PATHWAYS TO IMPROVING THE PRODUCTIVITY AND COMPETITIVENESS OF PORTS: STRATEGIES FOR KUNSAN PORT

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Introduction

Behind every port city is a community whose livelihood is intertwined with the ships that visit its port and the cargo that they carry to and from the port terminals. An integral component of this community is the group of businesses associated with the transportation and warehousing (storage) industries, including carriers (shipping lines) and terminal operators, as well as other services in the supportive industries such as freight forwarders, hauliers, warehousing companies, ship chandlers, towage and piloting services, ferry services, harbour and port operation industries, marine salvage, bunkering companies, and shipping agents (Fleming, 1987). In addition, there are many industries which are indirectly linked to the transportation and warehousing sector, such as export-oriented manufacturing companies which send their goods primarily through the port as well as companies which rely extensively on materials and semi-finished components imported through the port from other countries.

In these port cities, the businesses that carry out the abovementioned activities often cluster closely in and around the port terminals to take advantage of significant spatial economies associated with the geographical proximity to the port. The fortunes of this meshed network of service companies are tied largely to the volume of trade and transhipment of goods at the port and the flow of shipping through the harbour. It is in the interest of every port city to develop and grow their shipping and port-related activities so that the entire community can, over the years, enjoy incremental economic benefits in the form of better incomes and expanded employment opportunities.

Relationships between Shipping and Trade

However, like in any other business, port cities all over the world face considerable competition from other ports, especially those which are located in close proximity. In the face of competition and the pressure to sustain growth of traffic flows through their port, the relevant authorities will have to think of innovative measures that will help to increase the volume of trade and ship calls at the port. In the past few years, the international cargo pie has been growing significantly and many ports all over the world have managed to obtain a share of this growth, but some ports have grown much faster than others. Increasing globalization of the world economy has indeed led to the gradual breaking down of the barriers to flows of goods, services, capital, labor, investment and information. One of the most significant dimensions of globalization is the opening up of markets and the burgeoning growth of international trade. Of the different regions of the world, the Asia-Pacific is emerging as the centre of gravity of global trade and shipping (see Table 1).

The APEC economies' share of world exports has increased from 38.1 percent in 1990 to 44.8 per cent in 2004. Intra-regional trade (exports) in APEC accounts for 72 percent of the region's total exports. In contrast, the EU15's share of world exports was 43.2 per cent in 1990, but this dropped to 37.4 percent in 2004. Intra-regional exports in this region account for a smaller share as compared with APEC – 61 percent. It is also interesting to examine more closely the trade situation in a few selected Asian economies (see Table 2). It can be seen that between 1990 and 1995, all the major Asian economies have experienced an increase in their shares of world trade. Japan's share was impressive at an all time high of 8.57 percent of total world trade in 1995. However, after 1995, some of the Asian economies began to experience a steady decline in world shares even though their absolute export volumes were growing, including Japan, Hong Kong and Korea. The shares of Taiwan and Malaysia grew from 1995 to 2000, but began to decline thereafter. Only three economies – China, India and Korea – have seen consistent increases in their shares over the 15 years since 1990. By 2004, China had overtaken Japan as the

leading exporting nation in Asia in 2004, accounting for 6.39 percent of world exports.

Table 1: WORLD AND REGIONAL EXPORTS

	1990	1995	2000	2004
World Exports (US$ billion)	**3,494**	**5,169**	**6,436**	**8,976**
APEC Total Exports (US$ billion)	**1,331**	**2,352**	**3,112**	**4,019**
APEC's Share of World (%)	**38.1**	**45.5**	**48.4**	**44.8**
Intra-APEC Exports (%)	**68**	**72**	**73**	**72**
EU 15 Total Exports (US$ billion)	**1,510**	**2,018**	**2,317**	**3,361**
EU's share of World (%)	**43.2**	**39.0**	**36.0**	**37.4**
Intra-EU Exports (%)	**66**	**62**	**62**	**61**

Source: UNCTAD (2007)

Table 2: SELECTED ASIAN COUNTRIES' EXPORTS

	1990	1995	2000	2004
World Exports (US$ billion)	**3,494**	**5,169**	**6,436**	**8,976**
Korea Exports (world share %)	**65.0 (1.86)**	**125.1 (2.42)**	**172.3 (2.68)**	**253.8 (2.83)**
China Exports (world share %)	**62.1 (1.78)**	**148.8 (2.88)**	**249.2 (3.87)**	**573.6 (6.39)**
Japan Exports (world share%)	**287.6 (8.23)**	**443.1 (8.57)**	**479.2 (7.45)**	**565.8 (6.30)**
Taiwan Exports (world share %)	**67.1 (1.92)**	**111.6 (2.16)**	**147.8 (2.30)**	**174.2 (1.94)**
Hong Kong Exports (world share %)	**82.2 (2.35)**	**173.8 (3.36)**	**201.9 (3.14)**	**259.3 (2.89)**
Singapore Exports (world share %)	**52.7 (1.51)**	**118.3 (2.29)**	**137.8 (2.14)**	**179.6 (2.00)**
India Exports (world share %)	**18.0 (0.52)**	**30.6 (0.59)**	**42.4 (0.66)**	**71.8 (0.80)**
Malaysia Exports (world share %)	**29.5 (0.84)**	**73.9 (1.43)**	**98.2 (1.53)**	**125.7 (1.40)**

Source: UNCTAD (2007)

