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Vertical and Horizontal Integration in the Maritime Industry

The Impact of the Financial Crisis

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Abstract

The inferences of the recent financial crisis of 2008 have impacted the liner shipping industry greatly. The repercussions of the crisis were especially visible because of the nature of the demand for transportation. The Recovery from the crisis did take place, however, mostly not at pre-crisis levels. Liner operators are still enduring the repercussions of low fright rates coupled with increased costs.

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1. Introduction

Across time alliances have always represented a fashion to share risks and rewards with suitable partners, operating on common grounds. Regardless the nature of such a strategic relationship, resources have been divided, budgets have been coupled and rewards have been shared. In the case of a shipping alliance it is just deducible that one of the commons shared is the vessel fleet and the space on the vessels (Noteboom, 2008). The recent financial crisis has driven shipping companies to the abyss of deciding whether to remain independent or to join a strategic commitment to overcome costly expenses. These strategic groupings in the shipping industry have proven to be very complex, in the sense that some firms have merged and later entered alliances, while others, due to their large size and high market power, joined directly or decided to remain independent (Slack et al, 2002).

It is imperative to consider the reasons for such an agreement. The motivations behind alliances have been bordered in a setting of increasing globalization and competition norms. Carriers have entered alliances with the main thoughts of increasing the quality and efficiency of transportation and of their products and services, but most importantly to reduce their costs and share their risks.

The financial crisis has driven liner operators to consider business alliances; even though their reasons are important, of more relevance are the economic inferences of the crisis environment on the operational relationships between them. Accordingly, this paper centers on the following research question:

Can vertical and horizontal integration strategies help liner operators recover from the recent financial crisis?

To answer this question, one must bear in mind the overall repercussions of the financial crisis on the economy as a whole, while applying them to the liner shipping industry.

A theoretical framework is required. This framework shall include the description, advantages and disadvantages of both vertical and horizontal integration, while applying them to the recent panorama of liner operators and distinguishing between independent liner operators and strategic alliances.

However, before analyzing the matter of shipping alliances (e.g. New World Alliance) vs. carriers (e.g. Maersk-Sealand), which remained to a certain extent independent (while vertically or horizontally integrated), key terms and definitions will be depicted; different types of alliances will be pointed out. Last but not least, the difference between alliances, mergers and acquisitions will be framed in this context, followed by a panoramic of alliances in the shipping industry as of 2011; three shipping alliances will be presented, excluding Sealand-Maersk (example of merger), Grand Alliance, the New World Alliance and the CKYH Alliance (Containerisation International, 2011).

All these business alliances were founded because of certain aims, which all partners share on a common platform, hitherto another query arises: which motives where the most preeminent ones?

After portraying definitions and differences of these operational relationships in the context of the recent financial crisis, this paper will assess the issue of competition, which is of great relevance, when one is implying the thought of a monopoly industry. Will competition be distorted? Will entry barriers impede new comers to enter the industry and compete in a fair manner? Competition laws will be discussed in this milieu.

Nearing the end of the paper, an analysis will be presented showing actual and possible aspects of recovery from the financial crisis of 2008. The questions answered here will concern the recovery of shipping alliances from the repercussions of the crisis.

In the end, a detailed conclusion will be presented, summarizing the main ideas of the paper and giving room to closing thoughts and opinions.

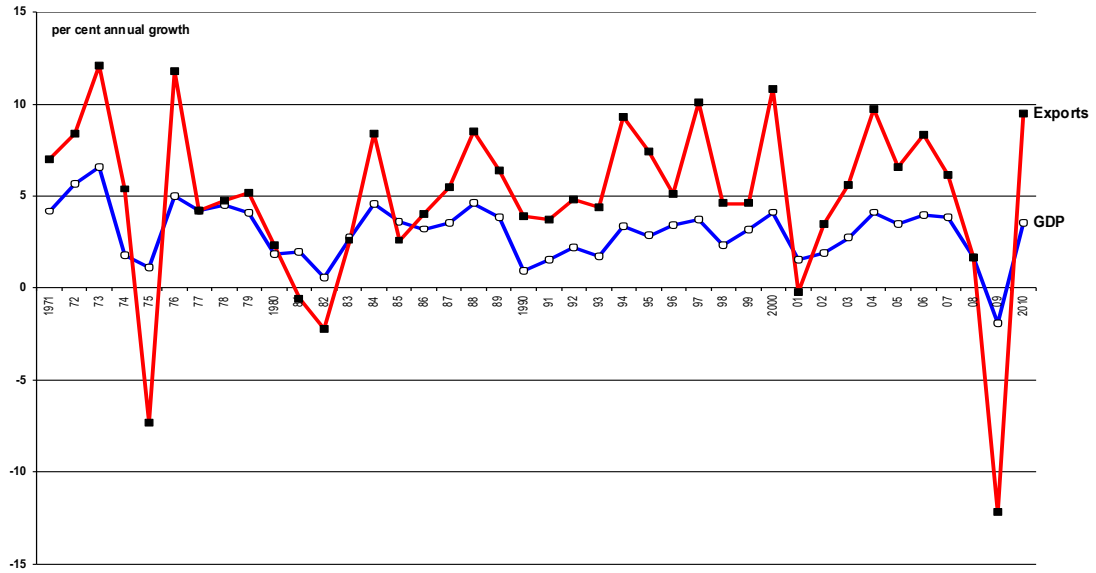
To support the arguments throughout the paper the following scientific literature has been employed: P. Cariou's "Strategic Alliances in Liner Shipping: An Analysis of Operational Synergies" (2000), E.J. Sheppard's "Ocean Shipping Alliances: The Wave of the Future?" (2001), B. Slack's et al "Strategic Alliances in the Container Shipping Industry: A Global Perspective" (2002), Ch. Sys's "Is the Container Liner Shipping Industry an Oligopoly?" (2009) R. McLellan's "Liner Shipping Development Trends" (2006) and R. Agarwal's "Network Design and Alliance Formation for Liner Shipping" (2007), further literature will be used as well with reference to the bibliography at the end of the paper.
As the research conducted prevails the outcomes and implications of a recent financial crisis, the data used is considerably new and often lacking research in the domain, yet it has explored causes and reasons for alliances and clearly determined the differences between alliances, merger, acquisitions and independent operators. Figures used in the paper will be gathered from publicly available reports of specific companies depicted during the paper (e.g. annual reports) or specialized publications and scientific journals, such as Containerization International, Journal of Maritime Policy and Management and Lloyd's List.

To commence the paper, a theoretical framework of definitions and key-terms, as well as classifications of the subject at hand will be pictured in the coming section. The following definitions may be found as well in the glossary at the end of the thesis.

2. Global Financial Crisis and its Impact on the Shipping Industry

Trade liberalization, standardization and the advancements in transport and logistics set the grounds for the phenomenon of globalization and its fast expansion. The investments in logistics and research and development in the transportation industry were, nonetheless, rewarded by the benefits brought forth by globalization. Trade and global GDP reached high levels, as depicted in the graph below. However large the gains from globalization were, the downfall of the global financial crisis was felt intensively. World GDP dropped to its lowest point in 2009, regarding data starting from 1971 until 2010, while global exports exceeded a -10% global economic stagnation, thus international trade suffered a decrease. Because of globalization, the economic crisis spread worldwide as fast as it induced, years earlier, an economic boom.

Graph I: Global Exports and GDP

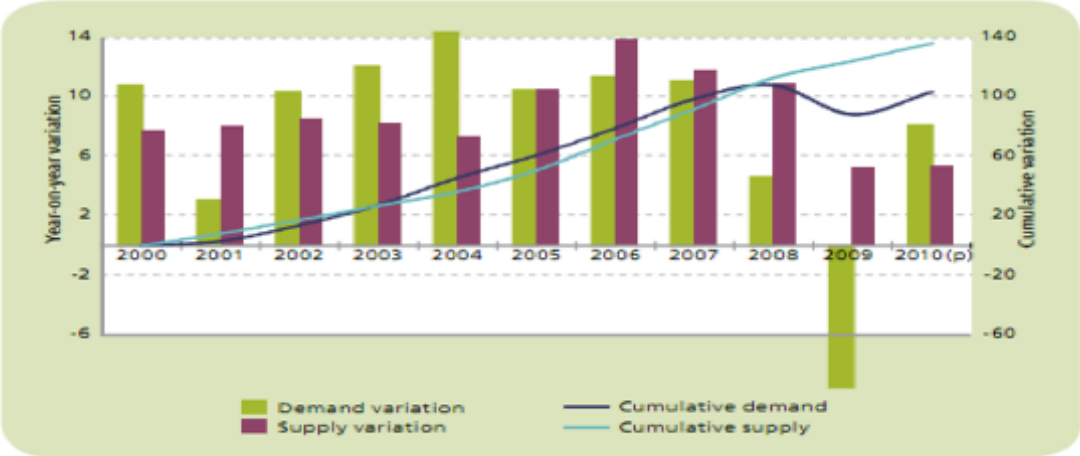


Source: UNCTAD, 2010

The financial crisis hit the world's economy harshly, with the transport industry suffering the most. This has happened because of the nature of the demand for transportation, that is, a derived demand. This means the demand for one good, in this case the demand for transportation, is enhanced as an outcome of demand for another good or service.

If consumption of one good drops, the result will be that the demand for transportation of that certain good will drop as well (Friedlaender, 1998). Indeed, the liner shipping industry suffered exactly from this occurrence.
The graph below shows the downfall of the demand for container shipping during the financial crisis, while supply was still comparatively high, leading to an overcapacity in the liner shipping industry.

Graph II: Supply and Demand for Container Transport

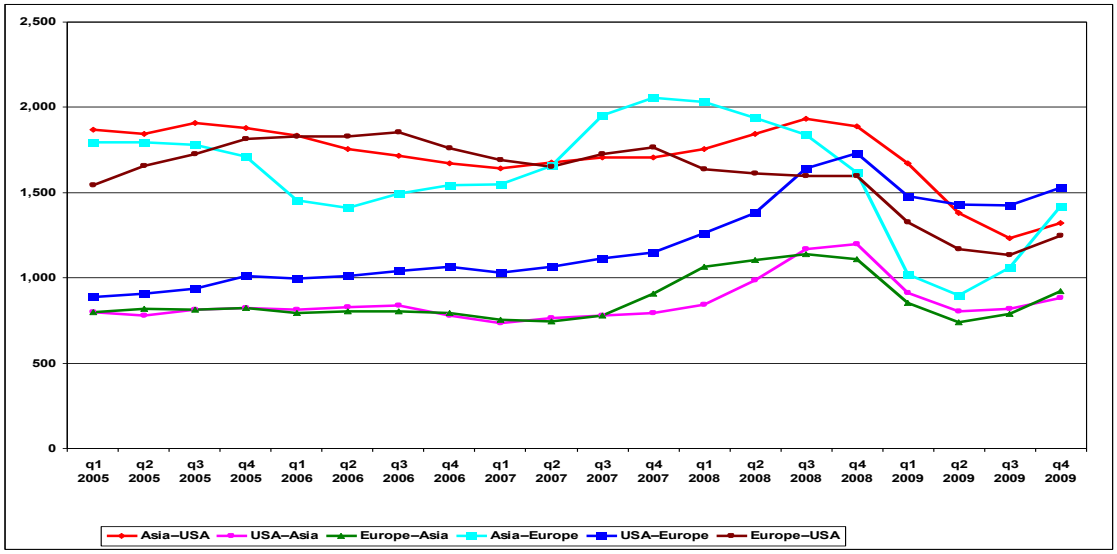


Source: Sanchez, R.J., 2000

An overcapacity means, new shipping orders have to be canceled, as well as the construction of new ships and ultimately their scrapping will be the solution. Hence, from a financial crisis the ship scrapping market will be the only one profiting (Fremont, 2007).

The financial crisis has, next to the above-mentioned impacts on the shipping sector, another negative aspect, the decline of freight rates, especially in 2009. Albeit their decline, in 2010 their recovery took place, however not at pre-crisis levels.

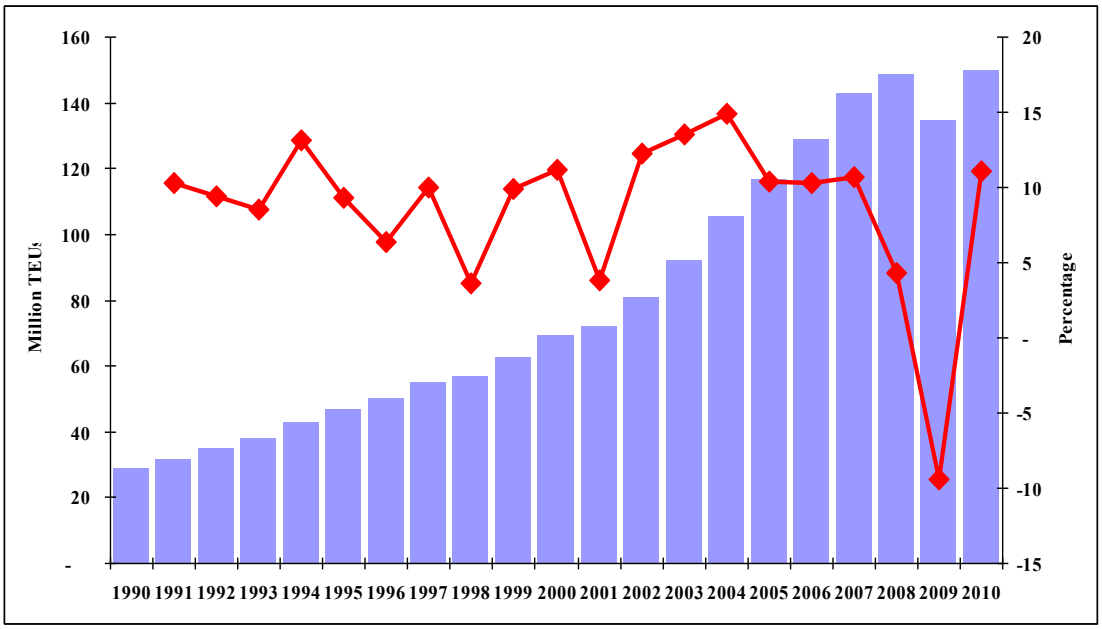
Graph III: Container Freight Rates, 2010



Source: UNCTAD, 2010

Not only freight rates dropped, but also the overall container trade had to suffer from the economic crisis and its repercussions, as pointed out in the graph underneath.

Graph IV: Global Container Trade 1990 – 2010



Source: UNCTAD, 2010

The stagnation of global container trade was difficult to recover from, however as the graph pictures, not impossible (global container trade increased in the second half of 2009). Container trade has taken off again, and the recovery of the liner industry is said to be fast, especially because of the stability of freight rates (administrated tariffs) and the increased consumer demand (van de Voorde, 2009).

Decay in demand; results in a decrease of trade, which of course is one of the causes of overcapacity, in the first place. The table underneath depicts the figures relating to the quarterly international deep-sea trade in the container business.

Table I: Quarterly International Deep-Sea Trade Container Industry

Quarterly International Deap-Sea Trade, Container Indices					
Quarter	2006	2007	2008	2009	2010
1	100.0	105.5	117.7	102.2	122.6
2	100.0	106.6	116.8	104.9	125.6
3	100.0	108.8	115.2	108.5	126.1
4	100.0	107.3	102.8	109.3	130.1

Source: Containarisation International, 2010

Observable is the fact that this table has as a base year, the year of 2006. Regarding the highest figure, excluding the year of 2010, meaning 117.7 (2008 – First Quarter), an increase of approx. 17,7% compared to the base year. This representation relates to the economic boom, however at the end of 2008 another scenario predominates. Compared to 2006, the increase during the crisis is of 2,8%[1] (2009 - First Quarter), which is significantly lower than the previous 17,7%. Nonetheless, a definite increase is visible in 2010 (First Quarter), exceeding values of pre-crisis events.

[1] *Containerisation International, 2010*

What happened however to the bulk shipping sector? Bulk shipping is a highly competitive market, with actors being price-takers, meaning they do not set prices, but rather adjust their costs to pre-determined prices (Fremont, 2007). Also, as in liner shipping, the demand for transportation is inelastic; however, the reason is not the small share of transportation price from the total price of a product (liner shipping), but rather the inelasticity of the demand for raw materials (Noteboom, 2008). The financial crisis, indeed affected both dry and wet bulk industries. From 2008 to 2009 a decrease in tons of the seaborne trade regarding wet bulk (e.g. oil) took place, reaching a fall of -3% (*Appendix: Table 1*). However, this decreasing trend is viewable since 2006 (*Appendix: Table 1*). The decrease in bulk is not as dramatically noticeable as in the liner shipping industry, yet it took place.

For further sections of this paper, the focus will be mainly on the container-shipping sector, since it suffered the most from the financial crisis.

3. Theoretical Framework: Vertical and Horizontal Integration

3.1. Vertical Integration

The maritime industry is no longer characterized by competition among individual companies, but rather by a tendency towards consolidation, meaning the integration of services, vertically and horizontally (Fremont, 2007).

Vertical integration refers the cooperation among stages of the supply chain (van de Voorde, 2009), such as terminal services, hinterland transportation services, warehousing, distribution, etc.

Maersk is the most distinguished example of vertical integration. A typical supply chain will probably look something like the picture portrayed underneath, which includes, waterside activities, yard activities as well as land activities in a port, all related to transportation and handling of cargo.

Figure I: Market Power and Vertical and Horizontal Integration in the Maritime Shipping and Port Industry

Figure 1. **A typology of the maritime logistics chain**

Source: Van de Voorde, E., T. Vanelslander, 2009

The consolidation of services along the supply chain has led to the creation of so called Third-Party Logistics (3PL). 3PLs refer to integrated intra-firm logistical services, reaching from transportation, to warehousing and distribution delivered at consumers' desires (Selviaridis, 2008). Third-Party logistics offer a certain competitive advantage, namely the value added aspect of the supply chain, which in the eye of the customers is of paramount importance.

3.1.1. Advantages of Vertical Integration

How come certain liner operators decided to vertically integrate, more precisely, what are the advantages of vertical consolidation? Selviaridis (2008) and Rodrigue (2010) offer a series of potential factors, they find common ground on five main drivers. To commence, cost reduction along the stages of the supply chain is importance in this representation (Rodrigue, 2010).

Transportation costs can be saved, when the company is linked either to the market or the source of supply; proximity is a key issue in this sense (Harrigan, 1985).

