



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

FACULTY OF APPLIED ECONOMICS

DEPARTMENT OF TRANSPORT & REGIONAL ECONOMICS

Co-Operation and Competition in International Container Transport Strategies for Ports

Heaver, T., H. Meersman and E. Van de Voorde

RESEARCH PAPER 2001-002
January 2001

Prof. dr. T. Heaver, Professor Emeritus, University of British Colombia.

Prof. dr. H. Meersman and Prof. dr. E. Van de Voorde are at the University of Antwerp (UFSIA-RUCA and ITMMA).

The authors express their gratitude to W. Dullaert and T. Vanellander for their assistance in research and our thanks to G. Blauwens, H. Paelinck, F. Suykens, M. Vermorgen and F. Witlox for the many fruitful discussions that contributed to the writing of this article. The authors remain solely responsible for the article's content.

University of Antwerp,
Prinsstraat 13, B-2000 Antwerp, Belgium
Research Administration - B.213
tel (32) 3 220 40 32

D/2001/1169/002

CO-OPERATION AND COMPETITION IN INTERNATIONAL CONTAINER
TRANSPORT: STRATEGIES FOR PORTS

Trevor Heaver, Hilde Meersman and Eddy Van de Voorde

University of British Columbia

University of Antwerp (ITMMA/UFSIA)

1. INTRODUCTION

Increased horizontal and vertical integration is occurring among organizations involved in the international logistics of manufactured goods. The development of supply-chain management practices is evidence of the greater integration in the structure and practices of shippers. The global alliances among shipping lines, the growth of container terminal management companies with global operations and the increase of logistical service offerings by transport companies are evidence of the increased integration among suppliers of logistics services.

The level of integration is such that the demarcation between previously separate markets for logistics services is now blurred. For example, the value of treating shipping as a separate market has been eroded by the expansion of shipping companies into port-terminal management and into logistics service offerings. At the same time, organisations with expertise in container terminal management have been able to enlarge their roles in logistics services by managing terminals in different ports and by participating in the integration of ports with inland transport services. These and related developments in market structure within which international shipping and other logistics services are provided raise serious strategic questions for port authorities.

This paper focuses on the response of port authorities to the changing market environment in which they operate. It documents the changes taking place in the relationships between port authorities and terminal management companies and considers the strategic issues faced by these groups and other port interests. In particular, it investigates the potential conflicts of

interest for a port authority in matters related to the level of competition among terminals within a port and the amount of competition among ports.

The role played by individual organisations in international logistics systems as vertical and horizontal re-organisation proceeds is uncertain. It is influenced by many factors, especially those affecting the power of organisations and their potential contributions to efficiency and profitability of logistics systems. In the rivalry to establish roles that meet the objectives of the various organisations (and, hopefully, the needs of shippers), the asymmetry in their positions is important. Two aspects of an organisation affect its power. The first is its financial strength which is influenced by many factors. It is a key to an organisation's ability to follow costly strategies to achieve its objectives. The second factor is the range of options available to it. This is dependent on the characteristics of the market structure. Disparities in the number of options available to negotiating parties can result in an imbalance of power. For example, a port authority without alternative locations is at a disadvantage in relation to a shipping line with a choice of ports. However, a port in a prime location derives advantage from that in negotiating with alternate shipping lines.

The rivalry among the various players in the development of international transport and logistics systems involves the working of complex forces in the evolution of the new vertical and horizontal relationships. The outcomes affect the public interest in the preservation of structures and practices consistent with effective competition. While the power of port authorities appears to have weakened, at least, temporarily, they still play an important role in determining the development of the new systems.

2. CO-OPERATION AGREEMENTS BETWEEN MARKET PLAYERS

In a previous study of the structure and scope of co-operation agreements in the maritime sector in the broad sense, we considered the effects of mergers and alliances on international shipping and port competition (Heaver, Meersman, Moglia and Van de Voorde, 2000). We concluded that shipping companies, consortia and alliances have acquired a more powerful negotiating position vis-à-vis port authorities, terminal management companies¹ and inland

¹ Various names are given to the companies that operate container terminals. In some cases, the port authority or private port company itself is responsible for terminal management. Shipping lines manage terminals and specialist firms manage them. Some have retained the name "stevedores," e.g.,

transport firms. In general terms, three major strategies have emerged but lines may follow more than one of them:

- a number of powerful alliances/shipping groups (the Grand Alliance, the New World Alliance, and the Global Alliance);
- a number of co-operation agreements regarding slot exchange (e.g. CMA and GCM);
- a number of ‘soloists’: MSC (Mediterranean Shipping Company), Maersk Sea-Land (controls Safmarine), Evergreen (controls Lloyd Triestino and Uniglory), Cosco, China Shipping Group.