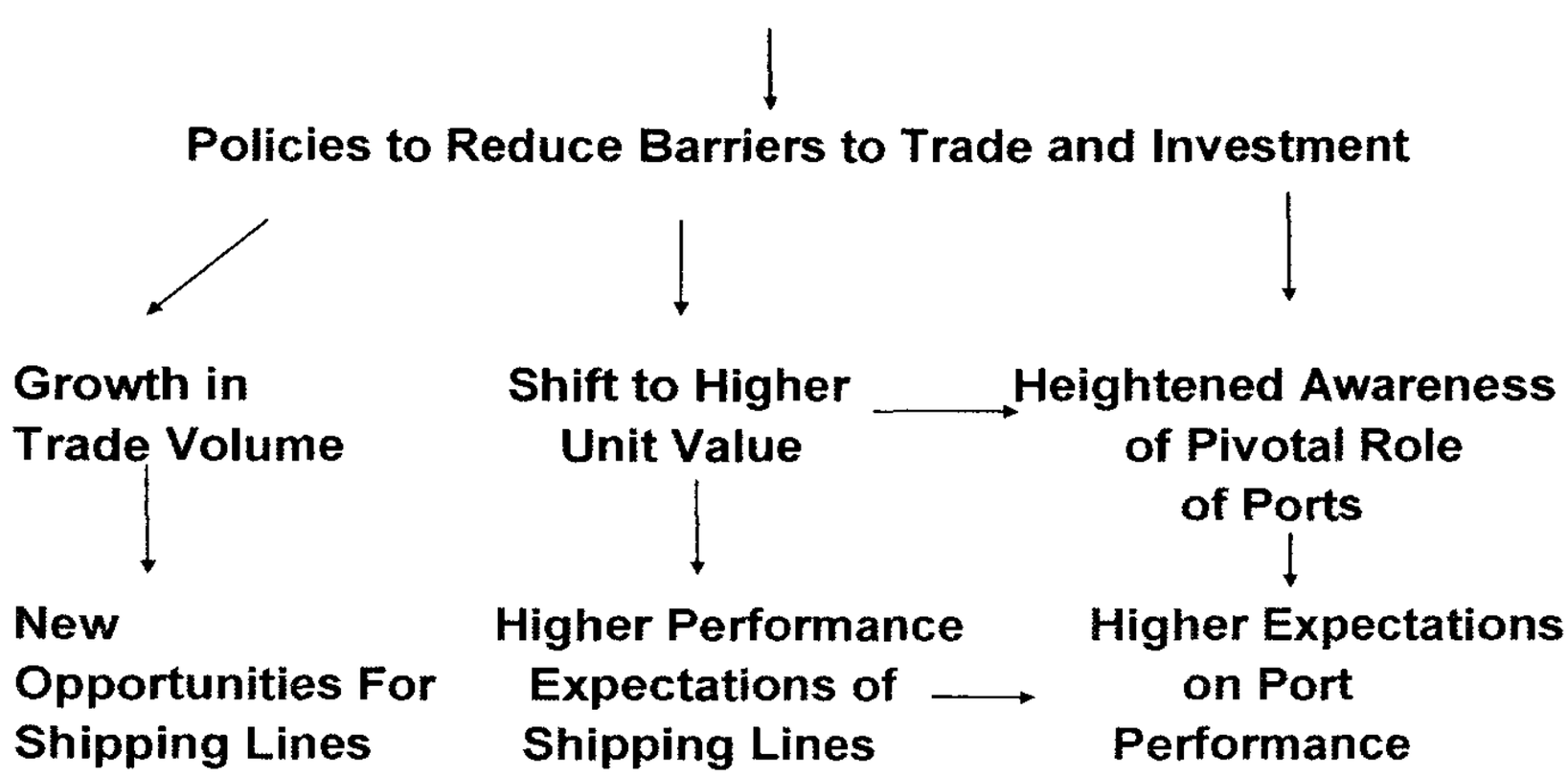
As world trade has increased by leaps and bounds over the past 20 years, there has been a corresponding increase in world fleet capacity. As can be seen in Table 3, seaborne trade has increased from 4,008 million tonnes in 1990 to 7,109 million tonnes in 2005. It is not surprising that the greatest capacity increase has been in Asia. It is also interesting to note that while exports in dollar terms have jumped by 2.57 times between 1990 and 2004, shipping volumes (in tonnes) have increased by only 1.77 times between 1990 and 2005. While this observation may be related to many factors, it is clear that a major force behind this trend is that the ships are moving goods of increasingly higher value over the years. This places greater pressures on ports as they are expected to provide higher levels of service quality for their customers (Figure 1).

Table 3:
GROWTH IN SEABORNE TRADE
(million tons)

Year	Total Seaborne Trade	Tanker	Dry	
			Total	Bulk
1970	2,556	1,442	1,124	448
1980	3,704	1,871	1,833	796
1990	4,008	1,755	2,253	968
2000	5,885	2,149	3,736	1,285
2005	7,109	2,422	4,687	1,701

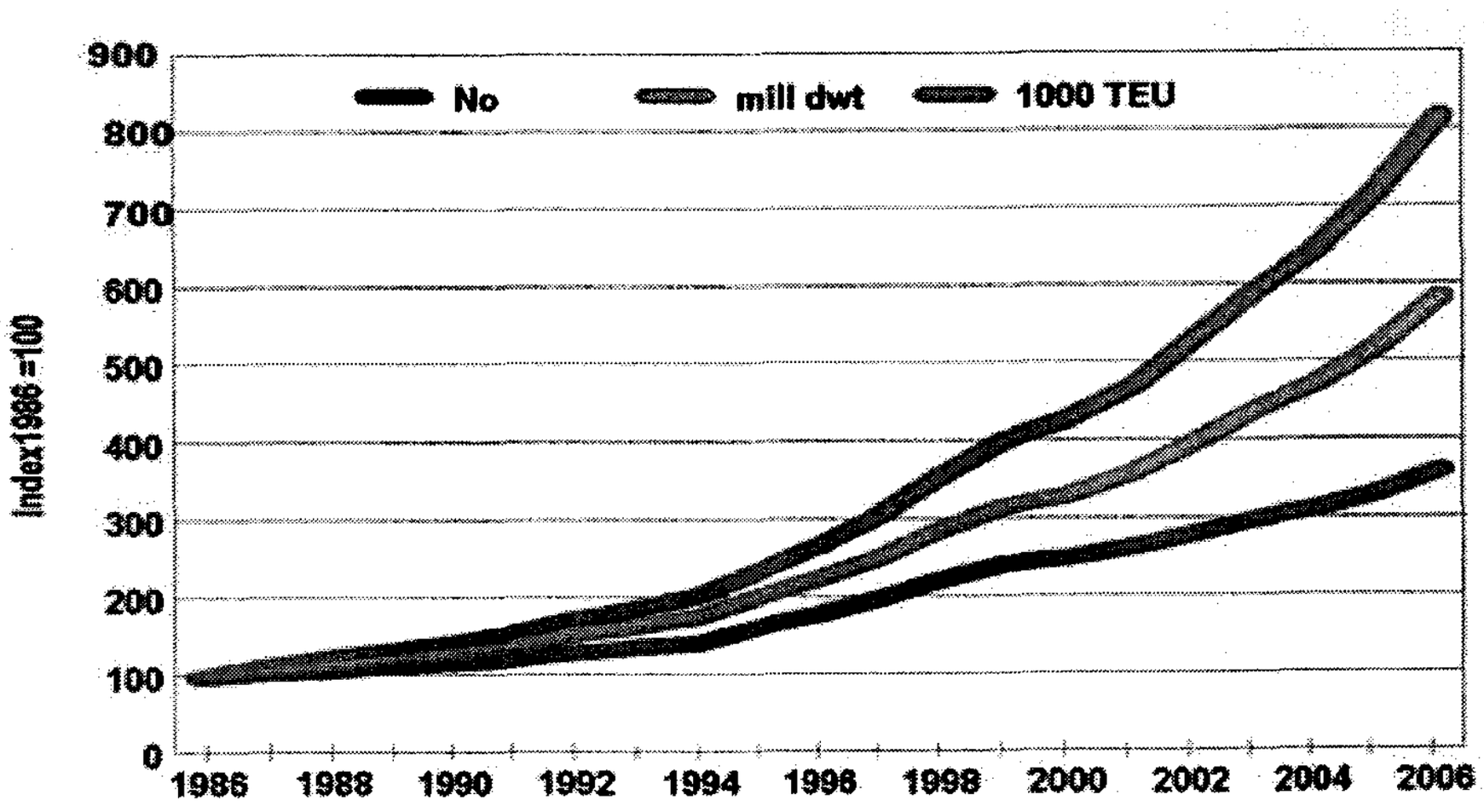
Source: UNCTAD (2006)

Figure 1: Changes in International Trade and Responses of Shipping and Ports (Source: ESCAP, 2001)



It was noted earlier that the growth in seaborne trade tonnage has been considerably smaller than the growth in exports in dollar terms. It is noteworthy that the growth rate in the number of ships has been significantly smaller than the growth in ship capacity (in dwt or TEU capacity). This suggests that the size of ships is getting bigger over the years. In the period 2003 – 2007, the average size of the world merchant fleet increased from approximately 20,700 to 23,500 deadweight tonnes (ISL, 2007). Figure 2 shows the growth rates of number, size and capacity of the world container fleet between 1986 and 2006. It clearly depicts how container ships are getting larger but are able to hold even more containers per unit dwt than before.

