

**AN ANALYSIS OF THE CHALLENGES AND OPPORTUNITIES FACING THE
HONG KONG LOGISTICS INDUSTRY**

by

LAU, Anthony Siu Wing

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ABSTRACT

Hong Kong freight forwarding services have flourished along with China's economic development. Manufacturing activities in the Pearl River Delta (PRD) have provided the Hong Kong logistics sector with many business opportunities. However, due to the changes in the business environment, the industry is facing many challenges: competition from other local logistics companies in China, a shrinking market share on the shipping side, and increasing operating costs. The study aims to answer two questions: *will the PRD continue to serve as the manufacturing powerhouse of the world and will exporters in the PRD continue to use Hong Kong's airport and port?*

The findings of this research will help academia and practitioners better understand the opportunities and challenges facing the Hong Kong logistics industry. This research was carried out in two phases. First, the author conducted exploratory interviews with manufacturers, logistics service providers, and government officials. Second, two questionnaires (one for manufacturers and one for logistics service providers) were designed based on the interviews and the literature review. The results of this two-stage analysis indicate that manufacturing in the PRD will continue to demand forwarding logistics support from Hong Kong because the latter continues to offer competitive advantage in several aspects compared with competitors in China. The Hong Kong government's pro-business attitude has helped to maintain Hong Kong's competitive advantage as a logistics hub; thus, the integration of Hong Kong and PRD logistics service providers has further enhanced this advantage in the PRD. Finally, based on these findings, a number of recommendations are offered. The empirical part of the research was completed before the onset of the 2008/9 recession; hence, no reference to its effect has been included in this thesis. The work also excludes any specific reference to the issues of carbon footprints and related environmental concerns because these are not primary issues for the industry as seen by the governments of the PRD region.

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Chapter One Introduction

1.1 Background to the Research

Since the beginning of the 1960s, Hong Kong has become the manufacturing centre of light industries, producing goods such as textiles and apparel, plastics, flowers, wigs, and electronic and electrical goods. Hong Kong did not have any natural resources then; raw materials had to be imported from China and neighbouring countries. Finished products were shipped to the world's markets mainly by ocean-going vessels, and a small part was shipped by air. To cope with the increasing importation of raw materials and exportation of finished products, international freight forwarders (IFFS) emerged in the market, initially by a couple of local companies. Later, several multinational freight forwarders (FFs) from the US and Europe also branched to the emerging market of Hong Kong.

Freight forwarding services flourished further when China adopted an 'open door' policy in 1978, enabling many Hong Kong manufacturers to shift their manufacturing activities to China, particularly to the Pearl River Delta (PRD), with its advantages of cheaper labour and land costs. There were 11 million workers (Mei, 2004) in the PRD working for Hong Kong manufacturers. Due to insufficient logistics infrastructural facilities in the PRD, most of the finished products were trucked back to Hong Kong to be forwarded by ocean and air to the world's markets. From 1992 to 2004, with the exception of 1998, Hong Kong led the world as the top container port. Presently, it is the third largest in terms of total container throughput after Singapore and Shanghai (Containerization International, 2008). Since 1998, Hong Kong has also led the world as the top air cargo centre (Air Cargo Statistics, 2006).

However, there have been major infrastructural logistics improvements both in the ports and airports in the PRD in recent years. The participation of port operators, such

as Hong Kong International Terminal Ltd. (HIT) and Modern Terminal Ltd., have helped narrow the service gap between Hong Kong and the PRD ports, both in terms of port facilities and quality of service. Since the late 1990s, the PRD ports have enjoyed double-digit growth (Zhang et al., 2005). The Guangzhou Baiyun International Airport in PRD started operations in 2003, and currently has an operating capacity of 4 million tons per annum for air cargo (Xu and Zhang, 2007). Many reputable airlines, including United Airlines, Japan Airlines, and Air France, have started servicing Guangzhou's airport.

1.2 Justification for and Objectives of the Research

China is one of the major beneficiaries of globalised manufacturing. Numerous manufacturing activities have shifted to China, taking advantage of its cheap land and labour cost. As a result, there has been a strong demand for freight forwarding services, particularly from the export sector. Due to its close proximity to the PRD and the poor logistics infrastructural facilities of PRD ports and airports, Hong Kong handles the shipment by ocean and air of approximately 80% of PRD imports and exports (Fung et al., 2005). Since the 1990s, however, more and more ocean freight for export have started shipping through Yantian and Shekou/Chiwan ports in the PRD. In contrast, the Port of Hong Kong has only shown low, single-digit growth in the last 10 years (Hong Kong Port Statistics, 2010). The port is expected to fall into the 4th place among the largest container ports in the world in the near future, after Shanghai, Singapore, and Shenzhen. Government officials and logistics service providers, particularly FFs, are very concerned whether the rise of the PRD ports will continue to erode Hong Kong port's competitiveness. Clearly, there are challenges and opportunities for Hong Kong's forwarding industry in the face of China's rise as the world's manufacturing powerhouse and of the PRD's improved ports and airport facilities, as well as human resources availability, for the forwarding industry. The over-arching purpose of this

study is to examine the challenges and opportunities faced by the forwarding sector of the Hong Kong logistics industry.

There are more than 200,000 people or approximately 30% of Hong Kong's total work force directly or indirectly engaged in the city's logistics industry (Yeung et al., 2009). The catchment area of Hong Kong's logistics industry has been enlarged from the the PRD to the Pan-PRD, with the blessing of China's central government. The Pan-PRD consists of the provinces of Guangdong, Fujian, Jiangxi, Hunan, Guangxi, Guizhou, Sichuan, Yunnan, and Hainan, plus the Hong Kong Special Administrative Region (SAR) and Macau SAR. In 2008, the area contributed 35.4% in exports and 31% in industrial output to the national total (Table 1.1).

Table 1.1 China's GDP in 2008

	GDP (USD in BN)	Export (USD in BN)
China	\$4,498	\$1.429
Pan PRD	\$1,298	\$ 502
Guangdong Province	\$ 523	\$ 404
Hong Kong	\$ 215	\$ 302

Source: Hong Kong Trade Development Council

Approximately 70% of the cargo handled by Hong Kong's port and airport caters to South China (Hong Kong Logistics Development Council, 2009). With rapid economic growth and urban development in the last two decades, and with 6.8 million people in Hong Kong and 19 million in the PRD region, their combined area can be developed into a greater megalopolis (Yeh et al., 2002). The region has been changing very rapidly since 1978, with one year of development in the region approximately equivalent to at least two to three years of development in most parts of the world. Competitiveness is a key factor of success in the future global economy. However, better cooperation, coordination, and planning between Hong Kong and other parts of the PRD are needed in order to reduce unnecessary competition and duplication. Furthermore, synergy needs to be developed in order to build a more competitive PRD

region for meeting challenges from competitors, as well as economic, social, and environmental challenges, for the benefit all the people and businesses in the region (Yeh et al., 2002).

To achieve these goals, a number of obstacles need to be resolved. First, Hong Kong cannot be considered as a separate entity, and should be included in China's regional, social, and economic plans. Second, there needs to be greater and more effective interaction between the Hong Kong government and local governments in the PRD. Fortunately, there have been interactions between the Hong Kong government and Guangdong provincial government, and between the Hong Kong government and Shenzhen city government, have increased in recent years. One issue that has prevented the closer integration of Hong Kong with the PRD is the significant difference in wages and its effect on social and economic issues. However, with stagnating or decreasing wages, particularly in the blue-collar sectors, in Hong Kong, coupled with the fast-rising living standards in the PRD, the difficulties in the integration of Hong Kong into the Greater PRD are bound to be reduced.

Hong Kong and Shenzhen share the world's largest land boundary, with 23,304 goods and passenger vehicles crossing the Hong Kong/Shenzhen border daily. To ease the border crossing in this area, in addition to the land boundary crossings at Lok Ma Chau, Man Kam To, Sha Tau Kok, and Shenzhen Bay Bridge, a fifth land boundary crossing is currently being built at Liantang/Heung Yuet Wai, and is scheduled to be operational by 2018 (Figure. 1.1).