Next, risk sharing is another relevant factor, followed by obtaining market control and coverage (Rodrigue, 2010). Not only will the larger market be served, but also the consumer network will expanded, since new and attractive products can be offered (Harrigan, 1985). Selviaridis (2008) points out other drivers of vertical integration, namely economies of scale and scope. Economies of scale refer to a decrease in average costs with an extra unit of output, thus increasing production of one good (Krugman, 1980). Economies of scope denote, similarly as economies of scale, a reduction of the average costs over two or more goods as opposed to one (Kurgman, 1980).

Vertical integration offers customers the option of buying more services from a single provider, thus cargo handling activities as well as hinterland delivery can be obtained from the same service provider. Further advantages of vertical integration concern the spread of knowledge (e.g. tacit knowledge), IT and communication. Lastly, vertical consolidation improves the logistics chain, creating value added services (Selviaridis, 2008). This being said, vertical integration happens because of the desire to reach economies of scope, while keeping costs as low as possible and profits sustainable and constant. However, in the long-run value adding services are to be encouraged.

3.1.2. Disadvantages of Vertical Integration

Disadvantages of vertical integration, relate mostly to coordination and collaboration problems, and the potential to conflict exposure. One drawback of vertical integration relates to the coupling of different business structures from different industries together (Krugman, 1980). In the case of liner shipping, carriers have traditionally focused on waterside activities, whereas logistics companies have concentrated on distribution, warehousing and hinterland transportation of goods. Their focuses rest on different fields, combining them might sometimes be a hindering undertaking (Selviaridis, 2008).

Related to this point is also the business orientation of carriers compared to logistics companies, which in comparison to carriers, have a more consumer centered perspective regarding their business practices, which is being currently adopted also by carriers, thus it can be considered a disadvantage, when their perspectives conflict, however not when their integration succeeds properly.

Another disadvantage of vertical consolidation regards competition. A result of vertical integration in the liner industry is the increased competition, since global carriers will directly compete with independent Third-Party Logistics for hinterland coverage (Selviaridis, 2008).

Being vertically integrated can leave a company along the supply chain without corporate identity, thus flexibility of decision taking of that company will be diminished (Krugman, 1980).

Lastly, vertical integration concerns a great deal of coordination, thus the administrative and bureaucratic expenses to be endured are of significance (Krugman, 1980).

Summing up, the following table will portray once more the advantages and disadvantages of vertical integration, for the purpose of structure.

Table II: Advantages and Disadvantages of Vertical Integration

Advantages	Disadvantages
Cost reduction (operating costs)	Conflict in business orientation
Value Added	Conflict in business structure
Larger market coverage	Competition distortion
Increased consumer network	Loss of corporate identity
Economies of Scale	Lack of flexibility
Economies of Scope	Administrative expenses
Exchange of knowledge (e.g. tacit knowledge)	

Vertical integration proves to be advantageous, as the case of Maersk will show later in this thesis. Nevertheless, when vertically consolidated, coordination and competition knowledge are relevant to the success of the consolidation.

3.2. Horizontal Integration

Having portrayed so far the scenario of vertical integration, the attention of this paper will center now around horizontal integration.

Horizontal integration refers to cooperation between two or more companies competing in the same sector or market (Hill, 2008).

Next to vertical consolidation, the maritime industry is dominated by horizontal integration, either through mergers and acquisitions or strategic alliances.

The bulk shipping industry is not so much affected by the presence of alliance, thus this paper will consider the case of container shipping. Alliances are numerous in this part of the maritime sector, especially because the liner shipping industry is a capital-intensive industry (Cariou, 2000).

3.2.1. Strategic Shipping Alliances

Consumers' demand for product and services has increased over the past years, and so has the worldwide container traffic (*Appendix: Graph 4*). Due to standardization and containerization, global trade and investments became possible to a large extent, increasing consumer markets (Agarwal, 2007). In order to keep participating in the shipping industry as a global player, shipping companies decided to enter strategic shipping alliances in order to reduce operating costs, mainly through asset sharing (Van de Voorde, 2009).

To begin with, an artless question demands an answer: what are alliances? Strategic alliances imply a cooperative agreement, hence a deliberate relationship between two or more companies for the common use and integration of certain company assets in order to attain mutual goals set prior (Hung, 1992). In this sense, alliances include joint ventures.
Research on this topic has divided these strategic commitments into three categories (Harrigan, 1987), as depicted in *Table 6* of the Appendix. Under strategic relationships, mergers and acquisitions are comprised as well, however the difference between these two and alliances will be pointed out later in this section. According to Harrigan, strategic relationships can be divided as follows: full equity ownership (e.g. mergers and acquisitions), partial equity ownership (e.g. joint ventures) and no ownership rheostat (e.g. research and development agreements) at all (Harrigan, 1987).

3.2.2. Difference to mergers and acquisitions

In order to allow a further depiction of alliances it is of utter importance to consider the distinction between an alliance, a merger and an acquisition, in a general background. All three represent methods of horizontal integration; nevertheless the strategic thought behind them makes up the difference. A merger implies two or more companies joining together to become one single enterprise (De Pamphilis, 2008). An acquisition, on the other hand, makes reference to a merger however, instead of creating a completely new company, one company buys another, controlling its assets. The company acquiring the other firm(s) automatically becomes the owner of it (De Pamphilis, 2008). Both mergers and acquisitions harm competition when not regulated. The most distinguished example of an acquisition in the container shipping industry is the case of Maersk's purchase of SeaLand, and its further acquisition of P&O/Nedlloyd in 2005 (Sys, 2007). Pointing out the main difference between mergers, acquisitions and alliances, the striking and distinctive fact is that of purchase and the formation of a new company. Strategic alliances do not contemplate on purchase, neither results from their creation another company. Strategic business relationships solely imply a collaboration of partners acting on common grounds.

A complete list of mergers and acquisitions is depicted in *Table 15* in the *Appendix*.

3.2.3. Types of Strategic Alliances

Strategic alliances generally, as well as in the shipping industry, can be alienated in three classes; this thesis will apply these categories directly to the maritime industry (Koay, 1988).

The first type of alliance, and the most common in the shipping industry, constitutes the operational alliance, which concern the upkeep of functioning activities; asset sharing (space sharing, vessel sharing, etc.) is a key term in this discussion. Overall, operational alliances can be of multiple modes and different conducts. Koay distinguished a four-numbered classification of cooperation between maritime giants, when in an operational relationships: marketing, risk sharing, fleet pooling and the sail scheduling (Koay, 1988).

These attributable categories of membership cooperation can be applied to different types of operational alliances, for instance to equity sharing joint ventures, which are the most eminent example of operational alliances. These joint ventures include all four, above-mentioned, traits of an operational agreement (*Appendix: Table 7*).

However, not all alliances are pondered tight, space sharing or vessel sharing agreements are considered more loose commitments, including for instance just the fleet pooling and the management of the sail roster (Fremont, 2007). Loose commitments refer to the integrity and autonomy of a company in a alliance (Koay, 1988).

The trouble here is the incompetence to reach economies of scale, as possible in the tight operational relationships. On the other hand, independence and flexibility can be thought of as advantages (Koay, 1988).

Why would companies enter an operational alignment? The main answer regards certainly the reduction of operational costs. In order to enable a larger coverage of market shares, shipping companies need to deploy more and more vessels, however the costs of purchasing and maintaining a ships are significantly high. If shipping companies are coupled in a strategic operational synergy, their endured costs of vessel maintenance, together with other staff and vessel related costs, (e.g. repair, insurance, salaries, etc.) could be reduced by dividing them with the respective partners of the alliance.

Not only vessel expenses are a driving factor of effectuating operational alliances, but also costs related to fuel to keep the vessels going. This nonetheless, is very relevant in times of a financial crisis.
Lastly, costs related to port dues can be taken into consideration. Port dues and pilotage, dockage and other related services, need to be accounted for (Koay, 1988). Even with the steadiness of shipping alliances, the impact of a financial crisis is countless.

The second foremost classification of a strategic alliance centers on the idea of profits. Koay's definition of pricing alliances renders on the main thought of collaboration between two or more carries on a specified trade route, in order to trail common objectives (D'Arcy, 2001) and stabilize freight rates on certain trade routes (Koay, 1988). The main tools to confirm common freight rates across all companies in the alliances are price management, thus safeguarding the existence of price coordinating mechanisms and regulating the volume supplied, these of course are ensured by agreements and audit control. Pricing alliances are highly debated topics, especially because of their tendency to monopolize a certain trade lane leaving other liner operators open-aired.

The last type of a strategic alliance confirms a logistical perspective. Logistical alliances have proven their importance, since consumers' expectations and markets enlarged dramatically, demanding carriers to expand their service range, and bring that certain new flair to the table, that will constitute a competitive advantage. No more traditional port-to-port services are required, but rather door-to-door transportation, where the carrier assumes his duty and obligation to deliver the goods on the customers front door on a timely manner (Koay, 1988). The current trend allows inducing that more and more carriers have turned to their attention on land bound services (Cariou, 2000). Besides costumers' demands, containerization and standardization were other two factors contributing to this change.

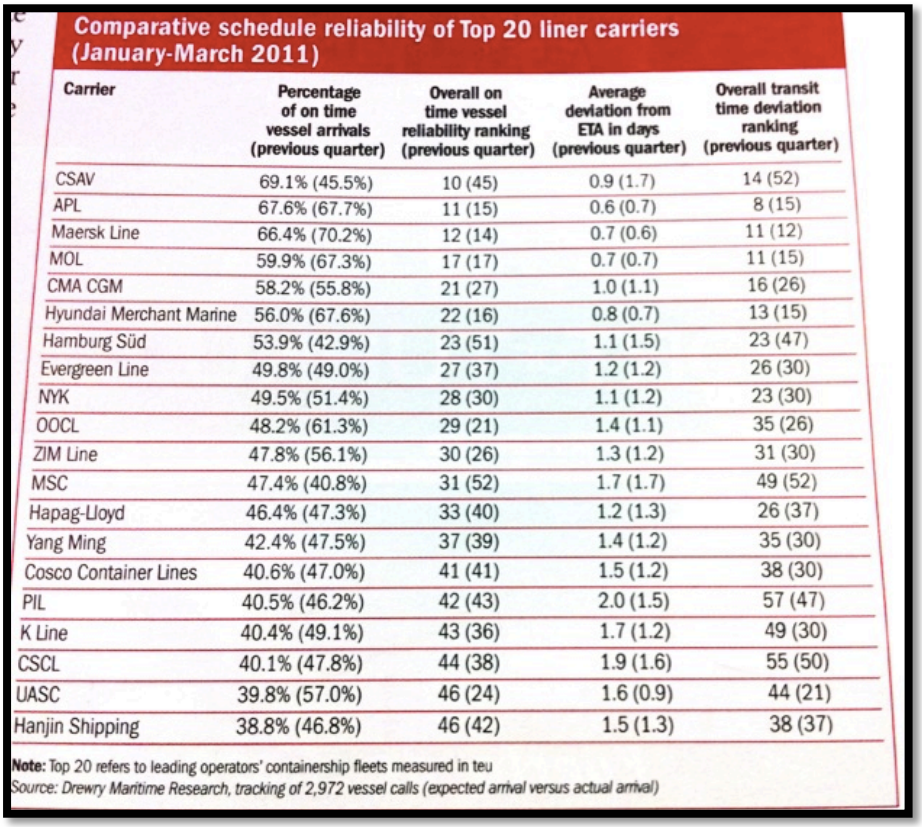
The outcome of this alteration were investments in eccentric areas (e.g. investment in logistics on land) for carriers, the increase in importance of both vertical and horizontal integration, and the assimilation of technological novelties. Logistical alliances tend to become more and more relevant for liner operator, expressively in the context of competitiveness.

After pointing out the main types of alliances and considering the case of an independent liner operator, it is meaningful to touch the advantages and disadvantages of collaborating in a strategic alliance in the maritime industry.

3.2.4. Advantages of Strategic Alliances

Applicable to the maritime industry, there are several advantages to be expressed, first and foremost, members of alliances share their financial risks, resources and a series of wide-ranging risks, on one hand, yet on the other hand they benefit in multiple ways, such as profit sharing, technological and informational exchange (i.e. tacit knowledge exchange between employees) and top managerial collaboration.
Next to this set of advantages, brought forth by a strategic alliance, an insight into motivational issues to join such commitment is enlightening. One reason behind these conglomerates represents the desire for market share, which indeed can be gained more easily by taking part in a colossal multi-company giant alliance rather than functioning alone. Thus, market coverage is another advantage of strategic alliances (Cariou, 2000), which, if obtained, enhances a certain competitive position. In the case of liner shipping optimal sailings can be enhanced, ensuring on-time arrivals and improving the schedule reliability (Van de Voorde, 2009). The table below depicts the schedule reliability of the major carriers as of 2010 (Containerisation International, June 2010).

Graph V: Comparative Schedule Reliability, 2011



Comparative schedule reliability of Top 20 liner carriers (January-March 2011)

Carrier	Percentage of on time vessel arrivals (previous quarter)	Overall on time vessel reliability ranking (previous quarter)	Average deviation from ETA in days (previous quarter)	Overall transit time deviation ranking (previous quarter)
CSAV	69.1% (45.5%)	10 (45)	0.9 (1.7)	14 (52)
APL	67.6% (67.7%)	11 (15)	0.6 (0.7)	8 (15)
Maersk Line	66.4% (70.2%)	12 (14)	0.7 (0.6)	11 (12)
MOL	59.9% (67.3%)	17 (17)	0.7 (0.7)	11 (15)
CMA CGM	58.2% (55.8%)	21 (27)	1.0 (1.1)	16 (26)
Hyundai Merchant Marine	56.0% (67.6%)	22 (16)	0.8 (0.7)	13 (15)
Hamburg Süd	53.9% (42.9%)	23 (51)	1.1 (1.5)	23 (47)
Evergreen Line	49.8% (49.0%)	27 (37)	1.2 (1.2)	26 (30)
NYK	49.5% (51.4%)	28 (30)	1.1 (1.2)	23 (30)
OOCL	48.2% (61.3%)	29 (21)	1.4 (1.1)	35 (26)
ZIM Line	47.8% (56.1%)	30 (26)	1.3 (1.2)	31 (30)
MSC	47.4% (40.8%)	31 (52)	1.7 (1.7)	49 (52)
Hapag-Lloyd	46.4% (47.3%)	33 (40)	1.2 (1.3)	26 (37)
Yang Ming	42.4% (47.5%)	37 (39)	1.4 (1.2)	35 (30)
Cosco Container Lines	40.6% (47.0%)	41 (41)	1.5 (1.2)	38 (30)
PIL	40.5% (46.2%)	42 (43)	2.0 (1.5)	57 (47)
K Line	40.4% (49.1%)	43 (36)	1.7 (1.2)	49 (30)
CSCL	40.1% (47.8%)	44 (38)	1.9 (1.6)	55 (50)
UASC	39.8% (57.0%)	46 (24)	1.6 (0.9)	44 (21)
Hanjin Shipping	38.8% (46.8%)	46 (42)	1.5 (1.3)	38 (37)

Note: Top 20 refers to leading operators' containership fleets measured in teu
Source: Drewry Maritime Research, tracking of 2,972 vessel calls (expected arrival versus actual arrival)

Source: Containerisation International, June Issue, 2011

Next to schedule reliability, economies of scale and scope are elements, which members of alliances thrive for.

If in an alliance, income is on factor that can be thought of as more or less secure, compared to the risky income of an independent liner operator, however as a member you have to contribute your share to the conglomerate as well. Worth mentioning is also the fact that strategic alliances usually offer a competitive advantage, making their goods both differentiated and diversified (Koay, 1988).
Because of asset sharing, three further advantages can be thought of, firstly the reduction of congestion in ports (Notteboom, 2004), since vessels are coupled and shared together. Secondly, the risk of transporting empty containers can be reduced since the load is divided between the members of the alliance (Dong-Ping Song et al. 2009). Thirdly, emission reduction can be reached by sharing vessels; this can be compared to car-pooling.
Overall, alliances are a mode of coping with the current trends and difficulties of the maritime industry. However, every coin, it has two sides.

3.2.5. Disadvantages of Strategic Alliances

To commence, as with most marriages, strategic alliances tend to be conflicted, making collaboration often very difficult on a management level. These conflicts, may lead to poor managerial performance and lack of incentive towards the alliance's well being. Primarily, to build and enforce a managerial body upon a strategic collaboration needs high monetary funds. The expenses of managerial performance and the implementation and sustainability of a strategic alliance are respectively high, depending on the size of the relationship (Koay, 1988).

In such a gigantic agglomeration of companies, one must keep in mind that the risk of losing one's independence (e.g. policy independence), devises a high probability. Coupled with this argument, is the problem of free-riders, unlikely though, meaning that a company may benefits from the alliance's resource, however without actually paying for it (Grossman et al., 1980). Another disadvantage represents the lack of flexibility and the loss of corporate identity, which is the result of conglomerates, where corporate goal dominate individual goals.

So far, this paper has portrayed the theoretical insights into the topic; it is nonetheless essential to examine real-world examples of independent liner operators and the recent panorama of strategic alliances in the maritime industry, followed by the effects of the recent financial crisis of 2008 on the maritime cluster.

As with vertical integration the table depicted underneath, will some up the advantages and disadvantages of horizontal integration, meaning of strategic alliances.

Table III: Advantages and Disadvantages of Horizontal Integration

Advantages	Disadvantages
Shared financial risks/Shared profits	Conflict at management level → Poor managerial performance → Lack of incentives
Top managerial collaboration	Loss of corporate independence
Market coverage	Free-rider behavior (unlikely)
Competitive advantage/ product & service differentiation	Lack of Flexibility
Reduced risk of empty containers	Corporate goal > Individual goal
Economies of scale and scope	
Optimal sailings/ Reliable Schedule	
Reduced congestion in port (bigger vessels + shared)	
Reduced pressure on terminals	

These advantages will be analyzed later, and applied to the single carriers.

4. Ocean Carriers vs. Strategic Alliances

4.1. Ocean Carriers

This section is dedicated to the description of liner operators, which embody the transportation and transshipment of general cargo[2]. Due to trade liberalization and the global focus of the container shipping industry, liner operators had to adapt, entering alliances and mergers.

In this section the following carriers will be presented: A.P. Moller-Maersk Group, Mediterranean Shipping Company S.A. and Evergreen.

