

## HONG KONG CONTAINER PORT: THE SOUTH CHINA LOAD CENTER UNDER THREAT

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**abstract:** Rapid container port development in Hong Kong has had a quite different path from the classical load center model due to a special geo-economic setting in the region. This article reviews the existing theories about the load center and its application and problems, and then investigates the case of Hong Kong through three aspects: (1) the role of Hong Kong in South China region, (2) the expansion of Hong Kong's economy as a whole and the port as a component into the region, and (3) the new setting for port competition and cooperation between Hong Kong and ports in China.

### 1. INTRODUCTION

In the last two decades, many countries in the world have witnessed the similar development characteristics of container load centers that were laid out in Hayuth's conceptual model of load center (LCM) based on the evolution of container port system in the North America (Hayuth, 1978). At the same time, the global economic shift towards the new industrializing center in East and South East Asia and stronger cross-ocean links between Asia and other continents have resulted in a fast regional economic growth centered at the major container ports such as Hong Kong and Singapore. Due to different historical, political and economic backgrounds, the development of container ports as a system in this part of the world has shown certain special features that seem to be quite different from their counterparts in America or in Europe. One of these examples is Hong Kong, the world busiest container port in terms of total throughput since 1991.

As the entrepôt to China, Hong Kong has operated as a free-market economy and has developed ahead of its major hinterland for at least two decades. When this British colony caught the train for a fast growth with the other three "little dragons" in the 1970's and began to develop its container port, China was left much behind. As a result, there has been a lack of serious port competition in the past two decades from Mainland China, and the role of Hong Kong in container shipping as the hub for this region has therefore been exaggerated. When China was developing at a two digit growth rate in the first half of 1990s, Hong Kong container hub began to face real challenges from its nearby ports within its hinterland. The changeover of sovereignty in 1997 to China makes the issue of competition and cooperation between the ports in the region more critical.

This study aims to investigate this case, and to contribute an elementary insight into the regional challenges and changing conditions which Hong Kong port has to confront. After a literature review on the theories and practices of container load centers, this article turns its focus to investigating the role of Hong Kong in South China region. This investigation consists of two sections: one to identify to what extent Hong Kong is currently operating as

the load center for South China; and the other to provide a regional context and explain the new development of container ports in the People's Republic of China. It is followed by some discussion of the competition and complementarity between Hong Kong and other Chinese ports nearby. The concluding remarks bring the detailed discussion back to the general political and economic setting in the region: Hong Kong as a newly industrialized economy serving its fast-ever developing giant neighbor that runs under a totally different political-economic system. The findings at the end of this article indicate that a land-platform is forming in the region with some local characteristics, and most importantly, the development path to a new regional container port system will be quite different from these found in other places or in theories.

## 2. CONTAINER LOAD CENTERS IN THEORY AND PRACTICE

The concept and discussion of container load center can be traced back to Hayuth's classical work based on the evolution of American container ports till the late 1970s and his further explanation in the eighties (Hayuth, 1978, 1987, p74-82). His theory of staged development is from a perspective of technological innovation and diffusion. He argues that a regional load center would appear after first three stages of development, i.e., a period of pre-container stage, a stage of container-adoption, and a stage of consolidation and concentration through inter-port competition. A load center would be established as a result of economies of scale in ocean shipping, port operation and land transport. A strong centrifugal force will reinforce further concentration of port activities for quite a long period of time until the limiting factors, mainly the diseconomy of scale in port and related operation, become severe and the stage of peripheral development sets in (see Fig. 1).

Many features defining the early stages of this model have been evident in the case of US ports development. The dynamic changes in the world economy, however, have brought new questions not answered by this pioneer work. First of all, would it be possible for a new, growing port to replace the existing one? Second, if such a replacement did not occur, can a region sustain two load centers? Third, what would be the role of re-organization of shipping such as the establishment of new inter-modal shipping routes or the formation of new alliances of shipping lines? Fourth, how will an interplay between the load center and its challenger(s) interact with the regional development?

To answer the first two questions, Starr (1994) attempted through analyzing the competition between Baltimore and Hampton Roads for the mid-Atlantic load center. He points out that it was the port authorities under the two state governments that initiated and backed up the competition between the two single ports for the load center position (p. 221-222). It is the key difference between this case and the dual-port centers such as Seattle and Tacoma, Oakland, and Los Angeles and Long Beach, California. The study thus indicates the means and conditions of competition between two ports may vary dependent on different situations involved in a region.



