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**Strategic Alliances and Their Impacts
On the Container Shipping Industry**

D'Arcy J. Ryan

**A Thesis
in
The Department
of
Geography**

**Presented in Partial Fulfillment of the Requirements
For the Degree of Master of Public Policy and Public Administration at
Concordia University
Montreal, Quebec, Canada**

September 2001

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ABSTRACT

Strategic Alliances and Their Impacts On the Container Shipping Industry

D'Arcy J. Ryan

The thesis deals with the evolution of container shipping route networks over a ten-year span from 1989 to 1999. The network evolution is shown to be a direct result of globalization, with a decline in the number of direct routes serving only two maritime ranges and a proliferation of multi-range services. A particular development has been the establishment of Strategic Alliances. Today, the industry has restructured itself around five major groupings. This paper provides an explanation for the establishment of such alliances and their influence. In particular the New World Alliance and its members will be examined in the thesis.

ACKNOWLEDGMENTS

I thank my adviser, Professor Brian Slack, whose encouragement and advice made this thesis possible. I would also like to thank my wife Angela. Her faith and belief in me was my inspiration. Thank you to my parents and the Geography Department at Concordia University for preparing me for the real world.

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List of Acronyms

APL - American President Line
ECNA - East Coast North America
FE - Far East
HMM - Hyundai Merchant Marine
IMO - International Maritime Organization
MED - Mediterranean
MOL - Mitsui O.S.K. Lines Ltd.
NOL - Neptune Orient Line
NWA - New World Alliance
TEU - Twenty Foot Equivalent Unit
WCNA - West coast North America

Chapter 1

Introduction

1.1 Purpose of the Thesis

In recent years, some of the major shipping companies have moved to strengthen their position in the market place by cooperating with each other in the form of strategic alliances. Through this cooperation they are now offering services jointly. Examples include the Grand Alliance made up of Hapag-Lloyd, MISC, NYK, OOCL, and P&O Nedlloyd. In other cases there have been mergers or acquisitions, for example Neptune Orient Line taking over American President Line, Sea-Land and Maersk joining forces, and P&O merging with Nedlloyd.

The emergence of these international groupings has been one of the most important developments in the global shipping industry. The purported aim of these alliances and mergers is to extend the reach of the individual companies by linking services with their partners. This augments the routes served as well as the number of ports, and also enables the partners to increase their sailing frequencies. The individual companies are then able to serve more ports and routes than individual non-alliance carriers.

This thesis aims to investigate the impact of this re-shaping process that is taking place in the container industry. Its goal is to verify the extent of the growth of networks and scope of operations since the formation of strategic alliances.

Specific attention is given to the New World Alliance, one of the five major groupings that has been formed. This alliance comprises three of the top twenty container lines: American President Line/Neptune Orient Line, Hyundai Merchant Marine, and Mitsui OSK Line. The thesis examines changes for three different years, 1989, 1994, and 1999. This timeline was chosen because it allows for a view prior to and after the major reorganization of the industry.

1.2 Changing role of the Maritime Industry

In the shipping industry, as in many other industries, the last decade brought significant changes as a result of globalization. Globalization has meant increased competition and pressure by consumers at all levels, whether it be increased demand, increased purchasing power, or pressure by freight forwarders, changes have occurred. This pressure has extended the important role played by the transport industry. These developments are not specific to the shipping industry. The process is also forcing other areas and sectors to evolve, such as the airline industry (Debbage, 1994).

Changing market forces have altered traditional forms of business in the shipping industry. Strategic alliances and other forms of cooperation have become the norm. The concept of a strategic alliance is a broad one. Definitions vary depending on the industry that is involved. For the purpose of this thesis the following definition is used: strategic alliances are cooperative agreements between firms that go beyond normal company to company dealings, yet fall short of being a merger or full partnership (Mockler, 1999).

Change in the shipping industry is occurring because of both external pressures such as globalization and competition, and internal pressures such as profitability. The shipping industry has adopted collaboration and cooperation in the forms of mergers and strategic alliances to deal with both the internal and external pressures. The shipping industry has seen its profit margins decline in tandem with falling freight rates. To respond to this problem the industry has sought to increase vessel size to create economies of scale. The larger the vessel, the greater the carrying capacity, and therefore the cost per container falls. Many companies, due to the high capital costs of the industry, are unable to provide a fixed day weekly schedule on the major routes and therefore can not go-it-alone on these routes. An alliance provides a solution. If two or more companies join forces to share the risk of operating the new large vessels, they can coordinate sailings, extend the networks, and widen market coverage.

1.3 Methodology and Organization of the Thesis

The specific objectives of the thesis are first, to explain how the establishment of alliances has influenced route networks, and secondly, to describe how port selection and vessel deployment by the members of the New World Alliance has changed.

The data are drawn primarily from the *Containerisation International Yearbook*. This yearbook is a compilation of company profiles covering a wide range of specifics, including routes, service frequency, ports of call, number of ships, traffic, feeder/mainline services, and others. Data were collected for 1989, 1994, and most recently 1999. From

these data I have determined which ships are deployed on what routes, and have calculated the capacity, in Twenty Foot Equivalent Units (TEU), allocated on those routes. Also the ports served and the frequency of calls have been tabulated. This data then permits comparisons to be made for each of the three years sampled to determine what changes have occurred to the members of the NWA.

The data collected from the Yearbooks was entered into *Excel* spreadsheets, which allows for easy visual comparisons and statistical manipulation. The analysis includes a look at the changing network structure, as well as measures of capacity, size, routes, vessel deployment, and an assessment of the number of ports of call for each of the three years of study. The computer program *Freehand* is used to provide a cartographic representation of the data relating to routes and capacity.

Other sources of data and information have come from the *Journal of Transport Geography*, *Maritime Policy and Management*, and *Containerisation International Journal*. These journals are the primary sources of discussion and analysis in the literature review section. The literature review considers a number of issues relevant to this thesis including strategic alliances, conferences, consortia, ports, competition, and globalization.

Chapter Three deals with the specifics of the New World Alliance. This survey provides an in-depth look at each of the three member companies and their degree of involvement and participation in the alliance. Chapter Four tracks the changes in their individual service route structure for the three years that are then compared with the alliance offerings.

Chapter Five presents the impacts of the alliances on the port sector. The literature suggests that there are both positive and negative impacts from the shipping industry. These different considerations are addressed in light of the results determined in this study. Chapter Six presents a discussion of the policy issues that arise out of the creation of strategic alliances in the container shipping industry. While these alliances may be seen as primarily commercial developments occurring in international space, there are several implications for local and national policy actors.

Chapter 2

Literature Review

2.1 Introduction

This research paper deals with the rise of strategic alliances in the container shipping industry from 1989 to 1999. This literature review focuses on several underlying themes that are relevant to this topic. They include a formal examination of strategic alliances, economies of scale, and ports. The reason for selecting the first two topics is because they play important roles in the changing shipping industry. Container lines are attempting to create and effectively manage their business through achieving economies of scale. It is felt that through economies of scale greater operational efficiency will be obtained. Ports are included because both the liner companies and ports are co-dependent upon each other.

2.2 Globalization

According to Dunning (1997), the single most important socio-economic event of the 1980's was the renaissance of the market system as the dominant form of economic organization. A century ago economic activity was mainly conducted between single buyers and sellers. Today with globalization and regionalization of economic activity we see the growth of structural integration and interdependence of cross border transactions

(Dunning, 1997; Mockler, 1999; Underhill, 1996). Globalization is the latest stage in the spatial evolution of economic activity. The speed and direction that globalization has taken have been conditioned by the many advances in the transport industry.

“Globalization refers to the multiplicity of linkages and interconnections between the states and societies which make up the present world system.” (Dunning, 1997)

Globalization can be examined in two ways. The first is in terms of scope, which has a spatial connotation, because of increased operations worldwide. The second is intensity, and the increased number of levels of interaction between nations, companies, and customers (Dunning, 1997; Janelle and Beuthe, 1997). The rapid process of globalization is being fueled by pressure placed on enterprises by customers. Customers want high quality goods at a low cost. Corporations set up manufacturing plants that specialize in a limited number of components or products. Many plants are located in distant areas of the globe where labour is cheap in order to drive down the cost of production. Exchanges between plants add parts to the global assembly line.

Because economic activity is rapidly changing there is an increasing need for spatial integration. The advent of flexible production, and alliance capitalism (Dunning, 1997) is leading to a greater emphasis on the formation and creation of inter-firm cooperative and collaborative relationships. A single company's resources and capabilities are no longer sufficient to sustain a competitive edge, especially within internationally competitive markets (Dunning, 1997; Gomes-Casseres, 1996). From this comes the need for alliances, mergers and acquisitions to adapt to globalization. In many sectors companies are aligning themselves with partners, and the transportation industry is no exception.

The “new world economic order” (Slack et al, 1996) has imposed challenges that a single transportation company cannot meet. The globalization of production and industry necessitates the need for an efficient and cost effective global transport network. As the shipping industry faces an increase in competition, companies are responding in different ways. The most recent response to the increase in competition has been the formation of strategic alliances (Gomes-Casseres, 1996).

2.3 Definitions of Strategic Alliances

This new shift and response to a changing industry includes engaging competitors in mergers, acquisitions and strategic alliances. The literature that deals with cooperation amongst companies and competitors employs a variety of terms to define and describe these relationships. Some of these terms include partnership, cooperative agreement, coalition, collaborative agreement, and strategic alliances (Brooks, 2000; Ryoo, 2000; Culpan, 1993). Each industry seems to have its own particular lexicon, including arms length collaborative contracts, equity joint ventures, and mergers. As has already been cited by Mockler (1999), strategic alliances are cooperative agreements between firms that go beyond normal company to company dealings, yet fall short of being a merger or full partnership. These alliances still allow for the individual companies to maintain their separate identities.

The term strategic alliance has only recently become in vogue. Different authors use the term in different ways. Weimer et al (1988) use the term interchangeably with strategic partnership, and thus regard a strategic alliance as a relationship with

measurable goals, shared commitment, and a desire to achieve an end result. The goal is rapid global market penetration. Harrigan (1988) uses the term to include joint ventures, consortia, among other forms of cooperation. Jorde and Teece's (1989) definition is similar to that of Weimer et al (1988) in that there are a set of common goals, and that strategic alliances entail a pooling of resources and capabilities.

This imprecision in terminology causes confusion. Strategic alliances must be distinguished from other forms of corporate agreements and strategies inherent in most services. The shipping industry is a prime example of an industry that has seen several types of service agreements and cooperative agreements that fall under the umbrella of strategic alliances (Brooks, 2000). Mergers and acquisitions are seen as an alliance and in most cases are implemented through strategic planning. According to the definition of a strategic alliance by Mockler (1999), acquisitions and mergers should not be considered as strategic alliances. Alliances are cooperative agreements that go beyond normal dealings yet fall short of mergers.

2.3.1 Conferences, Consortia, Slot-Charters

There are many types of alliances in the shipping industry, including conferences, stabilization agreements, consortia, joint ventures, slot charters and coordinated services. These forms of alliances can be divided by area of focus. There are alliances that deal with cooperation on rates, while others deal with operational cooperation. Thanopoulou et al (1999) pointed out that in the 1970's and 1980's the shipping industry used consortia

and conferences as the prevailing form of cooperation to aid them in both service frequency, fleet deployment, and as an attempt to stabilize or increase rates.

2.3.1.1 Collaborative measures: Conferences

The history of liner shipping is replete with various examples of co-operation between liner companies. It can be traced back to the days of the British Empire (Brooks, 2000). With the advent of the steam engine came the realization that trade benefits could be realized since schedules of sailings were more reliable (Brooks, 2000). Transit times could be predicted and thus scheduled liner services began to expand. This expansion however led to an oversupply of ships and not enough cargo. This started cutthroat marginal pricing (Brooks, 2000). To stabilize the problem, 'the conference concept' was developed.