Table IV: Integration Strategies of Carriers

	Vertical Integration		Horizontal Integration
Carriers			
A.P. Moller- Maersk	x		
MSC			x
Evergreen		x	
Alliances			
TNWA			x
GA			x
CKYH			x

Source: Containerisation International, 2010

The table above depicts the major carriers and alliances of this paper, regarding their consolidation strategies. Fully vertical integrated is Maersk, however worthwhile to mention is the fact that Maersk extended a great deal trough acquisitions (Sealand, P&O/Nedlloyd) and comprises currently a number of divisions, which operate under own autonomy. Regarding Containerisation International (2011) these division are: Safmarine, Damco and Seago (Containerisation International, 2011). All three of them are considered separate entities (Containerisation International, 2011).

[2] ***Maersk-Sealand History**: http://www.maritimeknowhow.com/English/KnowHow/Shipping_Companies/general.htm*

MSC is horizontally integrated, not in the sense that it is in an alliance with other carriers, but with terminal operators.
Evergreen is an example of both vertical, and also horizontal integration. It has its own terminals, however it benefits also from arrangements with other terminal operators.
All three cases will be described in the following sub-section, starting with the case of A.P. Moller-Maersk Group.

4.1.1. Maersk

A.P. Moller-Maersk Group, a Danish based conglomerate, debuted in the 20th century with the acquisition of Maersk's first steam ship, S.S. Laura[3]. Maersk expansionistic ideas were clear when the family purchased numerous ships[1]. Captain P. Maersk-Moeller and his sons continued operating Maersk Group together until his death, from which forth his sons took over.
The end of WWII diminished Maersk's fleet diminished to a couple of vessels. This however did not stop the brothers, who continued the expansion of Maersk towards economies of scale and increased vessel size[4].

In 1999 Maersk announced one of its biggest acquisitions: Sealand Inc., former company owned by Malcolm McLean, innovator and creator of containerization[3]. The acquisition was not without difficulties; however Maersk-Sealand succeeded in setting differences aside, and becoming the world's leading container carrier.
Maersk strategy is characterized by two key elements: economies of scale and direct services, meaning attending the customer directly (Fremont, 2007).

Maersk's acquisitions didn't stop here; in 2005 it acquired the Dutch company P&O/Nedlloyd (Containerisation International, 2010). P&O is a British company, which used to operate mostly in Northern Europe. Nedlloyd originates in the Netherlands; in 1997 it merged with P&O (Containerisation International, 2008).

[3] ***Maersk-Sealand History***: http://www.maersklinelimited.com/AboutUs/history.php
[4] ***Maersk-Sealand History***: http://www.maersklinelimited.com/AboutUs/history.php

Maersk is vertically integrated, thus it supplies many activities along the logistics chain. What lies behind Maersk's decision of remaining independent? To begin with, the most appropriate reason relates to the monetary resources of the company (Fremont, 2007). The subsequent reason reflects the firm's capacity to supply qualitative services. Top management, specialized know-how and integration capabilities are other factors relevant in the consideration of operating independently. If a company can embody activities along the supply chain, then it will gain a competitive advantage towards the other players in the market (D'Arcy, 2001).

Because of vertical integration, Maersk is able to extend its global maritime network as depicted under.

Figure II: Ports served by Maersk as of 1994 and 2002

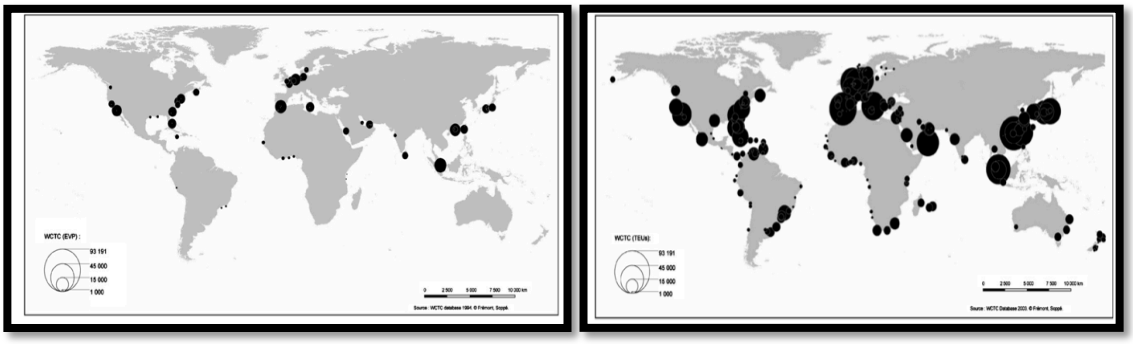


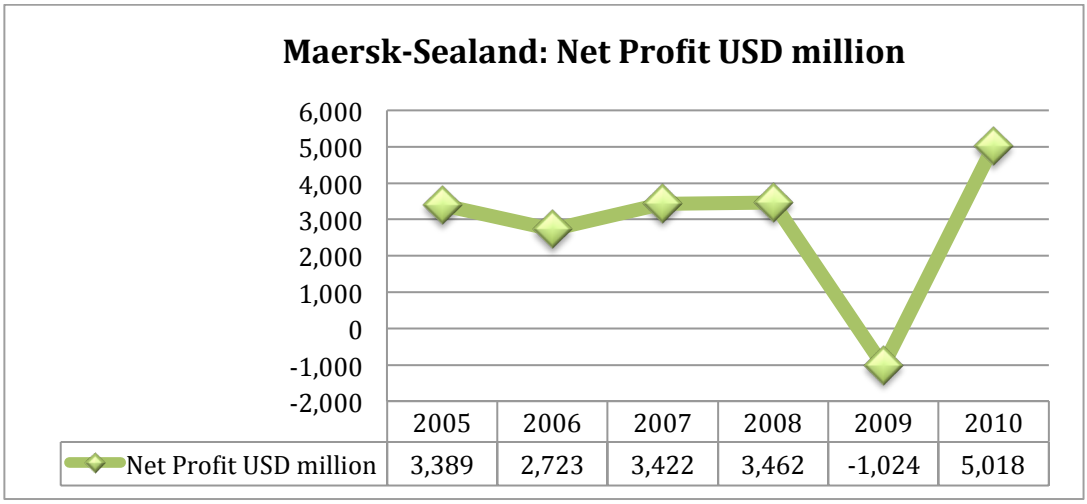
Figure II: Source: The ports served by Maersk in 1994
Fremont, 2007

Source: The ports served by Maersk-Sealand in 2002
Fremont, 2007

In 1994 Maersk's service pattern was present in all continents with a focus on the East-West trade routes. Concentration was on Asia, Europe and North America. This picture has changed nonetheless. Since 2002, Maersk's global coverage extended. Ports are served around the world with an even higher focus on Asia, Europe and North America; especially since the most concentrated trade is the Intra-Asia trade, followed by the Asia-Europe trade (Noteboom, 2008). Today, as in the early 2000, Maersk has a global coverage (Containerisation International, 2011).

Next to economies of scale and extended market coverage, Maersk is also active in niche markets (Fremont, 2007), meaning it responds to local port situations, covering next to primary seaports (i.e. the Port of Rotterdam) also secondary seaports (i.e. the Port of Valencia), as well as encouraging feeder services on river ports. To sum up, Maersk is functioning vertically, concentrating both on global coverage as well as on niche markets and logistical services. Maersk strategy seems to work best, since it ranks first among global carriers, having the largest market share of 18,2% as of 2006[5]. Alphaliner.com reports Maersk in the first position of global carriers, however with a reduced market share than in 2006, namely 15,2%, as of June 2011[6].

From Maersk's financial reports one can observe that net profit between 2005 and 2008 was to a certain extent constant, while dropping in 2009, and picking up again in 2010. The drop in 2009 is recoverable however, especially because the net profit in 2010 exceeded pre-crisis levels (*Graph VI*).



Graph VI: Source: Maersk Financial Reports (See Appendix) – Graph own design

Maersk indeed had to encounter losses during the financial crisis, however the future looks good, with profits exceeding levels measured so far.

[5] ***Barry Rogliano Salles***, *2006: http://www.brs-paris.com/newsletters/liner_studies/no29/BRS-rep-0601.pdf*
[6] ***Alphaliner***, *2011: http://www.alphaliner.com/top100/index.php*

Regarding data from Containarisation International, 2011, more precisely the comparison of Maersk, APL, Hapag-Lloyd and OOCL on the volume performance during 2010, one can observe that Maersk is leading (Containerisation International, 2011). The graph below depicts Maersk's leading position in volume performance.

Table V: Ocean Carrier: Volume Performance During 2010

Carrier	2010 TEU (x 1,000)	2009 TEU (x 1,000)
Maersk	14,600	13,800
APL	5,662	4,578
Hapag-Lloyd	4,947	4,637
OOCL	4,768	4,159

Source: Containerisation International, 2011

Volume performance in TEU has increase for all carriers during 2009-2010, however Maersk is leading by far. This, of course, is not the only indicator proving Maersk's worldwide top position.
The financial results of the first quarter of 2011, proves the same thing.

Table VI: Ocean Carrier Financial Report – First Quarter 2011

Carrier	Revenue 2011-Q1 (USD million)
Maersk	6,419
APL	2,443
Hapag-Lloyd	2,091
Hanjin	1,637
Evergreen	978

Source: Containerisation International, 2011

No matter the downfall of revenues during the financial crisis, Maersk has succeed to recover from the financial drawback, while also launching a new division Seago (Containerisation International, 2010) and keeping profits up and at never-before seen rates (Lloyslist, 2011).

4.1.2. Mediterranean Shipping Company S.A. (MSC)

MSC ranks second in terms of market coverage, detaining a market share of 8.6% as of 2006[7]. G. Aponte founded MSC in 1970[8]. First route was between the Mediterranean and Somalia, followed by ports served in Europe and Africa[7]. In ten years, by 1980, MSC has covered all continents, gaining a dominant position in the world trade[9]. Since 1970 up to today MSC remains independent and under the ownership of G. Aponte.

In contrast to Maersk, MSC is very hostile to integrating logistical services, thus MSC is not vertically integrated, and it holds contracts with terminal operators, not owing its own terminals. MSC concentrate only on liner shipping.

Unfortunately, MSC keeps its financial and annual reports private, thus it is impossible to compare MSC's performance over the last years. Recent data of 200 shows nonetheless MSC's position as a top-leading carrier (*Appendix: Table 12*). Currently, MSC ranks second in the global ranking of carriers, with a market share of 12,8% as of June 2011[10].

4.1.3. Evergreen

As a last example of an ocean carrier this paper will consider the international company Evergreen Marine Corporation. Evergreen used to function independently, however the impact of the financial crisis drove Evergreen to consider strategic alliances, especially concerning vessel sharing agreements[11]. Evergreen policy, however, is constituted in the sense that the company is to be seen as independent[12].

Evergreen Marine Corporation is a multinational company with its origin in Taiwan, built in 1968 by Dr. Yuang-Fa Chang[12].

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[7] ***Barry Rogliano Salles**, 2006: http://www.brs-paris.com/newsletters/liner_studies/no29/BRS-rep-0601.pdf*
[8] ***MSC History**: http://www.mscgva.ch/*
[9] ***MSC History Worldwide**: http://www.msctogo.com/about_us/msc_worldwide.html*
[10] ***Alphaliner.com, 2010**: http://www.alphaliner.com/top100/index.php*
[11] ***Supply Chain Leaders Intelligence: List of Alliances:** http://www.supplychainleaders.com/shipping/evergreen-marine-corporation/324/*
[12] ***Evergreen History**: http://www.evergreen-marine.com/tbi1/jsp/TBI1_CorporateProfile.jsp*

Evergreen is situated between a vertical and a horizontal consolidation. Vertically, it holds its dedicated terminals; horizontally it has arrangements with other carriers, e.g. OOCL[12].

Taking a look at the number of port calls (*Appendix: Table 3*), it is obvious that Evergreen cannot cover a market share as large as one of the biggest alliances. Here again, no matter the increase in port calls of Evergreen during 1989 until 1999, the mean number of port calls, of the given period, of the members of the alliances outbids Evergreen's port calls (Slack et al, 2002). This is also grasped in the graph below.

Graph VII: Shipping lines' weekly-containerized transport capacity distribution over world's regions

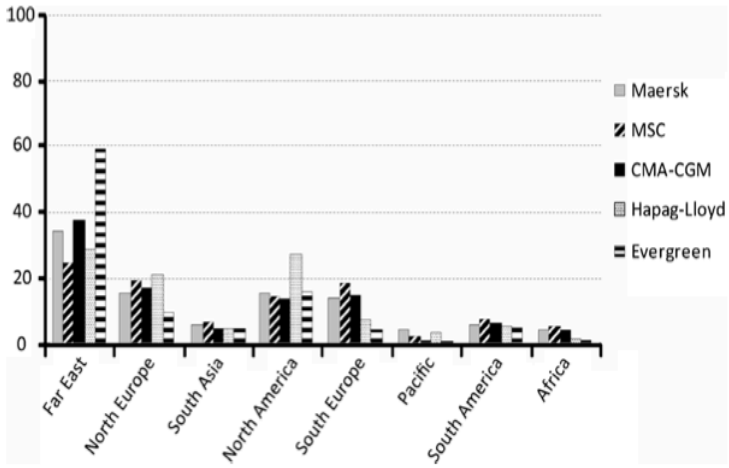


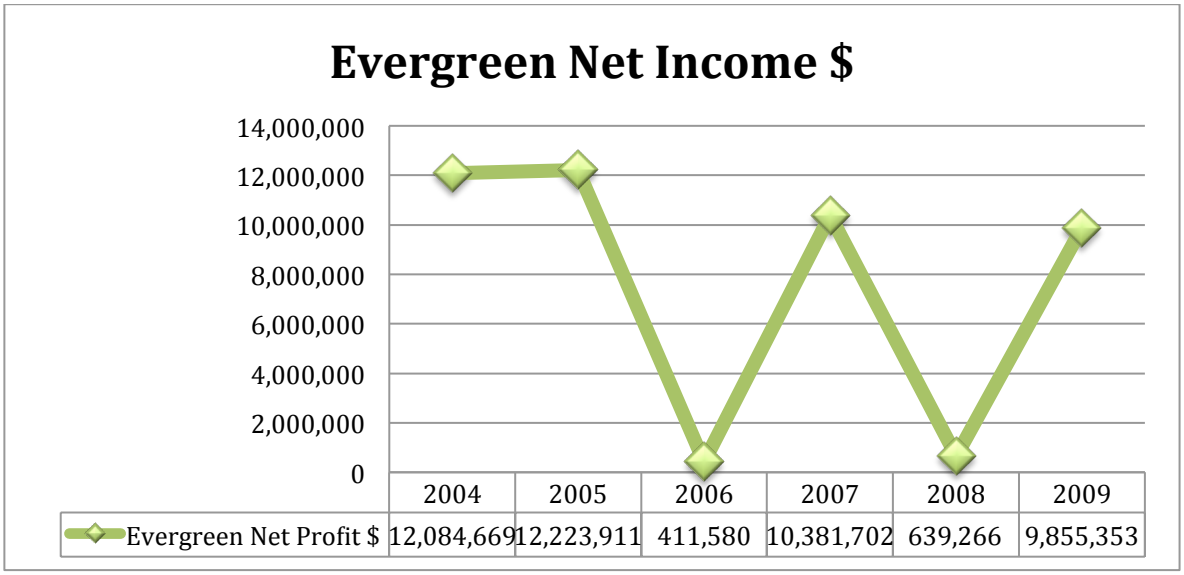
Fig. 2. Shipping lines' weekly containerised transport capacity distribution over world's regions (2006 data, % of the total SL's WCTC). *Source*: WCTC database (2006), Soppé M., Parola F., Frémont A.

Source: Soppé et al, 2009

It is clear that Evergreen has focused its attention on certain regions of the world. Albeit, Evergreen's distribution in relatively small quantities to all regions of the world, it is notable that its container distribution is centered primarily on the Far East (*Graph VII)* because of limited capacity of competition against colossal shipping alliances (Soppé et al, 2009).

If a liner operator decides to function independently, then it has to ensure the certain financial resources, which Evergreen sometimes lacked, according to its recent Income Statements, presented in the Appendix (*Appendix: Table 5a-f*). The graph below shows the fluctuations in Evergreens net income across the period 2004-2009. Figures for 2010 can be viewed in the Appendix, however just for the first half of 2010.

Graph VIII: Evergreen Net Income



Source: Evergreen.com: Financial Reports – Graph own design

Regarding Evergreens net income between 2004 and 2009 a definite increase took place[13]. The impact of the financial crisis was however harsh. Evergreen, regardless its deterministic policy of standing independent, had to consider strategic alliances orientated in asset sharing to keep pace with demand. In two years Evergreens net income fell from 12,084,669 dollars in 2004 to 411, 580 dollars in 2006 (*Appendix: Table 5a-f*).

After entering in certain strategic relationships (2006), e.g. with COSCON and OOCL[14], gross profit and net income increased, however another downfall happened in the year of 2008, when net income dropped from 10,381,702 dollars (2007) to 639,266 dollars (*Appendix: Table 5a-f*).

[13] ***Evergreen: Financial Reports***: http://www.evergreen-marine.com/tbf1/jsp/TBF1_FinancialReports.jsp
[14] ***Evergreen History***: http://www.evergreen-marine.com/tbn1/jsp/TBN1_PressReleases2006.jsp

Operating expenses increased drastically, leaving Evergreen with yet other choice: functioning alone, thus risking bankruptcy or considering strategic commitments; Evergreen chose the solution of entering alliances[15], which indeed was favorable. In 2009, Evergreen net income increased to 9,855,353 dollars (*Appendix: Table 5a-f*). For 2010, the prospects look encouraging; Evergreen is recovering from the financial crisis.

4.2. Recent Panoramic of Strategic Shipping Alliances

Due to globalization and the increasing size of container ships (*Appendix: Graph 1*), shipping companies considered strategic alliances to cover world trade routes (Agarwal, 2007), The horizontal integration of major shipping companies to solid strategic alliances, has been by far the most important development in the maritime cluster in recent years (D'Arcy, 2001). Not only have these alliances strengthened the economical efficiency of their members, but also guaranteed their position in the global trade (*Appendix, Table 13*).