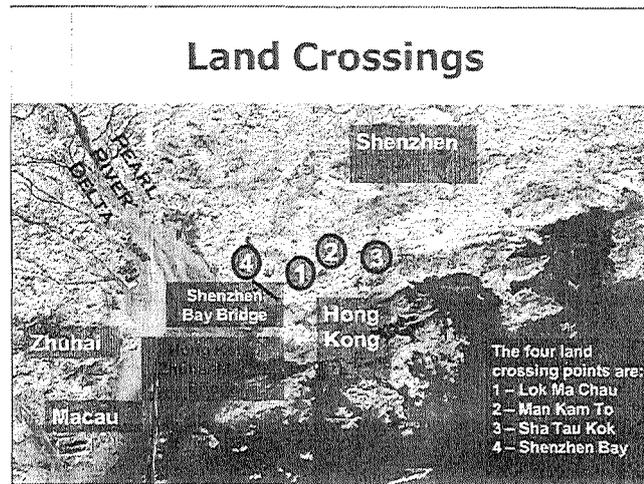


Figure 1.1 Land crossings between Hong Kong and Shenzhen

After the completion of this new border crossing, immigration and customs authorities on both side of the border can handle approximately one-third more than their current capability. Hong Kong's business sector has urged the Hong Kong SAR government to work with the Shenzhen government to introduce common checkpoints for immigration and customs formality in order to speed up the transport of goods and people.

Increased frequency in direct train services to major cities in the PRD would facilitate closer integration of Hong Kong into the Greater PRD. The 'Coordinated Development of the PRD Townships' launched in 2003 jointly formulated by the Guangdong provincial government and the National Ministry of Construction and endorsed by the Provincial People's Congress included significant attributes of Hong Kong and Macao. Furthermore, the governments of the PRD plan to build a transportation network by 2015. When these plans have been implemented, nine cities in the PRD, with Guangzhou as the centre, will be linked by transportation network; travel between Guangzhou and any of these cities will only take one hour. Thus, in order to prevent marginalisation, Hong Kong has to connect with the PRD transportation system. Apart from building the Hong Kong-Macau-Zhuhai Bridge, expected to be operational by 2015, the Executive Council of Hong Kong SAR's

government approved on October 21, 2009 the building of a high-speed railway, with a budget of HK\$ 65 billion. This railway will link Kowloon Station in Kowloon West to Shenzhen and with Shibi Guangzhou; travel from Kowloon Station to Shenzhen will take 14 minutes, travel to Shibi Guangzhou will take 42 minutes. The Secretary for Transport and Housing of Hong Kong has claimed that the government does not plan to make a profit from this line. The objective of the high-speed railway link is to link up the 16,000 km national rail network of China, which serves as a very important step in integrating Hong Kong into Greater China. The link can bring 116,400 passengers and 10% more Mainland visitors to Hong Kong (South China Morning Post, 2009). Government officials expect that, initially, there will be a train to Shenzhen every 15 minutes and one to Guangzhou every 30 minutes, and this will be ultimately increased to every 3 minutes during peak hours. Moreover, train frequency to Shenzhen could be increased to 5–10 minutes interval during peak hours (Figure. 1.2). The Hong Kong General Chamber of Commerce, quoting the Railway Authority of China, has stated that the four horizontal and four vertical railway systems will be operational by 2012 (Figure. 1.3) .



Figure 1.2 The Train link between Hong Kong and Shenzhen

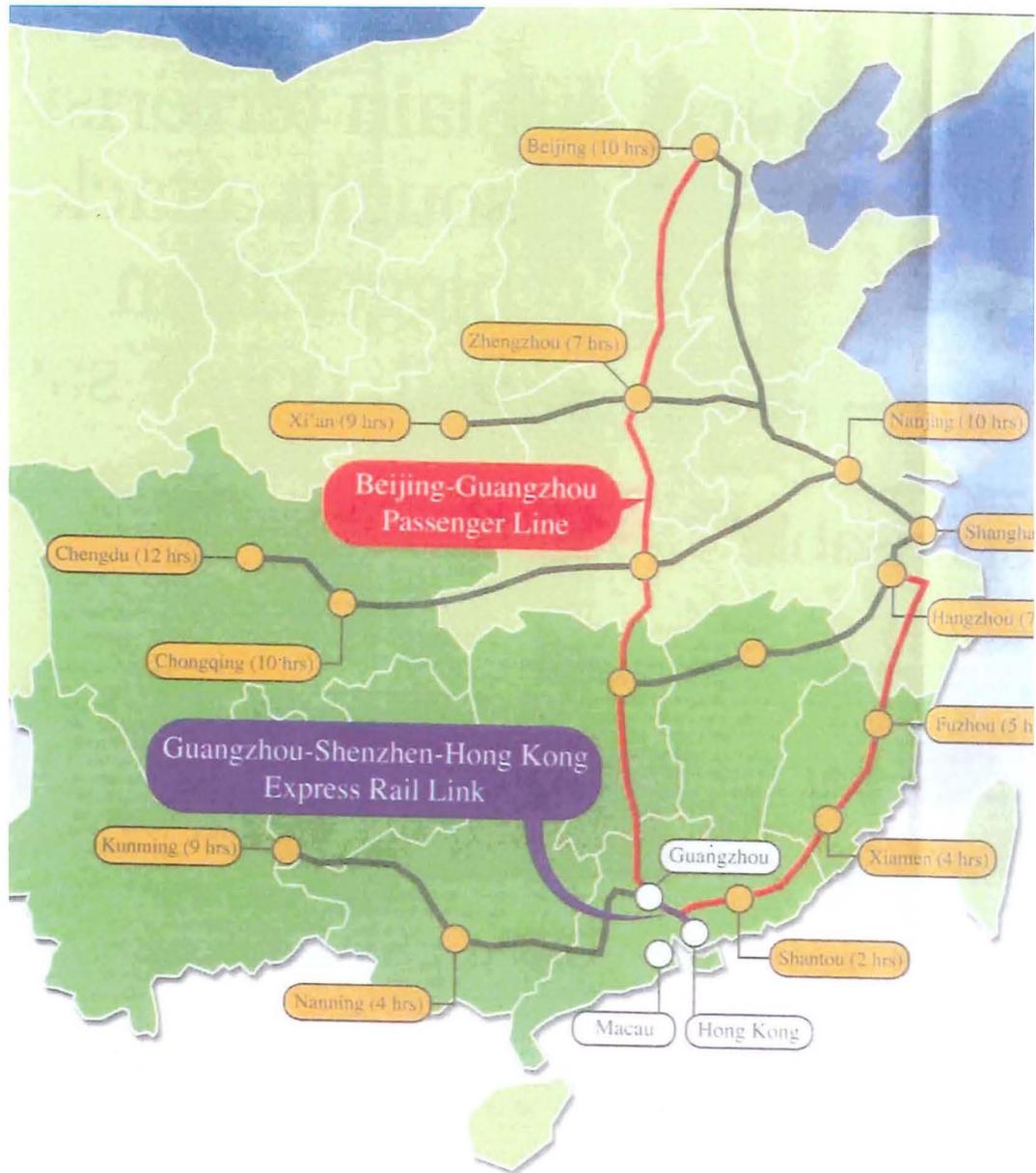


Figure 1.3 The express train system

When the Hong Kong-Shenzhen high-speed train becomes operational, travellers from Hong Kong can reach important cities of the PRD in shorter periods (Table 1.2). Passengers from 150 airports in China can take the high-speed train from Shenzhen's airport to Hong Kong; from there, passengers can travel to 110 cities around the world via Hong Kong's outbound flights. Similarly, passengers from 110 cities around the world can reach 150 airports in China through the Hong Kong and Shenzhen airports.

Table 1.2 Travelling time from Hong Kong to main cities by express train

City	Journey
Futian Shenzhen	14 minutes
Shek bai Guangzhou	42minutes
Sheungsha Hunan	4 hours
Fuzhou Fujian/Wuhan Hubei	5 hours
Shanghai	8 hours
Beijing	10 hours

Source: Hong Kong Government 2010

Apart from investing in the Hangzhou Xiaoshan International Airport and forming a joint venture management company at the Zhuhai Sanzao International Airport, the Airport Authority Hong Kong will also team up with the Shanghai Hongqiao International Airport through a 49% stake in a joint venture with the Shanghai city government. Hongqiao Airport, which has been operational for 88 years, is one of two airports in Shanghai with a focus on domestic routes. Due to its proximity to the city, Hongqiao Airport is very popular among passengers who wish to fly to/from Shanghai. This is another important step to deepen the integration of Hong Kong with Mainland China.