Figure 2: Container Fleet Development as of January 1st, 1986 – 2006 (Index 1986 = 100)



Source: ISL, 2006

Issues in Port Competitiveness

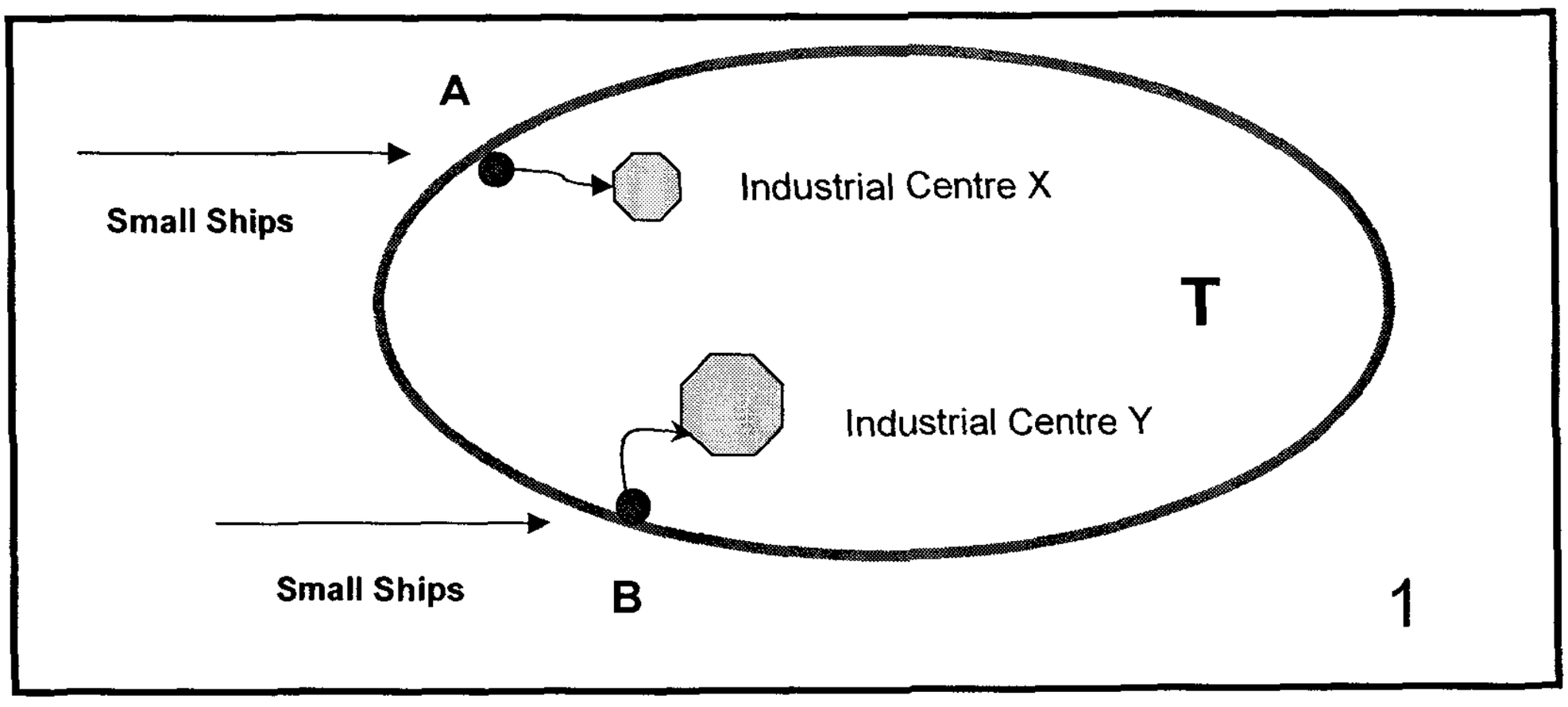
Shipping lines prefer to use larger vessels to enjoy economies of scale and they restrict their main calls to selective ports in a region rather than serve many ports. The question of larger ship sizes constitutes an important issue for ports. The best way to appreciate the impact of bigger ships is by way of illustration by example. For the purposes of the paper, we will consider a hypothetical scenario.

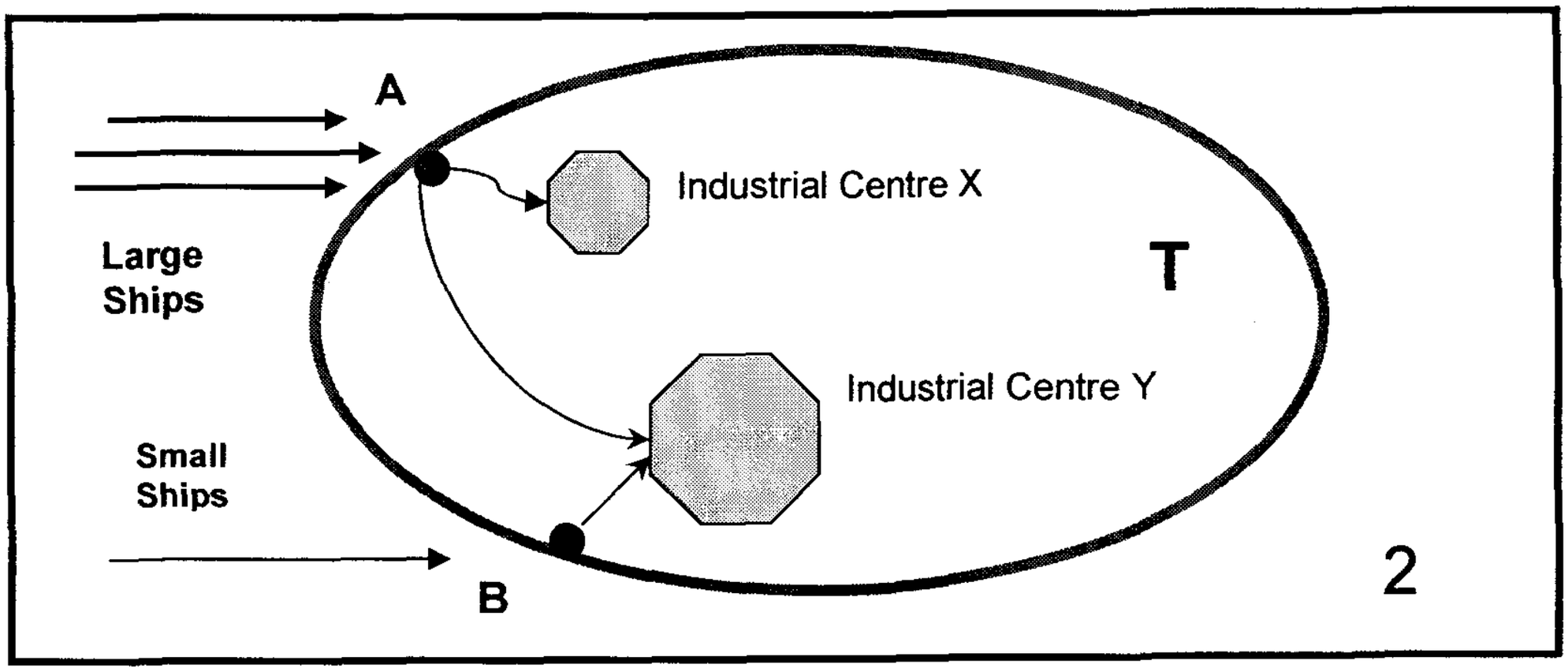
Assume there is an island country T with two ports A and B (Figure 1). In time period 1, the two ports are visited by small ships bringing materials to be processed in their respective industrial centres X and Y, and taking away finished manufactured goods. Over time, the global demand for the goods produced in Y increases significantly leading to more materials sent to and finished goods shipped out of Y. However, even though the trade hinterland of port B (industrial centre Y) is bigger than that of port A (industrial centre X), it turns out to be the case that major shipping lines prefer to have their ships call at port A and serve industrial centre Y