Recent developments have exhibited a number of alliances, which shall be depicted in this context. Agarwal (2005) has depicted as of 2005 the major alliances on East-West Trades: New World Alliance (former "Global Alliance"), Grand Alliance, TRICON and the Sino-Japanese Alliance (*Appendix: Table 8*). Of course, there is also the case of Maersk-Sealand. This representation has however changed. Since 2007 this has changed nonetheless (Sys, 2007). The panorama and the shifts in alliances are depicted in the Appendix, Table 15. Containerisation International (2011) portrays the same panorama of alliances.
The three main strategic alliances of today are: the Grand Alliance, the New World Alliance and CKYH Alliance. The table below shows the three alliances, their vessels deployed and routes covered. It also depicts TEU volume performed on the trade route Asia-North America.

[15] ***Supply Chain Leaders Intelligence: List of Alliances*** *http://www.supplychainleaders.com/shipping/evergreen-marine-corporation/324/*

Table VII: Global Alliances in the Liner Shipping Industry

	Grand Alliance	New World Alliance	CKYH Alliance
Members*	NYK (Japan) OOCL (Hong Kong) MISC (Malaysia) Hapag-Lloyd (Germany)	MOL (Japan) APL (Singapore) Hyundai (Korea)	Hanjin (Korea) COSCO (China) K-Line (Japan) Yang-Ming (Taiwan)
Vessels deployed*	140	100	170
Routes covered*	14	13	17
Asia – North America Route*			
Ports called* Asia*:	Hong Kong, Shanghai, Yokohama, Busan*	Kaohsing**, Hong Kong, Tokyo, Busan, Sanghai*	Hong Kong, Shanghai*
US/Canada*:	Oakland, Seattle, Norfolk, New York*	Los Angeles, Oakland, Seattle, Vancouver*	Savannah, New York*
TEUs deployed on Asia-North America Route*	3000TEU-7000TEU	4000TEU-6000TEU	4000TEU-6000TEU

*Source: * Containerization International, 2010*

*** Lloyd's List, 2010 – New Alliance introduces December 2010 Vietnam's Port Kaohsing to the rout.*

From this graph, one can deduce that on the Asia-North America route the TEUs deployed by the alliances are around the same figure for all three alliances, between 300,000TEU and 700,000TEU, while all call, more or less, the same ports.

Regarding a different route, meaning from the Far East to Northern Europe, as of 2010, another picture is painted (LloydsList, 2010).

Table IX: Alliances operating on route: Far East to Northern Europe, 2010

Alliance	Nr. of weekly services	Total nr. of vessels	Market share
CKYH	8	58	20%
Grand Alliance	4	36	13%
NWA	4	34	11%

Source: LloydsList, 2010

On this route an almost double implication of CKYH is observable. Regarding the overall performance of these alliances, little or no information is available. The total market share of CKYH reached as of 2010 a market share of 24%, whereas NWA and the Grand alliance comprised each a market share of 16% (Lloydlist, 2010).

The following section will picture the three main alliances and their recent performance, starting with the New World Alliance.

4.2.1. New World Alliance

The New World Alliance is composed out of the following major players: APL/NOL (USA/Singapore), MOL (Japan) and Hyundai (South Korea), being one of the leading marriages of the maritime cluster (Cariou, 2000). Built in 1996, the New World Alliance or as it was called in 1995 the Global Alliance (Cariou, 2000) suffered drastically, since divergences between member were nearly impossible to overcome (D'Arcy, 2001). The present New World Alliance had as a commencing point the acquisition of APL by NOL, making the integration of the different multinational members easier. In the *Appendix: Table 9* a series of movements from the first members generation to the second, as a historic representation.

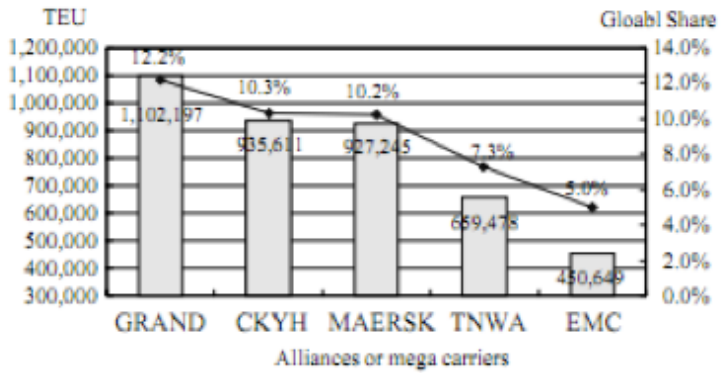
The cooperation between members of the New World Alliance is dominated by port-to-port services, while members usually operating on their own. Personal company identity is, thus, not fully lost, since in a narrow sense, members sometimes compete against each other. The New World Alliance covers all major trading routes, focusing on Asia – Europe as well as Asia – North America (Containerisation International, 2011).

The New World Alliance came together for reasons mentioned above, operational synergies, economies of scale and market control, but a distinct reasons was also the difficulty to ensure survival of the single companies (D'Arcy, 2001). Regardless the striving of integrating these multinational companies, New World Alliance's stability has been proven, since it currently ranks in the top strategic alliances of the maritime cluster (D'Arcy, 2001).

4.2.2. Grand Alliance

The Grand Alliance is composed out of four members: Hapag-Lloyd (Germany), NYK (Japan), OOCL (Hong Kong) and MISC (Malaysia). Hapag-Lloyd is a German transportation firm, dominating the German shipping market (Containerisation International, 2011). MISC is the Malaysian representative of the Grand Alliance. MISC was built in the late 60s and is Malaysia's leading carrier (Cariou, 2000). Lastly, NYK is a Japanese company, currently part of Mitsubishi (Cariou, 2000).
OOCL is the last addition to the Grand Alliances (Sys, 2007), originating in Hong-Kong.
Three of the above-mentioned carriers have been considered by Alphaliner.com, 2011, in the top 25, ordered by their market shares individually (*Appendix: Table 13*).

Graph IX: Capacity and Share of the five main Alliances, 2006



Source: Lu, H-A., J. Cheng, T-S. Lee, 2006

Regarding the market share of the whole alliance, as portrayed in the table below, as of 2005, it relevant to point out the efficiency of this alliance.
In 2005 the total share of the Grand Alliance reached 12%, with a TEU figure of 1,102,197 TEU over-running Maersk by almost 2% in global share.

Nowadays the Grand Alliance has increased its market share to 16% (LloydsList, 2011), competing directly with the NWA and the CKYH.
The competition on the Asia – Mediterranean route is especially relevant to the Grand Alliance, according to Containerisation International, 2011. Conform recent reports; summarized in the table below, the difference between the maximum capacities deployed per year on this route is relatively small (Containerisation International, 2011).

Table X: Alliances' performance: Asia – Mediterranean, 2010

Alliance	Nr. of vessels deployed on route	Maximum capacity/year TEU
CKYH	10	~ 300,000TEU – 400,000TEU
NWA	10	~ 350,000TEU
GA	8	~ 320,000TEU

Source: Containerisation International, 2011

Lastly, the CKYH Alliance will be described, following the analysis of the industry, concerning competition.

4.2.3. CKYH Alliance

The CKYH Alliance is a combination of former TRICON and the Sino-Japanese Alliance.

TRICON was a strategic alliance between Hanjin Shipping (South Korea), Cho Yang (Kuwait) and UASC (South Korea), described by Cariou (2000). Regarding their position in the world raking as of June 2011 (Alphaliner), Hanjin Shipping occupies rank nine, with a market share of 3,3%[14]. UASC currently ranks 20th, with a market share of 1,5%[16] (2011).

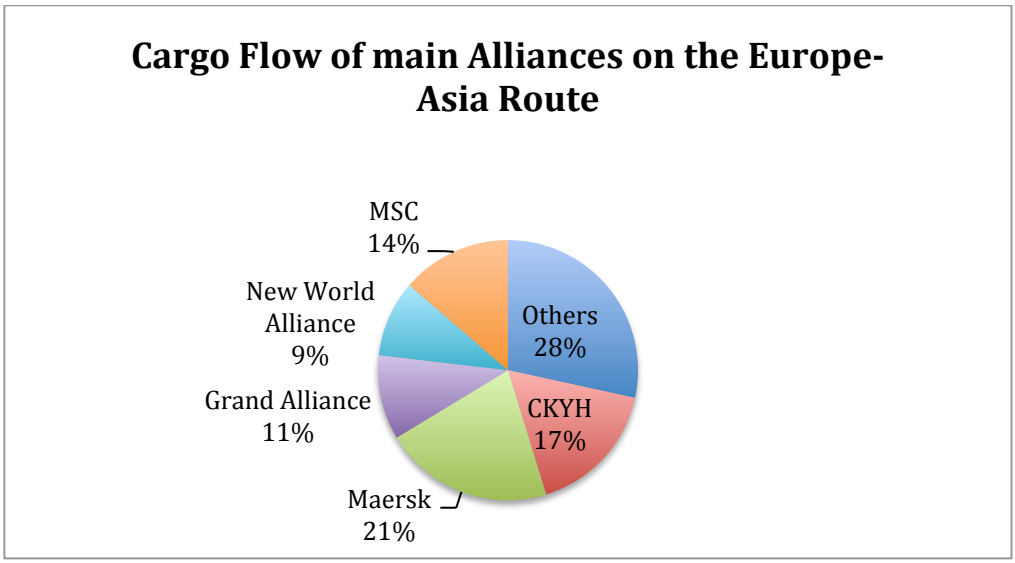
Cariou (2011) classifies the Sino-Japanese Alliance as being comprised of COSCO (China), K-Line (Japan) and Yang-Ming (Taiwan). COSCO is the leading Chinese carrier, ranking 5th with a global market share of 3,9%[14]. The Japanese K-Line is currently situated in the top 20, with a market share of 2,2%[14]. Yang-Ming Group is situated as well between the top carriers, with a market share of 2,3%[14].

TRICON and the Sino-Japanese Alliance were enforced during the 90s, in 2000 however the Sino-Japanese Alliance dissolved, and four years later TRICON came to an end. The members decided to divide themselves into the United Alliance and CKYH (Sys, 2007). The United Alliance ended soon after. The CKYH remained however a very powerful alliance (Containerisation International, 2011), being composed out of Hanjin, COSCO, K-Line and Yang-Ming.

CKYH is leading currently, both regarding market share (24%) as well as concerning capacity deployed on the major trade routes, e.g. Asia – Europe and vice versa (Containerisation International, 2011). The chart pie below shows the percentage of cargo flow of CKYH on the Europe – Asia route (Containerisation International, 2010)

[16] ***Alphaliner.com**, 2011: http://www.alphaliner.com/top100/index.php*

Graph X: Cargo Flow Main Alliances n the Europe-Asia Route



Source: Containerization International, 2010 – own design

Alliance members have proven efficient, almost all of them being situated in leading positions, accordingly to Alphaliner.com, 2011.

5. Competition in the liner industry

Horizontal integration has sometimes proven difficult, because competition is distorted. The liner industry is marked by its past. Until 2008, liner conferences where a popular alignment to control prices, meaning freight rates, on certain trade routes; being defined as "a group of two or more carriers which provide international liner services [...] on particular geographical limited routes, operating under uniform or common freight rates" (UNCTAD, 2007).
To sum up, liner conferences were concerned with freight rates manipulation rather than cost reduction. Under alliances the focus lies on efficient cost control, this is the main difference to conferences (Hubner, 2002).

In order to understand the implications of horizontal and vertical integration in the liner shipping industry it is of uttermost importance to analyze the state of the competition in this industry.
The OECD governments are keen on supporting competition in all economic sectors, the transport sector playing an important role in the discussions (Hubner, 2002).

Historically, the liner sector had been characterized by conferences, impeding competition (Benacchio et al., 2007). The main problem was that entry barriers were too high in order for new companies to enter the market and thus the industry leaders were gaining huge profits. The market has changed, since it is not characterized by conferences anymore (Hubner, 2002; Benacchio et al., 2007; Nooteboom, 2008). In 2008 conferences were banished from the scene.

Albeit conferences have been dissolved, carriers joined strategic alliances. There are however several problems that can occur with alliances, namely with respect to competition (Sys, 2009). Sys analyzes the various types of competition with respect to liner operators, while discussing the differences between these. The biggest problem that can occur is if a liner operator holds the entire market share, or a majority of it, i.e. over 40% (Graph, Types of Markets).

If one liner operator holds alone more than 40% of the market share, it is considered dominance of the market, which results in monopoly (Sys, 2009).

Regarding the table underneath, in the first case, the market would have to be characterized as a pure monopoly (Sys, 2009), i.e. there is one single provider in the market, and he is able to set freight rates and determine capacity. However, as Sys (2009) describes, the liner industry does not represent a pure monopoly, thus there is no single dominant liner operator.

A different type of competition namely a loose oligopoly characterizes the liner industry. In this case, there are only few providers, which divide most of the market share between themselves, i.e. the market share GA, NWA, CKYH and Maersk lies 25% and 60% (Sys, 2009).

Table XI: Types of Markets

Types of markets			
		market type	market condition
gradients in concentration	Shepherd	pure monopoly	one liner operator holds 100%
		dominant liner operator	one liner operator holds 40% to 99%
		tight oligopoly	four liner operators hold over 60%
			four liner operators holds 25 % to 60%
		loose oligopoly or effective competition	+ entry reasonably easy
variations in market share	Shepherd	symmetric	
		asymmetric	one dominant firm
variation in competition and collusion	Sloman	collusive oligopoly	
		formal collusive agreement (cartel)	freight conferences
		tacit collusion	operational agreements
		dominant firm price leader	
		barometric price leader	
	Markham	competitive type	
		monopolistic type	
		non-collusive oligopoly	
variations in interdepence	Machlup	pure collusion	
		uncoordinated oligopoly	
		fighting oligopoly	
		hyper-competitive oligopoly	
		chain oligopoly	
		guessing-game oligopoly	
		pure interdependent	

Source: Sys, 2009

The query remains if this is the case for the liner industry; taking into account the different alliances. Sys argues conform the table above, that indeed the liner industry is oligopoly, in the loose sense (Sys, 2009).

The Graph below (Market Shares (2000-2008)) shows the market shares of the main alliances plus Maersk from 2000 until 2008. To be observed is the total market share of these alliances. One can note that in all cases the total market shares of the three alliances plus Maersk are above 46% in all the years depicted, proving the fact that the industry is an oligopoly.

Table XII: Market Shares (2000-2008)

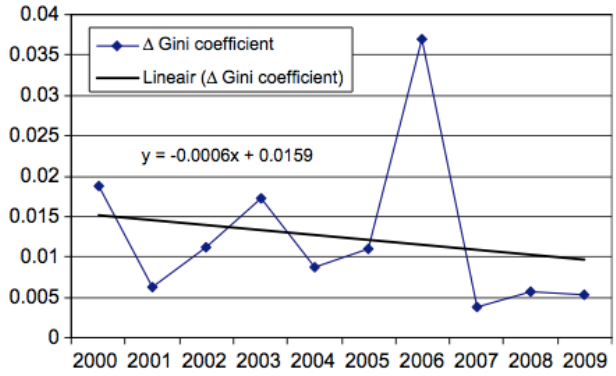
Year	Alliance	TEU	% share /liner total
2000	GRAND ALLIANCE	692.551	13,45%
	CHKY ALLIANCE	649.709	12,62%
	Maersk/Sealand	620.324	12,05%
	TNWA	446.381	8,67%
	TOTAL	2.408.965	46,78%
2003	GRAND ALLIANCE	957.019	13,97%
	CHKY ALLIANCE	846.251	12,35%
	Maersk/Sealand (incl. Safmarine)	818.850	11,95%
	TNWA	536.921	7,84%
	TOTAL	3.159.041	46,12%
2006	Maersk Line	1.665.272	18,23%
	CHKY ALLIANCE	1.067.198	11,68%
	GRAND ALLIANCE	989.241	10,83%
	TNWA	720.708	7,89%
	TOTAL	4.442.419	48,62%
2008	Maersk Line	1.878.943	16,06%
	CHKY ALLIANCE	1.349.452	11,54%
	GRAND ALLIANCE	1.296.557	11,08%
	TNWA	927.618	7,93%
	TOTAL	5.452.570	46,61%

Fig. 5. Market share of the alliances.

Source: Sys, 2099

Maersk-Sealand alone has 16%. The alliances, e.g. CHKY Alliance or Grand Alliance had around 12% of the market share each in 2008, a share that dropped to around 11% each in 2008, as portrayed in the graph above (Sys, 2009).
The Gini coefficient shows the discrepancy that occurs between a perfect competitive case and the case of the liner industry from 2000 to 2009.

Graph XI: Gini Coefficient



Source: Sys, 2009

In 2010, the market shares, according to Containerization International (2010) are as follows: Maersk 15%, CKYH Alliance 24%, Grand Alliance 16%, and TNWA 16%. Containerization International (2010) also gives also data for the market shares of the second largest trade route, Far East – Europe (Nooteboom, 2008). On this route, Maersk and CKYH dominate the market with 20% of its share, each, while the Grand Alliance has 13% and TNWA has 11%.
It is therefore that one can observe a loose oligopolistic market structure, which is even more obvious when taking the trade routes separately (Sys, 2009).

In the following, the main laws of the EU, with respect to competition will be discussed in order to analyze, why alliances are accepted between liner operators.

5.1. EU Competition and why alliances are not deterring competition

In the European Law, Articles 101 and 102 (formerly known as Art. 81 and 82) are concerned with competitive behavior of firms in specific industries[17]. Special attention is given to the maritime sector, especially the liner industry. The chapters on liner operators are concerned with different types of exemptions that are allowing liner operators to be in alliances or consortia.

The main reason behind this allowance is noted in Regulation No 906/2009 (3)[18], where it is expressed that liner operators are allowed to be part of alliances as long as the requirements of Art. 81(3) are met, and all companies are gaining from increased knowledge, productivity, etc. The certain requirements are not publicly available, however, strategic alliances have to align to this article and act conformingly (Sys, 2009). If conditions are not met the Commission, in accordance with Art. 81(3) of the Treaty, is allowed to restrain companies from operating in the liner sector. According to LloydsList, 2011 this was never the case.

The restraining, nonetheless, refers mainly to three main points expressed in the regulation. First, it is not allowed to set freight rates; secondly, imposing capacity limitations is out of question; and thirdly markets and customers are not to be allocated between the members (EU Commission, 2011). If any of these happen, the Commission is forced to act upon it.