With considerable transport infrastructural developments, Hong Kong will be gradually integrated into the GPRD, the PPRD, and with the major cities of China. Manufactured goods from the provinces in the PPRD, as well as imported goods from abroad, can be shipped through Hong Kong's port and airport with enhanced efficiency and reduced logistics costs.

The focus of this research is to examine the challenges faced by and opportunities available to the forwarding sector of Hong Kong's logistics industry. This research can thus offer theoretical explanations behind the trend that show increasing outgoing ocean freight from the PRD ports. Moreover, the research findings will identify the specific challenges faced by the forwarding sector and shed light on new opportunities for the

Hong Kong forwarding sector. To be specific, this research is designed to answer the following questions:

1. Will the PRD continue to rely on Hong Kong's logistics industry? If not, why not?
2. Will PRD exporters continue to use Hong Kong's airport and port? If not why not?

The motivation for this study comes from the author's experience within the industry in the PRD and Hong Kong for the past thirty five years. However, ad hoc experience is not a sufficient basis for developing useful recommendations for the industry's future. For this, we require sound research that is both theoretically valid and evidence-based.

1.3 Structure of the Thesis

The current chapter introduces the rationale for and the objectives of the research. In Chapter Two, different logistics services are defined. This chapter also critically reviews the theories and models that explain the rise of the PRD as a manufacturing powerhouse and the strong logistics demand for Hong Kong logistics service providers.

Chapter Three presents the development of Hong Kong's logistics industry, including its past, present, and future trends. In particular, this chapter also traces the historical development of the industry, its growth in terms of scale and diversification, and its branching out to the PRD. Through an analysis of the industry's development in Hong Kong, why the two key research questions need to be asked is made clear.

In Chapter Four, the author introduces the logistics industry development in Shanghai, Taiwan, Singapore and India. By comparing the industry in these four areas with Hong Kong's, the author offers insights that can be applied to the Hong Kong logistics industry.

Chapter Five explains the research design and the reasons for the choice of research approach. The research methodology is discussed, and the choice for the combined interview and survey methods is explained. The specific methods are then discussed in

detail, with an analysis of the effectiveness of the methods adopted in helping to answer the research questions.

Chapter Six presents an analysis and the results of the data linking the analysis to both the research questions and the literature review presented in Chapter Two.

In Chapter Seven, the key findings of the research are discussed and linked to the historical development of the industry in Hong Kong, to the theoretical models discussed in Chapter Two, and again to the two research questions. Particular focus is given to future of the industry in Hong Kong in the context of the PRD and globalisation. The contribution to knowledge from this research is discussed in detail.

Chapter Eight summarises and offers a number of recommendations based on the conclusions of this research. The limitations of the research are then discussed, and pointers to future research required are provided.

1.4 Contribution to Knowledge

The inspiration and key driver to undertake this research arose from the author's attempt to examine the challenges facing and opportunities available to the Hong Kong forwarding sector of the logistics industry. Significant changes appeared to have occurred in a very short period; however, no systematic study of Hong Kong's logistics industry could be sourced. This was the case for both industry and academic sources, and continues to hold true, apart from the present research. This research is the first such study to address the two research questions that, in one form or another, have been posed over the years by industry players and the government. Hence, this study represents the following specific contributions:

- The first ever detailed analysis of the views of manufacturers, logistics companies, and governments on the industry
- The first ever detailed statistical analysis of the future implications for the industry
- An analysis of the extent to which current theory can help to explain logistics

developments in this part of the world

- An assessment of the limitations of current theory in the context of the PRD region
- The development of a more useful conceptual tool for understanding the industry in the PRD region
- A critical analysis of the Hong Kong forwarding industry's future direction

These are further elaborated on in the concluding chapter of this thesis.

Chapter Two Theoretical Background

2.1 Definition of logistics

Logistics refers to the process of planning, implementing, and controlling the forward and reverse flow and storage of goods, services, and related information from point of origin to point of consumption while conforming to customer requirements (Council of Supply Chain Management, 2005). Logistics activities can be broadly divided into asset-based and non-asset-based logistics. The forwarding industry sector is a subset of the logistics industry (Markides and Holweg, 2006).

Most logistics practitioners agree that logistics is a subset of supply chain management (SCM). However, the distinction between supply chain management and logistics literature is unclear. Mills et al., (2004) agree that logistics literature essentially presumes rational co-operation between buyers, suppliers, and service providers and on this basis, strives to find optimal solutions for inventory, transportation, and information flow.

In contrast, SCM also considers the behavioural and political dimensions of trust and power, conflict, and dependence between suppliers and buyers. Lamey (1996) argues that the field of logistics research focuses on minimising total cost, whereas supply chain management is concerned with long-term profitability of serving customers and customers' customers. By analysing developments in the logistics and supply chain management literature, Hallorsson and Larson (2004) conclude that there are four different perceptions on the relationship between supply chain management and logistics (Figure 2.1):

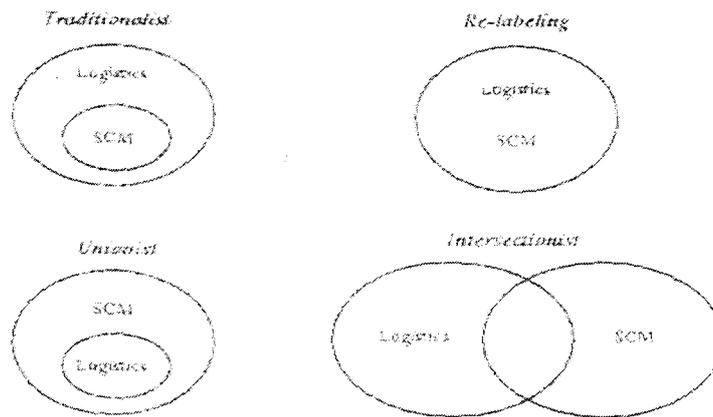


Figure 2.1 Supply chain management and logistics

Source: Halldorsson and Larson, 2004

- Traditionalist – The traditionalist positions SCM within logistics and tends to view SCM as ‘logistics outside the firm’.
- Re-labelling - The re-labelling approach simply renames logistics; what logistics before in the past is now considered supply chain management. ‘Supply chain’ and ‘logistics network’ are synonymous.
- Unionist - This perspective treats logistics as a part of SCM: SCM completely subsumes logistics. Lambert (2001) suggests that supply chain management is the management of eight key business processes: (1) customer relationship management, (2) customer service management, (3) demand management, (4) order fulfilment, (5) manufacturing flow management, (6) procurement, (7) product development and commercialisation, and (8) returns. These processes subsume or include majority of logistics, purchasing, marketing, and operations management.
- Intersectionist - The intersectionist approach considers supply chain management as not a subset of logistics, but as a broad strategy that cuts across business processes, both within the firm and through supply chain channels.

One of the key components of supply chain management is the manufacturing process. Thus, supply chain management cannot be a subset of logistics activities. This

logic also applies to the view of the re-labelling approach. Supply chain management is not a new name for logistics. Clearly, there are strong logistics components in supply chain management. Logistics links a number of supply chain management functions by its support of physical and information flow. The intersectionist view cannot offer satisfactory answers on logistics activities if they are not considered part of supply chain management. In this thesis, the author agrees that the unionist approach (see Lambert, op. cit) is the most logical system for understanding logistics. This is because the function of logistics (as defined above) is clearly part of supply chain management. This is also empirically sound; for example, evidently, physical and information flows (the core of the logistics function) link a number of supply chain management functions. Hence, the unionist view of logistics as a key component of supply chain management is the view adopted in this study. Moreover, the other 'views' listed above are only partial in that they cannot conceptually (or empirically) represent the more comprehensive picture provided by the unionist approach.

Figure 2.2 shows the hierarchy in the logistics industry presented in a pyramid structure that reflects the flows of both goods and information, beginning with the source of demand for logistics services: the manufacturer. The goods from the manufacturer are then transmitted via different logistics service providers that offer different types of services, all of which are required by the manufacturer. This hierarchy is explained as follows.