Figure 1 Load Center Model Based on the Development of U.S. Container Port System (summarized from Hayuth, chapter two, 1978)

Characteristics of Port System Structure		Characteristics of Port External Relations		The Environment: Technological Development in Container Transportation	
Development Phase of Container Port System	Hinterland	Foreland	The experimental stage of container shipping.		
<b>I. Preconditions for containerization</b>	Containerization imposed on a well-established system of ports of all sizes.	A general equilibrium in terms of port hinterland remains unchanged and containers are handled with other cargoes in the traditional port system.	The traditional one: except for a few ports having direct service to overseas ports, most of the general cargo trade handled by conventional liners making periodic calls at the larger ports.	The intermodal transportation system is only at the early stage of development. The ocean shipping service is performed by mixed conventional cargo and container ships and vessels modified to carry containers	
<b>II. Initial Container Port Development</b>	The initial adoption of containerization limited to very few ports, and overall structure of port systems unchanged.	The changes are concerned particularly with local and traditional markets. The potential of containerization as a means of enlarging tributary areas is not yet fully recognized.	No apparent changes in port-foreland relations except for the introduction of limited numbers of specialized container ships into the service.	Fully cellular container ships and specialized gantry cranes have entered service	
<b>III. Diffusion, Consolidation, and Port Concentration</b>	Vertical and lateral diffusion of containerization comes into a fully operational system, early starters take advantage and form self-reinforcing mechanism for growth; a new spatial arrangement of the system emerges based on center-subcenter relations.	Lines of penetration beyond the traditional hinterland boundaries begin to emerge, especially along the most important transport networks. The large ports reach further inland.	Increased concentration in the ocean carrier's structure and operation. The emphasis in vessel operation is to improve the turnaround time of ships in ports and to cut total voyage time by reducing the number of port calls.	Containerization becomes a dominant technique in the general cargo trade. Container vessels improved to be larger and faster. Intermodality becomes the key for door to door transport.	
<b>IV. The Load Center</b>	The load center is demanded as a result of concentration of container traffic passing at a limited number of larger ports. A change in port hierarchy of two level (center and feeder ports) evolves	The ocean carrier enters the inland transport market, and the inland distribution strategy tends to be considered as part of the entire voyage, a single door-to-door service. Traditional hinterland patterns transformed; traffic concentrates on favored inland routes, as new inland transportation network and new distribution centers emerge. High-priority of trunk lines are developed between load center ports and the major markets.	Carriers consolidate trade routes to major channels of overseas service by calling at a limited number of ports on each side of the ocean.		
<b>V. The Challenge of the Periphery</b>	The system structure reaches a greater maturity. The intermodal system operates fairly smoothly, the load centers continue to handle most of the container traffic; however, the challenge of the dominant ports by some of the smaller ports intensifies.	The boundaries of hinterlands become blurred; the changing patterns of points and lines for commodity packaging and consolidating become more practically significant than the traditionally defined hinterlands.	New direct-service lines to some peripheral ports emerge, while the ocean trade-route network is still composed of a relatively few consolidated long-distance routes.		

As for the impact of re-organization of shipping activities on the development of load centers, Slack (1994) has provided a good example of how the US domestic containerization on both land and sea-born transport has reshaped the entire inter-modal shipping network and hence the marine and inland hubs. However, it is worth noticing that all the aforementioned cases are from the United States, a single country within which the variation in general economic and political conditions and in policies and regulations regarding container ports and shipping are much smaller than many cases involving two or more countries.

The international competition for container load center status within a region can be easily found in Europe or Asia. In the Benelux seaport system of Europe, the Dutch port Rotterdam and Belgian port Antwerp compete with each other (Charlier, 1996). A similar situation is found in South East Asia, where Port Hong Kong has been in confrontation for feeder traffic with Kaohsiung in Taiwan, and with Singapore. All these Asian ports are among the world top ten largest container ports. The international competition involves at least two important aspects that have not been so obvious and therefore discussed little in the US cases. The first aspect is the geopolitics relating to the countries in the competition. The second aspect relates to the differences in the nature and level of their economies. This article intends to investigate this second aspect through the case of Hong Kong, since it is crucial to appreciate the formation of container load center in Asia and the global dynamics.