Conferences are associations of competing shipping companies that agree to limit the competition between themselves and therefore agree to charge freight rates according to an agreed upon rate, and sail on a set schedule (Brooks, 2000; Ryoo and Thanopoulou, 1999; Ryoo, 2000, Slack et al, 1996). This form of cooperation grew in the latter part of the nineteenth century. This tactic of regulating sailings and fixing rates was a way for companies to band together to try and stabilize the market. These coordinated sailings, pre-determined rates, and cargo volume did restore profitability to the industry. The conference system has become less effective in its efforts to control prices and operating conditions since the passage of the *U.S. Shipping act* of 1984 (Brooks et al, 1993). The

more recent 1999 *U.S. Shipping Reform Act* has furthered the weakening of the conference system.

The U.S. Shipping Reform Act of 1984 required carriers and conferences to maintain tariffs and file them publicly. The net result of this is that carriers increasingly favoured contracts that promised service and price, and hence revenue predictability. Shippers no longer have the publicly filed “benchmarks” which included rates and service terms, and therefore must exercise greater caution when negotiating rates. Conferences, which used to have group contracts that prohibited individual contracting, now cannot prohibit individual contracting, and rates are now confidential. Conferences thus have lost much of the power that they originally held. The ability for individual contracting has added to the competitive pressures on carriers in their pursuit of establishing a global transport network. Carriers may choose to participate in traditional conference contracts, but it seems that more will pursue individual, customized contracts that focus on strengthening relationships with many of their clients.

To counteract the loss of power of the conferences, on many routes stabilizing agreements have been established. These are voluntary agreements that are implemented in order to reduce overcapacity on routes to eventually increase rate levels (Ryoo, 2000).

2.3.1.2 Operational arrangements: Slot-Charters and Consortia

A second form of collaboration deals with operational issues. Shipping companies strive to provide a regular weekly service for their clients. Often this is too expensive for a single company to undertake. Slot charters help a company to overcome

this obstacle. A company will purchase a set number of spaces per sailing on competitors' ships for a set price. This allows the firm to provide the service without actually committing any resources or ships. It thus allows the company to market these destinations as if they were sailing to them. The line that sells the slots has guaranteed income for the slots if they are filled or not so it helps them to finance the ship (Brooks et al, 1984).

Consortia have existed for 20 years in the shipping industry. Consortia are a cooperative venture in which shipping companies operate under a single name by pooling either all or some of their services in a particular trade (Ryoo, 2000). Again, costs and the need for regular services forced companies to come together. In certain cases, liner companies pool their resources including ships, and form a jointly owned entity. Scan-Dutch and Trio are just one example of consortia, which are not unlike many of the alliances we see today. These vessel sharing consortia would be able to offer more frequent sailings than a stand-alone company. Traditional forms of consortia, like the conference system, are declining because shippers feel that they are losing their individual firms identity to that of the identity of the consortia (Brooks et al, 1984).

2.4 Strategic Alliances

The literature suggests that strategic alliances have three common generic characteristics regardless of which industry is involved. Firstly, two or more companies unite to pursue a set of important and agreed upon goals while remaining independent. Secondly, partners in the alliance share both benefits and costs of the alliance, while

controlling the tasks throughout the duration of the alliance. The final factor is that all parties continue to contribute in one or more strategic areas. The full impact of an alliance does not stop at the boundaries created by the cooperation of the partners. There are far reaching effects (Janelle and Beuthe, 1997; Slack et al, 1996; Ryoo, 2000; Midoro and Pitto, 2000; Brooks, 2000).

These alliances have become an important and almost regular feature in contemporary business practices and organizations. A recent figure in the *Economist* estimates that since 1995 over 32,000 alliances have been created. All of these alliances seek to achieve their set goals whether it be profit seeking, or client satisfaction.

2.4.1 Objectives of Strategic alliances

There is a high degree of agreement in the literature concerning the objectives of strategic alliances. Strategic alliances help companies that are in globally competitive industries strengthen their own competitive position, while preserving their independence (Thompson et al, 1995). They enter these alliances for several reasons. First, to gain economies of scale. Second, to fill any gaps in their company, whether it is technical, resource based, financial, or other areas of expertise. Thirdly, to acquire new market access (Silver, 1993; Mockler, 1999; Thompson et al, 1995; Underhill, 1996; Rimmer, 1998; Ryoo, 2000; Midoro and Pitto, 2000; Brooks, 2000; Ryoo and Thanopoulou, 1999). These motivations can be both aggressive and defensive (Dunning, 1997). Each of these elements are discussed below.

Many firms join alliances for the sake of eliminating uncertainty within the market and for fear of being left out. Because of the low start up cost of alliances and the added benefits of shared risk through the pooling of resources, the decision to enter an alliance is relatively easy. Each of the companies within the alliance can only hope that the complementary aspects of the companies result in added value for the companies and customers (Dunning, 1997). Alliances are a cost effective and quick means to gain access to resources and new markets. Companies will be able to realize cost savings not achievable with their own resources, and market share (Thompson et al, 1995).

Companies in the shipping alliances retain their commercial identity, sales, marketing and personnel, but assets like ships, terminals, births, and feeder networks are pooled (Rimmer, 1998). Companies also share the risks involved in their areas, which often are too great for any one single company. In the shipping industry, new shipbuilding is a good example. The size (and costs) of ships are continuously increasing in order to realize economies of scale and reduce the cost per Twenty Foot Equivalent Unit revenue per mile. These 'new buildings' represent large financial risks especially if they are ordered in advance due to a prediction based upon the present market situation. Carriers order these ships based on 15 to 20 year cycles, weighing long-term forecasted trends in the global shipping industry. If the market does not grow as predicted it creates over capacity. In 1996-97 there was a dramatic increase in container capacity in the Pacific trade routes just as cargo demand was leveling off. This subsequently led to the fall of rates by \$600 per container (American President Line, 1998).

Another benefit that companies gain through cooperation is the shared knowledge and resources. In the shipping industry, this translates into access to markets and ports

previously not served. Each company uses the other member or members to advance their own interests, while retaining membership in the alliance. This leads to a problem that some authors hint at, namely opportunism, which makes alliances difficult to manage, because when maximizing their own interests companies might jeopardize the alliance. Companies that are in an alliance are still competitors. They still challenge and compete, and pursue their own interests, sometimes at the expense of others. Rational choice theory explains this behaviour by suggesting that individuals act rationally, and in so doing, seek to optimize their own interests (Lane, 1995).

These inter-firm collaborations have become increasingly common in the pursuit of a competitive advantage. It is partly due to this increase in competition that alliances have developed and increased in popularity (O'Farrell and Wood, 1999). Despite the increase in the number of alliance formations, the dynamics of their creation and degree of success is a troublesome area in the literature. Many authors argue that alliances are highly successful while others maintain that a large percentage of alliances fail (Brooks, 2000; Culpan, 1993; O'Farrell and Wood, 1999). This applies particularly to certain business sectors of both developed and developing nations, but the transport industry, with its long history of collaboration, has witnessed fairly stable alliances.

Looking back to the original shipping industry global alliances of 1996 the market situation has changed. After the birth of the shipping alliances in 1996 there was an early period of re-alignment made necessary by a spate of mergers and acquisitions. The composition of the original alliances had to change because of these mergers and a new and seemingly more stable second generation of modern alliances came into being (Midoro & Pitto, 2000). From 1997 to 2001 there have been few changes, but Midoro

and Pitto (2000) feel that a third generation of alliances will be built if there continues to be problems of instability in the shipping industry. This third generation, it is suggested, will be made up of mergers and acquisitions rather than strict alliances.

2.5 A Theory of Strategic Alliances

It must be noted that strategic alliances, as we know them today, are a fairly new feature of the shipping industry. Much of what is known about strategic alliances comes from the theoretical literature on manufacturing services and high technology industries. Research is just starting to appear in the literature pertaining to alliances in the transport industry.

Several theories to explain strategic alliances have been proposed, including strategic positioning, industrial organization, transaction cost, and internalization. Strategic positioning relates to the organizational influences that direct a firm's strategic planning and future direction (O'Farrell and Wood, 1999). Companies may have many motives to integrate and create alliances to enhance their strategic positions in the market place. An important aspect about strategy and alliances is the need to incorporate ideologies and behaviours, such as long-term goals, desired short-term goals, financial risks, uncertainty in the market, and the willingness to cooperate (O'Farrell and Wood, 1999). Companies must find solutions either internally or externally in order for them to remain competitive. Often a single company does not have the resources internally, and therefore they seek to expand by the use of strategic alliances.

The industrial organization paradigm is based on the law of supply and demand. It is a system where supply and demand impacts upon the market structure, which affects conduct. This in turn affects the market which changes the structure and the conditions governing supply and demand (Brooks, 2000). The foundation of industrial organization theory was mapped out by Mason (1939, 1949) and later furthered by Bain (1959), Heflebower (1954), and Sosnick (1958).

Another important theory that stems from industrial organization, is the game theoretic approach. According to this theory, with the absence of competitive equilibrium in the market, stability will not exist. Stability is likely to happen only when supplier's "minimum average costs demonstrate limited variability, when demand is less elastic, and when excess capacity exists – all conditions acknowledged to be present in the liner shipping market." (Brooks, 2000) The game theoretic approach argues that with free market conditions, the liner industry will not achieve the desired and necessary level of equilibrium and therefore must impose stability. Alliances are agreements that attempt to create stability. They are meant to be an efficiency enhancing mechanism. Cooperation between liner companies allows them to impose an artificial equilibrium. Without these agreements "instability and competitive chaos would exist" (Brooks, 2000)

Theory that comes from the strategic management literature draws upon many fields. Galbraith and Kazanjian (1978) define strategy in the following manner: "Strategy must be matched with a compatible, congruent configuration of organizational structure, process, systems, and people for effective financial performance to result." Not all structural forms are effective in implementing corporate strategy that enhances performance. Strategic management theory shows that there is a need for 'strategic fit'

between the parties so as to obtain value through the alliance. Strategic fit exists when companies' combined resources improve their market power. Based on the concept of 'fit' it is felt that superior performance will be obtained based on their "ability to garner market power or cost advantages" (Brooks, 2000).

Economic theory views integration in the forms of strategic alliances and other collaborative efforts as a means for reducing transaction costs. According to Brooks (2000), the "main cost of transacting in the marketplace is that of learning and haggling over the terms of trade." Alliances, along with mergers, internalize these costs of new transactions, therefore reducing the need for unstable contractual relationships with other outside companies. Both internalization theory and transaction cost theory have been used to justify strategic alliances. However, internalization theory suggests that companies could reduce transaction costs further through mergers and acquisitions, thus increasing their ability to extract greater profit margins (Brooks, 2000). This is because joint ownership allows for a further reduction in transaction costs.

Studies of the evolutionary processes of strategic alliances are scarce, and the literature so far has failed to capture the dynamics and processes of alliance creation and its development. Yet there is evidence that alliances have the ability to evolve and adjust to market forces thus making them more effective than other forms of collaboration (Doz, 1996). Compatibility and motivation forge strategic alliances. After an alliance is formed it allows partners to internalize their capabilities, and augment their competitive position within the industry (Hamel, 1991; Glaister and Buckley, 1996). Traditional rivalries have been pushed aside so as to work together toward trade stability and cost recovery (Lim, 1998).

It has been postulated that alliances have been brought about by both globalization and competition (Mockler, 1999). However, they must also be seen as elements of cooperation. They result in allies directing their competitive energy toward mutual goals, such as stabilizing markets. The response to the changing business environment is one of cooperation. This allows the companies to meet customer demands of door to door service. Strategic alliances are seen as more effective in combating competitive tendencies in the market than it is in gaining an advantage (Thompson et al, 1995).

2.6 Effects of Alliances on Ports

The issue of the impacts of alliances on shipping networks and port systems has not received much attention in the literature (Rimmer, 1998). The available research is divided. Some authors (Janelle and Beuthe, 1997; Gilman, 1999; O'Kelly and Miller, 1994) claim that the ultimate outcome will be the emergence of a hub network. Meanwhile, other authors such as Robinson (1998) believe that the alliances will produce a hierarchical network of higher cost and efficient nodes and smaller more simple lower cost networks.