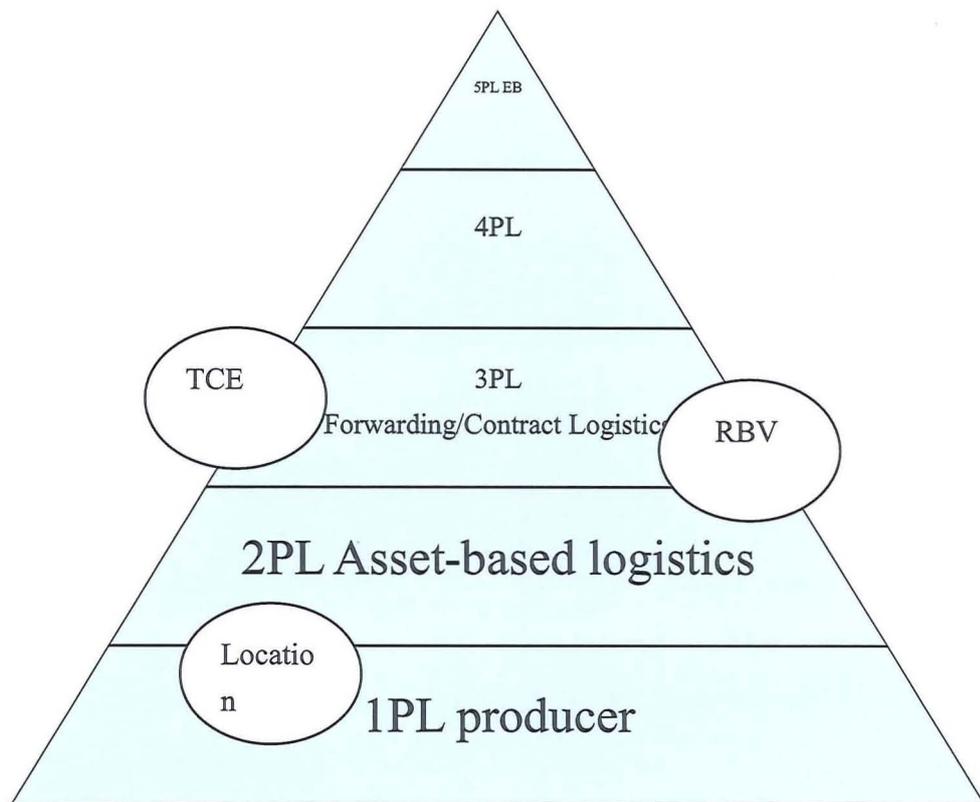


Figure 2.2 Hierarchy of the logistics industry

At the base of the hierarchy is the producer, which is called the first-party logistics service (1PL provider). The producer owns and operates the facilities. Under this situation, the logistics service is in-house and in combination with manufacturing. From a theoretical point of view, the 1PL provider, who is also a manufacturer, can be placed within the context of traditional location-specific advantage (LSA) theory. This is because proximity to low-cost labour and other inputs is of primary concern to these manufacturers. The latter is also true of 2PL providers because they enjoy the consequent derived demand for their services from the manufacturers in the PRD. However, the ideas to be found in transaction cost economics (TCE) and resource-based value theory (RBV) are more applicable to the nature of operations of third-party

logistics service (3PL) providers and to a lesser extent, second-party logistics service (2PL) providers. The 2PL provider refers to the transactional transport and warehouse management (the second part of the pyramid). These service providers own the facilities (airlines, shipping lines, trucking firms, and terminal operations). The manufacturers and/or other logistics service providers [i.e., 3PL both freight forwarding and contract logistics service providers] can outsource their logistics functions to the 2PL providers. Together, the 2PL and 3PL providers represent the majority of firms in the logistics industry in both the PRD and in Hong Kong, whereas the more complex service 'bundle' is represented further up in the pyramid of the logistics structure. The 3PL providers include both those in the contract and forwarding logistics. Although 2PL and 3PL represent the largest components of the industry, they are in fact quite different from a conceptual point of view. In the pyramid diagram in Figure 2.2, 3PL providers can be located within the context of TCE because these providers enable manufacturers to distribute their products at the lowest landed costs. In addition, 3PL providers can also be located within the concepts of RBV because they have developed substitutable competitive advantage through the creation of rare, inimitable, and non-substitutable communication technologies. To a lesser extent, this is also true of 2PL providers because they do not possess the communication technologies that are typical of 3PL providers. This is why the RBV theory is mostly represented by the 3PL part of the pyramid. However, the 2PL providers cannot be conceptually located within the theory of transaction cost economics because they do not directly reduce the total landed costs for the manufacturer. Placing the 3PL providers in the context of TCE and RBV in the pyramid is not specific to Hong Kong or the PRD; it is rather a conceptual development from the existing theory put forward in this thesis. This is explained further in the concluding chapter of the thesis. The 4PL providers focus on the supply chain integration management. The fifth-party logistics service (5PL) providers are in

the e-business area, and manage all parts of the supply chain integration. Since 1PL does not include outsourced logistics functions to a service provider, the author only covers 2PL, 3PL, 4PL, and 5PL in detail. The conceptual differences between each 'level' of provider and the value added to the manufacturer from each type of provider are explained in detail in the following pages. Notably, over time, the structure of production in the PRD will change toward higher value-added products; therefore, the role of 3PL providers will become more crucial. However, predicting what structural changes the future will bring with any sensible accuracy is impossible. At this stage, noting that these changes will certainly affect the logistics industry is sufficient. However, the issue of the possible effects of these changes is very much an area for further research beyond this thesis, and has therefore not been included here.

The conceptualisation of the logistics industry given in Fig. 2.2 enables a clearer understanding of which parts of economic theory can be used to place the industry within a more formal analytical framework. Current SCM theory simply does not address the key elements provided by TCE, RBV, or LSA theories. This refinement of the simple conceptual structure of the industry is a key contribution to knowledge of this thesis. This contribution is introduced early in the thesis to emphasise the important role that these ideas play in the context of the data analysis, and will be discussed in greater detail in Chapter Six.

2.1.1 Second-party logistics service (2PL) providers (Asset-based logistics industry)

Second-party logistics service providers, or asset-based logistics service providers, invest heavily in fixed assets such as aircraft, ships, trucking fleets, and terminals.

- Airlines

The airline industry in Hong Kong started immediately after the Second World War in 1946 when two Australian pilots established Cathay Pacific Airways. Cathay Pacific Airways began with a DC-3 in 1946, and gradually modernised its fleet by replacing

them with newer units such as Catalina, DC-4, DC-6, Lockheed L-188 Electra, General Dynamics Convair 880, Boeing 707-300, Lockheed L-1011 TriStar, Boeing 747, Airbus A330, Boeing 777, and Airbus A340. Today, Cathay Pacific Airways operates a fleet of 100 modern aircraft. After 60 years of development, Hong Kong is now served by more than 88 international airlines, offering 150 destinations with 5,400 flights per week. The airlines include Dragon Air, Air Hong Kong (a pure cargo airline), Hong Kong Express, Hong Kong Airlines, and CR Airways. More than half of the world's population is within five hours flying distance from Hong Kong. Hong Kong Airport Authority is committed to linking Hong Kong with more than 180 cities in the world by direct air services.

- Shipping lines

Four hundred shipping lines operate in Hong Kong, offering services to five hundred destinations. Out of these, many are Hong Kong-based. Two of the largest lines are Worldwide Shipping and Oriental Overseas Container Lines.

- Shipping terminal and trucking operators

Second-party logistics services operators or asset-based operators include shipping terminal operators offering terminal operations to shipping lines and/or trucking operators that offer trucking services to FFs and contract logistics service providers. In Hong Kong, the largest shipping terminal operators are HIT, Modern Terminals, HIT-Cosco, and DP World (which have acquired interests in Sea Land Terminals).

- Air cargo terminal operators

Second-party logistics services providers also include air cargo terminal operators. Before 1976, airline companies handled air cargo operations such as acceptance and delivery of air cargo, palletisation, and loading and unloading aircrafts. The first air cargo terminal operator, Hong Kong Air Cargo Terminals Ltd. (HACTL), was franchised by the Hong Kong Government and started operations in 1976. Before Hong

Kong Airport was relocated to Chek Lap Kok in 1998, HACTL offered services to all airline companies operating in Hong Kong. While operating at the old airport at Kai Tak, HACTL had the exclusive rights to franchise operations and a 100% market share. After the opening of the new airport at Chek Lap Kok, a second air cargo terminal operations license was franchised by the Hong Kong Airport Authority to Asia Airfreight Terminals Ltd. (AAT), a consortium led by Chiangi International Air Cargo Service (CIAS). AAT now has approximately 20% market share and has reduced HACTL's market share to approximately 80%.