The commission however does allow several actions. These actions imply scheduling, pooling of vessels, chartering and slot exchanges (defined in the Glossary) etc. As long as the actions refer mostly to cost reductions, the alliances are not deterring the competitive behavior within the industry. Most importantly, however are the combined market shares of the companies involved in an alliance or consortia. In the Competition Handbook of the European Commission on liner operators, Article 5, Chapter 3 on Maritime Transport, refers to this specific problem. The statement regards, that the companies involved in an alliance or consortia are not to have a combined market share above 30% (EU Commission, 2011).

[17] ***EU Competition Law:*** *http://ec.europa.eu/competition/antitrust/legislation/handbook_vol_2.pdf*
[18] ***EU Competition Law:*** *http://ec.europa.eu/competition/antitrust/legislation/handbook_vol_2.pdf*

As observed earlier, Sys (2009) has noted the market shares for some of the major alliances in the industry. It is clear that none of the alliances have a market share above 30% (Sys, 2009).
To sum up, currently there is no threat of competition distortion in the liner shipping industry. The European Commission is very keen on acting upon such matters.

6. Inferences of the Crisis

Freight rates going down, shipping yards congested, strikes in ports, empty containers, and job losses, this is the picture the global financial and economic crisis left behind. The shipping industry benefited a great deal from globalization; however the economic crisis hit the maritime industry severely.

As observed earlier in this paper, all above-mentioned carriers have managed to overcome the crisis with positive revenues. This can be seen in Table 13, in the Appendix. A last example vis-à-vis the recovery from the financial crisis of 2008 constitutes the services of the major carriers on the trade route between Northern Europe and North America (Containerisation International, 2011).
The table below depicts exactly the main figures of the major carriers and the mentioned alliances, concerning this particular trade lane.

Table XIII: Services: Northern Europe – Northern America, 2010

Carriers	Maximum capacity/year (TEU)
CKYH	140,829 TEU
Grand Alliance	168,324 TEU – 238,056 TEU*
Maersk	150,748 TEU – 206,128 TEU*
New World Alliance	241,832 TEU
MSC	254,998 TEU – 350,079 TEU*

Source: Containerisation International, 2011
** Depending on the number of port calls*

Here, just the carriers mentioned in the paper are being depicted, however the picture is clear. On every trade route, they seem to dominate.

During the crisis, from May 2008 to November 2008, ocean freight rates declined drastically, e.g. on the trade route US to Japan from 125,00 UDS/tone to 28,00 USD/tone[19].

What where the strategies liner operators employed to overcome such difficulties? Can integration strategies help liner companies recover from the financial crisis, without hindering competition?

Vertical integration ensured Maersk a dominant position as depicted in the *Appendix, Table 13* and the graph below. The difference between those two graphs is not to doubt Maersk's leading position, but the difference in years. In 2007 Maersk ranked number one among the world carriers, this has not changed as of 2011[20].

Graph XII: Top 30 carriers, 2007

AXS-Alphaliner TOP 30 carriers

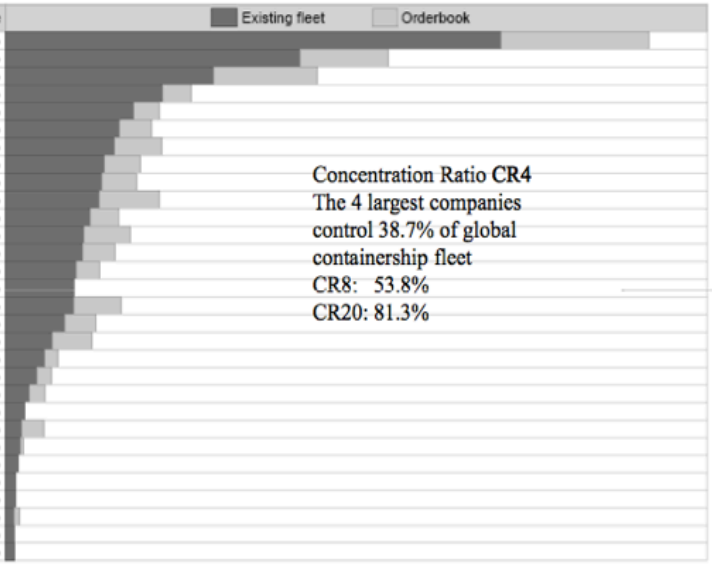
Operated fleets as at 16 February 2007

The TOP 30 carriers

> The percentage shown on the left of each bar represents the operator's share of the world liner fleet in TEU terms

> The light coloured bar on the right represents the current orderbook (firm orders)

Rnk	Operator	TEU	Share
1	APM-Maersk	1 759 806	16.5%
2	Mediterranean Shg Co	1 051 027	9.9%
3	CMA CGM Group	741 007	7%
4	Evergreen Group	563 725	5.3%
5	Hapag-Lloyd	458 729	4.3%
6	CSCL	406 017	3.8%
7	COSCO Container L.	391 167	3.7%
8	Hanjin / Senator	351 744	3.3%
9	APL	342 899	3.2%
10	NYK	334 368	3.1%
11	OOCL	304 244	2.9%
12	MOL	280 158	2.6%
13	K Line	279 155	2.6%
14	Yang Ming Line	254 389	2.4%
15	CSAV Group	244 313	2.3%
16	Zim	244 236	2.3%
17	Hamburg-Süd Group	215 077	2%
18	Hyundai M.M.	168 998	1.6%
19	PIL (Pacific Int'l Line)	143 870	1.4%
20	Wan Hai Lines	116 671	1.1%
21	UASC	86 608	0.8%
22	MISC Berhad	69 982	0.7%
23	IRIS Lines	62 832	0.6%
24	Grimaldi (Napoli)	56 668	0.5%
25	RCL (Regional Container	46 466	0.4%
26	CCNI	40 213	0.4%
27	Sea Consortium	37 912	0.4%
28	Costa Container Lines	34 559	0.3%
29	China Navigation Co	34 176	0.3%
30	Matson	33 018	0.3%



Source: Alphaliner, 2007

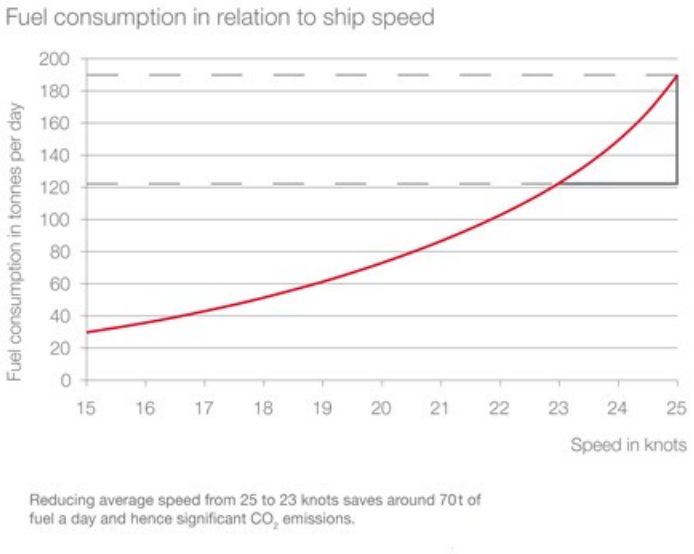
[19] ***Food Outlook, Market Analysis:*** *http://www.fao.org/docrep/011/ai482e/ai482e11.htm*

[20] ***Alphaliner.com****, 2011*

Vertical integration maintained Maersk leading position; of course this was partly possible because of Maersk's economies of scale, regarding container transport as well as vessel size (e.g. Emma Maersk). From 2007 until today, MSC and Evergreen policies seem to have worked in the sense that, they have maintained their position as top global carriers.

One query remaining is what happened to alliances and how did the alliance members recover from the crisis? No records show that members of alliances have gone bankrupt. An alliance gives the main advantage of reducing costs, since price setting is out of the question. How can these costs be reduced? First of all through sharing assets, such as vessels and correspondingly, space on vessels, to reduce the number of empty containers on board (Hummels, 2009). Secondly, slot exchange agreements, making it only favorable for a carrier to team up with a competitor to use ship capacity at a maximum, since, a ship that produces financial income, is a ship at sea and not "parked" in the port. Filled ships are, thus, one of the main goals, which is not always easy to attain.
Another encouraged factor within an alliance is the scheduling and arrivals at selected ports. Worthwhile mentioning in this context is the speed with which carriers have to reach their destinations; hence slow steaming is a key element in this discussion. Driving at the optimum speed, not too fast and not to slow, helps reduce fuel costs, which for liner shippers are high (Containerisation International, 2011). Driving at slow-steam, reduces fuel bills, and sometimes offers the case to introduce and additional vessel into the transportation market (Containerisation International, 2011).

Graph XIII: Fuel consumption in relation to ship speed

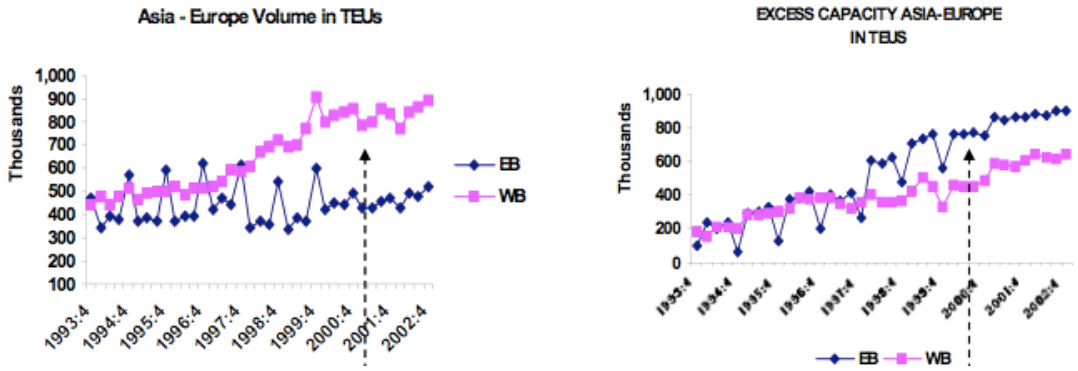


Source: Hamburg Port, 2010

Taking a look at the graph above, it is clear that at a relatively low speed (in knots), fuel consumption will be low as well, however as a shipper you don't want to drive too slow, because of meeting consumers' demands on time. Consequently, a carrier needs to find a trade-off between, reaching destinations on time, thus meeting consumers' demands, while saving costs on fuel consumption.

What will happen in the future with liner companies? Freight rates have declined drastically, and there is no sign of them picking up at pre-crisis level. In response to low freight rates, carriers stated deploying more TEU capacity at a lower cost and larger vessels (van der Voorde, 2009). This however will further lead to an overcapacity, which in turn will exert pressure on terminal operators. Strategic alliances are a mode to control for overcapacity and keep the container flow intact. This can also be observed in the graph below, which depicts the excess capacity on the trade route Asia-Europe.

Graph XIV: a. Asia-Europe Volume TEUs/ b. Excess Capacity Asia-Europe in TEUs



Source: UNCTAD

Aside trade imbalances and increasing vessel size, alliances regulate and control TEU flows on certain trading routes, keeping an eye on overcapacity, since overcapacity can be the cause of cancelling orders, stopping the ordering of new ships and reduce container shipment generally (van de Voorde, 2009).

Nevertheless, what where the factors that saved the major carriers from the crisis? A series of factors are depicted in the tables below.

Table XV: Framework of Carriers and Horizontal Integration

Horizontal Integration	*A.P.Moller-Maersk*	*MSC*	*Evergreen*	*CKYH*	*TNWA*	*GA*
Advantages						
Shared financial risks/Shared profits				x	x	x
Top managerial collaboration				x	x	x
Full market coverage	x			x	x	x
Competitive advantage/ product & service differentiation	x	N/A	N/A	x	x	x
Economies of scale	x	x	x	x	x	x
Optimal sailings/ Reliable Schedule	x	x	N/A	x	x	x
Reduced congestion in port (bigger vessels + shared)	N/A	N/A	N/A	N/A	N/A	N/A
Reduced pressure on terminals	N/A	N/A	N/A	N/A	N/A	N/A
Reduced risk of empty containers				x	x	x

Disadvantages						
Conflict at management level → Poor managerial performance → Lack of incentives	x*			N/A	N/A	N/A
Loss of corporate independence (are at least susceptible to it)				x	x	x
Free-rider behavior (unlikely)						
Lack of Flexibility				x	x	x
Corporate goal > Individual goal				x	x	x

Source: Containerisation International, 2011
**Mergers/Aquisitions*

Firstly, the paper will consider the factors of horizontal integration. As observed in earlier sections, market shares of strategic alliances are high (e.g. CKYH 20%); this leads to the deduction that the market covered is substantially large. Almost all trade lanes, when not even all, are covered by the major alliances, in leading position (Containerisation International, 2011).

For covering extended markets leads, one must allow for a reliable schedule and on-time services. As regarded in *Graph V* all depicted alliance members have a reliability of above 40% for service scheduling. Being in an alliance, flourishes this effect, especially because one is cooperating rather than competing against each other. It is easier to schedule shipments and deliveries when one knows the plans of the other alliance members, rather than guessing the plans of competitors.

Also, keeping in mind that, the main goal of alliances is to share costs and assets, especially in the container business this is of importance. Imagine a liner operator with laid off ships in the port. A ship not on waters produces nothing but costs. Demand for transportation as depicted in the first section decrease on grounds of decreased consumers' desires for certain goods. Thus, ships have been lay-off or sold (Containerisation International, 2011). In an alliance, one can divide these costs and share the space on vessels efficiently as to reduce costs and increase efficiency.

During the financial crisis, overcapacity was a problem (Containerisation International, 2010), thus, while coupling orders and ensuring a proper use of the alliance fleet, saves carriers from giving ships to scarp, a industry which still flourished during the recent economic crisis (LloydsList, 2010).

Secondly, the factors constituting benefits of vertical integration have contributed to Maersk's dominating position (Sys, 2009).

Table XVI: Framework of Carriers and Vertical Integration

Advantages	*A.P.Moller-Maersk*	*MSC*	*Evergreen*
Cost reduction (operating costs)	x		
Larger market coverage (e.g. Hinterland)	x		
Increased consumer network	x	N/A	x
Economies of Scale	x	x	x
Economies of Scope	x		
Exchange of knowledge (e.g. tacit knowledge)	x		
Value Added	x		
Disadvantages			
Conflict in business orientation (are at least susceptible to it)	x		
Conflict in business structure (are at least susceptible to it)	x		x
Competition distortion			
Loss of corporate identity			
Lack of flexibility			
Administrative expenses	x		

Source: Containerisation International, 2011

The main bonus of vertical integration in the liner industry centers on the hinterland coverage. Even though as a carrier one focus on waterside activities, logistical activities and hinterland coverage may help reduce costs that were induced because of the derived demand problematic during the financial crisis, when demand for transportation decreased.

Having a hinterland occupation brings in certain profits that can be used in equalizing and recovering costs induced by e.g. vessels.

As noted earlier vertical integration is a perfect way to reach even higher economies of scope, i.e. lower the average costs by offering multiple complementary services. Therefore the companies are able to cope with the lower freight rates, and the problems of excess capacity. If shippers are not able to use the ships, entry in different markets along the supply chain can prove to be a remedy, as the company is able compensate the problems in one area with other services and activities.

Horizontal integration on the other hand, can help companies reach economies of scale and thus improve the capabilities of the current business units of the companies. This method is quite essential for some companies, especially ones that have either been hit hard by the crisis, or are not able to cope individually with vertical consolidation.

Either way, integration can be one of the most valuable ways for companies to counter the problems of the crisis. It might not create during the crisis high benefits, due to other externalities, however it can definitely keep the companies in business.

Most companies, either vertically integrated or horizontally, have not incurred net losses during the most important year of the crisis (2009), but they have lost immensely opposed to the years before. A strong example supporting this idea is Evergreen, who incurred a loss in 2009, but managed through horizontal targeted integration policies to achieve an important rise in the profits.

It is therefore that both integration strategies are of utter importance in a business, which is prone to problems in crisis, due to its nature of demand. During the crisis, the dropping demand and freight rates have affected companies very hard, however due to the exemptions in international laws regarding this business, integration strategies have proven to be able to get the companies out of the main problems, by tackling costs and not prices.

Alliance members do not only reduce their costs and share their risks, but they also regulate together the proper capacity of TEU transported and transshipped, since overcapacity is an undesired result.
In time of financial troubles these regulatory collaboration is of great importance to the survival of the industry and its members.
Integration and consolidation, no matter if vertical or horizontal, have proven beneficial along the years, and especially in times of need.

7. Conclusion

This paper has progressively assessed the importance of vertical and horizontal integration in the liner shipping industry, during the recent financial crisis.
It commenced with an insight into the repercussions of the global economic crisis and the effects on carriers, with a dedicated section to bulk operators, however not detailed, since the liner sector was the focus of this thesis.
After pointing out the difficulties encountered by liner operators during the crisis, possible methods to combat these difficulties were described.
A theoretical framework was set regarding both vertical and horizontal integration, as well as their advantages and disadvantages. Concerning vertical integration, three cases were depicted, Maersk, MSC and Evergreen. Their performance has been analyzed and compared.
In the sub-section of horizontal integration, strategic alliances were defined and their benefits and drawbacks pointed out. Also, the different types of alliances and the differences to mergers and acquisitions were depicted in the paper. The following strategic alliances were labeled: the New World Alliance, the Grand Alliance, TRICON and the Sino-Japanese Alliance. Of course there are alliances as well, such as the United Alliance, however a selection had to be made.
The following section regarded a short historic of liner conferences and the difference between them and strategic alliances; this difference concerns the price-setting mechanism of conferences and the cost control of alliances.
Coupled to this section, is the competition issue in the liner shipping industry; EU laws are being discussed and applied to case.

Before the conclusion a chapter was dedicated to answering the research question, namely if integration strategies help liner operator recover from the recent global economic crisis.

To conclude, with respect to the main research question of the thesis, the different integration strategies are the most important ways in this industry to cope with problems.

The economic crisis has affected not only the demand for normal consumer goods, but also for transportation, whose demand is practically linked to the demand for normal goods.

This has led to several problems, which needed tackling so as to remain in the business. The different integration strategies are a way to tackle those problems. The main idea is that integration strategies help, through cooperation and/or acquisitions companies to lower the costs, in order to remain in the business. Companies lowering costs in times of a crisis, when the main revenues are getting lower and lower is the most reasonable thing to do. Not only does it maintain companies in the business during times of financial crisis, but it is also an important step towards achieving higher profits in the future, thus making the company more profitable than before crisis levels. Throughout this paper, the two integration strategies discussed, horizontal and vertical have proven to be, through the numerous advantages, important ways for the companies to react to the financial crisis of 2008-2009.