The situation is still evolving, with the vertical concentration in liner shipping still continuing. Alliances are starting to opt for a further concentration on certain terminals, with important consequences. Alliances and other co-operation agreements are now controlling significant goods flows on the major routes on which they are deploying larger vessels. This creates demand for ever-greater terminal capacity where handling is organised in such a way that turnaround times are limited to around 12 hours. Ties with inland logistics can give considerable control over the logistics chain.

At the same time, the other parties have responded to the changing challenges and opportunities by themselves entering into various forms of co-operation (strategic alliances, mergers, etc.) to achieve greater control of the logistics chain. These developments bring with them a danger of preferential treatment, conflict of interests and market dominance (Heaver, Meersman, Moglia and Van de Voorde, 2000, p. 369).

By way of illustration, Table 1 provides an overview of the principal forms of co-operation between stevedores and port authorities that have materialised in recent years.

Stevedoring Services of America, other companies feature the word “port,” e.g., P&O Ports. In this paper, the general term “container terminal management company” (CTMC) is used to cover all the specialist firms.

Tabel 1: Co-operation agreements between various market players

Market Players	Shipping companies	CTMCs	Hinterland transport	Port Authorities
CTMCs	Financial stake of shipping company in CTM Joint ventures Dedicated terminals	Participation in capital	Joint ventures	Financial stakes port authorities
Port Authorities	Dedicated terminals	Financial stakes port authorities	Financial stake in hinterland terminals	Alliances between port authorities

Source: Based on Heaver, Meersman, Moglia and Van de Voorde, 2000, p. 365.

These developments are resulting in continuous shifts in the balance of the markets. In order to gain a better understanding of these developments, we put forward the following pertinent research questions:

- How can one explain from an industrial and economic perspective the observed co-operation trends involving port authorities and CTMCs, the principal port players? More specifically, we are interested in the objectives, the means used and likely impact of these developments.
- What are the potential consequences for the parties involved?
- Which other trends can be discerned?

First and foremost, answering these questions requires an in-depth knowledge of the relevant environmental factors and a detailed analysis of the various forms of co-operation.

3. DEVELOPMENTS WITHIN PORTS: THE RELEVANCE OF OWNERSHIP AND SCALE

The actions of port authorities are ultimately derived from their basic objectives which are influenced by their ownership, structure and mandate. These matters are not the focus of this paper, but some observations about them are needed before discussing the structural changes in transport markets.

Increased private participation is found in ports of most countries (Heaver, 1995). However, full privatisation of previously public ports is rare, mainly confined to the United Kingdom. Continued public presence in most countries in one way or another may leave the objectives of port authorities uncertain. Should they consider their primary objective to be maximising the tonnage handled? Should they maximise the value-added activities within the port perimeter? Or should they perhaps maximise profit-generating opportunities for industry and services located in the port (Suykens and Van de Voorde, 1998)? Should the community provide funds to support port investments or should port investments provide a revenue source to the local community?

Differences in the objectives to be pursued by port authorities will affect their policies with respect to the amount and nature of competition they would expect among terminals within a port and among ports. A revenue-seeking port (for its local community or a dividend-seeking higher level of government) may not favour inter-terminal competition if total traffic is inelastic to price. It may then prefer limited competition and economic rent-seeking rates.

Competition as an issue for port authorities is influenced by the geography of port jurisdiction. The distance between ports and their potential to serve a common hinterland affect the levels of co-operation and competition. These relationships are not static, as they are affected by ocean, port and inland costs, but they tend to persist. Thus, the geography of Australia is less conducive to inter-port competition than that of Western Europe or North America. The jurisdiction of authorities affects the potential for competition; for example, in the U.S.A., county and city authorities give rise to the competitive adjacent authorities of Seattle and Tacoma and of Los Angeles and Long Beach respectively. In other places, for example, Georgia, the state is the authority and the Port Authority of New York/New Jersey is a by-state authority. However, while local economic and institutional factors affect the potential for co-operative and competitive arrangements, the influence of developments in transport and logistics tend to be general.