According to Rimmer (1998) there has yet to emerge any dominant hub ports at either end of the trade routes. Other authors (Notteboom, 1997; Fleming and Hayuth, 1994) disagree by claiming that there are clearly a handful of ports rising above others that are 'load centres.' These load centers are served by feeder vessels for regional distribution. These same authors suggest that there will be an increasing reliance upon

the mega-hubs and the smaller feeder networks will become less important to the mainline routes (Notteboom, 1997; Fleming and Hayuth, 1994).

Vessels capable of carrying between 10,000 and 15,000 TEU's, are being forecasted (Gilman, 1999; Lim, 1994; Lim, 1998). Already there has been a significant growth in vessel size to 7000 TEU's that are being built in order to achieve economies of scale. Lim (1998) points out that no carriers want to be left behind, and therefore there are strong pressures for them all to purchase larger ships. Major operators have no real alternative but to conform if they wish to remain competitive. Lim (1998) has shown however that the immediate effects of these large ships are an over-tonnaging of the major trade routes.

These large ships are efficient only as long as they are filled to capacity. The future of these large ships therefore depends upon marketing and also on the depth of port channels (Lim, 1998). As the ships become larger, the number of ports capable of handling them is reduced. Thus at the heart of the vessel size issue is the ability of ports to generate enough traffic to justify a call, and the physical ability of the ports to receive the large ships. Port survival will ultimately depend on the ability to meet the needs of the carriers and their customers.

2.7 The Airline Industry

The airline industry is a good example of another transport sector in which strategic alliances have been developed. The trend of airline consolidation via mergers that began in the United States in the 1980's has continued on through the 1990's and

spread to other countries. This action was spurred by significant structural and regulatory changes, namely deregulation and the trend to privatize national airlines (Oum and Park, 1997; Graham, 1998). Many governments that had been heavily involved in the airline industry were unable and not willing to continue subsidizing unprofitable operations. Airlines realized that without the support and backing of their governments that they would have to look elsewhere for help. Some airlines began to join competitors to form operational alliances (Crossan and Pierce, 1994; Park, 1997). An example of this was when the national carriers Austrian Airlines, Finnair, Swissair, and SAS joined in 1990 (Crossan and Pierce, 1994).

Governments still however impose regulations on the airline industry that restrict foreign ownership to a minority position (Airways, 2000). The response by the airlines to government regulations has been an overwhelming rush toward global alliances. Although this phenomenon of alliances has brought many advantages to both airlines and passengers, some government regulators have expressed concern. The European Commission's competition overseer said that "They don't want the market to be carved up for alliances" (Airways, 2000). Some regulators feel that alliances are killing competition in the industry that they want to keep open. At the opposite end of the spectrum Oum and Park (1997) claim that "strategic alliances among major carriers are likely to be strengthened in the future." Alliances do not seem to be a passing phenomenon because the benefits are not just for the airlines in the form of greater profits but passengers also receive additional value.

Rather than engage in mergers the industry now looks to sharing assets (Debbage, 1994). These global alliances in the airline industry improve members' access to other

continents, routes, slots at hub airports, and the extension of their destinations through feeder networks in foreign countries (Debbage, 1994). Airlines have realized that it is almost impossible for a single company to offer a truly global service network alone (Oum and Park, 1997). A foreign airline is far more constrained than a resident carrier in setting up a network in a foreign market, even with the absence of legal barriers.

Strategic alliances in the airline industry have been used to meet the demanding and ever-changing worldwide market needs. According to Graham (1998), “they are often regarded as being indicative of globalization.” The airline alliances allow the partners to function as a worldwide carrier without equity investments (Mockler, 1999). Globalization of the airline industry has brought about the notion of world cities that “serve as gatekeepers of the world service economy” (Graham, 1998). Cities like London, New York, Chicago, Tokyo, and Hong Kong have become important commercial and financial nodes, linked by the emerging and developing transportation network. The same can be said of these hubs and airports in the shipping industry. There are some analogies between airport hubs and developments in the shipping industry. A handful of ports have become interconnection points for the global container shipping industry (Graham, 1998). The differences between the airline and maritime industry however, is that the airline industry is more restrictive in its regulatory environment than the shipping industry (Brooks, 2000).

2.8 Conclusion

The literature has shown that one of the only constants in the shipping industry is change. The formation of strategic alliances has not only brought about increased ship sizes but also increased service and route complexity (Robinson, 1998). The shipping industry is no different than many of the other industries that are being influenced by globalization. The idea of a single customer and producer relationship has ceased and what has now evolved is a complex network of activities in various markets and many relationships.

Decision makers in most industries, according to Drucker in *Crafting and Implementing Strategy*, “are not concerned with what their organization will do for tomorrow, but what they have to do to be ready for an uncertain tomorrow.” Companies are banding together to reduce costs, gain exposure to new markets, add more resources, and generate income. In effect they are cooperating with their competitors (Silver, 1993; Dunning, 1997). Strategic alliances are associations that are formed to further their common interests. The question is not whether they should be used, but how to develop and effectively manage them.

Chapter 3

The New World Alliance

3.1 Introduction

Leaving behind the old styles of cooperation in the form of conferences, and moving towards various other forms of collaboration, the shipping industry has entered into an era of global alliances. Strategic alliances are not a universal response, but of the top twenty carriers, fourteen are members of one of the five major groupings.

This chapter focuses on one of these alliances, the New World Alliance (NWA), which comprises American President Line, Neptune Orient Line, Hyundai Merchant Marine, and Mitsui O.S.K. Line. It is one of the major groupings, and is a player in almost all of the major world markets. It is also a multi-national alliance, comprising a Japanese company, a Korean conglomerate, and a former American owned company that was taken over by an Asian competitor. Thus the NWA includes a representative cross section of the industry, in which cooperation and acquisition are playing an important role.

3.2 Alliance Formation

In 1996 the shipping industry underwent significant change with the formation of global partnerships. Previous partnerships were limited to single trade lanes. The new alliances are global (Midoro and Pitto, 2000). The specific factors forcing these alliances were globalization, and poor profitability (Thanopoulo, 1996). Carriers had to respond to customers' needs and provide viable solutions in terms of services, global coverage, and frequency. In order to attain this, investment was required. Poor profits in the previous years, due to falling freight rates, made it difficult to obtain necessary capital and this prompted companies to seek alternate solutions. 1996 saw the birth of global alliances, the much heralded solution for the container industry's problems.

Several of the first generation alliances in 1996 did not survive the first year before their original membership changed. The restructuring was made necessary by a number of mergers that took place, notably the acquisition of APL by NOL, and the P&O Nedlloyd merger. The newly linked companies found themselves members of different alliance groupings, and this brought about a second generation of alliances (Table 1). Since this restructuring took place there has been stability in alliance membership.

The present New World Alliance came into being as a result of the takeover of APL by NOL, who previously were members of different alliances. After the purchase by NOL, the APL name was retained and the new enlarged company chose to become a member of the Global alliance, which shortly after renamed itself the New World Alliance.

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

3.3 Background of the members of the NWA

American President Line began its long history servicing the California gold rush under the name of the Pacific Mail Steamship Company in 1848. Transpacific service began almost twenty years later in 1867. APL has had many owners in its history including a railroad company, but three people in particular stand out in its history. Captain Robert Dollar, Ralph K. Davies, and W. Bruce Seaton were all instrumental in the growth and development of APL.

Robert Dollar was a lumber tycoon who was tired of the inadequate marine transport system. He purchased a ship so as to provide transportation for his lumber products. By 1925 his Dollar line acquired the Pacific Mail Steamship operation. The Dollar line dominated the marine transport industry until the Great Depression. Although

business appeared to be running smoothly, in fact it was not. Due to increased government regulation of the industry and rising labour costs the Dollar line was strained. By 1938 the company was worth \$11 million and had \$17 million in liabilities, with interest debts accumulating. The newly formed U.S. Maritime Commission, headed by Joseph P. Kennedy, judged the line unsound. The government assumed control of the Dollar line and renamed it APL. By the end of WWII its assets had grown to \$40 million. APL was then sold in 1952 to Ralph K. Davis who had gained his success in the California oil business in the 1920's. Davis and his investors bought the line for \$18 million, returning the company to private hands. Like Robert Dollar, Davis continued servicing Asia and began the push towards containerisation. Under the leadership of Davis 58% of all cargo was transported in containers. After the death of Davis, W. Bruce Seaton took charge and continued the progress of APL in the direction of containerisation and intermodal transportation (Brooks, 1999; APL, 2001).

With containerisation APL sought to be an industry leader. Its mission had three stated goals: to give a 15% return on investment to shareholders, to satisfy customers, and to be a company with integrity (APL, 1996). The early 1990's brought disappointment to the shareholders, as the company was operating well below the goal of providing a 15% return, although it had an excellent reputation for reliability and efficiency. Financial difficulties resulted in 950 positions being cut in 1994 and 1995. Even with the purchase of its own stock to try and support the share price, financial results continued to disappoint. By 1996 the stage was set for a search for strategic alternatives. There were limits to the amount of cost-cutting that could be done since service and operations would be affected. However, APL's 1996 annual report painted a rosy picture. It had joined the

Global Alliance and could state that the company was able to book cargo on 66 ships compared with the 23 it had prior to the alliance, and were able to offer 8 rather than 3 weekly transpacific sailings. The rate of return for shareholders was close to 15%, but at the expense of the long-term debt, which was rising. Brooks (1999) states that the company had become a target for a take-over.

Neptune Orient Line (NOL) is a component of a diversified portfolio of companies that are both transport and non-transport related in the NOL group, which is publicly owned in Singapore. On the transport side NOL operates marine terminals, warehousing, and ship management. The liner shipping business part of NOL accounts for the largest share of its revenues (Brooks, 1999). It was smaller in size than APL both financially and in number of TEU's carried. Whereas APL was focused on the trans-Pacific trade route, NOL was more global, even though it too had an important presence in the Pacific.

April 13, 1997, NOL offered \$825 million US dollars for the outstanding shares of APL. Three justifications for the acquisition were put forward. The first was that customers demanded a global carrier, a company able to offer a global service. Second was that through vessel sharing agreements it would be able to obtain greater market reach. Finally there were cost efficiencies that could be realized through the merger option (Brooks, 1999). These were estimated by APL and NOL officials to produce savings of approximately US \$130 million per year.

At the time of the sale APL was not a global carrier, but it believed that it had to become one if its financial position was to improve. The offer of NOL was seen as a way of achieving this goal. The strengths of each company were complementary to each

other. APL had a strong presence in the inter-modal service in North America and on the transpacific routes, with some intra-Asia trade exposure as well. APL had a much smaller position in the Asia-Europe, and the Latin America markets. NOL had strength in the Asia-Europe routes, and Asia-East coast North America through the Suez Canal. But even combined, they could not be seen as global players. They were particularly weak on the transatlantic trade route.

The other two members of the NWA are Hyundai Merchant Marine and Mitsui O.S.K. Line. HMM was founded in 1976 and has since grown into one of the worlds largest multi-modal marine transportation companies. It operates over 122 ships including full container, LNG carriers, oil tankers, pure car carriers, bulk carriers, and cruise ships. HMM through diversification and proper management rationalization has been able to survive the vicissitudes of the container transport business, but like other carriers, it was unable to overcome the low profitability and competition in the industry. It too saw the benefits from an alliance membership. HMM has set ambitious goals of being one of the top ranking multi-modal transportation companies in the world. It plans to achieve this by continuing to increase the size of its fleet and maintain a diverse array of service offerings. Its plan includes the carriage of special cargo such as petroleum products that generate high value, and the diversification of routes to establish a global network.