### **3. THE MAJOR ROLE OF HONG KONG: A TRANSSHIPMENT HUB OR THE ENTREPÔT TO CHINA?**

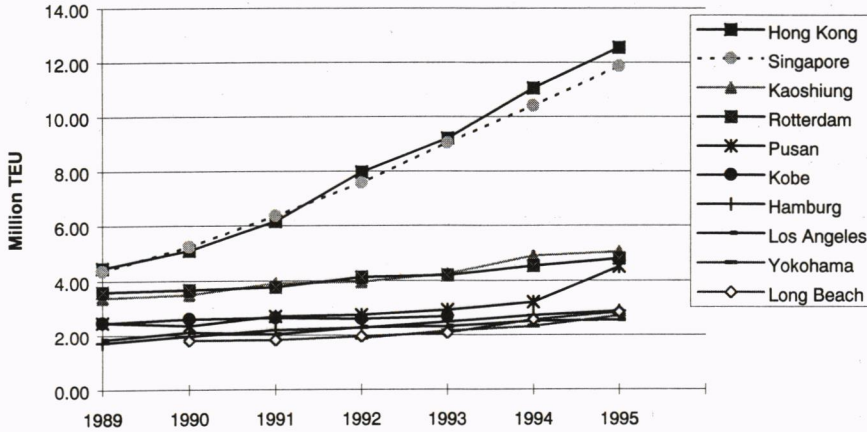
Hong Kong port, including all the port operations within the Special Administrative Region (SAR), has been one of the world's busiest for years in terms of its total throughput of containers, although its total cargo shipped and handled is ranked the eighth in 1995. (Fig. 2) The growth rate of its containers handled has also been higher than its general freight ever since the Kwai Chung container port received its first call in 1972. Such a dramatic change for Hong Kong port has been often attributed generally to the fast economic development in Southeast Asian region, China, and tighter global trade connections between this fast-developing region and the rest of the world (for e.g., Kreukels and Wever, 1996, 293).

However, as specific to the role of Hong Kong in a global as well as regional context of containerized transport, there are two different points of view. One views it as a regional load center, which is an inseparable component of the regional transport hub in South East Asia and South China (Rimmer, 1992, 1996); while some others see Hong Kong more as a transshipment hub rather than a load center, based on World Bank's definition (1990) (Fleming and Hayuth, 1994, for example). Two major differences between the two views are (1) how to define transshipment and (2) how to interpret Hong Kong's position being the entrepôt of China.

By the definition used by Hong Kong Government (HKCSD, 1996), all sea-borne containerized cargo transshipments occurred in Hong Kong refers to those consigned on a through bill of lading or through air waybill from a place outside Hong Kong to another place outside of Hong Kong and made one or more than one transshipment from (to) a vessel to (from) another vehicle of transport (vessel, truck, train, plane) in Hong Kong waters. Based on this definition Fig. 3 and Table 1 show the container transshipment occurred in the



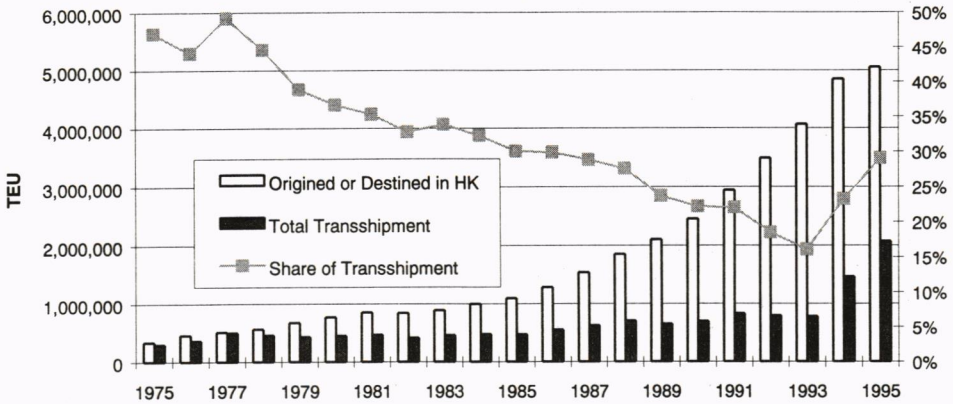
Figure 2. Top Ten Container Ports in the World



Source: *Containerization International Yearbook*, various years.