Second-party logistics services providers offer space to manufacturers, traders, and or LSPs for their transportation and warehousing needs. However, the space offered by 2PL is rather basic with less value added. The trend is for manufacturers and traders to use LSPs that can offer complex service chains.

2.1.2 Third-party (3PL) services providers

Africk and Calkins (1994) refer to 3PL as 'a relationship between a shipper and a third party which, compared with basic services, has more customised offerings, encompasses a broader number of service functions and is characterised by a longer-term, more mutually beneficial relationship'. Fung et al., (2005) defined 3PL service providers wherein 'a Third Party handles and integrates different logistics functions, involving some management capacity of supply chain integration, e.g., freight forwarders'. Third-party logistics service providers are generally asset-light or non-asset based. Third-party logistics services providers include contract logistics (CL) service providers and FFs.

- **Contract logistics (CL) service providers**

Beginning 1980, a new class of non-asset-based services providers has emerged in the market. The core activities of CL service providers include managing inventory for third parties and offering other value-added activities such as pick-and-pack, assembly,

labelling, quality control, reconditioning, and reverse logistics.

- Freight forwarders (FFs)

The freight forwarder (FF) is one of two service providers under the banner of 3PL. A person or company would normally contact a travel agent if they plan to travel and FFs if they wish to send a shipment to another party. The companies who offer services to senders or receivers by shipping goods from the place of origin to the place of destination are called FFs. FFs are broadly divided into domestic freight forwarders and international freight forwarders (IFFs). As Hong Kong has very little domestic freight forwarding, most of the FFs are engaged in international freight forwarding (Yeung et al., 2009).

Shippers and consignees would not normally contact airlines or shipping lines to ship their cargo because airlines and shipping lines normally only offer basic cargo space from airports or ports of origin to airports or ports of destination. Under normal circumstances, airlines and shipping lines would not offer ancillary services such as collection and/or delivery of shipments, preparation of related documents for transportation, and customs clearance. In contrast, IFFs offer one-stop service from collection of the shipments, preparation of export documents, booking the required space from airlines or shipping lines, to clearing the goods at destinations and delivering to final consignees. MergerGlobal (2008) states that the global supply network has changed considerably with trade liberalisation. Sourcing and manufacturing have been progressively shifting from high labour cost markets such as the United States and Western Europe to low labour cost markets such as China. The shift started 30 years ago with low-value consumer products and is moving up the product value spectrum. As sourcing patterns have shifted, manufacturers and retailers have increasingly relied on FFs to be the network managers of their intercontinental supply chains. The reliance of end users on forwarders has created a US\$ 115 billion industry (MergerGlobal, 2008).

The customer base of a typical FF is comprised of large, medium, and small manufacturers, as well as retailers. Services provided include transportation (international and intercontinental destination delivery), customs brokerage, origin consolidation, destination deconsolidation, and warehouse CL services.

Most service types are priced on a transactional basis per shipment or on total weight or volume. FFs are both competitors and customers of asset-based logistics providers, container sea freight carriers, and airlines. They compete with asset-based carriers for bigger shipments, and for purchase capacity from the same carriers or from carriers who would entrust wholesale most, if not all, their space to FFs. In 2007, FFs controlled an estimated 46% of combined air and containerised sea freight (Figure 2.3).

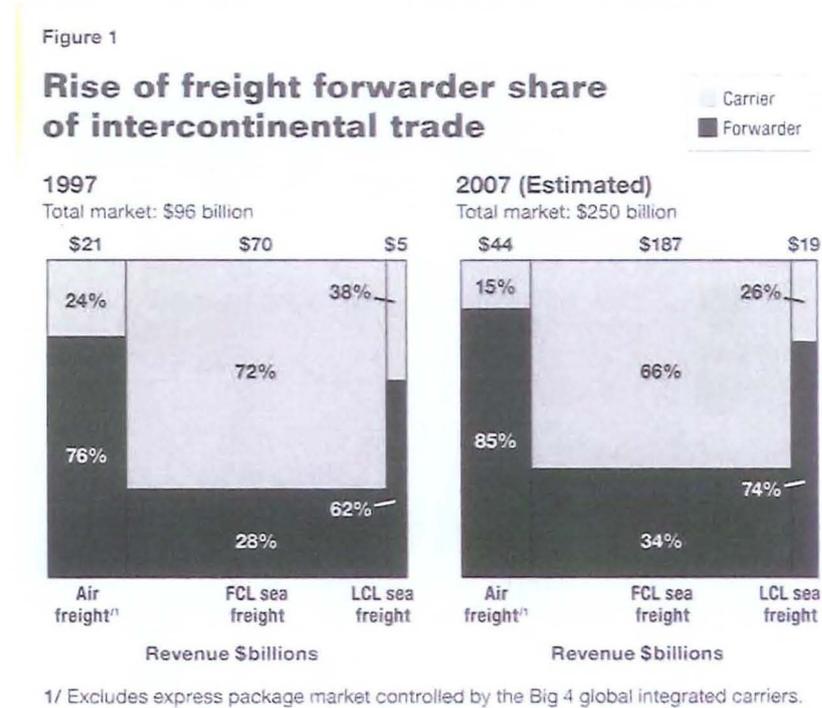


Figure 2.3 Rise of freight forwarder share of international trade

Source: MergeGlobal 2008

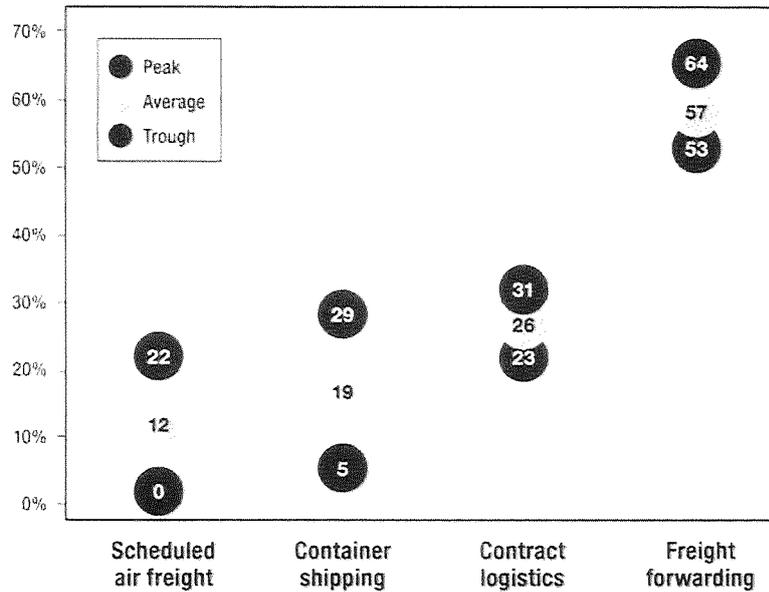
FFs dominate the airfreight sector with 85% revenue share of heavy freight shipments. This estimate excludes the express small package sector where the big four integrated carriers, namely, DHL, UPS, FedEx, and TNT, control 90% of this market

segment in terms of market share. Over the last ten years, forwarders have increased their share of the airfreight market by 9% in terms of market share because airlines have progressively reduced direct sales efforts to shippers and or consignees (MergerGlobal, 2008).

FF share of the sea freight market is lower at 34% revenue share of full container load (FCL) shipments and 74% revenue share of less-than-full container load (LCL) shipments. FF share of FCL has increased by 6% in terms of market share since 1997. The high share of FFs in the LCL segment is because of their expertise in handling smaller, complex transactions similar to airfreight. For the same reason, certain integrated ocean carriers are targeting LCL flows as well. Forwarders are able to generate attractive returns on capital employed by focusing on activities that require professional skills, instead of physical assets. Figure 2.4 presents the historical returns by industry segment, with the worst performing on the far left and the best performing on the far right. FFs' return on capital employed (ROCE) is the highest among all segments of the freight and logistics industry, reaching a peak of 64%, a trough of 53%, and an average of 57% throughout the industry cycle (Figure. 2.4). These results reflect the quality of forwarding services and their contribution in value creation for their services.

Figure 2

ROCE¹ by industry segment: 2000–2006



Return on capital employed (ROCE) is defined as earnings before interest, tax and amortization (EBITA) divided by net working capital plus net property, plant & equipment.