In recent years, a number of structural changes have occurred in the transport market as firms have attempted to be price competitive and to improve and expand service offerings. These developments are a result of striving towards cost-savings through expansion and the emergence of the concepts of global and total logistics. As a result, the principal players (e.g.

shipping companies, terminal operators, forwarders) evolved into large logistical organisations through a mixture of autonomous growth, alliances, mergers, etc. Each of these organisations separately strives explicitly towards expanding its sphere of influence, as is evident from the example of shipping companies who, beside their primary transport activities, are increasingly involved in operating terminals and hinterland transport modes.

Public and private port authorities, on the other hand, with a few notable exceptions, may be seen as responding re-actively to the organisational developments about them. Most have responded, some more actively and effectively than others, to the logistical needs of shippers and of their immediate customers, the shipping lines, by initiatives in such fields as facility expansion and information technology. Public port authorities, especially, tied to their local jurisdiction, have been faced with the need to respond to the growth of container traffic and the increased power of fewer players in the logistics chains. The most notable example of a port that has gone beyond this is the Port of Singapore Authority which has been pro-active in the marketing of its IT technology internationally and in entering into terminal/port management agreements internationally, for example, in Sines, Portugal. CMTCs on the other hand, for example, P&O Ports and Hutchison Port Holdings (HPH), have been active in expanding the geographic and service scope of their businesses.

Tables 2 and 3 illustrate the shifts that have taken place in the relative influence of a number of players. Table 2 shows the spectacular growth in container transshipment in the port of Antwerp since 1975. Container traffic has grown through the increased containerisation rate, i.e. the relative share of container traffic in overall transshipment, and through the growth of trade.

Table 2: Container traffic in Antwerp - share in general cargo traffic (1975-1998)

Year	Container traffic (TEU)	Container traffic (tons)	General cargo (tons)	Containerisation Rate
1975	356,194	3,335,558	22,055,164	15%
1980	724,247	6,125,967	28,459,417	22%
1985	1,243,009	10,921,320	37,601,995	29%
1990	1,549,113	16,553,429	43,522,594	38%
1995	2,329,135	25,795,560	50,674,572	51%
1996	2,653,909	29,460,184	52,206,146	56%
1997	2,969,189	33,426,642	56,443,291	59%
1998	3,265,750	35,376,283	60,150,697	59%
1999	3,614,246	39,442,240	60,299,056	65%

Source: Antwerp Port Authority

Table 3 shows that the two main stevedoring companies in the port of Antwerp have each increased their share of the traffic and to a total of 84 percent. This is mainly due to Hessenatie, which saw its market share expand from 27.8% in 1985 to 63.6% in 1999. The concentration trend is even more outspoken in the port of Rotterdam, where ECT achieved a market share of 70.9% in 1999. A similar trend can be observed in Germany, in part, because of the creation of Eurogate through a merger of the container activities of Eurokai in Hamburg and Bremerlagerhaus Gesellschaft in Bremerhafen.

Table 3: Concentration of container traffic in Antwerp (TEU)

Marker Player	1985	1990	1995	1999
Hessenatie (HN)	347,419	580,033	1,094,921	2,297,246
Noordnatie (NN)	153,033	282,072	419,928	742,754
Total for the port of Antwerp	1,243,009	1,549,113	2,329,135	3,614,246
Share of HN + NN	40.3%	55.7%	65.0%	84.1%

Source: Antwerp Port Authority and various stevedores

A comparable development has taken place among shipping companies, where expansion and concentration trends have been apparent in relation to the control of slot capacity in container traffic. While in 1995, the 15 largest global shipping companies controlled 62.5% of slot capacity, by 1999 their share had increased to 66.2% (source: Lloyds List).

The typical port authority has few opportunities to participate in developments beyond its jurisdiction. Take the port authority of Antwerp, for example: it concentrates on such activities as deepening of the river Scheldt in order to retain its status of port of call for so-called mega-carriers on the East-West route (for example, MSC, which is able to deploy a new generation of container vessels of 6,700 TEU; when the Scheldt has been deepened to 14 metres, half-loaded vessels of up to 8,000 TEU will be able to call at Antwerp tide-independently).