Mitsui O.S.K. Lines Ltd., is one of Japan's largest ocean shipping companies. MOL was founded in 1964 by a merger that joined Mitsui Steamship Company with OSK Line, and as such can claim a lineage stretching back to the origins of Japanese shipping companies. Today, the company operates one of the world's most extensive and

transportation and distribution systems (MOL, 2000). MOL like HMM operates a diverse fleet of containerships, carriers, and tankers. These ships create a network of routes that span the globe, calling at ports in more than one hundred countries and making nearly 2,500 voyages a year (MOL, 1999). MOL has also diversified into related fields including warehousing, distribution, freight forwarding, ship brokering, ship agency, insurance, and port-harbor transportation in recent years, while strengthening the firm base in maritime shipping. Overseas transportation accounted for 78% of fiscal 1999 revenues; warehousing and tracking, 9%; ferry operations, 4%; port-harbor transportation, 4%; and other business, 5% (MOL, 1999).

The New World Alliance came about as a result of global pressures on companies that were difficult to confront alone. The backgrounds of the companies that joined the NWA were very different, and their interests in coming together have presumably been diverse. Subsequent stability suggests it has been a success.

Chapter 4

Route Structure

4.1 Introduction

One of the major elements of the geography of container shipping is the pattern of routes. This chapter focuses on the changing route structures that have come about as a result of alliance membership. The literature suggests that as individual companies are being shaped by globalization, they are using alliances to extend their service frequencies and reach (Brooks, 2000). This section examines the changes that the individual companies in the NWA have made in routing before and since the formation of the alliance. It should be made clear at this point that the services referred to are those that are not part of the alliance joint offerings but are specific to the individual companies. Only after describing the separate routes are the joint alliance services detailed

4.2 APL Route Structure

Of all the members of the NWA, APL has undergone the biggest changes over the past ten years. In 1989 APL offered a relatively small number of services. These were focused on the trans-pacific route, with over 86% of its total capacity allocated to the WCNA, N. Asia, and E. Asia markets (See Figure 1).

APL

1989

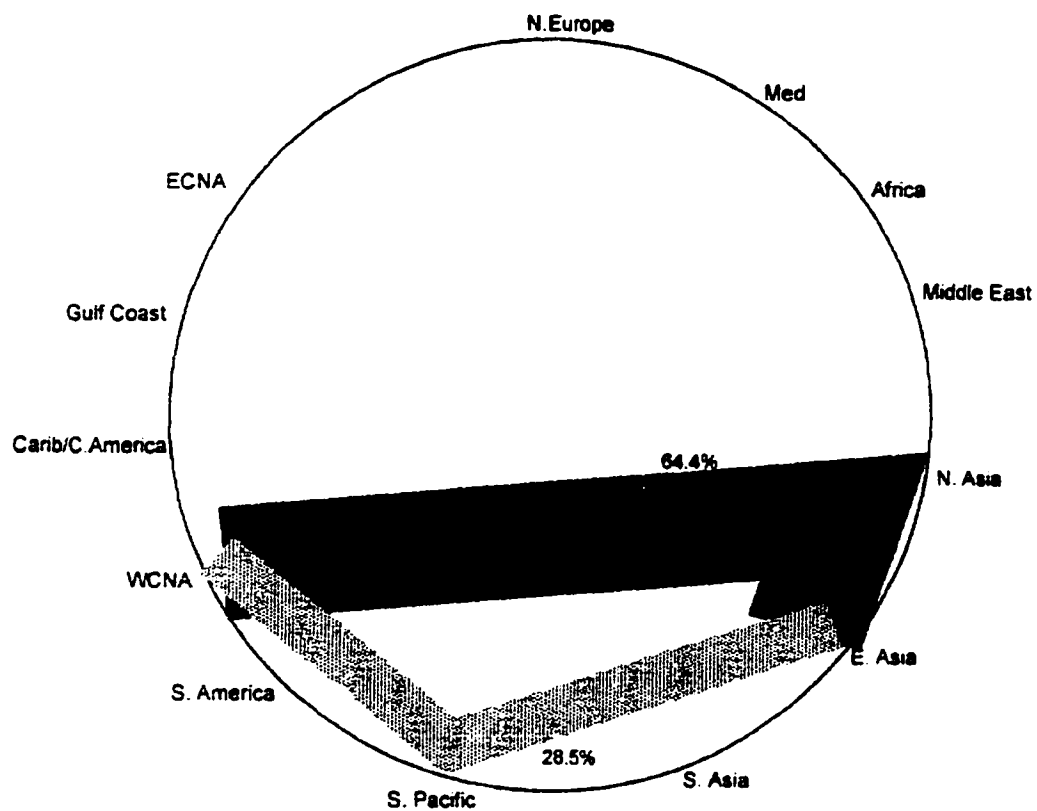


Figure 1. APL 1989 and 1994 route structure

APL

1994

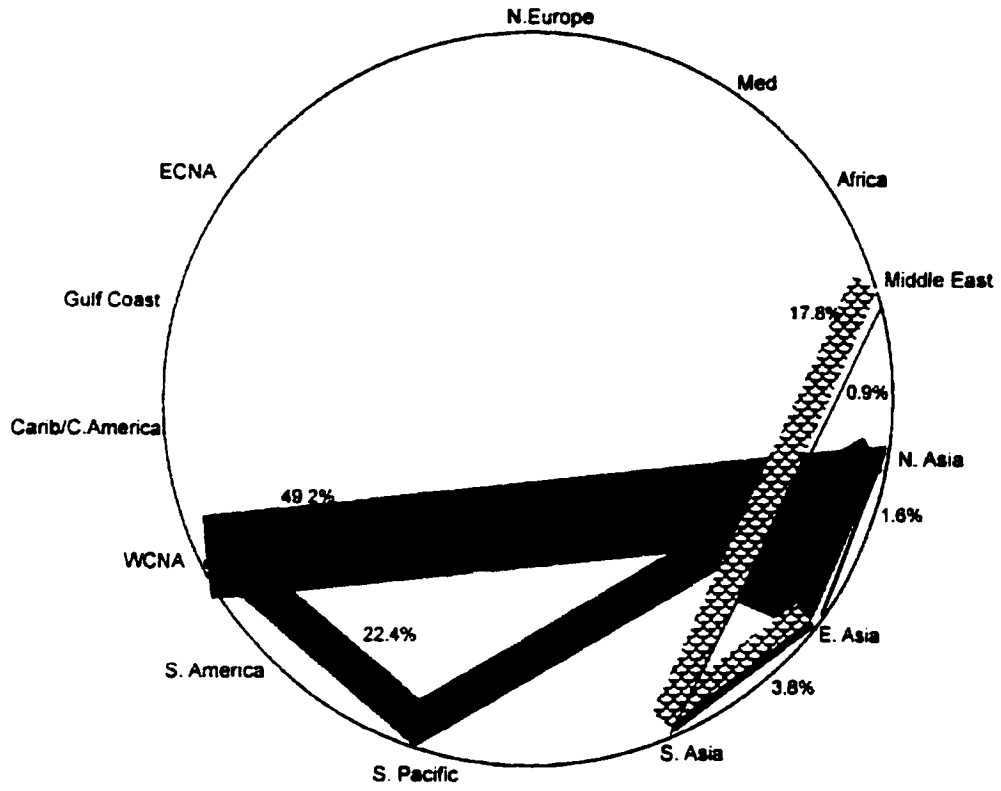


Figure 1. Continued

NOL
1994

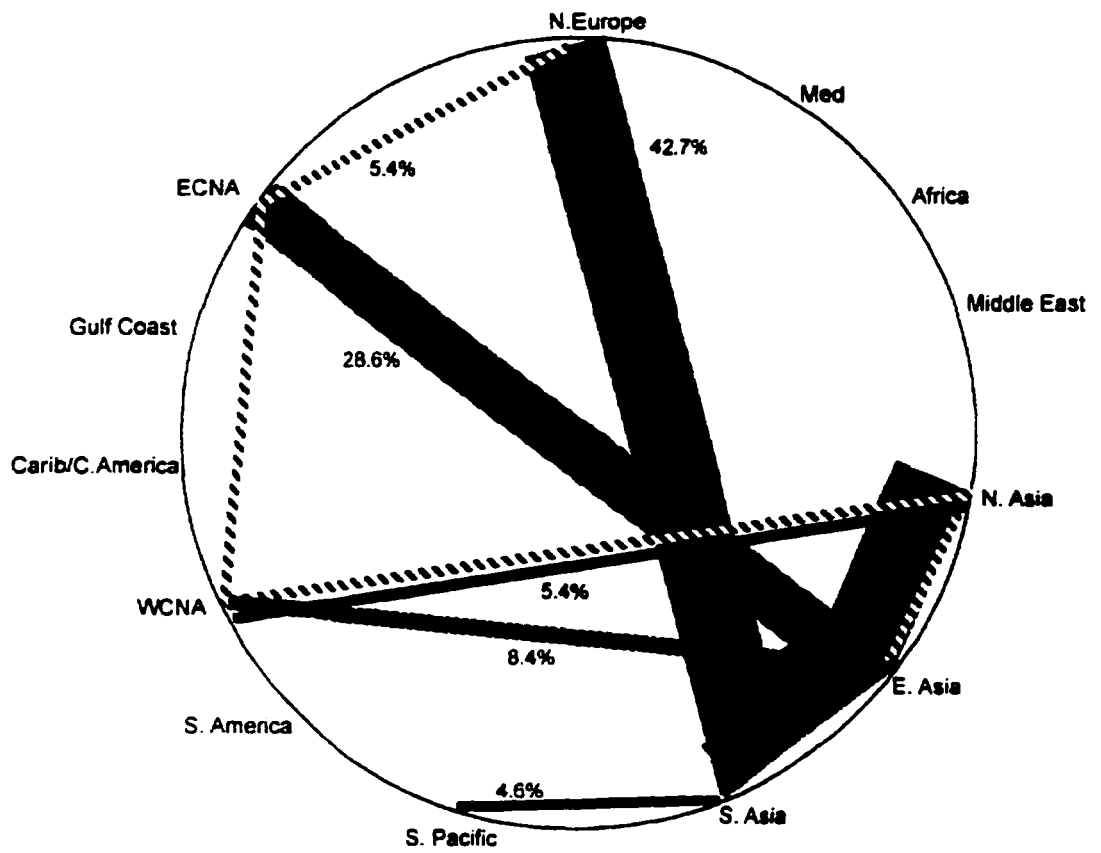


Figure 2. NOL 1994 Route Structure

Five years later the pattern of services of 1994 was only slightly modified. There was an expansion of service from South and East Asia to the Middle East.

Table 2. APL Services

APL	1989	1994	1999
# Services	20	20	33
# Independent	7	7	4
# Joint	13	13	29

By 1999 however, significant changes were evident. Notable was the dramatic increase in the number of routes. Some of the thirteen new routes added are a direct result of the merger between NOL and APL. By overlapping the 1994 graphs of APL and NOL (Figure 1 and 2) it is possible to see how much the new APL's 1999 network is a combination of the two services (see Figure 3). It is evident that APL absorbed NOL's former route network, since APL previously had no services between Asia and Europe or between the South Pacific and South Asia. As a result the network of 1999 has become more global. The combined network of APL-NOL for 1999 indicates some reallocation of ship capacity, but it is noteworthy that the trans-Pacific trade still dominates.