Figure 2.4 ROCE by industry segment

Source: MergeGlobal Inc 2008

Scheduled airfreight airlines and container carriers have significantly lower average ROCE and a high variability between peak and trough returns. Their lower returns can be explained by the need for significant investments in transportation assets and the daily exposure to capacity utilisation risk. Although entry barriers exist, availability of low-cost capital, often government-subsidised, allows new entrants to add physical capacity more easily, even in poor industry conditions. Passenger-oriented airlines, often subsidised by governments to increase capacity to support the tourism business, also add physical capacity.

There are several structural factors in the forwarding industry. In addition, its business model design allows forwarders to generate superior financial returns compared to air and container carriers. These factors include the following:

- Control of the end-user, the party who eventually pays the bills, or the customers
- Ability to provide better supply chain information to customers

- Flexibility of services across modes and different carriers within each mode
- Ability to attract and retain high-calibre staff
- Better understanding of costs due to less complexity

However, contrary to conventional wisdom, there is also a level of fixed costs and commitments that forwarders have to maintain, including the following:

- Information systems
- Physical facilities
- Minimum volume commitments, with air and container carriers in front-haul markets with tight supply

Forwarders are able to control the end-customers relationship because asset-based air and container carriers have increasingly relied on forwarders' wholesale capacity instead of by direct marketing to end customers, especially to medium- and small-sized customers. These carriers provide additional capacity to fulfil long-term market share objectives and are not constrained by quarterly earning expectation of shareholders.

Capital for asset-intensive transport activities is shifting to emerging markets, particularly in the form of local companies investing in capacity for market share growth. These carriers are not equipped to build the intellectual capital and customer relationships that asset-based companies located in developed markets have established. As a result, as market share shifts to these entities, forwarders take greater share of retail control of end-customers.

Examples of this trend can be seen with Emirates Airlines in the airfreight sector and China Shipping in the container sea freight sector. Emirates Airlines is building substantial capacity in the Asia-Europe trade as part of the United Arab Emirates' long-term vision to build Dubai as a global air logistics hub. Emirates Airlines has ten 747-8 and eight 777 freighters on order (<http://www.emirates.com>, 2008). Among non-integrated airfreight carriers, Emirates Airlines is one of the largest freighter orders

on the books. China Shipping is a young, government-controlled container carrier founded in 1997. The company has embarked on an aggressive expansion strategy to build up its position in the China market. To support its growth goal, China Shipping continues to add container ship capacity, especially with eight 13,296 TEU vessels to be delivered over the next five years, and will aggressively use FFs to fill its new ships (<http://www.cscl.com.cn>, 2008). In both case cases, wholesaling of capacity to FFs is their key sales strategy to fill their new capacity.

Globalisation is driving sustained growth in long-haul trade. As a percentage of world growth of gross domestic product, the value of intercontinental trade has nearly tripled from 5.2% in 1962 to slightly more than 15% in 2006 (MergerGlobal, 2008). The trend is for long-haul trade to continue to rise. This trend directly benefits the FFs upon whom most manufacturers and retailers rely to organise and supervise door-to-door movement of goods. This unique positioning has allowed forwarders to not only participate in the expansion of global freight flow, but also to control the most complex and valuable activities of this flow.

One of the major contributions of IFFs is their role as service consolidation provider to the business community and shipping public. Through consolidation services, IFFs are in a position to offer rates that are more competitive to shippers and/or consignees than the shippers and/or consignees can obtain from airlines and shipping lines directly. Table 2.1 shows an example of how IFFs achieve lower costs and are therefore in a position to offer lower air cargo rates to shippers and or consignees.

Table 2.1 An example of how IFFs achieve lower costs

	Actual Weight	Volume Weight
Shipper A ships a shipment of shirts with Destination X at HK\$20 per kilo	2,000 kilos	3,000 kilos
Shipper B ships a shipment of watches with Destination X at HK\$20 per kilo	<u>2,000 kilos</u>	<u>1,000 kilos</u>
By consolidating shipment A + B	4,000 kilos	4,000 kilos

IFFs pay airlines based on actual weight by kilogram or by volume weight of 6,000 cm³, whichever is higher. By consolidating Shipments A and B, IFFs pay for 4,000 kg at HK\$ 20 per kg, that is, HK\$ 80,000 to airlines. On the other hand, they charge Shipper A for a volume weight of 3,000 kg at HK\$ 60,000 and Shipper B for an actual weight of 2,000 kg at HK\$ 40,000. Through the consolidation process, IFFs manage to achieve a cost of HK\$ 16/kg, making a gross profit of HK\$ 20,000. Due to the huge volumes of shipments that IFFs handle, there are frequent opportunities for IFFs to mix and combine volumetric shipments and dense shipments to achieve lower buying costs.

FFs have gradually evolved into the domain of contract logistics service providers by offering simple value-added services such as sorting, labelling, and warehousing services. Indeed the boundary between FFs and CLs service providers has become increasingly blurred. A 3PL is regarded by the industry and the general public as more up-to-date and fashionable. Many one-man truck drivers call their trucking businesses a logistics company. On the other hand, FFs are regarded as outdated and lagging behind in development. The irony is that the financial market offers a higher valuation to the freight forwarding industry than the CL industry because the former is regarded as more profitable. In the logistics arena, the Hong Kong forwarding industry has been leading the world in air forwarding. In terms of total air cargo throughput, it has led the world

since 1998. In terms of total container throughput, Hong Kong has been in the top leagues in ocean forwarding for many years, including several years in the top position. A consensus definition does not seem to exist, even in academia. In the last few years, many global FFs have started identifying themselves as forwarding logistics service providers. In the logistics market in Western Europe, the terms 'freight forwarder' and 'forwarding logistics service provider' are used interchangeably. In Hong Kong, the term 'freight forwarder' is commonly used. Unsurprisingly, the public, and even people in the freight forwarding industry, do not realise that freight forwarding or the forwarding logistics service is a subset of 3PL. The 3PLs, both CLs and FFs, cater to numerous clients and enjoy tremendous economies of scale. They are in a position to offer cost efficiency for their customers and attractive returns for their shareholders. They play a very important role in supporting 2PL in terms of business. They take over the role of logistics functions at lower costs for manufacturers, which can minimise or make investments in the logistics areas unnecessary, enabling them to concentrate on their core competence such as research and development, manufacturing processes, and sales and marketing of their manufactured products. These characteristics are typical of the underlying concepts identified under transaction cost economics and, to some extent, under resource-based value theory. Currently, 3PL has developed into a strategic tool for creating competitive advantage to manufacturers by offering cost-efficient and flexible logistics services. Their services are widely used in the business community around the world.

2.1.3 Fourth-party logistics (4PL) service providers

The term 'fourth-party logistics provider' (4PL service providers) is a trademarked term owned by Anderson Consulting (Li et al., 2008). The term refers to the evolution in logistics of suppliers formerly focused on warehousing and transportation (third-party

logistics providers) into suppliers offering a more integrated service. Among other services, 4PL services include supply chain integration and solutions, change management capabilities, and value-added services. Basically, 4PL companies are 3PL providers that either have added these capabilities to their services or have formed alliances to provide these services. Thus, a 4PL provider is a supply chain integrator that assembles and manages the resources, capabilities, and technology of its own organisation with those of complementary service providers to deliver a comprehensive supply chain solution. The providers leverage the competencies of 3PL providers and business process managers to deliver a supply chain solution through a centralised point of contact. As the 4PL provider caters to multiple clients, the investment is spread across clients, thereby taking advantage of economies of scale. The 4PL cycle includes three phases of work: reinvention, transformation, and execution. In carrying out supply chain integration, the 4PL service provider needs to innovate the provision of integrated services, which means that they have to reinvent offerings that are customised to individualised demands. The supply chain integration includes several parties (e.g., supplier, manufacturer, and customer); therefore, the reinvented service demands that these parties transform their own systems and practices into a new centralised way that they deem acceptable. After the transformation, how to execute the centralised supply chain integration and solve emerging problems are very important considerations in order to realise the potentials of 4PL supply chain integration. The 4PLs tend to focus on selective major logistics services users who can achieve substantial cost savings by the innovation and transformation of logistics services offered by 4PLs. However, 4PL service is not yet well developed in Hong Kong and the PRD. Consequently, 4PL service has less impact on the business community in these areas.