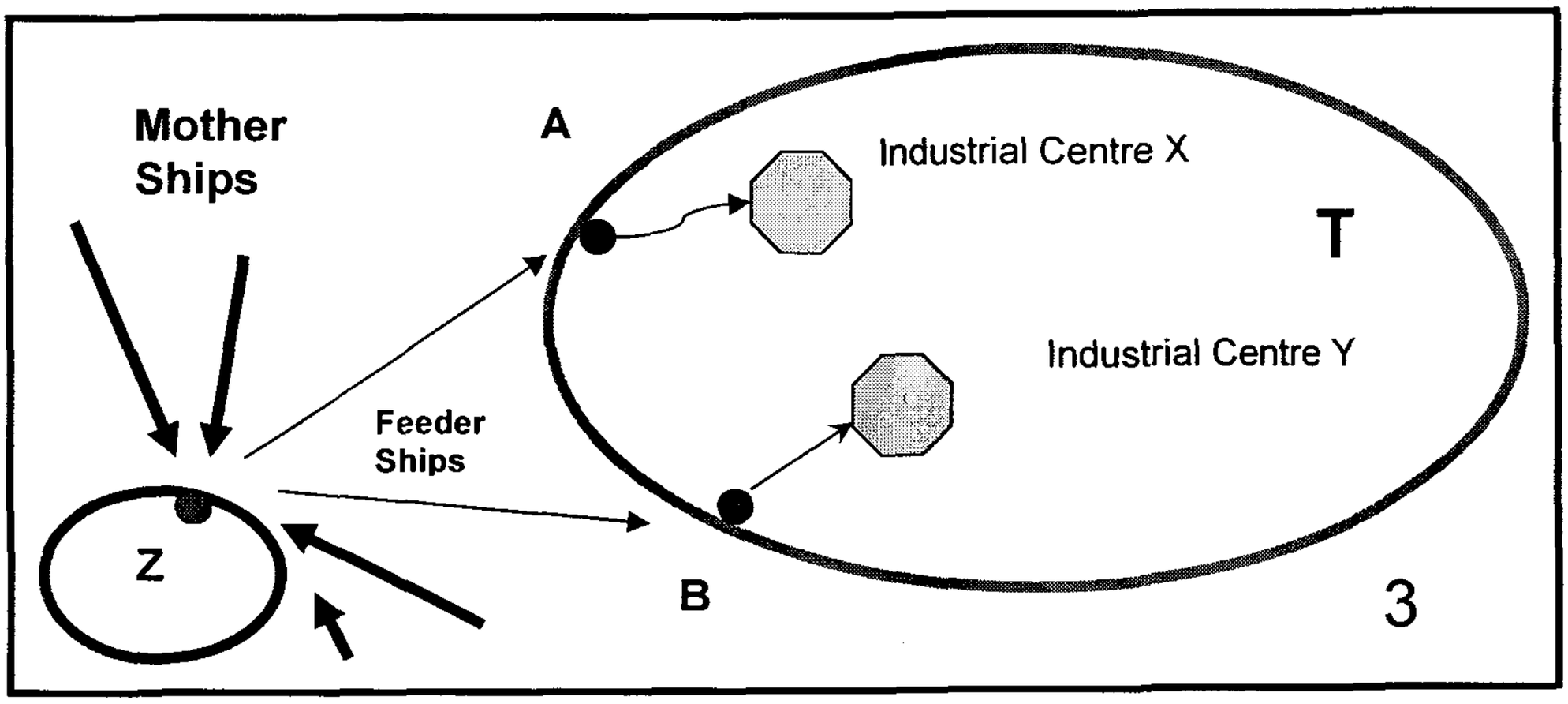
through a trucking service from port A, rather than serve port B (time period 2). There could be various reasons for this – lower cargo handling and port charges at A; inadequate port facilities and/or delays in cargo clearance in port B; poor road infrastructure development between port B and the industrial centre Y; better service levels in port A; and so on. Port A thus experiences good growth, at the expense of port B.

In time period 3, shipping lines are adding even larger ships to their fleets and increasingly forming hub and spoke networks instead of making direct calls to many ports. During this period, another port Z in a neighbouring country has been actively developing its port facilities and services such that efficiency levels are much higher than ports A and B. An additional factor is that port Z has a natural deep harbour that can accommodate larger ships easily. Shipping lines decide to use Z as their key hub and ports A and B are reduced to being served by feeder vessels from Z. Because of subsequent inadequate port development and the deterioration of port service quality, firms based in the industrial centres X and Y shift out and move their factories to Z.