APL 1999

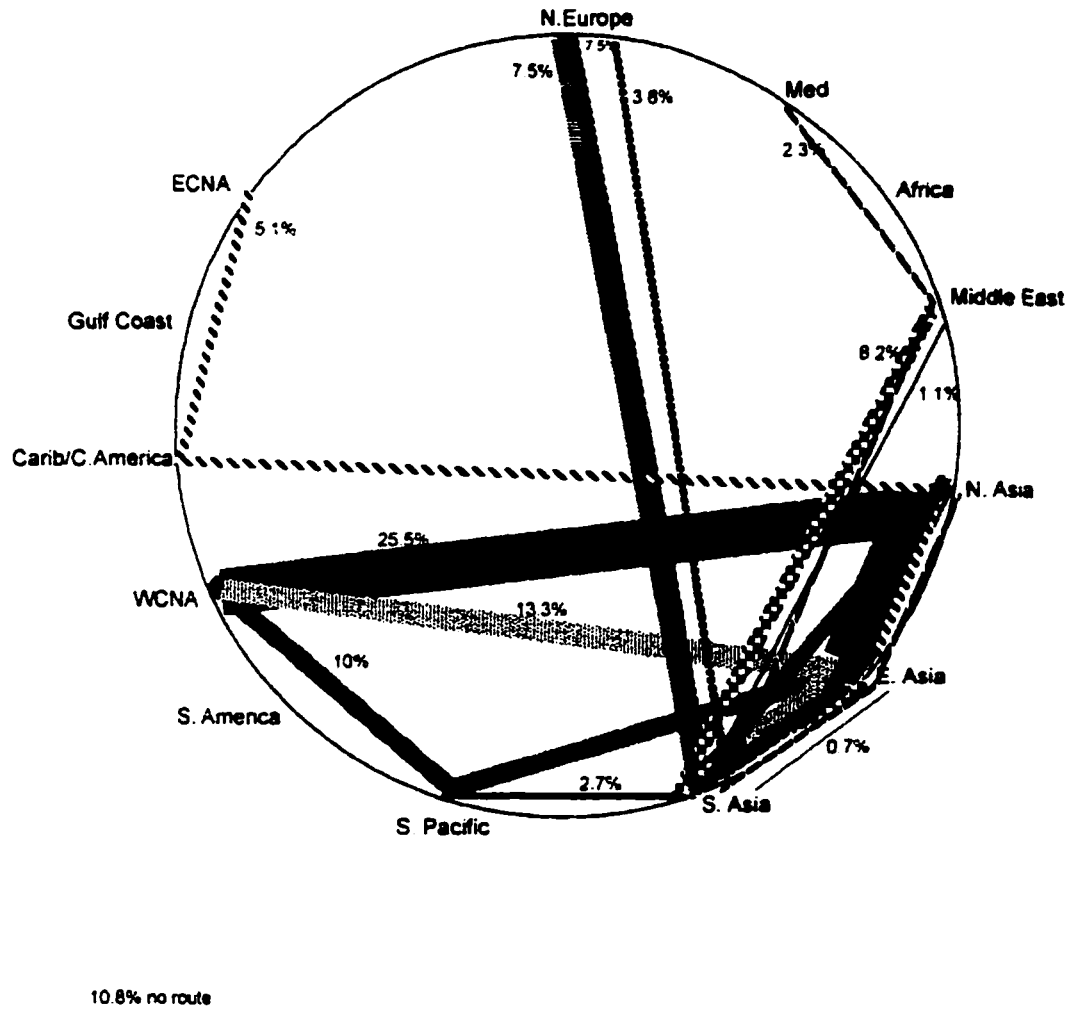


Figure 3. APL route structure

4.3 MOL Route Structure

Of the three companies in the New World Alliance, MOL has undergone the least amount of change between 1989 and 1999. In 1989 MOL maintained 32 services. It had a fairly diversified route structure, but the trans-Pacific route was the most important, with an allocation of 30% of capacity (see Figure 4).

Table 3. MOL Services

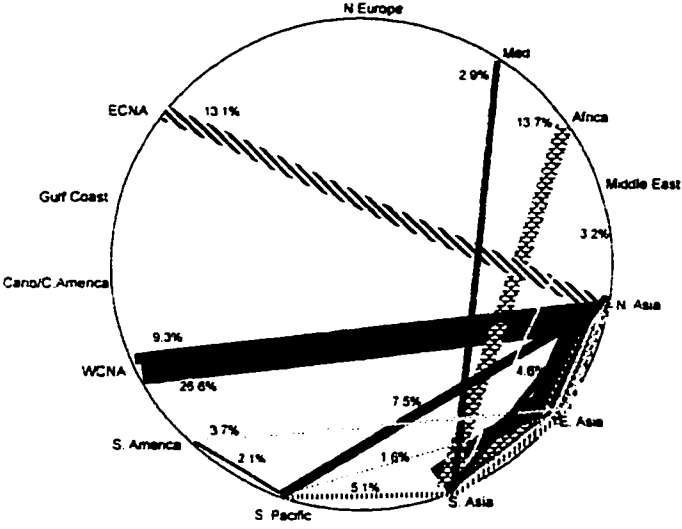
MOL	1989	1994	1999
# Services	32	43	41
# Independent	9	11	7
# Joint	23	32	34

In 1994 MOL had expanded its offerings to include 43 routes. A notable addition was the extension of service to N. Europe from the Far East, which comprised 19% of the capacity of the company.

By 1999 MOL experienced a slight decrease in the number of services but the newly developed Europe-FE route now accounted for more capacity than the well established trans-Pacific route (see Figure 5). A reason for the slight decline in service numbers is due to the fact that MOL amalgamated several former separate routes. Rather than maintain several different services linking some of the same ports with slight variations in route patterns, rationalisation has taken place resulting in services being dropped. The destinations and routing patterns that were changed were very extensive, including calls in South America, Africa, Asia, the Caribbean, and the West Coast of North America.

MOL

1989



MOL

1994

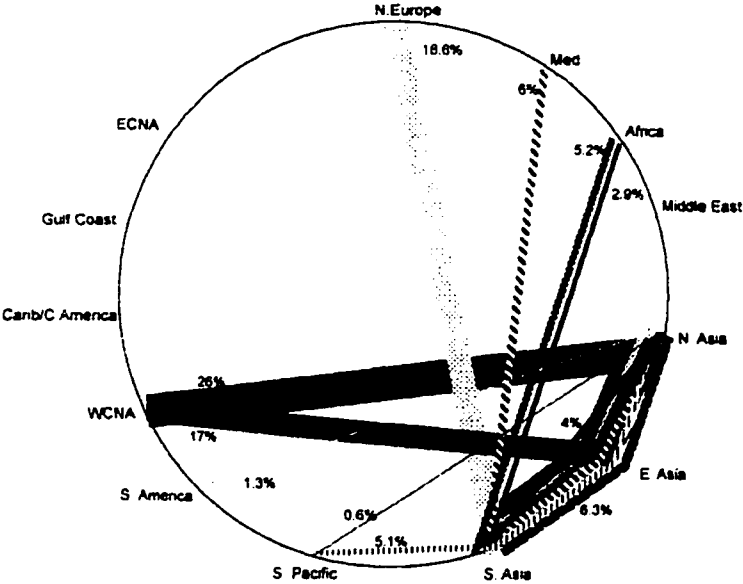


Figure 4. MOL 1989 and 1994 route structure

The question arises why MOL joined an alliance considering that it was a global player prior to the re-organization of the industry. Possible answers that are alluded to in the literature include cost savings that could be realized with cooperation, the ability to increase sailing frequency, and the fear of being left behind in this changing environment (Ryoo, 2000; Mockler, 1999; Thanopoulo, 1996).

MOL
1999

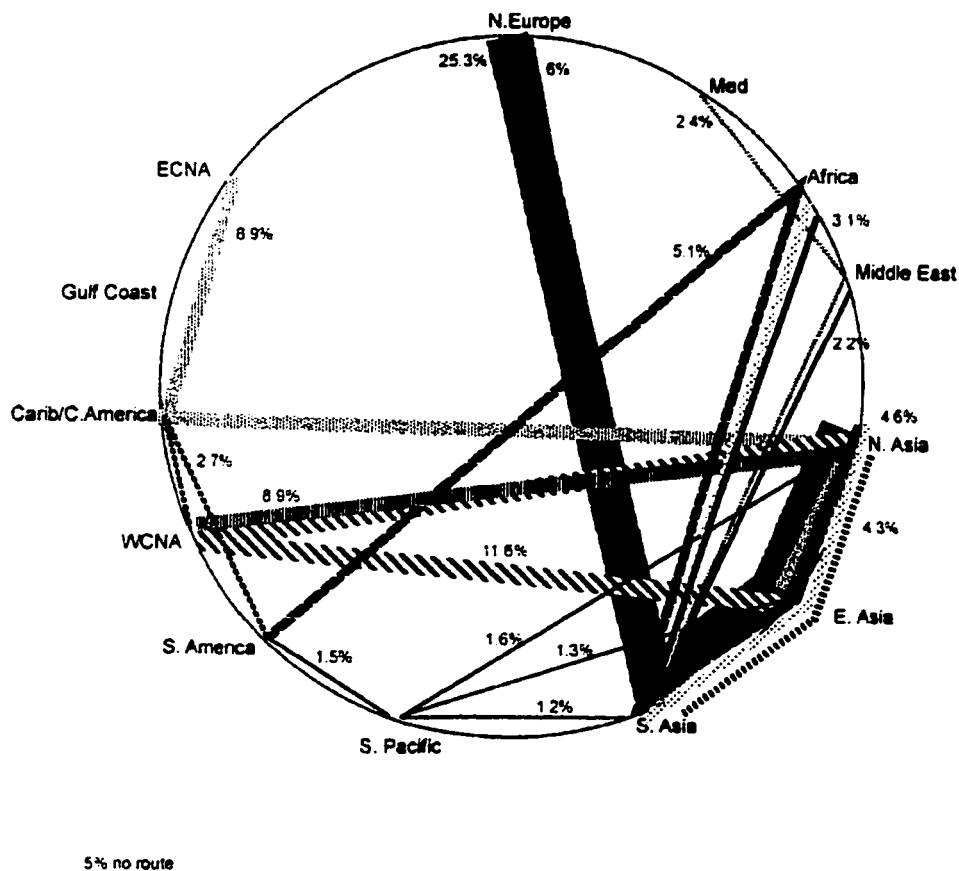


Figure 5. MOL 1999 route structure

4.4 HMM Route Structure

The third member, HMM, has undergone some significant changes. Like APL, HMM offered a relatively small number of services in 1989. Its main focus was the WCNA - North and East Asia trade lane, where 76% of its total capacity was allocated. The remaining portion was assigned to the Europe - South Asia and South Pacific routes (see Figure 6).

HMM

1989

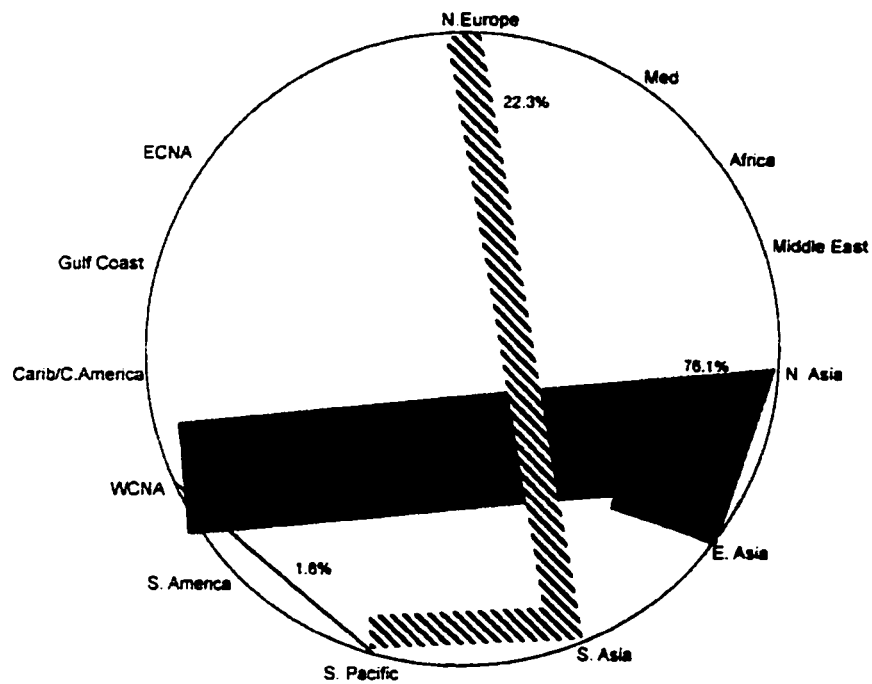


Figure 6. HMM 1989 route structure

This pattern changed somewhat by 1994 with the addition of service between Europe and the Far East. This new service changed the relative capacity allocation of different routes, in particular the FE-WCNA which saw its share fall by 20% (see Figure 7).