Horizontal integration strategies are most definitely helpful in lowering average costs. As noted, during the crisis, the demand for transportation went down, and thus some of the companies' ships were not at sea anymore. The result is increasing costs per ship. One of the few ways to tackle this is by obtaining higher economies of scale, and horizontal integration is the most important way to do so. By lowering costs, companies can maintain themselves in business throughout the crisis and even gain after the recovery, when revenues start taking shape again.

Vertical integration strategies on the other hand, besides other advantages, result rather in economies of scope.

This is highly beneficial for companies such as Maersk, who are able to focus on other business units, e.g. logistical services, in times of crisis, therefore lowering costs, throughout the different business units.

Even though the strategies are proving quite important, they do not come without their disadvantages. The main disadvantage is that integration strategies can seriously harm competition. If market shares are too high or, if the companies are prone to actions that are not in accordance with international laws, the result can become quite unwanted.

Due to competition laws, many mergers or alliances can be disrupted, however as noted, this is not a problem for the companies in the liner shipping sector. There are many exceptions in the liner shipping sector, and only in very specific situations, alliances can be disrupted. It is thus that alliances and vertical integration strategies are allowed, and companies can benefit from this in order to reduce their costs.

Albeit these strategies have also their disadvantages, they are the two main strategies that can be beneficial for companies to adopt in times of crisis. Due to the multiple advantages, integration strategies are quite helpful for companies to cope with problems in times of crisis, recover rather quickly after it, and benefit also later, through lower costs.

Concluding this thesis, it is of vital importance for companies in the liner shipping sector to consider and act upon integration strategies, as to tackle their problems caused by the financial crisis. In problematic times, strategies aimed at cooperation and reducing costs are vital for a sustainable company growth.

7.1. Limitations:

The paper has presented the different aspects of integration strategies in the liner industry. The conclusion was that such strategies are highly beneficial for companies, through numerous advantages. Albeit, the paper has proven that strategies are the most important way to act upon the financial crisis, the paper has also few limitations in this respect.

A first limitation is that the paper focuses only on integration strategies; however there are different strategies that the companies can adopt, e.g. super-slow steaming (Containerization International, 2011).

Integration strategies might be of a high benefit only for some companies, while others might not be that well affected. Smaller companies, for instance, might find more benefits in other strategies, not involving integration.

A second limitation to this paper is the fact that there is limited data on the alliances as a whole. Most of the data found is solely on the separate companies, with few hints on the alliances as a whole. Moreover some companies are reluctant to disclosing their financial statements to the public.

Thirdly, and lastly, a more detailed analysis on the specific companies might render more insight into the different strategies adopted by companies in the liner shipping industry.

8. Appendix

Table 1: World seaborne trade (tons), 1970-2009

World seaborne trade (tons), 1970-2009

Year	Oil	Main bulks [a]	Other dry cargo	Total (all cargoes)
1970	1 442	448	676	2 566
1980	1 871	796	1 037	3 704
1990	1 755	968	1 285	4 008
2000	2 163	1 288	2 533	5 984
2006	2 698	1 849	3 135	7 682
2007	2 747	1 972	3 265	7 983
2008	2 732	2 079	3 399	8 210
2009[b]	2 649	2 102	3 092	7 843

-3% +1.1% -9% -4.5%

12 TO 15 SEPTEMBER UNCTAD RMT, 2010 18

Source: UNCTAD, 2010

Table 3: Number of port of call: 1989, 1994, 1999

Table 4. Number of ports of call: 1989, 1994, 1999.

	Number of ports of call			Number of ports on weekly service		
Company	1989	1994	1999	1989	1994	1999
Maersk	80	112	209	27	47	174
SeaLand	93	105	129	20	50	109
Grand			43			43
Hapag	122	101	88	17	30	79
P&O	77	114	202	11	42	120
Nedlloyd	191	157		20	38	
MISC	47	70	122	17	30	52
OOCL	40	43	78	33	41	68
NYK	139	161	152	24	46	77
United			41			41
Hanjin	12	27	59	10	25	62
DSR	72	87	92		21	64
Senator	17	25				
Cho Yang	29	45	73	11	12	67
New World			37			37
HMM	30	33	67	12	22	54
APL	54	47	107	12	19	78
NOL	51	54		29	33	
MOL	109	152	141	25	40	66
K-Line	95	94	77	22	47	64
COSCO	53	64	92	6	7	54
Yangming	25	30	77	14	21	61
Joint service			42			42
TOTAL	1336	1521	1806[a]	310	571	1249[a]
Mean	70	80	106[a]	18	32	78[a]
Evergreen	37	34	74	24	21	71

[a] Alliance totals are not included.

Source: Slack et al, 2002

Table 4a,b: Financial reports 2005-2010 – Maersk-Sealand
a.)

Financial highlights

Amounts in USD million

	2009	2008	2007	2006	2005
Revenue	48,522	61,211	51,218	43,743	34,843
Profit before depreciation, amortisation and impairment losses, etc.	9,193	16,478	11,819	8,487	8,044
Depreciation, amortisation and impairment losses	5,658	5,122	4,816	3,255	2,937
Gain on sale of ships, rigs, etc.	161	914	1,113	711	280
Associated companies – share of profit/loss for the year	67	-369	566	484	507
Profit before financial items	3,763	11,901	8,782	6,427	5,894
Financial items, net	-982	-1,533	-755	-374	-354
Profit before tax	2,781	10,368	8,027	6,053	5,540
Tax	3,805	6,927	4,507	3,352	2,218
Profit/loss for the year – continuing operations	-1,024	3,441	3,520	2,701	3,322
Profit/loss for the year – discontinued operations	0	21	-98	22	67
Profit/loss for the year	-1,024	3,462	3,422	2,723	3,389
A.P. Møller - Mærsk A/S' share	-1,311	3,329	3,271	2,617	3,370
Total assets	66,511	64,925	64,648	55,409	45,152
Total equity	30,610	29,972	28,803	24,148	19,620
Cash flow from operating activities	4,679	8,524	7,313	3,987	5,564
Cash flow used for capital expenditure	-7,874	-10,281	-9,000	-5,771	-10,467
Investment in property, plant and equipment	7,867	11,980	10,652	7,452	4,815
Return on invested capital after tax (ROIC)	-0.3%	10.1%	10.1%	9.7%	15.9%
Return on equity after tax	-3.4%	11.8%	12.9%	12.4%	17.6%
Equity ratio	46.0%	46.2%	44.7%	43.6%	43.5%
Earnings and diluted earnings per share, USD	-312	809	795	636	819
Cash flow from operating activities per share, USD	1,115	2,072	1,777	969	1,352
Dividend per share, USD	63	123	128	97	87
Share price (B share), end of period, USD	7,052	5,317	10,719	9,397	10,310
Total market capitalisation, end of period	30,231	22,002	43,973	37,849	41,726

Source: Maersk.com: Financial Results

b.)

Financial highlights

	DKK million		USD million	
	2010	2009	**2010**	2009
Revenue	315,396	260,336	56,090	48,580
Profit before depreciation, amortisation and impairment losses, etc.	89,218	49,262	15,867	9,193
Depreciation, amortisation and impairment losses, etc.	33,821	30,317	6,015	5,658
Gain on sale of non-current assets, net	3,792	852	674	159
Associated companies - share of profit for the year	461	360	82	67
Profit before financial items	59,649	21,157	10,608	3,761
Financial items, net	-5,263	-5,253	-936	-980
Profit before tax	54,386	14,904	9,672	2,781
Tax	26,174	20,393	4,655	3,805
Profit/loss for the year - continuing operations	28,212	-5,489	5,017	-1,024
Profit for the year - discontinued operations	3	–	1	–
Profit/loss for the year	28,215	-5,489	5,018	-1,024
A.P. Møller - Mærsk A/S' share	26,455	-7,027	4,705	-1,311
Total assets	374,723	345,199	66,756	66,511
Total equity	192,862	158,868	34,376	30,610
Cash flow from operating activities	56,872	25,098	10,132	4,679
Cash flow used for capital expenditure	-26,078	-42,165	-4,638	-7,874
Investment in property, plant and equipment	26,683	42,161	4,745	7,867
Financial ratios:				
Return on invested capital (ROIC)	12.7%	-0.3%	12.2%	-0.3%
Return on equity after tax	16.0%	-3.5%	15.4%	-3.4%
Equity ratio	51.5%	46.0%	51.5%	46.0%
Earnings per share (EPS), DKK/USD*)	6,061	-1,674	1,078	-312
Diluted earnings per share, DKK/USD*)	6,058	-1,674	1,077	-312
Cash flow from operating activities per share, DKK/USD*)	13,052	5,980	2,231	1,115
Dividend per share, DKK/USD	1,000	325	178	63
Share price (B share), end of year, DKK/USD	50,510	36,600	8,998	7,052
Total market capitalisation, end of year*)	217,464	156,801	38,741	30,231

Source: Maersk.com: Financial Results

Table 5a-f: Financial Reports Evergreen
a.)

English Translation of Financial Statements Originally Issued in Chinese

EVERGREEN MARINE CORPORATION AND SUBSIDIARIES

STATEMENTS OF INCOME

For the Years Ended December 31, 2005 and 2004

(Expressed in New Taiwan Thousand Dollars, Except Earnings Per Share)

	Year Ended December 31, 2005	Year Ended December 31, 2004
Operating Revenues (Notes B, D21 & E)	$41,975,536	$41,924,420
Operating Costs (Notes D22 & E)	(32,486,820)	(34,102,562)
Gross Profit	9,488,716	7,821,858
Operating Expenses (Notes D22 & E)	(2,695,367)	(2,734,209)
General and administrative expenses	(2,695,367)	(2,734,209)
Operating Profit	6,793,349	5,087,649
Non-Operating Income		
Interest income	134,141	62,721
Investment income accounted for under the equity method (Note B& D8)	7,683,397	8,959,281
Dividend income	93,222	52,007
Gain on disposal of property, plant and equipment (Notes B & E)	120,395	72,807
Gain on disposal of investments	200,281	-
Foreign exchange gain (Note B)	42,262	-
Rent income (Note E)	59,240	49,298
Gain on market price recovery of short-term investments (Note B)	-	3,619
Others(Note D8)	144,483	88,391
Total Non-Operating Income	8,477,421	9,288,124
Non-Operating Expenses		
Interest expense	(465,553)	(602,444)
Other investment loss(Note B & D8)	(28,343)	-
Loss on disposal of property, plant and equipment (Notes B)	(11,019)	(4,575)
Gain on disposal of investments	-	(4,867)
Foreign exchange loss (Note B)	-	(32,579)
Financial expenses	(77,895)	(80,549)
Others	(22,170)	(47,278)
Total Non-Operating Income	(604,980)	(772,292)
Net Income before Income Tax	14,665,790	13,603,481
Income Tax Expense (Notes B & D23)	(2,441,879)	(1,518,812)
Net Income	$12,223,911	12,084,669

Source: Evergreen.com

b.)

EVERGREEN MARINE CORPORATION
STATEMENTS OF INCOME
For the Years Ended December 31, 2006 and 2005
(Expressed in New Taiwan Thousand Dollars, Except Earnings Per Share)

	Year Ended December 31, 2006	Year Ended December 31, 2005
Operating Revenues (Notes B, D27 & E)	$33,863,398	$41,975,536
Operating Costs (Notes D28 & E)	(30,698,815)	(32,486,820)
Gross Profit	3,164,583	9,488,716
Operating Expenses (Notes D28 & E)	(2,293,123)	(2,695,367)
General and administrative expenses	(2,293,123)	(2,695,367)
Operating Profit	871,460	6,793,349
Non-Operating Income		
Interest income	181,319	125,649
Investment income accounted for under the equity method (Notes B & D10)	-	7,683,397
Dividend income	75,145	93,222
Gain on disposal of property, plant and equipment (Notes B & E)	1,181,500	120,395
Gain on disposal of investments(Note C)	139,556	-
Foreign exchange gain(Notes B & C)	167,183	98,278
Rent income (Note E)	63,033	59,240
Gain on valuation of financial assets(Notes B & C)	75,469	180,780
Others	138,702	144,483
Total Non-Operating Income	2,021,907	8,505,444
Non-Operating Expenses		
Interest expense (Note C)	(148,723)	(451,518)
Investment loss accounted for under the equity method (Notes B & D10)	(1,915,230)	-
Other investment loss (Notes C & D10)	-	(1,300)
Loss on disposal of property, plant and equipment (Note B)	(12,093)	(11,019)
Loss on disposal of investment (Note C)	-	(238)
Financial expenses	(52,951)	(77,895)
Loss on valuation of financial liabilities(Notes B & C)	(111,765)	(70,051)
Others	(3,747)	(20,982)
Total Non-Operating Expenses	(2,244,509)	(633,003)
Income before Income Tax	648,858	14,665,790
Income Tax Expense (Notes B & D29)	(140,670)	(2,441,879)
Income after Income Tax from Continuing Operations	508,188	12,223,911
Cumulative Effect of Changes in Accounting Principle (Note C) (Net of tax benefit $50,937)	(96,608)	-
NET INCOME	$411,580	$12,223,911

Source: Evergreen.com

c.)

EVERGREEN MARINE CORPORATION
STATEMENTS OF INCOME
FOR THE YEARS ENDED DECEMBER 31, 2007 AND 2006
(EXPRESSED IN THOUSANDS OF NEW TAIWAN DOLLARS)

	2007		2006	
	AMOUNT	%	AMOUNT	%
Operating Revenues (Notes 4(29) and 5)	$ 27,844,435	100	$ 33,863,398	100
Operating Costs (Notes 4(30) and 5)	(23,280,416)	(84)	(30,698,815)	(90)
Gross profit	4,564,019	16	3,164,583	10
Operating Expenses (Notes 4(30) and 5)				
General and administrative expenses	(2,507,373)	(9)	(2,293,123)	(7)
Operating income	2,056,646	7	871,460	3
Non-operating Income and Gains				
Interest income	171,390	1	181,319	1
Gain on valuation of financial assets	-	-	75,469	-
Investment income accounted for under the equity method (Note 4(12))	8,086,030	29	-	-
Dividend income	33,052	-	75,145	-
Gain on disposal of property, plant and equipment (Note 5)	1,514,085	6	1,181,500	4
Gain on disposal of investments	216,182	1	139,556	-
Foreign exchange gain, net	277,055	1	167,183	1
Rental income (Note 5)	76,293	-	63,033	-
Other non-operating income	86,129	-	138,702	-
Non-operating Income and Gains	10,460,216	38	2,021,907	6
Non-operating Expenses and Losses				
Interest expense	(170,908)	(1)	(148,723)	(1)
Loss on valuation of financial assets	(149,937)	(1)	-	-
Loss on valuation of financial liabilities	(384,157)	(1)	(111,765)	-
Investment loss accounted for under the equity method (Note 4(12))	-	-	(1,915,230)	(6)
Loss on disposal of property, plant and equipment	(1,589)	-	(12,093)	-
Financing charges	(28,604)	-	(52,951)	-
Impairment loss (Note 4(10))	(119,000)	-	-	-
Other non-operating losses	(2,688)	-	(3,747)	-
Non-operating Expenses and Losses	(856,883)	(3)	(2,244,509)	(7)
Income from continuing operations before income tax	11,659,979	42	648,858	2
Income tax expense (Note 4(31))	(1,278,277)	(5)	(140,670)	(1)
Income from continuing operations	10,381,702	37	508,188	1
Cumulative effect of changes in accounting principles (Net of tax benefit of $ 50,937)	-	-	(96,608)	-
Net income	$ 10,381,702	37	$ 411,580	1

	Before Tax	After Tax	Before Tax	After Tax
Basic earnings per share (Note 4(32))				
Net income from continuing operations	$ 3.96	$ 3.53	$ 0.22	$ 0.17
Cumulative effect of changes in accounting principles	-	-	(0.05)	(0.03)
Net income	$ 3.96	$ 3.53	$ 0.17	$ 0.14
Diluted earnings per share(Note 4(32))				
Net income from continuing operations	$ 3.80	$ 3.38	$ 0.21	$ 0.16
Cumulative effect of changes in accounting principles	-	-	(0.05)	(0.03)
Net income	$ 3.80	$ 3.38	$ 0.16	$ 0.13

Source: Evergreen.com

d.)

EVERGREEN MARINE CORPORATION
STATEMENTS OF INCOME
FOR THE YEARS ENDED DECEMBER 31,
(EXPRESSED IN THOUSANDS OF NEW TAIWAN DOLLARS)

	2008	2007
Operating Revenue (Notes 4(27) and 5)	$ 22,437,412	$ 27,844,435
Operating Costs (Notes 4(30) and 5)	(20,880,062)	(23,957,784)
Gross profit	1,557,350	3,886,651
Operating Expenses		
General and administrative expenses (Notes 4(30) and 5)	(1,918,497)	(1,830,005)
Operating (loss) income	(361,147)	2,056,646
Non-operating Income and Gains		
Interest income	110,362	171,390
Investment income accounted for under the equity method (Note 4(11))	3,133,337	8,086,030
Dividend income	58,446	33,052
Gain on disposal of property, plant and equipment (Note 5)	1,001,790	1,514,085
Gain on disposal of investments	-	216,182
Foreign exchange gain, net	-	277,055
Rental income (Note 5)	101,506	76,293
Others	116,628	86,129
Non-operating Income and Gains	4,522,069	10,460,216
Non-operating Expenses and Losses		
Interest expense	(228,469)	(170,908)
Loss on valuation of financial assets (Note 4(2))	(12,656)	(149,937)
Loss on valuation of financial liabilities (Note 4(15))	(3,086,605)	(384,157)
Loss on disposal of property, plant and equipment	(4,799)	(1,589)
Loss on disposal of investments	(41,623)	-
Foreign exchange loss, net	(88,129)	-
Financing charges	(8,668)	(28,604)
Impairment loss (Note 4(9))	-	(119,000)
Others	(2,216)	(2,688)
Non-operating Expenses and Losses	(3,473,165)	(856,883)
Income from continuing operations before income tax	687,757	11,659,979
Income tax expense (Note 4(28))	(48,491)	(1,278,277)
Net income	$ 639,266	$ 10,381,702

	Before Tax	After Tax	Before Tax	After Tax
Basic earnings per share (Note 4(29))				
Net income	$ 0.23	$ 0.21	$ 3.96	$ 3.53
Diluted earnings per share (Note 4(29))				
Net income	$ 0.22	$ 0.21	$ 3.80	$ 3.38

Source: Evergreen.com

e.)