2.1.4 Fifth-party logistics (5PL) services providers

Fifth-party logistics service providers are e-business operators that manage all of

As we can see from Figure 2.5, there are overlapping areas between FFs and CLs. However, 4PLs do not offer physical handling services. They outsource their requirements to FFs and CLs. Although CL service providers, 4PL services providers, and FFs are active in the supply chain, Hong Kong is strongest in its forwarding capability in terms of air cargo throughput. Members of the Hong Kong Association of Forwarding and Logistics Agents Ltd. (HAFFA), the most powerful trade association in the Hong Kong logistics industry, handle more than 90% of air cargo and 50% of ocean-going cargo out of Hong Kong's airport and port. Members of HAFFA, including small and medium enterprises (SMEs), have increasingly evolved themselves into the CL domain. Many HAFFA members have rebranded themselves as logistics service providers and indeed have incorporated CL services attributes (Lai et al., 2004a).

2.2 Theories and Models

The 3PLs or more precisely, CLs, only emerged in the market in the 1980s. Since then, many best practices have been created; however, no theories have been developed that focus upon the forwarding and CL industries per se. The closest we can currently obtain a better theoretical understanding of these issues is through economic theory. Hence, the author has borrowed economic theories in an attempt to better understand the nature of the industry and the related data collected in the pursuit of this research. Literature search revealed three theories from economics, which separately contain elements that significantly aid our understanding of the logistics industry. These were briefly introduced earlier as an enhancement to the basic conceptual view of the industry and presented in Figure 2.2. The salient elements of these (in terms of the industry) are presented below.

2.2.1 Transaction cost economics (TCE)

TCE takes an economic perspective on how to minimise transaction costs.

Transaction costs are the costs associated with negotiations, implementation, coordination, monitoring, adjustment, enforcement, and termination exchange agreements, and include two major components: coordination cost and transaction risk (Clemons et al., 1993). Oliver Williamson¹ has built on Coase's initial insight, using theories from the disciplines of (1) contract law, (2) institutional economics, and (3) organisational behaviour. Williamson's formulation of TCE suggests that three variables are crucial to the decision: (1) the level of asset specificity associated with the transaction, (2) the degree and type of uncertainty surrounding the transaction, and (3) the frequency of the transaction (Williamson, 1975). One key assumption of TCE is opportunism, which suggests that under the condition of information asymmetry, agents in a relationship are likely to take unfair advantage of a bargaining situation. Another important construct in TCE is asset specificity, which refers to the transferability of assets that supports a given transaction, with high asset-specific investment representing costs that have little value outside the exchange relationship (Grover and Malhotra, 2003). Uncertainty refers to the level of predictability associated with future events. If there is significant uncertainty surrounding the transaction; TCE predicts that the buyer will move to protect itself through stronger contractual arrangements. If asset specificity and uncertainty are sufficiently high, the buyer may choose to perform the service itself. Frequency refers to the number of times a transaction is executed, or the 'volume' of a particular transaction. As frequency increases, fixed costs can be spread over more transactions, lowering the fixed cost per transaction. TCE argues that the make-or-buy decision of a firm is solely a function of asset specificity, uncertainty, and a firm's risk-taking level. These elements are based on the premises that the cost of economic exchange could be too high under certain conditions, and that the decision-making environment is characterised by bounded rationality and opportunism. The above

¹ Nobel Prize winner in Economics 2009

explanation of the key concepts under TCE fits very well with the advantages provided by the 3PL companies (see Figure 2.2).

At present, customers are increasingly interested in 'one-stop shopping' for logistics services. A successful response to these customer demands is critical to the long-term survival of carriers. Carriers face two important decisions: 1) additional services to offer; and 2) how to supply the new services. Hanna and Maltz (1998) have investigated the specific decision by Less-than-container load (LCL) carriers to expand into warehousing. More specifically, TCE has been applied to logistics outsourcing in general, and warehouse outsourcing in particular, with some success, and transaction-specific assets play very important roles in vertical integration, distributor-customer relationships, and co-marketing alliances. Relying on TCE, Bienstock and Mentzer (1999) attempt to answer three questions:

- 1) Is the relative efficiency of outsourced transportation versus transportation by private fleet affected by the type of carrier equipment required for the transportation activities?
- 2) Is the relative efficiency of outsourced transportation versus transportation by private fleet affected by operational uncertainty (e.g., delays among transportation routes due to weather, road conditions, or labour unrest)?
- 3) Is the relative efficiency of outsourced transportation versus transportation by private fleet affected by the volume of products that is transported?

The results of the analysis suggest that, when making transportation decisions, an evaluation should be undertaken to determine the status of factors, such as volume of shipments, degree of operational uncertainty, and availability and cost of requisite assets. Managers should attempt to evaluate total production and transaction costs, and should be accompanied by the realisation that certain factors (i.e., specific asset requirements and uncertainty) could increase transaction costs when transportation tasks are

outsourced, rather than performed by a private fleet. However, the decision ultimately depends on ascertaining the most efficient alternative when the total of production and transaction costs is considered. Commonly, higher total land costs will result if a logistics manager uses a less dependable mode of transportation on the logistics chain. This is often due to the shipment being delayed by unpredictable customs inspection or becoming delayed at transshipment points. This is a common mistake of the less-knowledgeable manager of a logistics company who strives to generate more profit for the company but who in fact incurs more costs for the company. In other words, the transaction cost element in the chain rise because the expertise of 3PL companies has not been used.

In a framework based on TCE, Gonzalez-Benito (2000) propose that the success of logistics-related just-in-time (JIT) purchasing practices that fundamentally transform the physical exchange process depends on the implementation of additional practices, which transform the way of governing and controlling the relationships and which support and rely on a climate of cooperation. Skjoett-Larsen (2000) has studied the adoption of third-party logistics based on TCE and has found that this explains the conditions under which third-party agreements become preferable to the classical choice between the market and hierarchy. The author concluded that third-party logistics are not merely a means to cost efficiency, but also as a strategic tool for creating competitive advantage through increased service and flexibility. Halldorsson and Skjott-Larsen (2006) have analysed the preparation, implementation, and operation of a particular case of 3PL arrangements to understand further the inter-organisational dynamics of dyadic relationships between a buyer and provider of logistics services. According to their study, dyads are subject to both controllable and non-controllable forces of change. Inter-organisational dynamics relate to how the dyadic relationships are governed. As the dyad accumulates experience over time, changes will occur in the

balance between the two parties in terms of goal congruence and risk preferences. Rabinovich et al., (2007) have studied the logistics services in outbound distribution channels. A low level of asset specificity, for example, has caused one of the 2PL logistics firms in Hong Kong to be less attractive to investors because its facility is used to handle general air cargo that could easily be handled by a general warehouse with much lower investment. In contrast, based on TCE, low levels of asset specificity and uncertainty drive Internet commerce firms, for example, to establish relationships, while logistics service providers make these services available across new and existing relationships between Internet commerce firms, their customers, and their vendors.

2.2.2 Resource based view (RBV)

RBV looks at economic units in terms of their resource endowments, which leads to different immediate insights compared with the traditional product perspective, and the diversified firms are seen in a new light (Wernerfelt, 1984). Firm resources including all assets, capabilities, organisational processes, firm attributes, information, and knowledge are controlled by a firm, enabling it to conceive of and implement strategies that improve its efficiency and effectiveness (Daft, 1983). Thus, resources, capabilities, and strategic assets are key concepts in the RBV. Resources are firm attributes that may enable firms to conceive of and implement value-creating strategies. Firm resources can be tangible or intangible, and they may have been developed inside the firm or acquired in the market. Capabilities refer to a firm's capacity to deploy resources in order to affect desired ends. Assets are stocks of available factors that are owned or controlled by the firm. Assets can only be generated through a process of accumulation, consisting of a path of 'flows' or investments over time and have the characteristic of being 'visible' resources. Barney (1991) notes that two assumptions are elemental to the RBV: 1) resources are distributed heterogeneously across firms, and 2) these productive resource cannot be transferred from firm to firm without cost (i.e., resources are

'sticky'). Based on these, Barney (1991) also makes two fundamental arguments. First, resources that are both rare (i.e., not widely held) and valuable (i.e., contribute to firm efficiency or effectiveness) can produce competitive advantage. Second, when such resources are also simultaneously not imitable (i.e., they cannot easily be replicated by competitors), not substitutable (i.e., other resources cannot fulfil the same function), and not transferable (i.e., they cannot be purchased in resource markets), these resources may produce a competitive advantage that is long lived (sustainable). Thus, to gain competitive advantages, one can identify types of resources that lead to high profits, a balance between the exploitation of existing resources, and the development of new ones. One can then purchase a bundle of resources in a highly imperfect market. Therefore, RBV highlights the importance of key resources in achieving competitive advantage. Such resources possess particular attributes that enable the provision of value to customers (Barney, 1991), resist duplication by competitors, and whose value can be appropriated by the organisation, leading to the attainment of supernormal profits.