By 1999, important changes are evident. The number of services increased to 33. HMM's core business however remained on the WCNA -North and East Asia routes (see Figure 8). The most notable addition to its services is the connection between the ECNA, Caribbean and the Far East markets. Although it only represents 10% of HMM's capacity it signifies a new market link.

Table 4. HMM Services

HMM	1989	1994	1999
# Services	6	8	33
# Independent	2	1	3
# Joint	4	7	30

HMM

1994

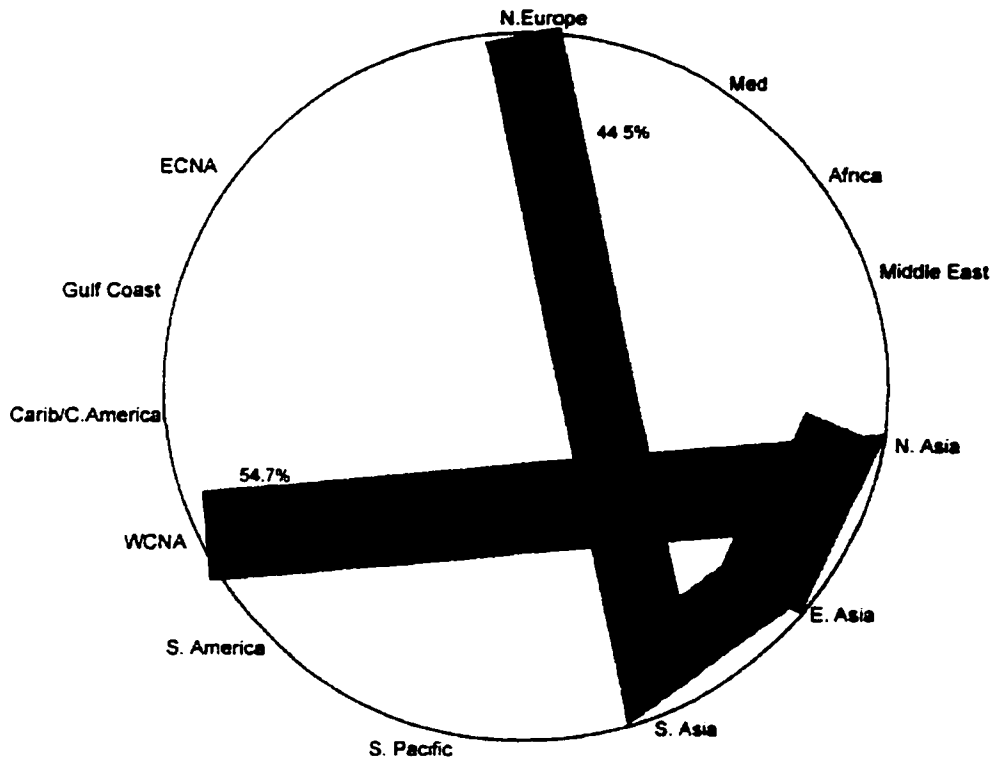


Figure 7. 1994 HMM route structure

HMM
1999

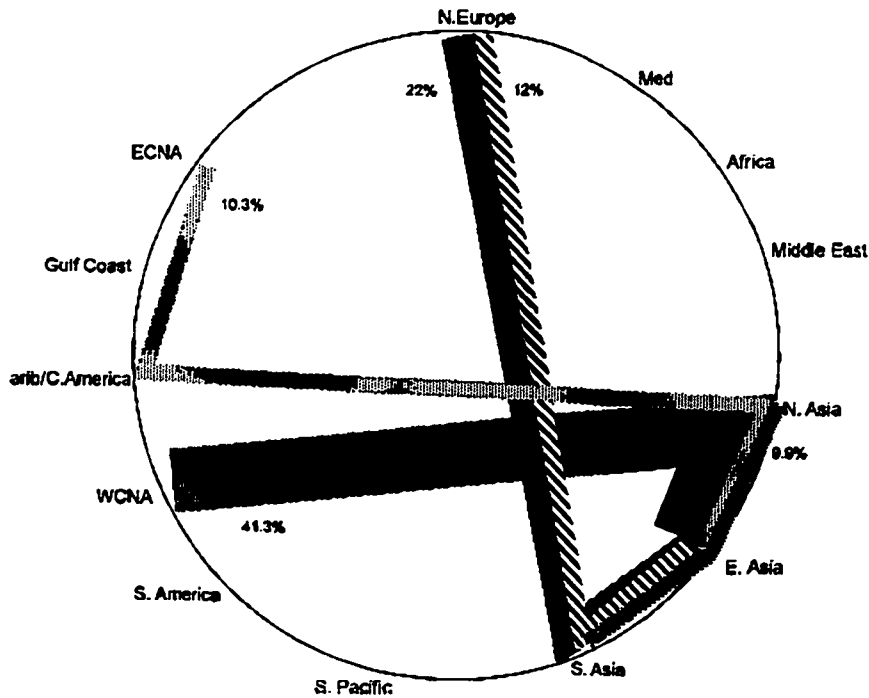


Figure 8. HMM 1999 route structure

4.5 NWA Route Structure

As for the alliance itself, the NWA developed 13 services. The NWA jointly operates nine fixed day weekly services across the Pacific, with direct calls in China, and four Asia-Europe services. The spatial distribution of these routes is not as completely world-wide as the other global alliances (see Figure 9). In an attempt to broaden its range the NWA has recently joined forces with Maersk-SeaLand on the Atlantic, and has a slot

exchange with Evergreen. This slot exchange provides the NWA with additional market access to the US East Coast.

**New World
1999**

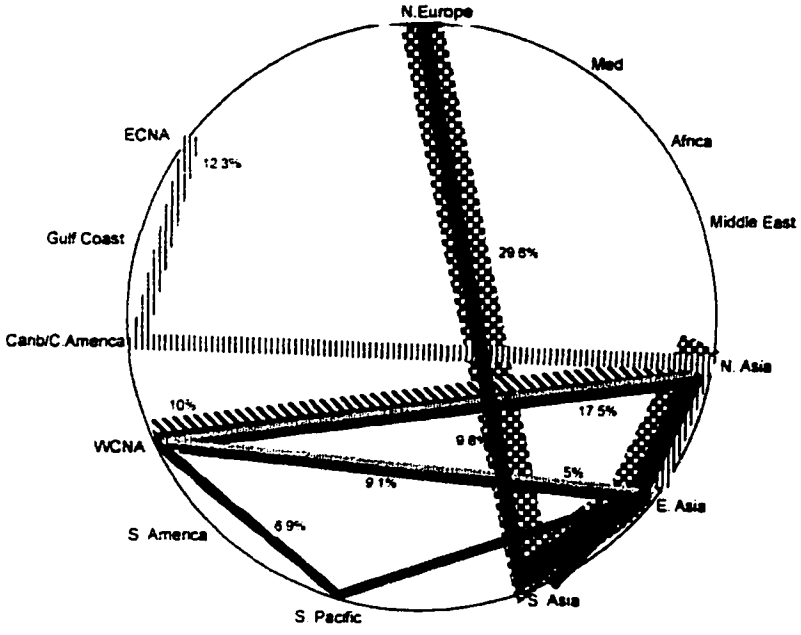


Figure 9. New World Alliance 1999 route structure

Table 5. New World Alliance Services

New World Alliance (APL, MOL, HMM)	1999
# services	13
# independent	0
# joint	13

4.6 Alliance Advantages

The literature suggests that there are five advantages of alliances: (Kadar, 1996; Thanopoulo, 1996; Ryoo, 2000; Mockler, 1999)

- 1-They facilitate a wider geographical scope - the range of both routes, networks, and ports are broadened
- 2-Vessel planning and coordination can be organised on a global scale
- 3-Risks are shared - high capital investments can be jointly spread
- 4-Economies of scale are more easily realised- larger alliances justify larger ship size to reach satisfactory utilization rates
- 5-Frequency of service can be enhanced- multiple fixed day weekly services can be offered on all major trade routes

It is instructive to examine how these advantages apply to the NWA. The first two advantages refer to the broader geographical scope that alliance membership provides, and the opportunities to coordinate vessel sailings. The NWA has certainly resulted in the coordination of vessel deployment that operates on a wide scale (see Figure 9). Each company contributes about 25 vessels to the NWA. A single company would not be able to offer 13 services of this magnitude and frequency with only 25 vessels. In turn, this permits each individual company to broaden its own geographical market coverage. This is evident in the changing patterns and additional routes provided

as seen in the comparison of the route deployment graphs. For example APL now offers service between Europe and the Far East, HMM serves the ECNA, and MOL has calls in the Caribbean. MOL has also greatly enhanced its feeder networks. The feeders originally carried approximately 1% of total capacity but by 1999 they carry 5 % of the company's total TEU's. Vessels released from mainline alliance services have been re-deployed to extend local market coverage. With the introduction of larger vessels into the mainline services (see below), it places increased pressure on filling the ships, and a hub and spoke system is a solution.

The third purported advantage of an alliance is the ability to share the associated risks involved in operating in a highly competitive industry that requires large amounts of capital investment. Vessels not only represent large investments but they also have high operating costs. Through vessel sharing in an alliance these costs are shared and the risks minimized. The alliance also allows for cost savings in "joint production, sales, purchasing, control, and other areas (Lim, 1998)." The individual companies gain access to additional services without the high cost associated with them. This is especially true when they are able to share terminals and cooperate in other land-side operations which can significantly reduce costs.

Costs can also be reduced in the alliance by a more efficient use of capital assets such as vessels, which leads to the fourth advantage; economies of scale. The shipping industry has been plagued with overcapacity and falling freight rates for many years (Ryoo, 2000; Lim, 1998; Fossey, 1998). Alliances permit the deployment of larger ships that can achieve economies of scale (Lim, 1998). To obtain scale economies the alliance utilizes the largest vessels of its members on the large volume trade lanes. In order to

achieve a satisfactory utilization rate the alliance uses the larger vessels because the “break even load factors will be lower for the larger vessels due to the lower unit costs that larger vessels achieve through economies of scale (Lim, 1998).” As can be seen from the table 6 and 7, the average vessel size in the NWA is well above the average of the individual companies.

Table 6. Average Vessel Size in TEU’s

Company	1989	1994	1999
NWA			3858
HMM	1187	3628	3167
APL	2350	1791	2763
MOL	1342	1452	1897

Table 7. Size of Largest ship in TEU’S

Company	1989	1994	1999
NWA			5551
HMM	2641	4400	5551
APL	4300	4300	5000
MOL	3613	3733	4743

The fifth potential advantage deals with the frequency of services. This is one of the major benefits of membership in an alliance. Serving the main market corridors with its largest ships the alliance is able to offer all of its services on a fixed day weekly schedule. As noted above, the alliance allows members to serve these routes with minimal commitment of vessels by the partners. They are then able to re-deploy the ‘surplus’ vessels to either create new services or increase the frequency of service on

existing routes (see section 5.4). As we have witnessed all three companies have opened up service to new regions. However because most customers want a reliable and frequent service, the companies in the main have chosen to increase their frequency of services more than creating new ones. It is significant that all of the companies in the NWA have increased the frequency of sailings by a significant margin. This topic will be dealt with in further detail in Chapter 5.

Chapter 5

Ports and Sailing Frequencies

5.1 Introduction

In the previous chapter the proliferation of routes was documented. The companies were shown to have expanded services into new market areas. Routes are one facet of network structure, however, if changes to routes have occurred, then an adjustment in ports of call may be anticipated. This chapter focuses on the impacts of the alliance on port selection and sailing frequencies. It examines the changes that have taken place between 1994 (pre-alliance period) and 1999 (post-alliance period).

5.2 Strategic Imperatives of Globalization

We have seen that the alliances have brought change to route patterns and services. This has resulted in changes and shifts for the ports of call of the three alliance members. These adjustments in port coverage have been quite significant (see Table 8).