Figure 1: A Hypothetical Scenario of Port Competition







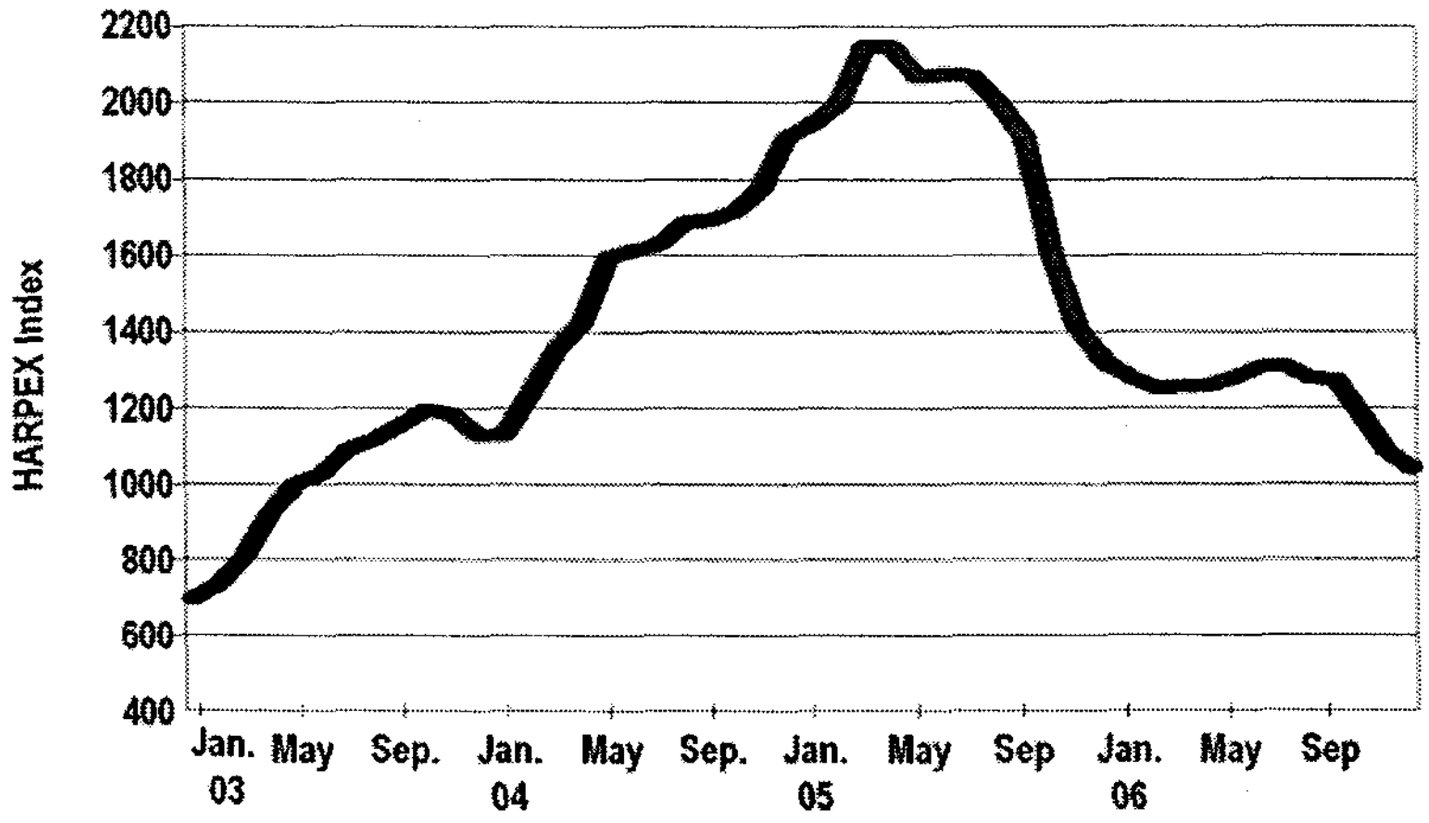
Sustaining a Port's Competitive Position

Although the above is just a hypothetical case, it is not an unrealistic situation. It clearly highlights the real-world scenario that the ability of ports to sustain growth rests on many factors, both internal and external. A port and shipping community needs to consistently upgrade its facilities and services in line with market demand. Port capacity ideally should be expanded ahead of demand instead of waiting till it is saturated because it takes a long time to put in new facilities and congestion may build up in the meantime. Given the large investment of financial resources on bigger and more expensive ships, it is of interest to the carriers that the ships be

turned around quickly at ports so that they can be more effectively employed in more voyages. Every day that is lost in waiting in ports can cost charterers of ships lots of money. For example, during the 2001-2002 period, the daily hire charter rates for open-hatch or breakbulk ships was in the range of US$7,000 – US$8,000/day. By early-2004, it had skyrocketed to US$35,000/day (McInerney, 2004). The same trend can also be seen in container, tanker and dry bulk charter rates. Figure 2 shows the rise in the HARPEX container charter rates right up to mid-2005. Having to spend 'dead time' in congested, inefficient or ill-equipped ports is thus a huge disincentive for carriers.

Ports therefore have to ensure that their productivity on equipment and labour are increased significantly to match the expectations of shipping lines. There is much talk about huge economies of scale and cost savings that are brought about through the use of bigger ships, but port authorities often lament that while the economies are enjoyed by the carriers, the diseconomies are passed on to the terminal operators who have to keep their physical infrastructure up to date with growing ship sizes. Putting in the latest technology in the physical handling systems does help but these have be purchased at high cost by the terminal operators.

Figure 2:
Monthly HARPEX Container charter rate index up to December 2006



Source: ISL (2007)

Nevertheless, embracing new technology, innovation and knowledge is a necessary step to improving not only the service quality of the port but it also helps the port to advance up the value-added ladder and achieve a higher level of economic impact. While increased trade and a larger number of ship visits at the harbour may lead to an expansion of the shipping economy in a port city, the per capita value-added and productivity of this sector may not experience significant growth. This will be the case if the port city increases its requirements of labour and other inputs to cater to the growing volume of traffic. The metamorphosis of the shipping and port economy towards higher productivity and value-added involves an internal transformation where high-technology and knowledge are increasingly applied in the existing activities in this sector resulting in what may be termed a "progressive modernization" of the shipping and port economy. This approach may involve, for example, the upgrading of physical handling technologies to more automated systems and facilities, and the subsequent incorporation of advanced information and security technologies. Given the heavy investments needed, many governments have gone down the route of partial deregulation of port services and the active involvement of the private sector in port modernization (Baird, 2002; Cullinane & Song, 2002). The desired result of these efforts is the provision of higher-quality port and shipping services where the value-added is higher and which can be priced at a premium (Tongzon & Wu, 2005).

When talking about labour, cost and productivity are important but they are not the only issues. Smooth labour management relations are also vital, especially in view of the many large-scale strikes encountered in some ports in recent years. In the infamous US longshoreman strike in October 2002, which closed 29 ports on the west coast and left hundreds of ships stranded offshore waiting to offload cargo, it was estimated that the daily impact to the economy was in the region of US$1 billion (*BBC News*, Monday, 7 October, 2002). While U.S. West Coast ports continue to battle terminal, freeway, and rail congestion, Mexico's ports have become

increasingly attractive to global shippers – especially for cargo originating in China and other Asian countries. Mexico's port workers are unionized, but wages are less than one-fourth of what they are at the ports of Los Angeles and Long Beach. Mexico also logs an advantage with its record of labor stability. It has gone 85 years without a strike at its ports. (*Inbound Logistics*, January 2007).

On the other hand, you may have a very efficient, cost-effective and high-productivity port with world-class facilities that allow cargo to be unloaded and loaded quickly, but if that cargo is stuck at the port because of cumbersome customs and other formalities, the efficiencies gained in the cargo handling systems may be lost to slow cargo clearance. Therefore, apart from the physical infrastructure, attention must also be given to the soft infrastructure especially dealing with issues of facilitation, such as customs and documentation clearance. A seamless, efficient, and flexible transport system thus needs to be complemented by smooth clearance, harmonization of standards in documentation and legal aspects of carriage, an effective data and information exchange system, and a clear assignment of responsibilities amongst the different agencies in the shipping and port community. For hub ports that deal with a significant volume of transshipment cargo, good connectivity between different terminals within the port system need to be present to bring about a timely transfer of shipments between a ship in one terminal to another ship in another terminal.

