to local labour markets in order to avoid social protests (EU ‘service’ directive proposal, for example). The possible reaction leading to raising ports’ competitiveness could be also a horizontal integration and port networking and combining competition and cooperation (fig. 2).

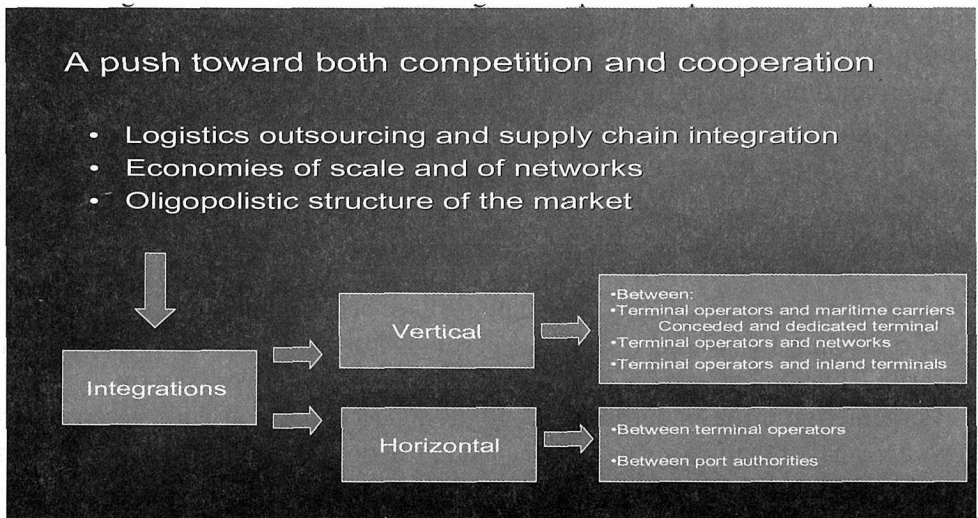


Fig. 2 Vertical and horizontal integration – ports competition and cooperation

Source: [www.enricomusso.it/VigoSlides3.ppt](http://www.enricomusso.it/VigoSlides3.ppt), 14.02.2006.

So the EU ports, acting as a real global players, need to be much more efficient in micro and macroeconomic terms. They should become an integral part of the vertically integrating logistic transport chain. The simplest form of performing these strategy is the development on their areas the distribution and logistics centres, for example. They need



to enforce much more integrated, logistic transport chain oriented sea port activities because of the still growing competitive requirements from maritime and land transport operators, as well as exporters and importers. Such kind of seaport reorientation can not be efficiently carried out without a transformation of their administration and management systems, i.e. going towards more partnership solutions, for instance.

## 4. CONCLUSION

The position of EU ports in the context of modern, global and integrating logistical chains has considerably weakened. They have been put 'at mercy' of the shipping alliances dominating world trade not only on water, but also on land. Moreover, the process of deregulation in the common transport policy in the EU enables shaping equity mergers and alliances on land. For instance, the rationalisation of rail services raises the potential of differential access to ports. Most EU port authorities play only a secondary role in the global game.

The EU supports the development of maritime transport and seaports. The latest Green Paper on Future Maritime Policy is a step towards a holistic approach which could benefit to European ports. However, it is unlikely that there will be a harmonisation of port policy soon. It is not clear yet whether the EU wants to support bigger ports or rather help the regional and local ones in their development.

The traditional port management models decrease the competitive position of many of the EU ports. Thus, there is a need for novel organisation solutions in order to enhance their competitiveness. Some of the European seaports try to adapt to the new widely observed internal and external challenges and conditions. The appraisal of their position is possible through capital integrated transport chain oriented models of management. Actually, the efficient seaport policy needs to take into account such strategies as vertical and horizontal integration, port networking and port clustering.

Some of the European ports will have to find other solutions and cultivate niches as secondary ports. Others may be forced to be pro-active and work closer with logistics providers, railroads and truckers raising the service attractiveness of the port. However, this would require more partnership solutions, going far beyond the port area. Ports could also allocate berths to a single user in exchange for long-term commitment which would integrate and even completely attach shipping lines to the particular port. The development of logistics features: inventory control, data management, packing and processing could also enhance economic benefits of port operations, like in Port of Rotterdam. The horizontal port alliances seem to be a good solution for survival, as well. A group of northern European ports already gather together to solve common problems. However, this process is quite a challenge because of the differences concerning port management models and systems. Finally, the ports' position in relation to global carriers can be upgraded thanks to the privatisation processes and emergence of grouping of terminal owner/operators.



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