In addition, the “local” port authorities are increasingly confronted with large, international goods-handlers (e.g. P&O Ports, HPH, PSA Ports) whose international asset base, IT systems

and cash flows are relevant to their efficiency, attractiveness and clout in negotiations. A typical example is PSA, which in 1999 embarked on three foreign projects, including Sines Container Terminal in Portugal. This brought to ten the number of ports and terminals developed and/or operated by PSA. This is where the question arises of possible abuse of monopoly power. To what extent can a market player that controls several ports or terminals devise global strategies for shipping in conjunction with mega carriers, as a result of which other terminals and ports, that are not controlled by this player, may lose traffic?

The threat of excessive market power by dominant suppliers of port services is influenced by the size of ports and the number of their terminals, the level of competition among ports and the potential for new ports and new logistics routings. It is striking how new hub and terminal ports continue to enter the market. For example, with its new terminal, the port of Amsterdam is striving to improve its position in the container transshipment market. The CERES terminal, to be concluded by the second half of 2001 with a capacity of 1 million TEU, is planned to guarantee 250 moves per hour so that a vessel need not stay moored for longer than 12 hours, compared to the usual day to a day-and-a-half.

4. MARKET PLAYERS IN PORTS: POSITIONS AND STRATEGIES

There are three types of goods-handlers active in the container business. They are port authorities, shipping lines with terminal operations, and independent container terminal management companies (CMTCs). The role of these groups is determined in part by the policies of port authorities and in part by broader public policies as they may affect the public interest in achieving efficiency through open and competitive regimes. The following paragraphs examine the positions of the parties and the strategies that they may follow.

4.1 Port authorities: scope for action

The discussion here of strategies for port authorities is confined to two areas. The first is the strategy of authorities with respect to the granting of terminal concessions. Port authorities face two primary issues in their decisions about terminal concessions. They are who should operate a terminal and what are the conditions under which operation will be allowed? The second is the strategy of ports with regard to the competitive relationship among ports.

Port authorities are compelled to adapt their strategies in light of the above-mentioned transformations in the structure and practices of other participants in international logistics. The response of shipping lines and others to the needs of shippers for improved logistics services are leading to a variety of pressures on ports.

4.1.1 Issues with terminal concessions. Ports are confronted with increasingly influential immediate customers. Shipping lines not only formulate demands with regard to port charges but they are more widely interested in the use of dedicated terminals. Dedicated terminals have been common in the U.S.A. where integrated systems to facilitate intermodal transport have been a priority. In Europe and elsewhere, as container volumes enable better utilisation of such terminals and as the benefits of integration through corporate responsibility for planning, investment and operations management increase, so the interest of lines in dedicated terminals has increased. Shipping companies see the terminals as a part of their international networks of transport and logistics services. Recent developments in Rotterdam are quite telling. Maersk/Sea-Land now has its own dedicated terminal; P&O Nedlloyd and the other members of the Grand Alliance have also been granted a dedicated terminal; and the World Alliance has moved to ECT's Delta Dedicated West Terminal. The market share of the large multi-user terminal provider has diminished. The development poses new issues for the smaller shipping companies, although there is no public evidence from American experience of discrimination against such lines. The interest of lines in terminal management also has implications for the market share available to CTMCs.

For port authorities, dedicated terminals are a means to facilitate the development of integrated services and to bind shipping companies to terminals. They provide opportunities for port authorities to push for more investment and longer-term leases than might otherwise be possible. The power to dedicate terminals is a useful strategy for a port authority, certainly if there is competition between different terminal operators. It is, also, a legitimate question whether European port authorities should/could/may make more effective use of this current position of power, for example, by forming alliances (including through participation, such as the port of Rotterdam's stake in ECT) or by establishing networks as done by PSA. It also remains to be seen whether port authorities are capable of establishing the same kind of functional relationship with inland links in the logistics chain.

The choice of a terminal operator may affect the amount of inter-terminal competition in a port. For small ports needing a second terminal, should a second operator be selected for a new terminal? Where a third terminal is to be added, are the economies of scale and scope such that one of the incumbents should get the additional terminal? What influence should mergers in the terminal operating business have port authorities' policies about inter-terminal competition?