The port authority and terminal operators also need to be vigilant about the offerings of neighbouring ports. Despite significant port infrastructure and service improvements, a port is only as good as what its competition can offer. This is an area of perpetual tension between ports and carriers where the former are being pushed by the latter to offer a competitive set of conditions (Hoste, *et al.* 2006). This is especially so in the case of container shipping where large-scale mergers and acquisitions have led to certain carriers commanding significant shares of the total global fleet capacity. In 19 June 2007, Maersk had a global share of 16.1 percent; MSC 10.1 percent; and CMA-CGM 7.2 percent. Just these three carriers control a third of the global capacity (33.4 percent). In comparison, the three leading lines at 1st January 2000, Maersk Sealand, Evergreen and P&O Nedlloyd, had a combined

market share of 23.7 percent (BRS, 2007). The top 10 carriers currently account for more than 60 percent share of the total capacity. Carriers with such market shares are clearly in a position to push port authorities to the limit. If they do not get what they are looking for at one port, they may very well be able to find it at another nearby competitor. This is what happened in the year 2000 when Maersk shifted their transshipment operations from Singapore to Tanjung Pelepas in Malaysia.

Table 4: The Top 10 Container Carriers in the World

Rank	Operator	TEU Capacity	Share
1	APM-Maersk	1,787,821	16.1%
2	Mediterranean Shipping Co (MSC)	1,120,841	10.1%
3	CMA CGM Group	799,770	7.2%
4	Evergreen Line	596,560	5.4%
5	Hapag-Lloyd	484,745	4.4%
6	China Shipping Container Lines (CSCL)	426,963	3.9%
7	COSCO Container L.	411,350	3.7%
8	NYK	361,201	3.3%
9	NOL-APL	357,763	3.2%
10	Hanjin / Senator	341,202	3.1%

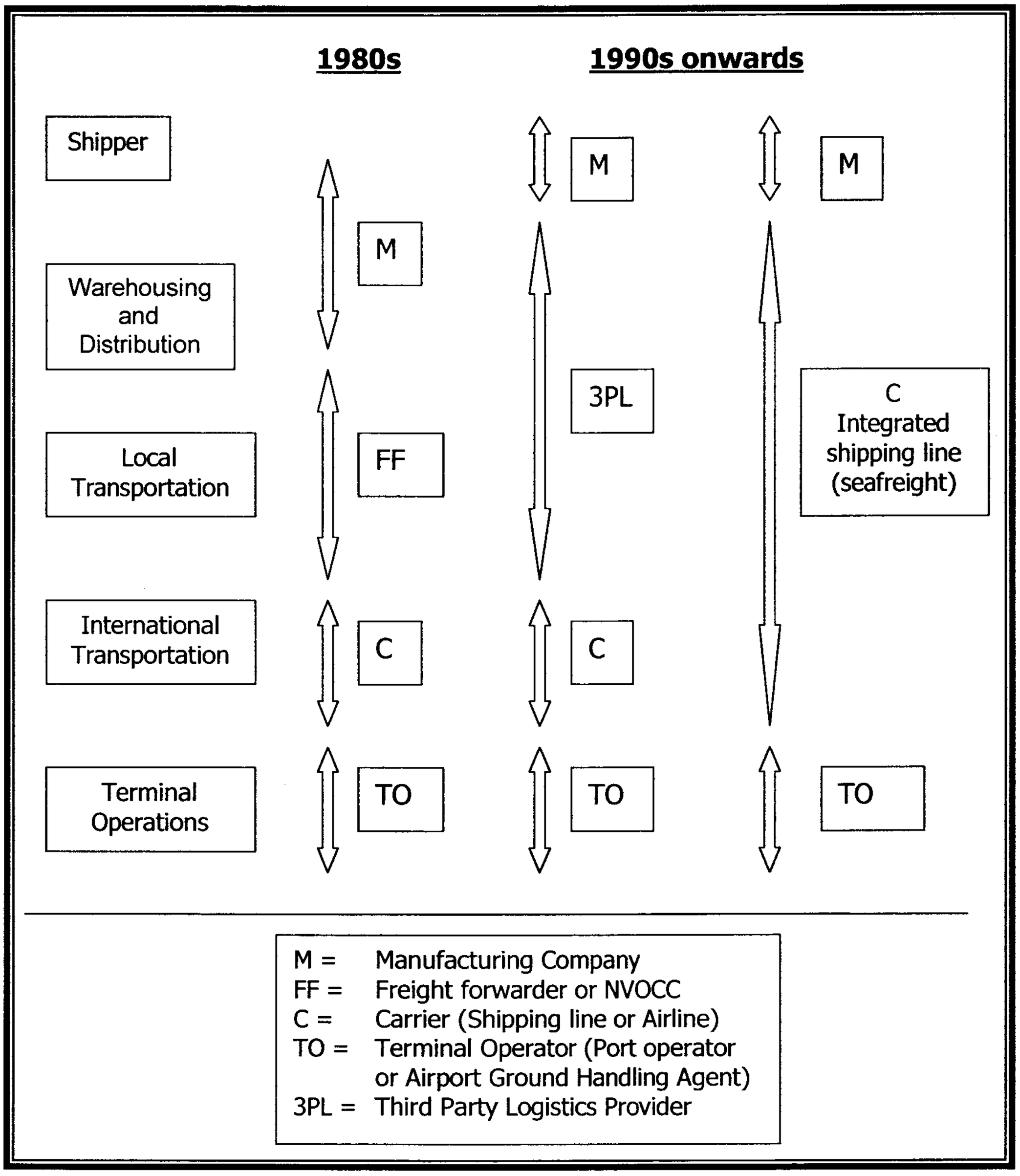
The same trend of mergers and acquisitions is also taking place in the third-party logistics (3PL) business. Major players like DPWN (Duetcshe Post World Net), Schenker, Panalpina, Kuehne & Nagel (K&N) and UPS control a major share of the global market. In 2005, DHL moved 22.9 million TEUs, accounting for a 8.6 per cent market share. K&N, Schenker and Panalpina each accounted for 8.3 percent, 4.3 percent and 4.0 percent respectively (Boeckers, 2007). Both the large shipping lines and 3PLs have a practice of

using strategic hubs to consolidate and re-distribute their shipments to the final consignees. In addition to a horizontal integration involving expansion of the core business through mergers and acquisitions, shipping lines and 3PLs have also been active in vertical integration, where they establish a presence in businesses that are linked backward and forward to their core business. For example, Maersk has, in a big way, integrated forward into logistics (Maersk Logistics) and backward into terminal operations (APM Terminals). They have the capacity to become a totally mega-integrated carrier, capable of taking on the responsibility of the entire door-to-door supply chain on their own without having to rely on other agencies (see Figure 4). Port cities which are selected by these integrated carriers and 3PLs as their hubs stand to benefit significantly from the volume of transshipment traffic that these businesses can bring. Cities which aspire to promote themselves as global logistics centres have to pay special attention to marketing their port and other related services to these "big boys" in the industry, and work towards a high level of customization and personalized approach in the service package offered to these important customers. Shipping lines, 3PLs and manufacturing firms are increasingly becoming footloose and can easily close shop at one location and shift to another location where the infrastructure and services are perceived to be better.