Note: Kobe was displaced from top 10 due to the earthquake in 1993.

Figure 3 : Full Containers Handled and Share of Transshipment at Kwai Chung Terminals, Hong Kong, 1975-1995



Territory by major loaded areas/countries and by major discharged areas/countries, and Table 2 shows the historical trend of container transshipment.

The two tables and the figure reveal two important facts. First, the major outward transshipment at Hong Kong is from China to North America (10%), Western Europe (18%) and Asia (16%), clearly implying the gateway role Hong Kong plays for China trade. Second, while the total volume of transshipment has been increased, its proportion to the total loaded TEUs declined significantly from a high of 49% in the 1970s to low of 16% in the early 1990's, and then came back in the mid-90s to 29%. The downward trend was due to the loss of market share of regional transshipment between countries other than China to Kaoshiung (Wong, 1994). The new upward trend in the 1990s reflects that more and more Hong Kong-invested/operated firms in South China, the Pearl River Delta region in particular, have used through-bills rather than the "re-export" procedures to send out their final

products or ship in raw materials via Hong Kong to or from other part of the world. This is mainly due to a fact that after some 15 years of economic reform in China, these firms in the Pearl River Delta (PRD), the most liberal region in the country in terms of economic policy, began in the 1990s to move their final packaging process to China following the manufacturing process which moved early in the 1980s. This trend is particularly true to those firms in electronics and toys industries that are not subject to stringent export quota rules (HKGCA, 1992, p83).

**Table 1.** Full Container Loads Handled at Kwai Chung/Stonecutters Island Terminals, Hong Kong, 1975-1995

Year	Local			Transshipped			Total	
	Discharged	Loaded	Local Sub-total	Discharged	Loaded	Trans-shipment Sub-total	Total TEU	Share of Trans-shipment
1975	150,016	186,070	336,086	152,303	145,247	297,550	633,636	47%
1976	200,379	255,790	456,169	187,457	172,709	360,166	816,335	44%
1977	237,058	276,748	513,806	252,664	244,854	497,518	1,011,324	49%
1978	271,330	293,968	565,298	230,134	225,358	455,492	1,020,790	45%
1979	315,041	358,611	673,652	215,836	212,726	428,562	1,102,214	39%
1980	370,516	401,114	771,630	224,460	223,047	447,507	1,219,137	37%
1981	395,655	456,814	852,469	235,405	230,875	466,280	1,318,749	35%
1982	384,813	461,088	845,901	209,466	204,414	413,880	1,259,781	33%
1983	389,933	499,896	889,829	229,910	225,771	455,681	1,345,510	34%
1984	430,290	566,721	997,011	239,906	235,762	475,668	1,472,679	32%
1985	501,028	594,794	1,095,822	242,497	229,044	471,541	1,567,363	30%
1986	526,437	756,140	1,282,577	273,930	273,929	547,859	1,830,436	30%
1987	624,017	914,113	1,538,130	315,703	308,245	623,948	2,162,078	29%
1988	770,119	1,082,783	1,852,902	355,410	350,430	705,840	2,558,742	28%
1989	796,056	1,304,409	2,100,465	328,032	323,856	651,888	2,752,353	24%
1990	937,706	1,513,117	2,450,823	352,192	346,355	698,547	3,149,370	22%
1991	1,135,032	1,806,535	2,941,567	414,825	417,498	832,323	3,773,890	22%
1992	1,365,824	2,122,906	3,488,730	386,541	405,132	791,673	4,280,403	18%
1993	1,588,549	2,477,832	4,066,381	388,477	390,798	779,275	4,845,656	16%
1994	2,003,532	2,841,640	4,845,172	725,607	739,033	1,464,640	6,309,812	23%
1995	2,124,147	2,931,983	5,056,130	1,014,814	1,052,537	2,067,351	7,123,481	29%

Source: Hong Kong Annual Digest of Statistics, Census and Statistics Dept, Hong Kong, various years.

Notes: 1. "TEU" refers to Twenty-Foot Equivalent Units.