Little evidence is available on the working of competition among terminals. As terminals have shifted to integrated elements of the logistics systems of which they are a part, so the importance of system competition has increased over that among the elements. Therefore, the attention of port authorities to retaining competition needs to be greater when there are limited port routing options. Competition among terminals can be expected to be more of an issue in Australia than it is in North America or Western Europe.

Port authorities need to consider the effects on efficiency of their agreements with terminal operators. Long-term leases encourage optimal development strategies by terminals, a factor, no doubt, in the granting of a 50-year concession by Antwerp to a consortium led by P&O Ports to operate the port's third container terminal at the Deurganckdock (left bank). Port authorities and governments that may play a roll in setting payment terms need to consider the effects of alternatives on efficiency. Direct charges to traffic, as common in Australia, or dividend rates variable with profitability, may be attractive to public bodies interested in revenue enhancement but they are not consistent with maximizing the efficient development of traffic. The use of long-term concessions to a few companies is also leading to some new investment strategies by port authorities as found in Rotterdam and Antwerp.

In 1999, the Port Authority of Rotterdam acquired a 35% financial stake in the major stevedore ECT, a company that in turn was controlled by HPH. The Port Authority also granted a joint dedicated terminal to ECT (a 33% stake) and Maersk, while another was allocated to P&ONL in a 50/50 joint-venture with ECT. This inevitably raises questions. The move meant that the port authority of Rotterdam was investing in the risk-bearing capital of a private terminal operator. This could be considered as a typical example of a private-public partnership but, at the same time, it could be seen to compromise the impartiality of the port authority. After all, through its stake in ECT and the joint-venture, the port authority also acquired an interest in the well-being of Maersk Sea-Land and P&ONL.

A similar situation could occur in Antwerp. When the concessions for two new container terminals were granted (June 2000) to respectively a British consortium (P&O Ports - P&ONL - the port of Duisburg) and a Belgian combination (Hessenatie - Noordnatie - NMBS), the port authority imposed a number of conditions. Besides conditions concerning traffic, the port authority also wants a number of clauses to be incorporated which give it the right to acquire a minority stake in the two consortiums. More specifically, it wants right of pre-emption if one or more of the groups involved decides to sell their own shares. Theoretically, this could enable the Antwerp port authority to acquire a stake in the port of Flushing via a shareholding in Hessenatie.

These examples are illustrative of two developments. Port authorities have recently started moving to acquire a more active position in the market place and the logistics chain. The power to grant concessions for container terminals to CTMCs or consortiums of them represents a useful tool in this respect, as it could enable port authorities to realise their goal in the short-term. At the same time, though, this evolution poses a threat to the impartiality of port authorities vis-à-vis other players (including competing terminal management companies and shipping companies), which will inevitably have repercussions for its role as regulator in a port.

4.1.2 Issues of inter-port competition. Ports need to consider the status of competition from other ports and the logistics systems through them. The effects of improved intermodal services are to increase the competitiveness of alternate port routings. In addition, new ports can emerge, for example, Amsterdam and Flushing in the Hamburg- Le Havre range. Initially, such new competitors may not pose much of a threat, but some gain a critical mass of traffic and establish effective hinterland connections. Monitoring the effectiveness of new ports requires careful attention to the success of their network strategies, even at the level of agencies and forwarding firms.

The interests of port authorities and of companies operating terminals in co-operation and competition with other similar enterprises are subject to similar considerations as relationships between other competitive businesses. The economies of scale and scope may create efficiencies at least to some level of co-operation but the mitigating effects on competition must be taken into account. For small ports, even a merger may be beneficial

when sufficient competition from other facilities remains. For example, the merging of the ports of Copenhagen (Denmark) and Malmö (Sweden), enabled by the Oresund Fixed Link, may be viewed in this way. Merging or price agreements between larger ports would be more likely be viewed as anti-competitive.

Ports and terminals in close proximity often enter into small co-operation agreements with neighbouring facilities. For example, in Europe, the ports of Antwerp, Ghent, Terneuzen and Flushing are considering more “structural co-ordination”. The port authority of Rotterdam, for its part, has reached a co-operation agreement with Flushing, including with regard to joint investments. In the U.S.A., the Northwest Terminal Operators Association facilitates collective general marketing and lobbying on matters of mutual interest. The Association does not discuss pricing. In the U.S.A., ports enjoyed the right to exchange price information under the Shipping Act in the same way as conference lines, but discussions and agreements on pricing did not take place. This may be explained, in part, by the ownership of ports by local authorities more interested in the promotion of traffic through their port rather than in the maximisation of profits.