Further, it can be very beneficial for port cities to look at port and industrial hinterland development as an integrated effort. Ships will generally go to where there is cargo (or passengers for ferry services). Indeed, a good port may possibly thrive without the development of its immediate industrial hinterland. Similarly an industrial centre in a city may thrive without the support of a good port. However, the chances of success are much higher if both are integrated as a synchronized public policy initiative. Several port cities all over the world are now developing various types of industrial parks under the broad umbrella of free trade zones (FTZs) or special economic zones (SEZs) to attract major transportation, logistics and global manufacturing firms to set up a base in these specially created industrial parks. The

concept has been extensively applied in countries such as China, Brazil, India, the Philippines and Poland.

Figure 4: Vertical integration of different functions of the supply chain by 3PLs and Shipping Lines



It must be realized that there are many links and nodes in the intermodal transportation chain, and the port is only one component. There are the inland cargo movements, handling of cargo at the ports, shipping of cargo in ships through mother-feeder networks, and the associated information and documentation flows between different parties. The overall efficiency of the intermodal chain is limited by the "weakest link". Good intermodal connections to demand and supply centres in the port's hinterland is crucial for the success of a port. In the Asian context, there are many weak links in the different countries. These include the lack of harmonized transport systems, frequent reloading of goods, port congestion, excessive documentation requirements, burdensome cross-border procedures, lack of automation and scarce use of information technology. These lead to long delays in the conveyance of goods to the consignees, and inevitably bring up the operating costs of the manufacturing firms. These firms are naturally drawn to Asia by virtue of the lower labour costs and huge market potential, but weaknesses in the transportation chain sometimes serve as a significant deterrent for investment.

In India, for example, one of the weakest links is the port system. India has 12 major ports and 181 minor ports. However, the major ports handle 90 percent of the all-India port throughput and the current capacity at these ports is overstretched, resulting in increasing congestion. "According to the Economic Survey, the average turnaround time for ships in major ports is up at 3.53 days from 3.41 days in 2004-05 and 3.45 days in 2003-04 and the average pre-berthing detention time was much higher at 9.16 hours compared to 6.03 hours and 4.86 hours respectively" (Sanyal, 2006). The performance of Indian ports does not compare favorably with that of efficient international ports. On three important parameters- capacity, productivity and efficiency, Indian ports lack in comparison to some of the major international ports. In international terms, labor and equipment productivity levels are still very low due to the outdated equipment, poor training, low equipment handling levels by labor, uneconomic labor practices, idle time at berth, and time loss at shift change (India Ports & Terminals, Website).

In China, a key problem relates to poor inland transport links. Port development has been pursued aggressively in the past few years in an effort to distribute the cargo loads away from the major ports such as Shanghai and Guangzhou. However, because inland links to these new ports have not been adequately developed, most carriers still prefer to use the major ports as these have better inland connections. The result is increased congestion at the major ports and underutilization of some of the new ports. It is estimated that inland transport costs can account for about two-thirds of the total transport costs from Chinese producers to overseas markets (see Table 4) (Carruthers, R. and Bajpai, 2002).

Table 4: Composition of Logistics Costs of Container Transport from Inland China (Chongqing) to US West Coast

Activity	US$ per TEU	% of Total Cost
Land access to port	2,300	63
Port Handling	200	5
Maritime Transport	750	21
Port Handling	150	4
Land access to final destination	250	7
Total	3,650	100

Source: Carruthers and Bajpai (2002)

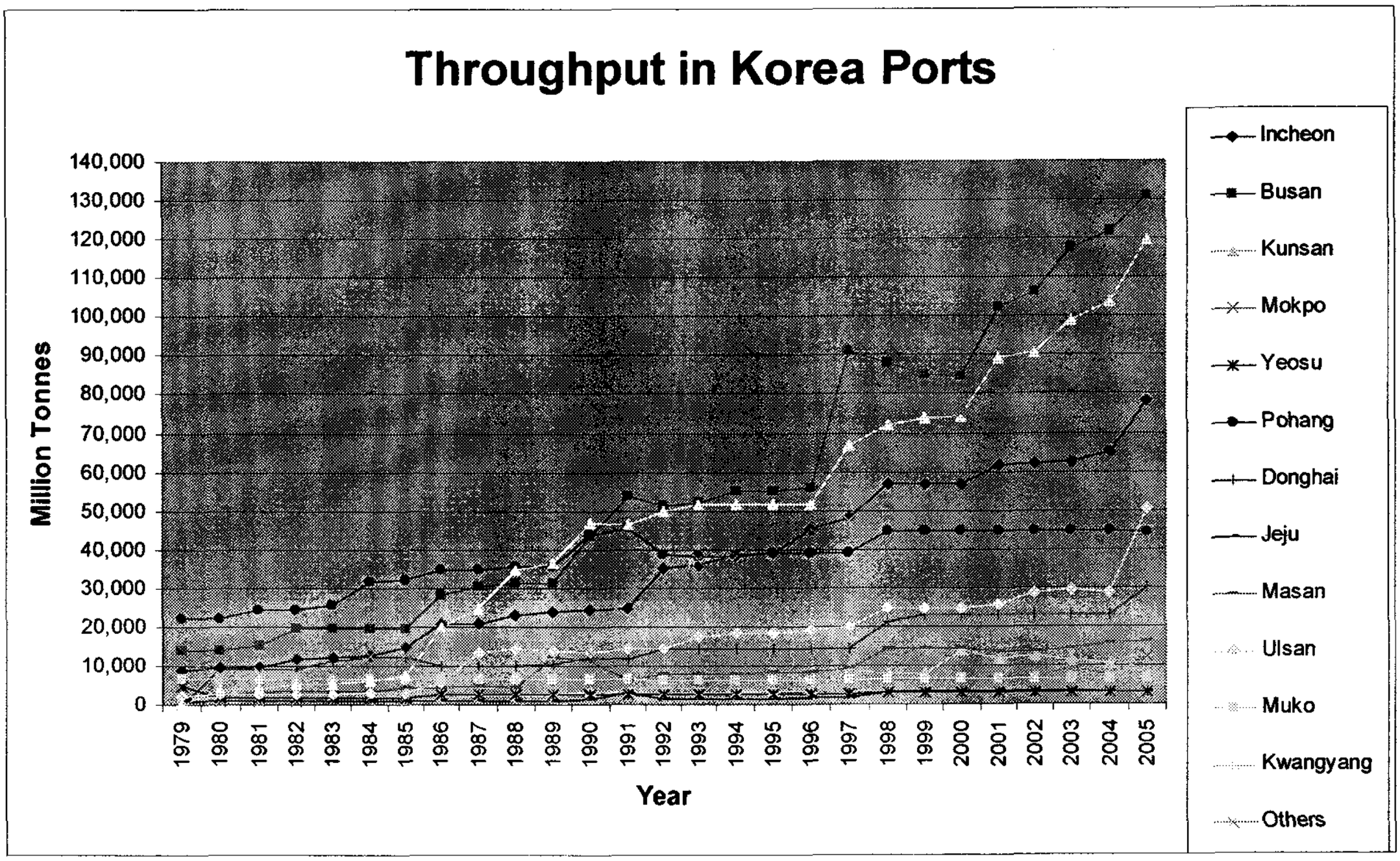
However, some of the factors may be beyond the control of the port authority such as the geographical location and water depths in the harbour. The biggest ships these days can only call at limited ports because of draft restrictions. For example, the biggest container ship, the Emma Maersk, which is capable of carrying 11,000 containers has a deadweight tonnage of 156,907 dwt and a draft of 15.5 metres. Its width of 56 metres is too big for the expanded Panama Canal, which is expected to be completed in 2009 and is scheduled to be 55 metres wide. Super capesize bulk