EVERGREEN MARINE CORP. (TAIWAN) LTD.
STATEMENTS OF INCOME
FOR THE YEARS ENDED DECEMBER 31.
(EXPRESSED IN THOUSANDS OF NEW TAIWAN DOLLARS, EXCEPT FOR EARNINGS PER SHARE)

	2009	2008
Transportation income (Notes 4(21) and 5)	$ 15,062,947	$ 22,437,412
Transportation costs (Notes 4(24) and 5)	(13,075,356)	(20,880,062)
Gross profit, net	1,987,591	1,557,350
Operating Expenses		
General and administrative expenses (Notes 4(24) and 5)	(1,518,516)	(1,918,497)
Operating income (loss)	469,075	(361,147)
Non-operating Income and Gains		
Interest income	57,182	110,362
Gain on valuation of financial liabilities	1,504,293	-
Investment income accounted for under the equity method (Note 4(9))	-	3,133,337
Dividend income	3,450	58,446
Gain on disposal of property, plant and equipment (Note 5)	1,229,694	1,001,790
Gain on disposal of investments	11,902	-
Foreign exchange gain, net	343,352	-
Rental income (Note 5)	101,407	101,506
Other non-operating income	50,571	116,628
Non-operating Income and Gains	3,301,851	4,522,069
Non-operating Expenses and Losses		
Interest expense	(266,153)	(228,469)
Loss on valuation of financial assets	(2,048)	(12,656)
Loss on valuation of financial liabilities	-	(3,086,605)
Investment loss accounted for under the equity method (Note 4(9))	(14,226,211)	-
Loss on disposal of property, plant and equipment	(3,599)	(4,799)
Loss on disposal of investments	-	(41,623)
Foreign exchange loss	-	(88,129)
Financing charges	(4,627)	(8,668)
Other non-operating losses	(748)	(2,216)
Non-operating Expenses and Losses	(14,503,386)	(3,473,165)
(Loss) income from continuing operations before income tax	(10,732,460)	687,757
Income tax benefit (expense) (Note 4(22))	877,107	(48,491)
Net (loss) income	($ 9,855,353)	$ 639,266

	Before Tax	After Tax	Before Tax	After Tax
Basic (loss) earnings per share (Note 4(23))				
Net (loss) income	($ 3.51)	($ 3.22)	$ 0.23	$ 0.21
Diluted (loss) earnings per share (Note 4(23))				
Net (loss) income	($ 3.51)	($ 3.22)	$ 0.22	$ 0.21

Source: Evergreen.com

f.)

EVERGREEN MARINE CORP. (TAIWAN) LTD.
STATEMENTS OF INCOME
FOR THE SIX-MONTH PERIODS ENDED JUNE 30,
(EXPRESSED IN THOUSANDS OF NEW TAIWAN DOLLARS, EXCEPT FOR EARNINGS PER SHARE)

	2010	2009
Operating income (Notes 4(20) and 5)	$ 8,596,132	$ 7,715,022
Operating costs (Notes 4(23) and 5)	(7,685,379)	(6,590,327)
Gross profit, net	910,753	1,124,695
Operating Expenses (Notes 4(23) and 5)		
General and administrative expenses	(738,822)	(744,428)
Operating income	171,931	380,267
Non-operating Income and Gains		
Interest income	18,899	47,821
Gain on valuation of financial assets	194,070	1,415
Gain on valuation of financial liabilities	484,138	1,017,817
Investment income accounted for under the equity method (Note 4(9))	3,110,056	-
Dividend income	88,692	8,450
Gain on disposal of property, plant and equipment (Note 5)	467,518	589,004
Gain on disposal of investments	7,351	7,333
Foreign exchange gain, net	-	161,859
Rental income (Note 5)	48,619	50,392
Other non-operating income	28,358	25,826
Non-operating Income and Gains	4,432,701	1,904,917
Non-operating Expenses and Losses		
Interest expense	(164,621)	(114,468)
Investment loss accounted for under the equity method (Note 4(9))	-	(6,994,823)
Loss on disposal of property, plant and equipment	(331)	(1,067)
Foreign exchange loss	(182,746)	-
Financing charges	(2,311)	(2,316)
Other non-operating losses	(317)	(592)
Non-operating Expenses and Losses	(350,326)	(7,113,266)
Income (loss) from continuing operations before income tax	4,254,306	(4,828,082)
Income tax (expense) benefit (Note 4(21))	(219,743)	114,010
Net income (loss)	$ 4,034,563	($ 4,714,072)

	Before Tax	After Tax	Before Tax	After Tax
Basic earnings (loss) per share (Note 4(22))				
Net income (loss)	$ 1.89	$ 1.82	($ 1.58)	($ 1.54)
Diluted earnings (loss) per share (Note 4(22))				
Net income (loss)	$ 1.84	$ 1.27	($ 1.58)	($ 1.54)

Source: Evergreen.com

Table 6: Ownership Structure

Full Equity Ownership	***Partial Equity Ownership***	***No Ownership Control***
Mergers and Acquisitions	Joint Ventures	Cooperative Agreements
Internal Venturing	Minority Investments	R&D Partnerships
		Joint Bidding Activities
		Cross-Licensing and Cross-Distribution Agreements

Source: Harrigan, 1985

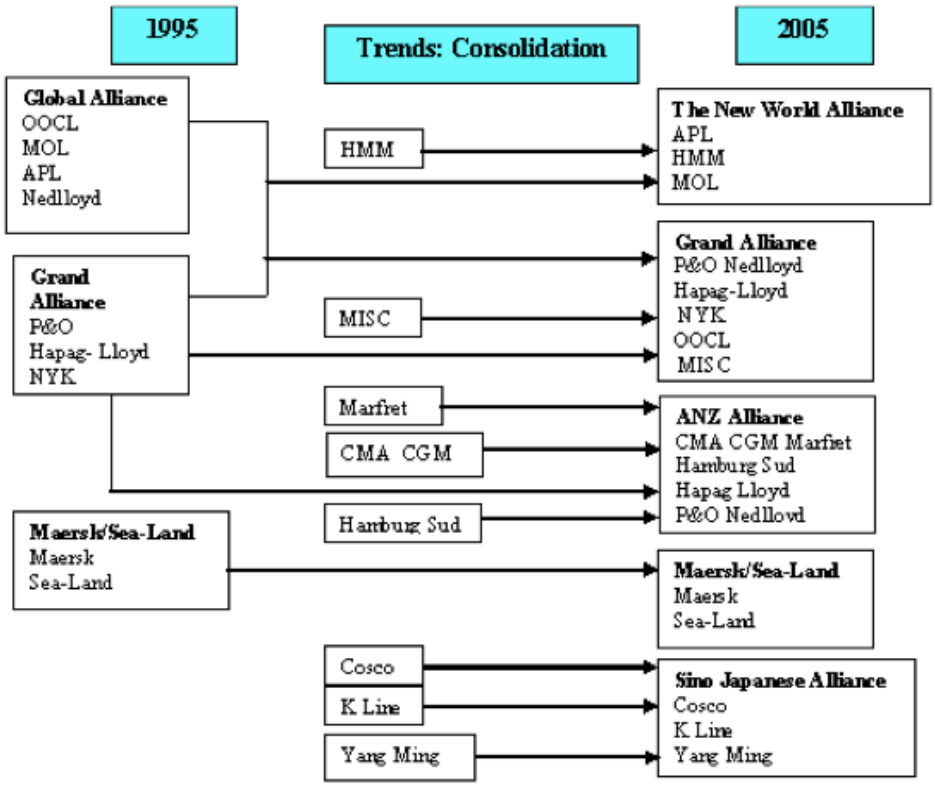
Table 7: Types of Operational Alliances

Table 3-1: Types of Operational Alliances

	Joint Marketing	Monetary Pooling	Vessel sharing	Schedule Coordination
Space purchase agreement	No	No	No	No
Space exchange agreement	No	No	No	Yes
Vessel pool partnership	No	No	Yes	Yes
Revenue/cost pool consortium	No / Yes	Yes	Yes	Yes
Equity-sharing joint venture	Yes	Yes	Yes	Yes

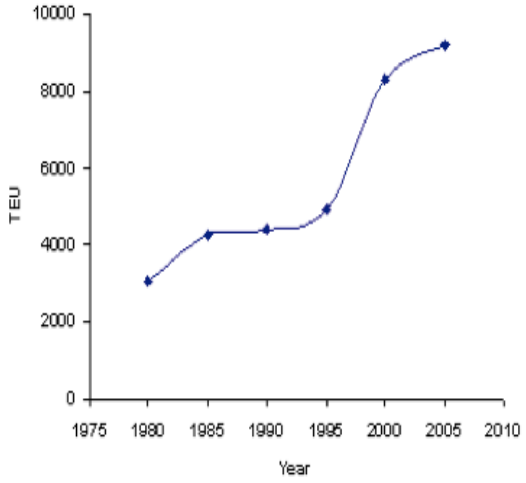
Source: Koay, 1988

Table 8: Trends of Consolidation



Source: Agarwal, 2007

<u>Graph 1</u>: Increase in size of container ships



Source: Agarwal, 2007

<u>Table 9:</u> First and Second generation alliance partners

Table 1. First and Second generation alliance partners

First Generation				
Alliance	Global Alliance	Grand Alliance	Maersk/Sealand	Hanjin/Tricon
Partners	APL, Nedlloyd, MOL, OOCL, MISC	Hapag-Lloyd, NYK, NOL, P&OCL	Maersk, Sealand	Cho Yang, Hanjin, DSR/Senator
Second Generation				
Alliance	New World Alliance	Grand Alliance	Maersk/Sealand	United Alliance
Partners	NOL/APL, MOL, HMM	Hapag-Lloyd, OOCL P&O Nedlloyd, MISC	Maersk, Sealand	Cho Yang, Hanjin, DSR/Senator

Source: Koay, 1988

Table 11: Number of port call: 1989, 1994, 1999

Table 4. Number of ports of call: 1989, 1994, 1999.

	Number of ports of call			Number of ports on weekly service		
Company	1989	1994	1999	1989	1994	1999
Maersk	80	112	209	27	47	174
SeaLand	93	105	129	20	50	109
Grand			43			43
Hapag	122	101	88	17	30	79
P&O	77	114	202	11	42	120
Nedlloyd	191	157		20	38	
MISC	47	70	122	17	30	52
OOCL	40	43	78	33	41	68
NYK	139	161	152	24	46	77
United			41			41
Hanjin	12	27	59	10	25	62
DSR	72	87	92		21	64
Senator	17	25				
Cho Yang	29	45	73	11	12	67
New World			37			37
HMM	30	33	67	12	22	54
APL	54	47	107	12	19	78
NOL	51	54		29	33	
MOL	109	152	141	25	40	66
K-Line	95	94	77	22	47	64
COSCO	53	64	92	6	7	54
Yangming	25	30	77	14	21	61
Joint service			42			42
TOTAL	1336	1521	1806[a]	310	571	1249[a]
Mean	70	80	106[a]	18	32	78[a]
Evergreen	37	34	74	24	21	71

[a] Alliance totals are not included.

Source: Slack et al, 2009

Table 12: Liner Market Shares

>>> BRS-Alphaliner - Liner Market Shares <<<

- Evolution of carriers operated fleets and market shares 2000-2006 -

	Jan 2000			Jan 2006				
	rank	teu	share	rank	teu	share	growth	rise p.a.
A.P. M ller-Maersk	1	620 324	12,0%	1	1 665 272	18,2%	268%	17,9%
MSC	5	224 620	4,4%	2	784 248	8,6%	349%	23,2%
CMA CGM Group	12	122 848	2,4%	3	507 954	5,6%	413%	26,7%
Evergreen Group	2	317 292	6,2%	4	477 911	5,2%	151%	7,1%
Hapag-Lloyd	14	102 769	2,0%	5	412 344	4,5%	401%	26,1%
CSCL	18	86 335	1,7%	6	346 493	3,8%	401%	26,1%
APL	6	207 992	4,0%	7	331 437	3,6%	159%	8,1%
Hanjin / Senator	4	244 636	4,8%	8	328 794	3,6%	134%	5,1%
COSCO Container L.	7	198 841	3,9%	9	322 326	3,5%	162%	8,4%
NYK	8	166 206	3,2%	10	302 213	3,3%	182%	10,5%
MOL	10	136 075	2,6%	11	241 282	2,6%	177%	10,0%
OOCL	16	101 044	2,0%	12	234 141	2,6%	232%	15,0%
CSAV Group	20	69 745	1,4%	13	234 002	2,6%	336%	22,4%
K Line	13	112 884	2,2%	14	227 872	2,5%	202%	12,4%
Zim	11	132 618	2,6%	15	201 432	2,2%	152%	7,2%
Yang Ming Line	17	93 348	1,8%	16	188 206	2,1%	202%	12,4%
Hamburg-S d Group	21	68 119	1,3%	17	184 438	2,0%	271%	18,1%
Hyundai Merchant Marine	15	102 314	2,0%	18	147 989	1,6%	145%	6,3%
Pacific Int'l Lines (PIL)	24	60 505	1,2%	19	134 362	1,5%	222%	14,2%
Wan Hai Lines	22	63 525	1,2%	20	114 346	1,3%	180%	10,3%
UASC	19	74 989	1,5%	21	74 004	0,8%	99%	-0,2%
IRIS Lines	42	19 920	0,4%	22	53 512	0,6%	269%	17,9%
Regional Container L.	33	26 355	0,5%	23	48 604	0,5%	184%	10,7%
Grimaldi (Napoli)	28	35 283	0,7%	24	44 363	0,5%	126%	3,9%
MISC Bhd	26	41 738	0,8%	25	40 543	0,4%	97%	-0,5%
Costa Container Lines	98	4 914	0,1%	26	37 480	0,4%	763%	40,3%
China Navigation Co	60	11 377	0,2%	27	36 717	0,4%	323%	21,6%
Sea Consortium	43	17 562	0,3%	28	34 242	0,4%	195%	11,8%
CCNI	32	26 710	0,5%	29	33 799	0,4%	127%	4,0%
SYMS	128	2 954	0,1%	30	32 337	0,4%	1095%	49,0%