At meetings of port authorities in venues such as the Association of American Port and Harbour Authorities, speakers have sometimes suggested that co-operation among port authorities might be the answer to the “unreasonable demands” from shipping companies and alliances for more space and deeper-draught ports. However, consideration of such action or exchange of information about prices would likely raise serious issues under competition policies. In Europe, an intervention by the European Commission is looming, as shipping companies wish to retain the freedom to negotiate with ports separately, rather than with a single representative body.

4.2 Terminal Operators: mergers on the horizon?

The restructuring of international shipping and logistics systems is also putting pressure on the companies providing container handling and terminal management services. The pressures on these businesses to provide high quality local service levels at very competitive prices while fitting into the global requirements of large lines and shipping alliances are forcing change in the industry. Three patterns of response are evident: (i) mergers that result in immediate expansion and a stronger negotiating position, (ii) regional coverage that creates

greater flexibility in supplying services in neighbouring ports, and (iii) continuing globalisation. Each of these warrants attention.

4.2.1 Mergers. Faced with mergers and alliances among their customers, the development of global CTMCs and the need for ever larger investments to meet transshipment requirements through mega terminals, stevedoring companies are merging. An example of the evolution in mergers is in Belgium. In June 2000, on the occasion of the granting of a concession for the third phase of the new Deurganck Dock on the left bank of the Scheldt in Antwerp, the two largest stevedores in the port, Hessenatie (a subsidiary of CMB) and Noordnatie decided to proceed with a merger. This created one of the biggest container transshipment companies in Western Europe, with a market share in Antwerp of almost 90%. This merger created the opportunity to capitalise on synergies (economy of scale effects) and to attain a stronger negotiating position vis-à-vis shipping companies and the port authority (Besanko, Dranove and Shanley, 2000, p. 98). Thus, the companies are able to take full advantage of the trend towards integrated services at increasingly competitive prices. Other pragmatic considerations also came into play. For example, the merger precludes a difficult choice of terminal for the Grand Alliance and the Americana shipping company. As an integral part of CP-Ships, Americana had previously had a contract with Hessenatie (which, due to a shortage of capacity, was actually executed by Noordnatie), while the Grand Alliance collaborated with Noordnatie. It speaks for itself that any joint operation by Grand Alliance and Americana would involve only one terminal.

However, mergers often have side consequences. In this case, the Belgian national railway company, which had until then been involved with Noordnatie in a joint venture at another terminal, became an interested party. Further, while the focus of attention is on container operations, it also affects the handling of some 45 million tons of general cargo.

A consequence of the merger is to place the merged company in a dominant position in Antwerp in the short run. However, the concession for the new third terminal (left bank) has been granted to the consortium led by P&O Ports. Also, competition between terminals at different ports remains intact.

4.2.2 Regional coverage. Another way for stevedoring companies to serve markets more effectively and to gain market power is to increase the intensity of their operations in a region.

This may be done by increasing the span of services offered, a common trend in logistics-service companies, and by providing similar services in adjacent locations. The Antwerp-based goods handler Hessenatie, for example, has also established itself in the port of Zeebruges for reasons connected with operational and commercial flexibility. As shipping companies are constantly moving from Antwerp to Zeebruges and vice versa, a presence in both ports reduces the risk of client-loss for the company. A similar line of reasoning inspired Hessenatie to acquire a concession on the Westerschelde Container Terminal (WCT) in the port of Flushing. It is a tidal terminal accessible to even the largest of container vessels that will offer a capacity of between 3 and 3.5 million TEU when inaugurated in 2002.

4.2.3 Internationalisation. The increased commercialisation of ports and the global expansion of container trades created an opportunity for the growth of specialised container-terminal operating companies. The companies have the resources to support substantial investments, have wide experience in container handling and logistics and have considerable expertise in technologies, particularly information technologies. The leaders globally are:

- P&O Ports, one of the core businesses of the P&O Group, with responsibility for 21 container terminals in 19 countries and investments in a further 30 ports;
- Hutchinson Port Holdings (HPH), one of the five core businesses of Hutchison Whampoa of Hong Kong, which operations in 18 ports. It owns the Port of Felixstowe which it acquired in 1991;
- Port of Singapore Authority (PSA) which set up an International Division in 1996 to take its expertise to other ports. It has 10 projects in other countries.