2. "Local" means containers with Hong Kong as the place of origin or destination.

3. "Transshipment" means containers consigned under through bill of lading from/to another place outside HK and handled involving foreign-going ship(s) in HK waters.

4. "Full" includes containers partially filled with cargo.

The role of Hong Kong as transshipment hub or entrepôt to China therefore, is depends really on whether we see Hong Kong as an independent economic identity or as part of a larger, regional economy, of which Hong Kong is the core of development and hub of transportation. It would be meaningful to examine from a regional point of view the special relationship between the two in terms of their land-sea container handling systems, because it is the key to understand why Hong Kong has become the world number one container port while no single competitor until very recently.

**Table 2. 1995 Containerized Cargo handled in Hong Kong ('000 Tones) by Ship Loading/Discharging Area**

	Seaborne Inward Transshipment (1)	Total Seaborne discharged (2)	Transshipment Share = (1)/(2)	Seaborne Exports	Seaborne Outward Transshipment (4)	Total Seaborne Loaded (5)	Transshipment Share = (4)/(5)	Area Share (Loaded + Discharged)
China (outward)	5165	6324	82%	2229	4095	6556	62%	16%
Asian countries excluding China	5992	22900	26%	4809	5218	9189	57%	39%
North America	2731	8048	34%	5874	2165	8039	27%	20%
C. & S. America	290	789	37%	858	419	1277	33%	3%
Western Europe	1320	5533	24%	3534	3332	6866	49%	15%
CIS & E. Europe	32	46	70%	29	92	121	76%	0%
Africa	72	366	20%	620	519	1139	46%	2%
Middle East	143	625	23%	404	555	959	58%	2%
Australia & Oceania	513	1502	34%	479	540	1019	53%	3%
Australia	375	1177	32%	358	424	782	54%	2%
<b>All</b>	<b>15188</b>	<b>46365</b>	<b>33%</b>	<b>17998</b>	<b>16935</b>	<b>34933</b>	<b>48%</b>	<b>100%</b>

Source: Trade Survey and Research Section, Census and Statistics Department, Hong Kong Government.



#### 4. THE REGIONAL CONTEXT: HONG KONG'S MANUFACTURING AND CONTAINER OPERATORS DEVELOPING INTO SOUTH CHINA

In the last 15 years, Hong Kong has experienced an economic restructuring due to a northward geographical shift of its manufacturing section into South China, mainly within the PRD region in Guangdong Province. As shown in the Figures 4 and 5, when the dominant position of manufacturing sector was replaced by the tertiary sector in Hong Kong, the industrial establishments invested/operated by Hong Kong entrepreneurs mushroomed in its neighboring PRD region, especially the Shenzhen Special Economic Zone (SEZ). At the same time, Hong Kong's re-exports to or from China outplayed domestic exports around 1987, indicating the integration of the two economies. The majority of products from the firms in the PRD were not aimed to China market, but to exporting overseas. This nature of production has resulted in a strong and constant demand for containerized transport between the region and the world. Hong Kong, with its well-developed port with the call of all world major shipping lines, has naturally taken its monopoly role to absorb most of these shipments, since all other ports in the region during this period of fast regional growth had no container handling capacity or were in an infant stage.

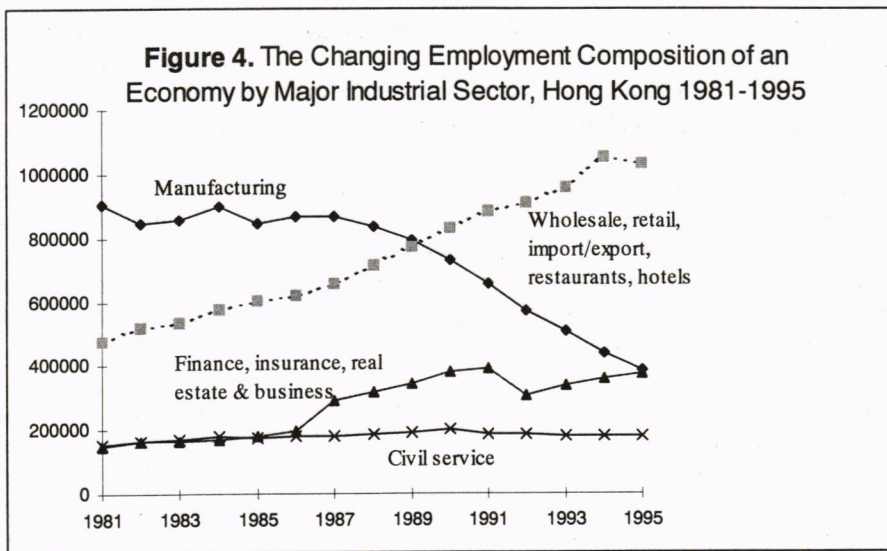
In fact, the obvious competitive advantages gained by Hong Kong have been found not only in the container handling at ports, but also in almost every single aspect of intermodal container transport, from road freight trucking, storage, to forwarding and documenting services. The fear of delay and unreliability through other ports and through Chinese river-shipping companies resulted in extra catchment areas as for as central and northern China, and extra high percentage of containers being carried through road networks.