Table 8. Ports of call 1994-1999

Carrier	Ports dropped	Continued	Alliance Ports	# added in 1999	Alliance Ports
HMM	10	23	19	44	18
APL	13	34	17	73*	20
MOL	62	90	25	51	12

* Including 8 ports gained from NOL

Between 1994 to 1999 all of the lines experienced shifts in port service, but there was considerable differences between alliance members. APL especially enhanced its port network with the addition of 73 ports by 1999, of which only 8 were inherited from the NOL merger. HMM dropped 10 ports from 1994 to 1999 while adding 44 new ports. At the opposite end of the spectrum MOL, while retaining 90 ports, ceased service to 62 ports between '94 and '99, and added only 51 ports.

It is significant that the individual members previously served all of the 37 ports that are called at by the alliance. The formation of the alliance did not create new ports of call but drew upon existing resources and port destinations to provide its services. The NWA is new but the service offerings and ports are borrowed from the individual members. Improving pre-existing services is easier than starting from scratch.

The changes in the ports served between 1994 and 1999 may be attributed to the formation of the alliance. The individual companies altered their ports of call and coordinated their services to make coordination easier between the three members of the NWA. The reason for the similarity in ports served, and to a degree the services offered by the individual companies, is globalization. The process of globalization has led to conformity. Differences between services that are offered by the liner companies are diminishing. The commonality within the industry has forced companies to serve all of

the major world markets (Slack et al, 2001). Membership in the alliance has provided an opportunity for the individual lines to become more global either by opening up new markets, increasing the number of ports served, or improving existing services. It is clear from Table 8 that between 1994 and 1999 that these developments applied particularly to both HMM and APL.

As noted earlier, the number of routes served by APL and HMM increased, while MOL declined. These expanded routes of APL and HMM are services with multi range operations. One of the main aims of carriers is to broaden their direct calls at ports, and both APL and HMM have been achieving these objectives by operating routes with a certain degree of specialty on select itineraries (Ryoo, 1999; Brooks, 1999). According to Gilman (1998) the ability to offer a distinct or specialized service means a “broad overall distribution and high service quality with tight control on the number of vessels in each string.” The alliance and its members have been able to keep its string size (number of vessels per route) down to a minimum while offering a high frequency service and a broad distribution. Because the NWA and other alliances utilize some of the largest vessels, Gilman (1998) suggests there was the tendency to believe that “larger main line ships imply greater concentration and hub and spoke networks”. This however is not the case. Larger ships do not necessarily reduce the possibility for operating a specialized service. Even with the use of the largest vessels the NWA was able to exploit opportunities for specialized services. What makes these services specialized is the competency to maintain a minimum number of vessels per route which represents a substantial saving in operation costs, and the ability to continue servicing a large number of important ports, not just hub ports as was previously thought. A good example of this

is NWA's Europe – Far East routes, which on average use some of the largest ships available from the alliance members (see Table 9). This table indicates for the three routes that are operated by the alliance the number of vessels, average vessel size, and a list of all of the ports that are called at on that service.

Table 9. Europe Far East routes

Service	Number of Vessels	Avg. Vessel Size	Ports
JEX	8	4805	Kobe, Nagoya, Shimizu, Tokyo, Hong Kong, Singapore, Rotterdam, Hamburg, Southampton, Le Havre
AEX	10	4703	Le Havre, Rotterdam, Hamburg, Felixstowe, Rotterdam, Singapore, Hong Kong, Kaohsiung, Kwangyang, Busan, Hakata
CEX	7	4039	Southampton, Antwerp, Bremerhaven, Rotterdam, Colombo, Singapore, Hong Kong, Shanghai, Yantian

Here we see that there are at least three ports of call in each market in all the services. However, it is noteworthy that on each of the three routes there is a call at both Singapore and Rotterdam. These ports come as close as possible to the true meaning of the term “hub” in their respective market areas. This is especially true for Singapore, as it does not have a large domestic hinterland to support it and is thus basically a trans-shipment hub that serves such countries as Thailand and Indonesia (Gilman, 1998). We may also note however that these routes involve direct calls at other major ports, many of which are ranked among the world's top twenty.

5.3 Ports served by the alliance members

The results discussed in 5.2 suggest that liner companies do not have strong allegiances to ports. They can easily add or drop ports on any rotation depending on a wide range of factors, including customers needs, port efficiency, and routing requirements. Table 10 reveals that each company in the NWA maintained service to a relatively small proportion of their ports of call between 1989 to 1999. This is a very high rate of turnover. It reflects in part the growth in port calls and the expansion into new markets discussed above. However, it also indicates that the lines are adjusting their ports of call by dropping some from the rotation. Being dropped by a carrier can have serious economic impacts on the port and its region.

Table 10. Number of Ports served for three years studied

	MOL	APL	HMM
1989	109	54	30
1994	152	47	33
1999	141	107	67
All 3 years	72	21	17

The opposite side of the coin is that many ports are being added to the rotation. As seen in Table 8 the combined total number of ports added in 1999 by the NWA members was 168. It must be noted however that many of these 168 ports are duplicates and so the absolute number of new unique ports is lower. According to Slack et al (2001) the number of ports that are served in any one-year period by all of the companies involved in all of the five major alliances is fairly constant. Thus this constant total hides

a situation in which there is considerable turnover and volatility from one year to the next.

The more time a ship spends in port the more expensive it is for the liner company. Lines demand fast port turnarounds. Of the ports that have retained service for each of the three years, many are among the top twenty ports in the world in terms of traffic. These may be referred to as the high order ports. All three members retained seven high order ports for each of the three years. These ports include; Busan, Hong Kong, Kaohsiung, Kobe, Seattle, Singapore, and Yokohama. These ports are termini of the trans-pacific routes in which each of the companies was strongly placed.

Of the 17 ports that HMM served for each of the three years 70% are higher order ports. Examples include Hong Kong, Rotterdam, Felixstowe, Hamburg, Singapore, Busan, Seattle, and Tokyo. Four other ports were served for all three years but were not in the top twenty ranking: Vancouver, Penang, Nagoya, and Oakland.

APL called at 21 ports for all three years. Of these, 33% were ranked in the top twenty. Like HMM, APL served many of the higher order ports like Singapore, Seattle, and Yokohama. APL also called at several regional ports for all three years, because they were important enough to warrant a direct call: Karachi, Calcutta, Colombo, and Jeddah.

MOL seems to be the odd member out again. It called at 72 ports for each of the three years. Of the 72 ports served only 20% were higher order ports. The reason for this low proportion is partly due to MOL's extensive feeder service network. The other explanation is that it operates regional services to South America and Africa, where there are no higher order ports.

5.4 Frequency of service

As we have seen the number of routes and ports being served is increasing. A further dimension of this network structure is the frequency of service. Port calls vary from once a month to once every few days. Shippers are demanding increasingly regular and frequent service. The ability to offer a fixed day weekly service has become the benchmark for the container industry. In the global economy with global production lines, many clients are constrained by schedules and rely on the container industry to service a desired port on a set timetable. Alliances are well positioned to offer that level of service, because through coordination, service levels can be enhanced.

The increasing number of fixed day weekly calls at certain ports exemplifies this trend. In 1989 less than 25% of ports were served on a weekly basis. By 1999 the proportion had increased to 63% (see Table 11). All members of the alliance have seen their service frequency levels increase between 1989 and 1999.

Table 11. Number of ports served vs. number of ports served on a fixed day weekly basis

Ports Served	1989	1994	1999
MOL	109	152	141
APL	54	47	107
HMM	30	33	67
Total	193	232	315
Fixed Day Weekly			
MOL	25	40	66
APL	12	19	78
HMM	12	22	54
Total	49	81	198

In the case of MOL the proportion of ports served on a weekly basis did not change much from 23% to 26% between 1989 and 1994. Over the next five years however, the proportion of the ports served on a weekly basis had jumped to 47%, a doubling of the proportion. APL's changes were even more dramatic, but they had begun earlier. In 1989 only 22% of the ports were served on a fixed day schedule, and by 1994 this had increased to 40%. This intensification of levels of service continued to 1999, by which time nearly three quarters of ports were on a weekly service. In the span of ten years APL tripled its service frequency. As for HMM its smaller network in 1989 was already offering weekly service to 40% of the ports of call. Over the decade HMM followed experience of its alliance members and in 1999 81% of its port calls were on a fixed day weekly service.

The pooled resources, therefore, have allowed the members to not only broaden their scope by serving more ports, but also to increase service frequencies. This has been achieved in two ways. Firstly through the coordinated services of the alliance itself (they are all offered on a fixed day weekly schedule). Secondly through the individual companies allocating resources that have been freed due to alliance membership to increase the rotation and augment service frequency (Slack et al, 2001).

The intensification of services has been a feature that all three members of the alliance have exploited. While the alliance has resulted in the expansion of services and increased port coverage of HMM and APL, the changes at MOL were not comparable. However, MOL has joined its two alliance partners in adding service frequency. For MOL, which already had an extensive network, the benefits brought on by the alliance

membership have been to allow a more frequent level of service to its already extensive port network.

5.5 Implications

The continuous process of change in inter-modal transport has resulted in increasing pressure on ports to adapt in this demanding environment. Strong growth in world trade, coupled with globalization, is forcing ports to improve handling efficiency and to expand facilities to accommodate increases in cargo flows.

Liner companies can exert a tremendous amount of pressure on ports. Due to the volume of business of certain lines, ports tend to succumb to this pressure. A good example of this was the bidding for Maersk-SeaLand's business on the East Coast of North America. New York, Baltimore, and Halifax all wanted Maersk-SeaLand's traffic. In order for New York to retain Maersk-SeaLand's business it had to make major concessions. New York had to pay for dredging costs to deepen channels, and grant Maersk-SeaLand a discounted rate on a terminal lease. Another example involving Maersk-SeaLand is that of Singapore. Despite Singapore being the number two ranked port in the world, Maersk-SeaLand departed because the port authority would not meet the demands of a dedicated terminal.

Through consolidation of liner companies, the container industry has increased its market power and is thus able to adjust its operations in response to port performance and according to the markets they serve. Ports may be penalized for any inefficiencies. The development of inter-modal transport systems has increased inter-port competition for

ship calls and cargo. It has also reduced the relative importance of ports in the overall logistics chain. Ports are changing from the traditional role of transferring cargo between nodes, to becoming just a link in the transport chain.

Chapter 6

Policy Impacts of Strategic Alliances

6.1 Introduction

The topic of strategic alliances, mergers, and acquisitions is an area that has many policy implications. Janelle and Beuthe (1997) asked with growing international character of transportation to what extent multinational corporations reduce the sovereignty of states? The ocean shipping industry is a transnational business, carried out by large international carriers; what role is left to the individual state to intervene? This is not the case in some other transport sectors, such as the airline industry, where there is still a significant amount of national regulatory control. Within the liberalized shipping industry two broad areas of policy interest can be discerned: a) the issue of monopoly pricing, and b), issues of local impacts. Both these topics are explored in this chapter.

6.2 Alliances and Competition

Governments continue to maintain a degree of control over areas of competition, even in a free market. Concern over monopoly power has been a major principle driving government intervention in transportation. In recent years US federal regulators have ruled against proposed mergers between Canadian National Railway and the Burlington

Northern-Santa Fe, and just the threat of government intervention caused United Airlines to abandon its take-over of US Air. The shipping industry has been somewhat different. The shipping conferences grew out of the need for an industry control on prices and service levels. These cartels were sanctioned by governments and were awarded anti-trust immunity, despite their obvious price-fixing character. The arguments in their favour were based upon the need to offer shippers a guarantee of service at a price that would not be as volatile as if pure market conditions prevailed (Brooks, 2000). The conference system has been largely dismantled since the development of the alliances, and governments have still to come to grips with the new service and market conditions presented by a handful of global alliances.