Not all successful terminal operators attempt to extend their businesses internationally. For example, ECT of Rotterdam initiated a terminal management programme for the Port of Trieste but subsequently decided to refocus its resources on Rotterdam.

Europe has felt the direct influence of the globalisation of terminal management. As HPH already owned the Port of Felixstowe, its proposed investment in ECT led to a prompt investigation by the European Commission into the effect of a dominant position in the container terminal business. P&O Ports has also been active in increasing its involvement in European ports. In February 2000, P&O Ports took over Antwerp Allied Stevedores and two large terminals from Seaport (for containers and break bulk, realising 500,000 TEU and 1.2 million tons in general cargo in 1999). The objective of P&O Ports is to develop a pan-

European network that will create synergies with other activities of the group. To this end, it also invested in the inland port of Duisburg. P&O Ports failed in an attempted acquisition of a majority shareholding or full ownership of one of the two other prominent market players (Hessenatie and Noordnatie) because of the aforementioned merger of these firms. As noted previously, a consortium led by P&O Ports has been successful in getting the concession for the third terminal in Antwerp.

4.3 Other market players in the port

In a port environment, there are of course numerous other, often smaller, market players besides a port authority and terminal companies, e.g., towing services, shipping agents, hinterland modes and shippers. So far, there appears to have been little movement among these players, nor have they really been take-over targets. However, if the current trend towards greater control over the logistics chain persists, this may change rapidly.

Until recently, towing services in Europe enjoyed a virtual monopoly, i.e. they operated in a sheltered environment. The consequences were clear to see: a lack of investment, substandard services, and inadequate planning for the future. Towing services succeeded in achieving a degree of profitability, but often this was skimmed off by trade unions and personnel. After 1993, competition set in, with the entry of such companies as Kotug and Smit in Hamburg, and Fair Play in Rotterdam. This resulted in a sharp decline in charges.

This change has stimulated a move towards globalisation. The Antwerp-based towing company URS, for example, is looking actively for international partnerships with a view to developing a world-wide supply of services cf. co-operation with Smit on the link between Rotterdam and Antwerp). This implies consolidation of its operational dominance on the Scheldt and a global expansion of activities. This expansion would be achieved mostly in Latin America, not in Northern Europe, where towing services have already reached saturation point.

With regard to shipping agencies, the trend is for shipping companies to assume direct responsibility for previous agency functions (e.g. Hapag Lloyd, Lykes Lines). In some cases, rather than drop an agency relationship, a shipping line may enter into a joint venture with a former agency. For example, in Antwerp, the Mediterranean Shipping Company (MSC),

which used to operate with a traditional agent, now has a so-called dedicated maritime agency at its disposal, which operates under the name MSC Belgium. This shipping agency is a 50/50 joint-venture between MSC and its agent. The similarity with another operation revolving around the concession for a container terminal (joint-venture between MSC and Hesseantie) is striking.

Among the hinterland transport modes, the highly competitive road transport is the most important mode. The role of railways is dependent on the provision of good dependable services. This has led to initiatives by shipping lines, terminal operators and port authorities to enter into arrangements for the operation of scheduled or “shuttle” trains (e.g. P&O Ports, from Antwerp to Duisburg).

Shippers have various influences on the patterns of vertical and horizontal reorganisation. Perhaps their strongest influence is their indirect influence through the preferences that they express in the market in their purchases of transport and logistics services. Consolidation among the shippers is adding weight to the need for service suppliers with a global capability. Characteristics of supply-chain management are encouraging vertical integration. However, shippers may also have opportunities to express their concerns about market structures that affect competitiveness in industries. The traditional example is in relation to shipping conferences.

5. CONCLUSIONS

In recent years, there have been well-marked trends for vertical and horizontal integration in the international maritime logistics chain. Shipping companies, in particular, have been taking the initiative in this development. One consequence has been an increase in the market power of the large shipping companies over the other service suppliers, such as port authorities.