In order to meet the demands generated mainly from its booming processing industries located in the coastal regions for international trade, China began in the early nineties to catch up in the field of containerized transport. Four newly constructed ports, namely Yantian in PRD, Maizhouwan at Taiwan Strait in Fujian, Ningbo in Zhejiang and Dayao in Liaoning Province, were designated by the national government as China's major container hubs for international trade in future. Meanwhile, the existing ports such as Shanghai and Tianjin, which have nearby large industrial bases, have enlarged their container handling capacities by renovating or building new terminals. Middle-sized ports have also been pushed by their provinces to gain a share.

Realizing the fact that sooner or later the major shipping lines would call directly at ports in the Mainland, Hong Kong International Terminal (HIT) and Modern Terminal Limited (MTL), the two major container port operators in Hong Kong, have been involved in major port containerizing programs or new container port development projects from Shanghai, Dalian, and Wuhan in North and Central China, to many new container ports such as Yantian in Shenzhen SEZ and Gaolan in Zhuhai SEZ within the PRD region. Yantian International Container Terminal (YICT), owning 62% share of Yantian Port, is HIT's sister company under the same mother company Hutchison Holding Ltd. Similar relationship has also established between the MTL with its Chinese partners in the same region.

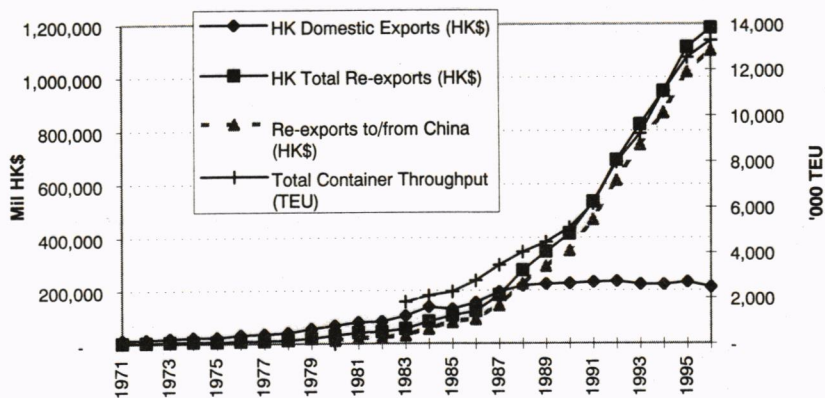
These actions indicate clearly that the Hong Kong port enterprises have already shifted their major intention of development northward into China for years while the government of Hong Kong keeps promoting the role of Hong Kong as the sole hub of container transport in the region (PDB, 1996a, b). The penetration to China has brought these enterprises a





Source: Cook, A. and J.J. Wang (1996) Employment Concentrations in Hong Kong 1981-1991, Occasional Paper 133, Dept of Geography, Chinese University of Hong Kong, Hong Kong

**Figure 5. Exports, Re-exports, and Container Throughput Hong Kong, 1981-1996**



Sources: *Hong Kong External Trade*, *Hong Kong Shipping Statistics*, Census and Statistics Dept, Hong Kong, various years.

perspective to rationalize their operation of container handling in a broader geographical scale, and multi-modal approach to many areas beyond the port operation.