vessels of 180,000 dwt, with a draft of more than 17 metres, need even deeper harbours. Port authorities must be aware of their inherent natural limitations and should target the right types of shipping lines and cargo in their quest for growth and higher productivity.

Strategies for Kunsan Port

I have been asked to write a short account on possible strategies for the development of Kunsan Port. I must admit that before this opportunity to present a paper at this conference was given to me, I knew very little about Kunsan city and its port. After some research, I was able to obtain some information about the port and the types of economic activities in the hinterland of the port. However, this information is limited and sometimes not very current, so my discussion here will be largely restricted to a conceptual analysis rather than based on a comprehensive knowledge of the actual situation and context of the port's development.

First, I would like to give a background of trade and shipping development in Korea as a whole. As I mentioned earlier, Korea is one of only three major economies in Asia who has seen its global share of trade growing consistently over the past 15 years. In 1990, its share in global trade was 1.86 percent and this increased to 2.83 per cent in 2004. In terms of sea cargo movements, the records at the Korea National Statistical Office show that 224 million tonnes in 1990, to 285 million (1995); 430 million (2000) and 598 million tonnes in 2005. It can be seen that growth in shipping has been especially rapid in the past 10 years.



The government of Korea has carried out various efforts to develop the country into the Northeast Asian shipping and logistics hub. A major component of this strategy is port access which will determine the ability of business to import and export their goods to markets overseas. In a presentation made in 2004 by Dr Jae Jae Hyuck Auh of the Ministry of Maritime Affairs and Fisheries (MOMAF), Korea was promoted as a "The Main Gateway to Northeast Asian Economy". This strategy to date, in my view, has appeared to focus significant energy and resources on container traffic. In particular, the ports of Busan and Gwangyang have been projected as the key port logistics centres with the development of two large-scale distriparks – the Busan Gamchon Distripark and the new Gwangyang Distripark. Major foreign shipping lines and 3PL companies have been attracted to set up their distribution bases at these two centres.

A Northeast Asia shipping strategy needs to look at all of the opportunities and integrate the movements of all products into the Asian market including those in break bulk and bulk form. Smaller ports such as Kunsan play an important role especially in terms of serving their immediate hinterland and supporting the growth of core industries located in this region. Since 2000, the throughput at Kunsan Port has been above the 10 million tonne mark. In 2004, she handled 10.536 million tonnes, accounting for 2.01 percent of the total throughput in all ports in Korea in 2004. This increased to 13.596 million tonnes in 2005, which represented 2.27 percent of the country's total. With the immense growth of trade, especially out of China, the prospects for continued growth are good for Kunsan.

I understand that Kunsan is a tidal port and that there are draft restrictions. Given these natural limitations and smaller base, it is perhaps worthwhile to adopt a demand-oriented strategy rather than a supply or capacity-driven strategy. By this, what I mean is that instead of aggressively building new infrastructure and adding capacity to attract new shipping lines to use Gunsan as a secondary hub, it may be better to focus efforts on creating the demand first, which will then naturally lead to more carriers wanting to come to Kunsan.

In this respect, it is observed that there are already major steps taken to develop the immediate hinterland of the port into a major industrial centre, the Kunjang Industrial Complex which, as is stated in many sources, is part of a massive development effort called the "Saemangum Project". A news report in the *Korea Times* (24 October 2000) highlights the planned local development of Cholla-pukto as a "land of new opportunities" with the aim of transforming the region into an international investment haven. In the 1980s, Kunsan had a population of about 150,000. However, with the opening of the industrial complexes and incorporation of Okku into the city limits, the population has swelled the population to approximately 300,000 in the 1990s, although it is said that the numbers are much higher as many industrial workers live and work here, but have their official residences in other cities

(website: *kalaniosullivan.com*). Both the population increase and the continued development of industries will increasingly drive up the demand for port services and the potential for growth in therefore clearly present.

There are a number of opportunities that can be capitalized in spearheading a demand-driven strategy to boost the throughput at Kunsan port. First, given its close proximity to China, the scope for carrying out trade missions to explore opportunities to boost international exchange between Kunsan and rapidly emerging cities in Northeast China, especially Qingdao, Dalian and Yantai, could be explored. Second, in view of the rapid economic growth of the hinterland, the demand for goods will increase and there is thus scope for more active efforts to promote the increase the feeder services from major Korean ports to Kunsan. Here, the port authorities need to work with the wider port community to ensure that the supporting services are amply available. Good land connections between the port and the inland region are also a critical requirement, and I understand there are already a lot of projects underway in this direction.

Third, there are opportunities to focus on certain selected industries for which the region has comparative advantages rather than taking a more broad-based approach. It appears that some industries have already been identified and targeted for development in the Kunsan Free Trade Zone – machinery and automotive parts. Such a focused approach will yield better results as a more specialized industrial base will have the effect of attracting the particular forward and backward-linked industries and create a more sustainable economic environment for growth.

In my discussion on port competitiveness above, I had outlined several key factors that are integral in a port's success in the light of growing competition. One of these factors is good labour-management relations. In the news report I referred to above, it is also mentioned that "Cholla-pukto is known for its harmonious labor-management culture, in sharp contrast to the rest of Korea, (and that) the province

is committed to maintaining this distinction" (*Korea Times*, 24 October 2000). This advantage, if it can be sustained, can serve as a useful marketing tool to promote the services of the port. Given the smaller scale of operations and a more focused group of customers because of its specialization, there is also scope for Kunsan port to carve out a more unique identity among Korean ports as a more "personalized, friendly" port where good partnerships are fostered with customers, to consistently keep in touch with their needs and to deliver quality services on time.

The port also needs to systematically strive to increase the efficiency and productivity through the careful application of new technology and services both in the physical handling and soft infrastructure (e.g. facilitation). In this way, it can boost its competitiveness and bring benefits to its entire port and shipping community. These efforts must be complemented with the upgrading of intermodal connections to inland market centres, so that there is a seamless flow of goods through the entire transportation chain. With the continued expansion in China's trade and the planned industrial development in the hinterland, Kunsan port is well-positioned to capitalize on opportunities for growth.

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