This issue may be addressed at two levels, first from competition theory, the second from the actual circumstances in the world container shipping market. Given the recentness of strategic alliances, there has been limited theoretical and empirical research into the potentials for monopolistic power among the alliances. Based on a study of more than 40 companies in the electronics sector, Gomes-Casseres (1996) concludes that alliances are not anti-competitive. It was found that competitive behaviour between alliances can be even more intense than competition between separate firms. Furthermore, contestability theory holds that government regulation is not necessarily required to ensure efficiency, provided that the markets are contestable (entry and exit is free) (Bowen and Leinbach, 1995). Under such conditions the threat alone of competition will prevent firms from abusing either their monopolistic or oligopolistic position. Contestability theory is particularly relevant for the shipping industry because

there are several alliances serving each major market region, and there exists several major carriers, such as Evergreen, MSC, and CP that stand apart from the alliances.

The actual evidence from the container shipping industry tends to support these limited theoretical conclusions. The absence of several major carriers from alliance groupings, as noted above, acts as a check on the power of any alliance. Although there has been a concentration of capacity because of the alliance, no one grouping controls more than 20% of the world's container fleet. The NWA accounts for only 4% of the world's container capacity.

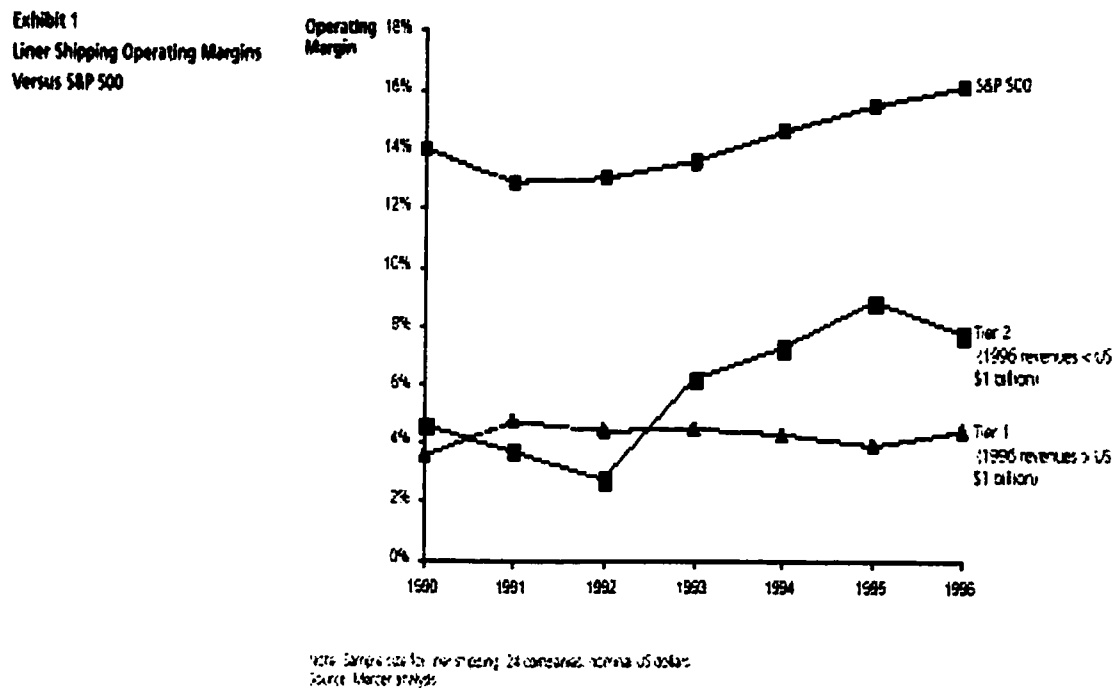


Figure 10. Liner Operating Margins

Monopoly power is not reflected in the economic performance of the container shipping industry. During the past fifteen years the liner industry has been plagued with poor

financial returns and operating margins that are well below those of most other industries (see Figure 10). It was thought that the expansion in capacity and the resultant poor utilization of container space lead to a decline in the rate levels and low profits. Capacity utilization however is not the sole factor to blame for this problem because, rates have continued to drop even on major trade routes where vessels were sailing relatively full. A detailed study by Mercer Management Consulting showed that average capacity utilization was stable at 75% between 1990 and 1995, with some fluctuations during peak and low seasons. The lines have been forced to improve profitability through cost cutting, because of their lack of control over rates. Membership in alliances is part of the cost-saving strategies employed by the carriers because of opportunities for economies of vessel utilization, savings in terminal operations, and extension into new markets.

The evidence suggests, therefore, that a policy oversight of the container shipping industry to counter any monopolistic tendencies may not be called for. Even if there was evidence of abuse of monopoly power, it is not clear what control most countries could exert over international carriers that are members of multi-national alliances. It would require multi-national political action to have any effect, and cooperation would not be easily agreed upon given the differing national interests involved. The only country with sufficient power to potentially influence the alliances would be that of the United States, which is somewhat paradoxical since it no longer has any domestic companies involved in container shipping alliances since the take over of APL.

6.3 Other policy issues

While the need for government regulation over the economy diminishes, other policy issues assume greater importance. Two areas of particular public policy significance are safety and the environment. The container shipping industry has an enviable reputation for safety, a fact facilitated by the recentness of the fleet. Container ships represent an enormous capital investment, reaching \$100 million per vessel. The international regulations that control the shipping industry originate from the International Maritime Organisation (IMO). This has been effective in maintaining high safety levels. Insurance costs and mandatory inspections by the classification societies that determine insurance rates act as an additional control on safety. Therefore, in the case of safety, the industry has attained a satisfactory response to safety issues as far as the major companies and the alliances are concerned, through international regulations and internal industry self-interests.

The environment is an evolving area of government intervention and public concern in contemporary society. Yet container shipping has largely escaped legislation by individual states and international organizations. There are two problem areas. First is pollution by ocean vessels. The conventional wisdom is that ocean shipping makes a small contribution to air pollution. The size of the engines used to power the modern container ships, and the growing tendency to increase the speed of ships tends to refute this assumption. For example, worldwide ship nitrogen emissions are equal to half the total emissions of the US, and sulfur emissions are equivalent to 43% of the US (Corbett and Fishbeck, 1997). These authors suggest that the problem is accentuated because all the large ships deployed by the alliances use the same shipping lanes, so that the source

pollution is concentrated. Considering the international nature of the industry, a global political response is called for. The IMO has made limited progress, establishing limits on Nitrogen Oxide emissions on all new ship buildings made after 2000, but given the difficulties of agreeing on such global climate issues since the election of US President Bush, international controls on other emissions may be a long way off.

The second area of environmental concern is with dredging. The growing size of container ships is forcing ports to deepen approach channels and dredge berths. Few ports around the world will be capable of accommodating the new generation of container vessels about to appear. Dredging and the provision of new berths will become an ever more pressing issue, with potential for significant repercussions on coastal environments. Unlike the issues treated in this chapter so far, this is a policy issue that national governments have direct control over. Governments must be prepared to establish regulations that will determine under what local conditions deepening will be allowed to take place, if at all. These regulations that will have to stand intense scrutiny, since they inevitably will conflict with the economic benefits claimed for dredging.

An area of potent policy interest arises directly out of the alliances and their actions. As has been documented in Chapter Five, the alliances have produced a number of significant impacts on ports. There has been large turnovers in port selection, and at the same time services are being concentrated in a relatively small number of hubs. Ports are being switched for many reasons, but clearly the ports themselves and the public authorities responsible for services in the local communities need to develop policy responses and coordinating local initiatives that contribute to making the port attractive to the carriers. Several areas for joint port-community cooperation and action exist,

including enhancing land transport access, establishing zoning reserves for logistics businesses, cooperation in marketing and promotion, port networking etc. (Notteboom and Winkelmanns, 2001).

The concentration of container traffic at hubs gives rise to a number of specific issues at the local level in the hub cities. High traffic volumes both within the dock area and in adjacent port zones create problems of noise, pollution, accidents, and congestion (Slack et al, 1999). These negative externalities are brought about by the very success of a local load center in the network structure of the alliances. The impacts are far reaching, both on local communities and on the future viability of the hub. Cities such as Rotterdam and Los Angeles are now instituting actions to free urban congestion and expand port capacity by improving rail links to the container terminals to try to remove thousands of trucks from the roads. Without local input and cooperation, the ports could be strangled by their own success.

6.4 Conclusion

This brief overview has shown that there are wide-ranging policy issues arising out of the formation of alliances. They range from the global, such as safety, to local such as congestion. The political responses must inevitably be diverse and complex. At the heart of the matter is the question of jurisdiction over multi-national alliances that operate globally. Many issues require international regulation, but the interests of the parties are diverse, and the question of applying controls over an industry as globally diverse as container shipping will not be easy. With regards to the shipping industry

there is clearly a need for a shift from government policy to a guiding business strategy. This has already occurred in some of the newly industrialized countries like Taiwan and Korea. They have “pursued aggressive development policy for their maritime transport” (Rodrigue et al, 1997).

The review has also suggested that many of the issues affect local regions in complex ways. Local solutions are called for, and the successful ports will be those that can position themselves to best serve the alliances, either as load centres or as feeders. Local communities can not leave their ports entirely to the whims of the market place, and even though the privately owned shipping companies operating in alliance with other large international companies are shaping developments, public policies can help facilitate the local attractiveness of ports.

Chapter 7

Conclusion

7.1 Introduction

The continuous process of evolution of the transport industry over the past ten years has changed it from a segmented industry towards one that is increasingly integrated. This has occurred so as to meet the pressing needs of industry brought on by globalization. As a result, increased pressure is placed on container ships, and they in turn place pressure on ports so that they both can adapt to the newly created roles and functions of this demanding environment. This entails rethinking of both liner and port strategies. Liner companies have begun the process with the advent of strategic alliances. Alliances are an answer to the challenges brought on by demand. Becoming a global player is costly, but alliances help make this possible. Ports must now develop their own strategies and reforms that would enable them to maintain their competitiveness.

Globalization has led to the development of larger trade areas for which shipping alliances become part of the supply chain. Shipping companies have merged, expanding their global reach to create global service networks. This is exemplified in the evolution of APL, MOL, and HMM's route networks from 1989 to 1999. The growth in market coverage has been a direct result of the alliance. The alliance itself has helped each company expand its service network and intensify its service frequencies.

Terminal operators also have to keep pace with the globalization process. Their operations have to become more efficient and standardized to offer shipping customers a consistent service over various trade routes. The activity of such terminal operators suggests a trend towards internalization of terminal operations. Certain terminal operating companies have begun to branch out like the Singapore Port Authority and Hutchison. They are beginning to offer the same port services at ports in different regions. This allows for the shipping companies to improve its scheduling procedures because they know the level of service they are going to receive at certain given ports that are owned and operated by these large holdings.

This move towards a global network on the side of shippers and terminal operators, has placed an increased demand on the intermodal interface with the land-side so as to enlarge the transport routes, and benefit from greater flexibility and options for the management of international transport operations.

7.2 Future research

Strategic alliances are fairly new to the shipping industry and have yet to be fully explored by the academic and professional communities. The opportunities for future research are bountiful. Possible areas of research include comparisons between stand-alone companies like Evergreen and alliance companies, to see if the non-alliance carriers are adjusting to the industry standards set by the alliances and their members. Alliances have provided carriers with valuable opportunities to expand their services and it would be interesting to see if the stand-alone companies have been able to achieve this. Another

area that could be looked at is the differences between the alliances and companies that are growing through acquisitions, like CP Ships. The pattern of growth and service levels of such companies may be different than those the alliances have achieved.

A further potential area of practical research would be in the relationships between ports and alliances. With the growing power of the alliances it would be interesting to examine in detail how ports can respond and retain clients.

The shipping industry is without a doubt being molded by globalization. Container lines have altered and enhanced their route networks out of necessity. They now offer many of the same services that created homogeneity within the industry. Companies are beginning to lose their distinctiveness because they have had to conform to the market demands. This uniformity is exemplified in the birth of the alliances. The services offered by the alliance and the individual companies do not differ greatly. This was seen in the comparison of each company's route network structure. The similarities in route networks have also carried over to the port sector. They all tend to use the same ports of call.

The future of alliances may be debatable, but changes they have brought about are profound. This thesis has demonstrated some of the spatial manifestations of the changes, and has pointed to some of the public policy concerns that arise.

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