However, the cooperation for container transport among ports, road networks, trucking, and railway systems in China have been very limited, and the development has been unbalanced among the modes, due to a lack of appreciation that container transport means a demand for intermodality. In the case of Guangdong, South China, since the construction of highway is basically under the control of the province, its network has had a very rapid expansion in the

last ten years. On the other hand, the decision on upgrading the railway system for containerized cargo is still controlled by the Ministry of Railway, which has paid its most attention and capital to construct new express rail system in the country to attract more passengers and to compete with airlines in the domestic market of long-distance travel.

The different attitudes of highway and railway in China regarding container transport have enlarged the gap between the two modes in terms of accessibility and reliability of land-sea container transport within the PRD region in particular. This has resulted in a further concentration of container-related industries in PRD, which is of better highway connection and faster growth of expressway network in the country, and a reinforced hub position of Hong Kong even though it has no rail connection at all.

Hong Kong reached its record growth in the early 1990s due to the expansion of its economy into the PRD region. A total growth of 5.2 million TEUs in a 4-year period of time is equivalent to the total annual throughput of Kaohsiung, which was ranked the fifth in the world. Although Yantian and other ports near Hong Kong have had a remarkable growth in 1994-96, their rail connectivity has not contributed at all, even after the operation of new railway line linking Beijing to Kowloon via Shenzhen.

The cross-border traffic between Hong Kong and China has been remarkably increased first through land transport checking points and then the river trade routes. The daily traffic of trucks passing the land border control point, Lok Ma Chau has more than doubled and its volume of cross-border containers, full or empty, has kept breaking the world record held by itself, and reached to 100,000 TEU per day (Planning Dept., 1996). Any possible increase of road cross-border traffic is wholly dependent on the efficiency of Customs there, since it is very unlikely to have new border crossing points in the near future for political reasons. The two existing ones then become permanent bottlenecks to Hongkong's entire road transport system and have triggered the boom of river trade.

## **5. COMPETITION IN THE REGION: YANTIAN OR MORE TERMINALS IN HONG KONG?**

Being the monopolistic load center serving South China for international trade, Hong Kong has many characteristics of phase V of Hayuth's load center model. Among others, the limited port backup areas for empty containers and the expensive costs for land and labor are two most apparent problems after a port growth of throughput from 5 to 12 million TEU in five years.

Although the rate of empty boxes is reasonably low as 16-18% of the total, which is lower than the world average. The absolute number of more than two million empty containers handled annually at the Kwai Chung terminals has caused serious problems such as traffic congestion within and around port area, and along the routes to China (Cox Consultant, 1994), and abuse of rural land in New Territories (Jim, 1996). This empty box issue in Hong Kong is further compounded by a Chinese Customs regulations, which allow the containers to be carried in and out of China by the same truck driver through the same border control point. As 90% of the cross-border truckers are Hong Kong drivers, the regulations mean that most Hong Kong truckers bring in and out of China the same container on the same day, and



consequently, most empty containers have to be stored somewhere on the Hong Kong side between the port and the border to China.

Hong Kong, as one of the best equipped and managed ports in the world, has tried its best to offset its high land and labor costs by higher port efficiency and well-established calls of all major shipping lines, symbolizing its mature status in port development. However, the expensive land in Hong Kong has raised the dispute as to whether any new container terminals should be built within the territory in future. A comparative study indicates that the cost for constructing the sound barrier separating the residential area at Discovery Bay and the proposed new site for Container Terminals 10 to 13 at Lan Tau Island for the decade of 21st century is about the same as the cost to build an entire terminal for the same capacity at Yantian, China (Zheng, 1997). It is doubtful that the major Hong Kong container operators such as HIT and MTL will bid for the future terminals in Hong Kong, as they have already speeded up their move to the nearby ports inside China.

The competitiveness of Yantian is not derived from its railway connection, but from (1) its Hong Kong-style management and operation, which minimizes the port day and port cost; (2) the lower land transportation costs due to the exclusion of Hong Kong truckers; and (3) good harbor condition for the 5th generation container vessels. Table 3 shows that on average, a 40-foot container sent from Yantian to a port in West Europe or North America may cost US\$250 less than sending it from Hong Kong. It is these advantages that made Global Alliance decide to call at Yantian since 1995, bringing the real challenge to Hong Kong.