Source: Alphaliner.com

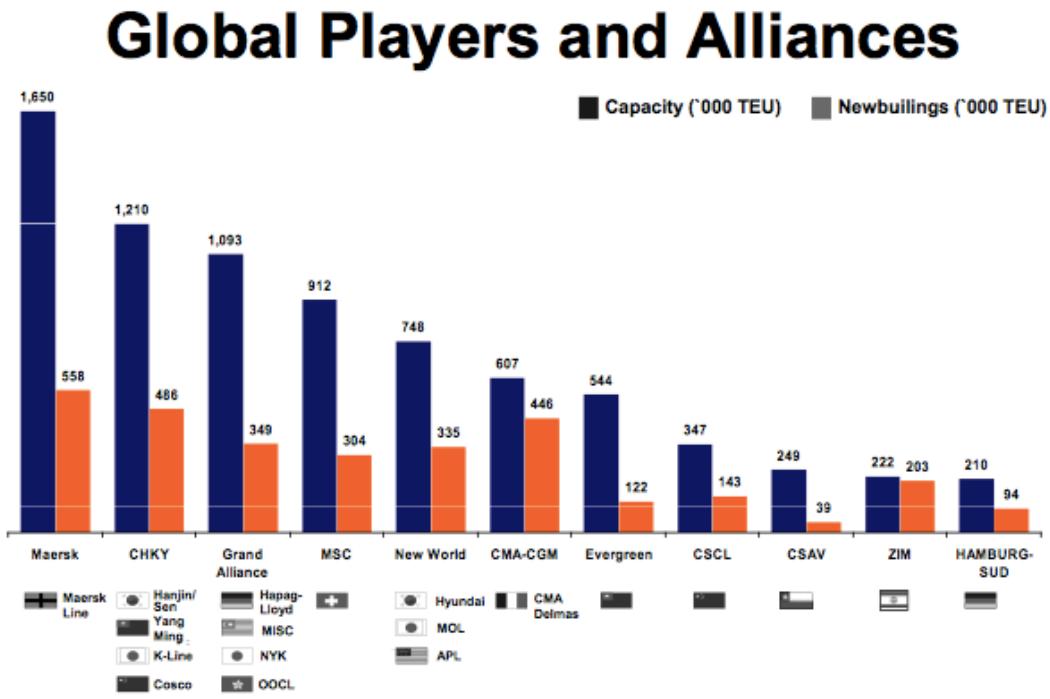
Table 13: Top 100 – Liner Companies

Alphaliner - Top 100 : Operated fleets as per 12 June 2011											
		TOTAL		Owned		Chartered			Orderbook		
Rnk	Operator	TEU	Ships	TEU	Ships	TEU	Ships	% Chart	TEU	Ships	% existing
1	APM-Maersk	2,342,265	620	1,120,356	207	1,221,909	413	52.2%	396,652	49	16.9%
2	Mediterranean Shg Co	1,983,311	466	1,003,464	211	979,847	255	49.4%	510,410	48	25.7%
3	CMA CGM Group	1,281,966	387	506,799	95	775,167	292	60.5%	185,612	21	14.5%
4	Evergreen Line	616,885	168	330,167	88	286,718	80	46.5%	308,000	35	49.9%
5	COSCO Container L.	608,472	143	348,427	96	260,045	47	42.7%	283,444	35	46.6%
6	Hapag-Lloyd	596,982	138	267,259	56	329,723	82	55.2%	131,000	10	21.9%
7	APL	578,105	146	169,547	45	408,558	101	70.7%	204,480	22	35.4%
8	CSAV Group	546,513	139	51,090	10	495,423	129	90.7%	98,589	12	18.0%
9	Hanjin Shipping	514,031	108	240,860	40	273,171	68	53.1%	137,027	14	26.7%
10	CSCL	488,838	140	296,102	74	192,736	66	39.4%	107,970	13	22.1%
11	OOCL	413,556	89	283,278	47	130,278	42	31.5%	140,816	13	34.1%
12	MOL	407,747	95	214,984	36	192,763	59	47.3%	44,840	8	11.0%
13	NYK Line	407,388	103	309,403	59	97,985	44	24.1%	61,476	6	15.1%
14	Hamburg Süd Group	384,158	115	184,356	44	199,802	71	52.0%	168,938	27	44.0%
15	Yang Ming Marine Tran	348,428	85	200,377	47	148,051	38	42.5%	95,626	15	27.4%
16	K Line	334,167	78	217,186	38	116,981	40	35.0%	54,152	7	16.2%
17	Zim	331,345	98	163,121	35	168,224	63	50.8%	153,216	13	46.2%
18	Hyundai M.M.	315,305	64	100,646	17	214,659	47	68.1%	65,460	5	20.8%
19	PIL (Pacific Int. Line)	263,164	138	160,017	92	103,147	46	39.2%	67,202	21	25.5%
20	UASC	236,747	58	126,696	28	110,051	30	46.5%	104,800	8	44.3%
21	Wan Hai Lines	183,821	86	115,297	56	68,524	30	37.3%	38,200	14	20.8%
22	TS Lines	89,138	44	4,734	3	84,404	41	94.7%			
23	HDS Lines	86,744	24	4,712	4	84,032	20	94.7%			
24	CCNI	62,687	25			62,687	25	100.0%			
25	X-Press Feeders Group	61,895	57	1,713	1	60,182	56	97.2%			
26	MISC Berhad	60,883	25	24,994	14	35,889	11	58.9%	8,540	1	14.0%
27	RCL (Regional Contain	52,620	40	43,491	34	9,129	6	17.3%	2,086	2	4.0%
28	Hainan P O Shipping C	51,601	21	13,194	5	38,407	16	74.4%			
29	Grimaldi (Napoli)	49,560	45	47,021	40	2,539	5	5.1%	3,016	6	6.1%
30	Matson	49,530	21	30,396	15	19,134	6	38.6%			
31	KMTC	48,371	38	20,883	19	27,488	19	56.8%	7,720	4	16.0%
32	SITC	45,325	50	13,589	16	31,736	34	70.0%	13,925	13	30.7%
33	Grand China Logistics	44,367	28	17,361	11	27,006	17	60.9%			
34	STX Pan Ocean (Conta	42,621	28	12,370	8	30,251	20	71.0%	12,460	4	29.2%
35	UniFeeder	41,390	43			41,390	43	100.0%			
36	NileDutch	40,689	22	2,137	3	38,552	19	94.7%	14,000	4	34.4%
37	Horizon Lines	38,948	17	19,818	9	19,130	8	49.1%			
38	Emirates Shipping Line	38,032	15			38,032	15	100.0%			
39	Seaboard Marine	36,387	43	5,825	9	30,562	34	84.0%			
40	S.C. India	30,907	10	14,407	5	16,500	5	53.4%	19,500	3	63.1%
41	Sinotrans	30,267	31	9,982	12	20,285	19	67.0%			
42	Schöller Group	28,121	18	7,225	4	20,896	14	74.3%	18,261	9	64.9%
43	Samudera	28,052	32	10,646	17	17,406	15	62.0%			
44	Simatech	27,785	16	7,025	6	20,760	10	74.7%			
45	Swire Shipping	27,037	24	13,696	13	13,341	11	49.3%	16,656	8	61.6%
46	Arkas Line / EMES	25,764	21	17,959	13	7,805	8	30.3%			
47	Linea Messina	24,882	17	17,734	13	7,148	4	28.7%	11,680	4	46.9%
48	OEL / Shreyas	23,279	18	7,812	8	15,467	10	66.4%			
49	Sinokor	22,694	26	8,314	13	14,380	13	63.4%			
50	Crowley Liner Services	22,276	24	8,304	9	13,972	15	62.7%			
51	MACS	21,170	15	6,828	4	14,342	11	67.7%	16,000	8	75.6%

52	Meratus	20,954	43	20,295	38	659	5	3.1%			
53	Heung-A Shipping	20,584	23	6,571	11	14,013	12	68.1%			
54	Tanto Intim Line	18,230	39	18,230	39						
55	Turkon Line	17,895	13	17,895	13						
56	FESCO	17,521	18	15,075	16	2,446	2	14.0%	3,108	1	17.7%
57	Nam Sung	14,816	20	13,790	18	1,026	2	6.9%			
58	Dole Ocean Liner	14,731	27	8,890	10	5,841	17	39.7%			
59	Westwood	14,371	7			14,371	7	100.0%			
60	Mariana Express Lines	13,986	13			13,986	13	100.0%			
61	Log-In Logistica	13,069	7	8,556	5	4,513	2	34.5%	10,800	4	82.6%
62	United Feeder Services	12,725	13			12,725	13	100.0%			
63	Containerships OY	12,628	15	966	1	11,662	14	92.4%			
64	Salam Pasific	12,488	24	12,488	24						
65	Great White Fleet	12,389	21			12,389	21	100.0%			
66	Temas Line	12,011	27	12,011	27						
67	Borchard Lines	11,546	14	1,606	2	9,940	12	86.1%			
68	HubLine Bhd	11,321	20	10,461	19	860	1	7.6%			
69	Delphis NV / Team Line	11,315	11	1,440	1	9,875	10	87.3%			
70	Marfret	10,174	8	8,442	7	1,732	1	17.0%			
71	Quanzhou An Sheng S	9,044	5	9,044	5						
72	Caribbean Feeder Serv	9,020	13	6,640	10	2,380	3	26.4%			
73	Vinalines	8,673	13	7,625	12	1,048	1	12.1%	2,121	3	24.5%
74	Yanghai Shipping Co (Y	8,340	8			8,340	8	100.0%			
75	Tropical Shg	8,272	16	3,946	11	4,326	5	52.3%			
76	Independent Container	8,136	4			8,136	4	100.0%			
77	NSCSA	8,100	4	8,100	4				2,184	6	27.0%
78	Universal Africa Line	7,799	15			7,799	15	100.0%			
79	OPDR	7,743	12	4,490	7	3,253	5	42.0%			
80	Melfi C.L.	7,652	7			7,652	7	100.0%			
81	Shanghai Jin Jiang	7,395	9	5,292	6	2,103	3	28.4%			
82	Tarros	7,144	7			7,144	7	100.0%			
83	SeaFreight	7,119	7			7,119	7	100.0%			
84	Samskip	7,025	11			7,025	11	100.0%			
85	Boluda Lines	7,007	8	5,159	6	1,848	2	26.4%			
86	UAFL	6,490	6			6,490	6	100.0%			
87	Gemadept	6,440	9	4,672	6	1,768	3	27.5%			
88	Kambara Kisen	6,136	8	907	1	5,229	7	85.2%	2,000	2	32.6%
89	Chun Kyung (CK Line)	6,093	12	3,342	8	2,751	4	45.2%	2,120	2	34.8%
90	King Ocean	6,060	6			6,060	6	100.0%			
91	Valfajre Eight Shg Co	5,901	9	5,299	8	602	1	10.2%			
92	DAL	5,841	2	4,500	1	1,341	1	23.0%			
93	MTT Shipping	5,826	9			5,826	9	100.0%			
94	Irish Continental Group	5,808	9			5,808	9	100.0%			
95	Shanghai Hai Hua (Has	5,609	8	3,776	5	1,833	3	32.7%			
96	Peel Ports (BG Freight)	5,565	10			5,565	10	100.0%			
97	Eimskip	5,367	10	3,083	6	2,284	4	42.6%			
98	Qatar National Line	4,977	7	4,977	7						
99	Hartmann Asia Lines	4,756	7	2,627	4	2,129	3	44.8%			
100	Lin Line	4,602	2			4,602	2	100.0%			
All information above is given as guidance only and in good faith without guarantee										© Alphaliner 1999-2011	

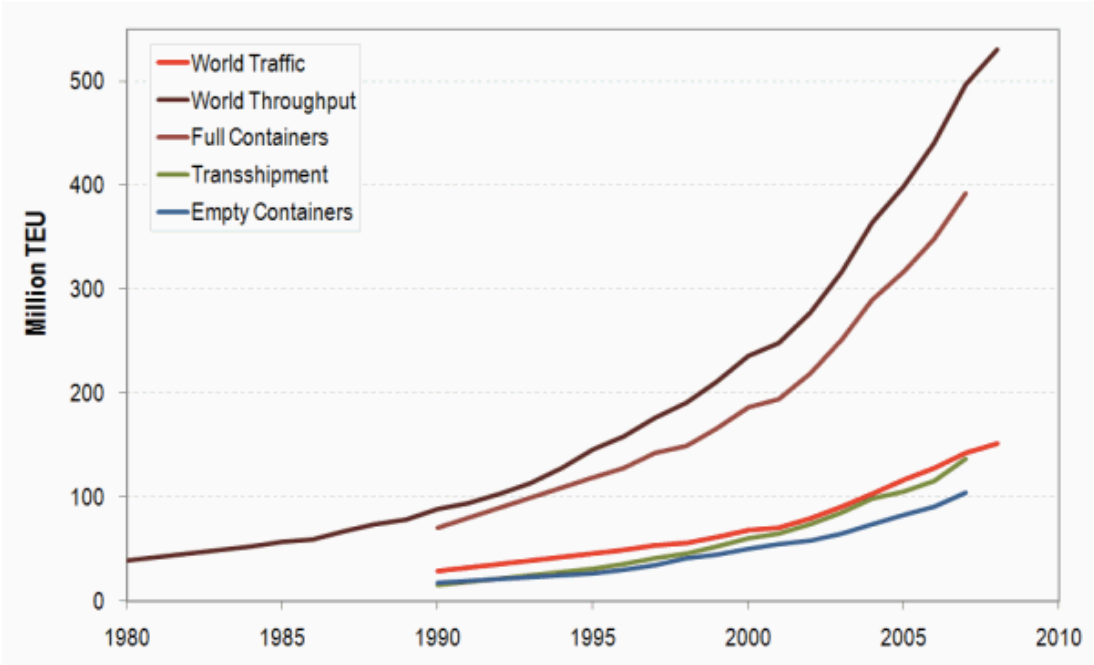
Source: Alphaliner, 2011

Graph 3: Global Players and Alliances



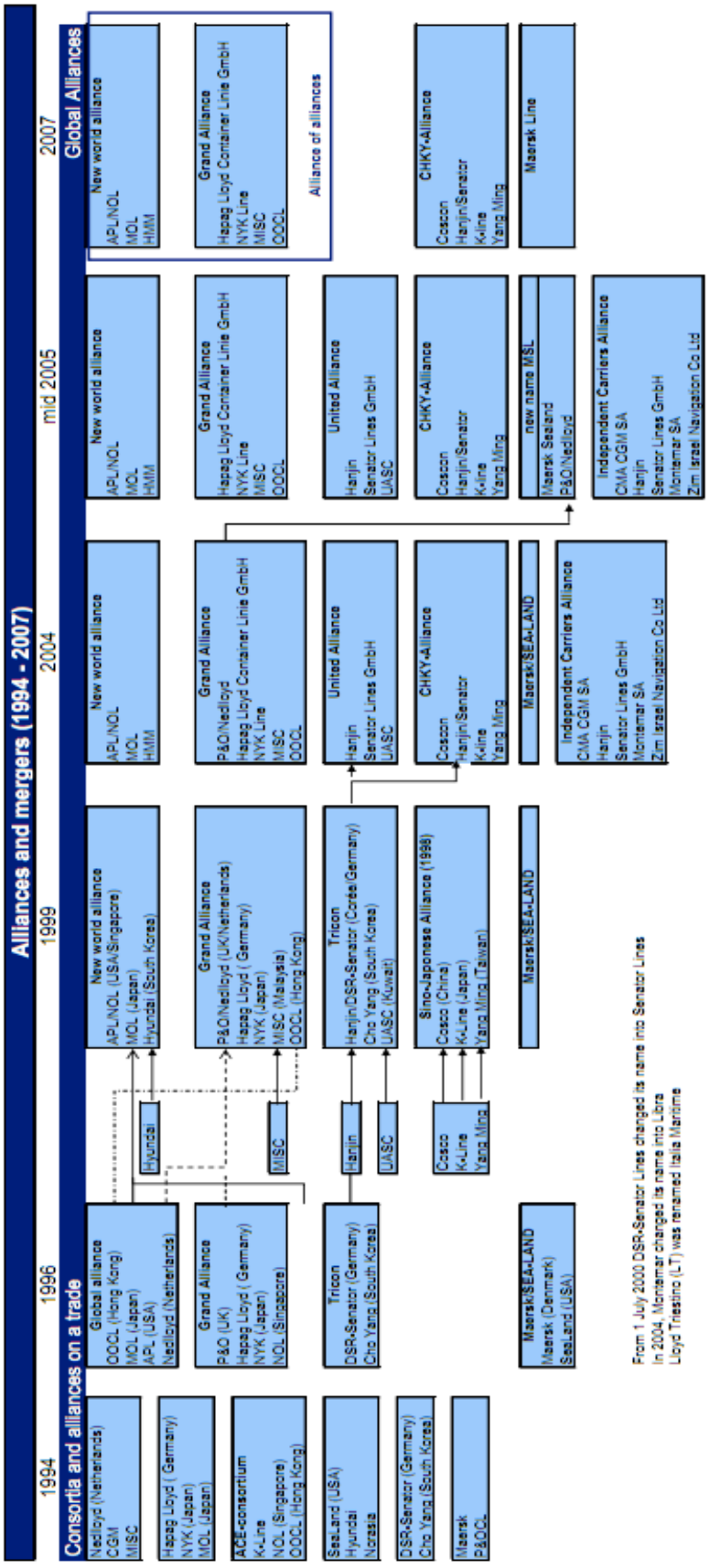
Source: Alphaliner, 2007

Graph 4: World Wide Container Traffic



Source: Drewry Shipping Consultants, 2010

Table 15: Alliances and Mergers 1994-2007, Sys, 2007
Source: Sys, 2007



Source: Hapag-Lloyd, 2006

8.1. Recent Performance of Ocean Carriers and Alliances, conform Containerisation International and LloydsList.

Table I: Quarterly International Deep-Sea Trade Container Industry

Quarterly International Deap-Sea Trade, Container Indices					
Quarter	2006	2007	2008	2009	2010
1	100.0	105.5	117.7	102.2	122.6
2	100.0	106.6	116.8	104.9	125.6
3	100.0	108.8	115.2	108.5	126.1
4	100.0	107.3	102.8	109.3	130.1

Source: Containarisation International, 2010

Table V: Ocean Carrier: Volume Performance During 2010

Carrier	**2010 TEU (x 1,000)**	**2009 TEU (x 1,000)**
Maersk	14,600	13,800
APL	5,662	4,578
Hapag-Lloyd	4,947	4,637
OOCL	4,768	4,159

Source: Containerisation International, 2011

Table VI: Ocean Carrier Financial Report – First Quarter 2011

Carrier	**Revenue 2011-Q1 (USD million)**
Maersk	6,419
APL	2,443
Hapag-Lloyd	2,091
Hanjin	1,637
Evergreen	978

Source: Containerisation International, 2011

Table IX: Alliances operating on route: Far East to Northern Europe, 2010

Alliance	Nr. of weekly services	Total nr. of vessels	Market share
CKYH	8	58	20%
Grand Alliance	4	36	13%
NWA	4	34	11%

Source: LloydsList, 2010

Table X: Alliances' performance: Asia – Mediterranean, 2010

Alliance	Nr. of vessels deployed on route	Maximum capacity/year TEU
CKYH	10	~ 300,000TEU – 400,000TEU
NWA	10	~ 350,000TEU
GA	8	~ 320,000TEU

Source: Containerisation International, 2011

Table XIII: Services: Northern Europe – Northern America, 2010

Carriers	Maximum capacity/year (TEU)
CKYH	140,829 TEU
Grand Alliance	168,324 TEU – 238,056 TEU*
Maersk	150,748 TEU – 206,128 TEU*
New World Alliance	241,832 TEU
MSC	254,998 TEU – 350,079 TEU*

Source: Containerisation International, 2011
** Depending on the number of port calls*

9. Glossary

Bulk Shipping:	* Can be classified in wet and dry bulk. Wet bulk is e.g. petroleum, while dry bulk are grain, iron, etc. Bulk is not transported in containers (Willam, 2005).
Containerization:	* Transportation based on standard containers.
Derived Demand:	* Demand for a certain goods or service is determined by the demand for another good or service (Friedlaender, 1980)
Door-to-door:	* Transportation of goods from the production factory to the customer's front door, resulting in a direct flow of goods (Business Dictionary, 2010)
Economies of Scale:	* Cost reduction through expansion (Sullivan, 2003)
Economies of Scope:	* Cost reduction of multiple goods through expansion (Sullivan, 2003)
Entry Barriers:	* Obstacles to enter a market
*Free-rider Behavio*r:	* In a collaboration, consuming a resource, without paying for it (Krugman, 1980)
Freight Rates:	* Found in the shipping industry; price at which cargo is transported (Notteboom, 2008)
Gini Coefficient:	* Measures statistical discrepancies
Hinterland:	* The land behind the port.
Horizontal integration:	* Collaboration of firms in the same stage of the supply chain (Thorburn, 2003).
International Trade:	* Exchange of goods and services at an international niveau (Slack et al, 2009)
Joint Ventures:	* Creation of new entity, based on agreements between two or more companies (DePamphilis, 2008)
Land Activities:	* e.g. distribution into the hinterland
Liner service:	* Offered by carriers by operating container fleet on defined trade routes. Can be compared to a "bus"- service (Notteboom, 2008).
Logistics:	* Management of goods and services from production point until the good has reached the consumer (Phelan, 2009)
Mergers/Acquisitions:	* Buying/selling/combining different companies (DePamphilis, 2008).
Monopoly:	* One firm dominating the market, and deciding entry barriers and prices (Frank, 2008).
Oligopoly:	* Many good and service providers are present in the market (Sys, 2009).
Overcapacity:	* Situation, when supply of a good or service exceeds demand (Frank, 2008)
Port Dues:	* Charges endured when in port area
Port-to-port Services:	* Transportation of goods from port to port.
Price – Takers:	* Companies, not setting prices, but rather adjusting their cost to fixed set prices (Krugman, 1980)

Strategic alliance:	* Agreement between two or more companies to obtain certain goals
Supply chain:	* Involves activities between production of a good until consumer obtains that good (Chen, 2004).
Transportation:	* Movement of persons and products from location A to location B (Bardi, 2006)
Third party logistics provider (3PL):	* Firm providing logistical services
Vertical integration:	* Cooperation among stages of the supply chain.
Warehousing:	* Storage of goods.
Waterside Activities:	* e.g. dockage
Yard Activities:	* e.g. warehousing

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