However, as expected, the other market players are responding to the changing environment also. Port authorities are adopting new strategies and new companies are emerging in container terminal management. Mergers, regional and global expansion are changing the structure of the old stevedoring business. The large shipping companies may now find themselves negotiating with the same terminal operating company in different ports in a range

of ports as well as in different port ranges. This may affect the negotiating power of the lines and increase their interest in the operation of dedicated terminals or obtaining a shared interest in a terminal. Such a trend may reduce the “footloose” nature of shipping companies and place their relationship with terminals on a sounder and longer-term economic base.

This development would tie in perfectly with the striving of port authorities to bind their shipping customers to the port. A shipping company with a financial stake in and a long-term agreement in a dedicated terminal will be less inclined to opt for alternative ports of call. It is striking in this whole evolution how a number of port authorities are emerging as more active market players, buying themselves into the capital of stevedores or joint-ventures between stevedores and shipping companies. The weapon they use to achieve this goal is the allocation of concessions. Could there be a better example of striving for survival?

However, these developments give rise to a number of important research questions. To what extent is the role of port authorities as a regulator and go-between with the government compromised in the eyes of (competing) market players that are not involved in the arrangement? To what extent will a further concentration of terminal management companies and the active participation of port authorities affect price determination of port services? How will the maritime markets and, in particular, port activities evolve from now? How will the long-term commitments of shipping lines and terminal management companies to facilities affect the dynamics of competition? Answers to such questions are speculative. But they may be aided by simulation studies to examine the influence of hinterland transport connections and the functioning of terminals on traffic flows.

REFERENCES

Besanko, D., Dranove, D. and M. Shanley, 2000, Economics of Strategy (2nd edition), John Wiley & Sons, Inc., New York.

Blauwens, G., Meersman, H. and E. Van de Voorde, 1996, The Influence of Load Size and Distance on Maritime Freight Rates, in: Hensher, D., King, J. and Tae Oum (eds.), World Transport Research. Proceedings of the 7th World Conference on Transport Research, Volume 4: Transport Management, Pergamon (Elsevier Science Ltd), Oxford, pp. 149-164.

Gilman, S., 1994, Contestability and Public Policy in Liner and Short Sea Shipping, in: Molenaar, H.J. and E. Van de Voorde (eds.), *Competition Policy in Liner Shipping*, IAME, Antwerp.

Graham, M.G., 1998, Stability and Competition in Intermodal Container Shipping: Finding a Balance, in: *Maritime Policy & Management*, Vol. 25, No. 2, pp. 129-147.

Heaver, T., 1995, The Implications of Increased Competition for Port Policy and Management, in: *Maritime Policy and Management*, Vol. 22, No. 2, pp. 125-133.

Heaver, T., Meersman, H., Moglia, F. and E. Van de Voorde, 2000, Do Mergers and Alliances Influence European Shipping and Port Competition?, in: *Maritime Policy & Management*, Vol. 27, No. 4, pp. 363-373.

Lim Seok-Min, 1998, Economies of Scale in Container Shipping, in: *Maritime Policy & Management*, Vol. 25, No. 4, pp. 361-373.

Meersman, H. and E. Van de Voorde, 1997, Future Strategies for Rail Freight. Taking Advantage of the Transport Generating Effect of Seaports, in: *Rail International*, Vol. 9/10, No. 1, pp. 206-215.

Meersman, H. and E. Van de Voorde, 1998, Coping with Port Competition in Europe: A State of the Art, in: Sciutto, G. and C.A. Brebbia (eds.), *Maritime Engineering and Ports*, WIT Press (Computational Mechanics Publications), Southampton, pp. 281-290.

Molenaar, H.J., and E. Van de Voorde, 1994, *Competition Policy in Liner Shipping*, IAME, Antwerp.

Sletmo, G.K. and S. Holste, 1994, Shippers' councils: role and responsibility - A Western View, in: *Maritime Policy and Management*, Vol. 21, No. 4, pp. 257-271.

Stead, R., Curwen, P. and K. Lawler, 1996, *Industrial Economics. Theory, Applications and Policy*, McGraw-Hill, London.

Stopford, M., 1997, *Maritime Economics* (second edition), Routledge, London and New York.

Suykens, F. and E. Van de Voorde, 1998, A Quarter of a Century of Port Management in Europe. Objectives and Tools, in: *Maritime Policy & Management*, Vol. 25, No. 3, pp. 251-261.