It is natural therefore to foresee an important change of container port system in this region when Hong Kong's hub role is spreading out. The existing system where Hong Kong is a super load center fed by road network to South China and by the small or medium sized ports in the PRD region is going to be replaced by a system in which Hong Kong and Yantian function together as a load center platform to serve a larger demand mainly from the PRD.

**Table 3. A comparison of shipping one 40-foot container to Europe/USA Unit:**

Costs to shippers	Direct Shipment From <b>Yantian</b>	Transshipment Via <b>Hong Kong</b>
Cross-border trucking charges	0	380
Chinese port fees	300	0
Hong Kong billing charge	0	10
Custom charges on import/re-export	0	50
Loading/discharging costs at terminal	220	323
Total FOB charges on exporter	520	763
Total shipping charges on importer	2700 at average	<2700
Number of direct shipping lines	a few	many
Total shipping time	fast	slow
Trade method	FOB China	FOB Hong Kong

Source: *Shippers Today*, Sep/Oct, 1996, pp 33.

## 6. CONCLUDING REMARKS: THE FUTURE INTEGRATION OF CONTAINER PORT SYSTEM WHEN HONG KONG BECOMING CHINA

The concern here however, is not the resulting form of this integrated port system, but the process of its formation. It must be noticed that when Hong Kong is becoming part of China both economically and politically under the concept of "one country two system", the transport systems as part of their general social-economic systems on both sides of the border are still to be operated quite independently. Significant differences occur in many areas concerning intermodal containerized transport, such as the way and quality of management and logistics. The competition and cooperation between Hong Kong and ports in China have been and will continue to be quite different from the Hayuth's model or the practice seen in the United States or in Europe, where the competition and development of major coastal ports have basically been among the ports in similar market economies. Indeed, it has been found only in the case of Hong Kong that a single port as load center such outplayed others without any challenge even with many accumulated problems. Only in South China has a coastal economy demanded strongly containerized sea-land transport while not having its own major international hub to be developed in time.

Keeping these facts in mind, one would argue that the development process for an integrated container port system for the region will also have its own character, and the diffusion of technology and management on multi-modal logistics will play a very important role in this integration. Presently, the international multi-modal logistics services in China, such container storage, repairing, insurance and cargo packaging/re-packaging, are still in their infant stage. In the entire PRD region, which might be the largest container traffic generator in the world, there is no inland/river container depot (ICD) in use, and only one under construction. This has resulted in a large number of small river trade vessels going directly between Hong Kong and about 20 small river border control points in the region and consideration of the Hong Kong government to upgrade its river trade terminal at Yuen Long of New Territories (see Figure 6). However, if there is a large-scaled container depot established in China with frequent and safe shuttle service to Kwai Chung terminals, Hong Kong, as what has being done by Yantian since it started its operation years ago, the container flow pattern will change dramatically with a faster growth of river trade than the road one. In the case that Yantian is likely to take away from Hong Kong a large portion of total box volume to be generated in the future, the development of inland container depot (ICD) in China will be welcomed by Hong Kong as it helps create a win-win situation.

The development of Yantian and the construction of ICDs will release the pressure on the land use or abuse in Hong Kong for storing trucks, chassises and empty containers, while reducing the dependency upon the Hong Kong trucking business in the inter-modal cross-border transport. At present, less than 10% of truckers allowed to cross the border is from the Mainland, implying a very high land transport costs due to the high salary level of Hong Kong drivers and high truck operation costs. However, as known by the author through interviewing the PRD shipping clients, one of the reasons for them to choose using Hong Kong instead of a port in China to export/transship is that the Hong Kong-based forwarding services provide such a trust that once they have packed onto a Hong Kong truck they feel like as it has arrived at the destination. It has to wait and see if China will be able to establish such reliability in forwarding and trucking services, and this could be another area for technology and management penetration from Hong Kong.



The possible evolution for the regional container transport system described above can be termed as a logistics approach, which emphasizes the importance of "soft integration" rather than the physical or hardware changes. Such an approach is suitable to examine the situation in South China, because after about 18 years of development since China's "open-door" policy, this region has attracted and consolidated adequate investment in its transport infrastructure, but it still lags behind in management. There is much room for the region to improve its intermodal container transport through better logistics services, which will eventually accelerate the integration of the Hong Kong-PRD economy, and benefit all.

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