Logistics competence is becoming an important source of sustainable competitive advantage for many companies (Skjoett-Larsen, 1999). This involves a complex interaction of physical and human resources, including resources and capabilities developed in relations with interacting companies. For example, logistics-related input factors include raw factors (e.g., forklift trucks, warehouse racking, packaging materials, and inventory) and raw skills (e.g., loading skills, driving skills, picking skills, and computer-operating skills). Logistics-related assets are warehouses, plants, fleets, railroad systems, satellite-based trucking communication technologies, and EDI computerised networks. Logistics capabilities consist of the ability to work in teams, the ability to manage supplier relationships, technological abilities, new product development, service delivery, and order fulfillment. Drawing on the RBV of the firm,

Lai et al., (2004a) have empirically investigated the existence of different types of logistics service providers (LSPs), and whether the types differ in service performance. Results suggest that there are four discernable types of LSPs, according to the service capability displayed by each type, and that differences in service performance exist between the types. Panayides (2004) suggests that both product-market and resource-based strategies may account for variations in performance among LSPs. Specifically, service differentiation, market segmentation, and inter-functional coordination exert a positive impact on various measures of company performance, unlike cost advantage, which does not seem to be a significant predictor of performance in this context. Using a survey of 1,200 manufacturers in Taiwan, Shang and Sun (2004) examine taxonomy in logistics management based on RBV and cluster analysis. Results show that intensive a logistics competence cluster with excellent logistics competencies in all four owners had better logistics, market, and financial performance. This demonstrates that logistics competencies should leverage one another to create sustained competitive advantages. Wu et al., (2006) use data collected from a survey of supply chain and logistics managers in various industries to demonstrate that IT-enabled supply chain capabilities are firm-specific and hard to copy across organisations. These capabilities can serve as a catalyst in transforming IT-related resources into having higher value for a firm. Cheng and Yeh (2007) adopt the RBV of the firm to examine the cause and effect relationships of internal dimensions, such as resources, capabilities, and logistics services on sustainable competitive advantage (SCA) in the air-cargo forwarding industry. Results indicate that capabilities are considered the most essential internal dimension influencing the SCA of air-cargo forwarders. In terms of the capabilities dimension, staff capability to provide better customer service is the critical factor. In addition, strategy alliances are regarded as the essential source of external assistance in achieving SCA. Markley and Davis (2007) outline the potential

competitive advantage that firms can create through the creation of a sustainable supply chain and described the potential measures for managers to use. They argue that firms can increase their competitive advantage as a result of a stronger triple bottom line, and propositions are created from a natural RBV of firm. Relying on the RBV, Carter and Rogers (2008) introduce the concept of sustainability to the logistics literature, which they define as the integration of environmental, social, and economic criteria that allow an organisation to achieve long-term economic viability. They place sustainability within the broader rubric of sustainable supply chain management. Vaidyanathan and Devaraj (2008) postulate that online information and process act as resources that result in logistics fulfillment capabilities. These capabilities in turn lead to satisfactory e-procurement. Using survey data collected from 131 purchasing and procurement managers, the results indicate strong support for the relationships between information flow process quality, logistics fulfillment quality processes, and e-procurement satisfaction performance.

2.2.3 Location-Specific Advantages Theory (LSA)

Unsurprisingly, Hong Kong has accounted for three-fifths of China's foreign direct investment (FDI) and fourth-fifths of outward investment to China since 1979, as China has offered and is still offering location-specific advantages (LSAs) to Hong Kong investors. Dunning (1981) suggests that multinational enterprises (MNEs) will invest in a foreign location only if the latter offers certain LSAs in terms of resources and facilities that make it possible for MNEs to explore their firm-specific ownership advantage. Root and Ahmed (1979), Frey and Schneider (1986), as well as Dunning (1993), all suggest that market growth, availability of materials suppliers, physical infrastructure, and efficient administration are the most frequently cited LSAs in host countries. Given the very unevenly distributed pattern of FDI in China's coastal provinces, this confirms that there are ample location advantages at Guangdong Province or the PRD, which absorbs more than one-fourth of China's FDI.

Zhang (1994) points out that Guangdong Province has enjoyed three important LSAs compared with the rest of China: geographical proximity to Hong Kong and Macao, historical and ethnic connections with overseas Chinese, and experience in dealing with the outside world. Luo (1998) also argues that foreign partners are mainly motivated by the lower production costs in China, whereas political risk does not seem to be a concern. Using a linear regression model and time series data, Wang and Swain (1997) have found that the size of the host country market, the relatively lower costs of labour, and cost of capital play a very important role in FDI inflow in China.

According to Zhang et al., (2007), the members of the Hong Kong Federation of Industries believe that the important determinants of FDI in China include low labour costs, proximity to Hong Kong, and low land cost. In addition, Hong Kong's manufacturing investments in Guangdong Province are concentrated in two cities: Shenzhen and Dongguan. The distance between these two cities and Hong Kong is approximately 100 km by land. The manufacturing labour costs in these two cities are only one-tenth to one-fifth and factory rental only one-tenth to one-quarter of those in Hong Kong in the early 1990s (OECD, 1995). Aside from Shenzhen and Dongguan, other Hong Kong manufacturers have chosen Huizhou, Guangzhou, Zhongshan, Chaozhou, Zhuhai, and Foshan to set up their operations.

Although LSAs are available to all firms in a host country (Pinho, 2007; Dunning, 1998), not every firm is able to maximise its return equally. Pinho (2007) hypothesised that LSAs depend on the following four factors: 1) the expectation in market sales/growth potential; 2) the perceived risk associated with the host country; 3) the operating costs associated with performing marketing activities; and 4) the perceived low distance in terms of culture and business practices within the host country. Mao and Chen (2001) argue that the elements of LSAs, such as labour, energy source and raw materials, and the condition of communication and transportation facilities, differ greatly from country to country. They attribute the size of China's market, as given by the level of GDP, as the most important determinant of LSAs.

They also infer that cheap labour resources are another important location-based factor determining FDI inflow. In addition, continued growth of China's economy is also an important location-specific determinant of FDI.

In his dissertation, Deichmann (1999) cites a 'laundry list' of location factors by Laulajainen and Stafford (1995) that have been identified from corporate behaviour over the past several decades. The list includes factors dealing with friction of distance and those measuring the attributes of areas. Friction of distance variables include proximity to markets and materials and labour inputs. Site characteristics include labour characteristics, infrastructure, governmental influences (subsidies, taxes, regulations, and risks) and quality of life. According to Laulajainen and Stafford (1995) proximity to market is the priority for retailers and other service providers, whereas manufacturers' considerations are more complex, favouring labour availability and accessibility to inputs (Laulajainen and Stafford 1995).

Not all theories cited by the above scholars explain the rationale of Hong Kong investors in favouring China and PRD in terms of LSAs. Hong Kong started with light manufacturing industries in the 1950s; by the 1970s, it had become renowned as a manufacturing centre for light industries. In the 1980s, Hong Kong's light industry manufacturing faced many unfavourable political, social, and economic challenges, such as global trade restrictions, rising protectionism, shortage of labour, and increasing land/labour costs. Many other developing counties had definite cost advantages over Hong Kong, especially in the high-volume, low valued-added items. At approximately the same time, China adopted its economic reforms and open door policy. Since its economic reform, China has completely reoriented its development policy toward growth by export-oriented light manufacturing industries financed by foreign direct investment. Special Economic Zones (SEZ) were developed in Southern China, which is adjacent to Hong Kong, to attract Hong Kong investment. With China's limited capital and technical expertise, and the heavy investment

and technology transfer from Hong Kong, light industries in the PRD of Southern China were established and prospered in the late 1980s. Most of Hong Kong's labour-intensive activities have now been relocated to the PRD because the reform of China has provided good opportunities for Hong Kong manufacturers to not only survive, but also even to grow and expand.

To a large extent, TCE and RBV explain why exporters and manufacturers in the PRD continue to use Hong Kong's logistics industry. LSA goes a significant way to explain both the location decisions of Hong Kong-based manufacturers (who have moved to the PRD), and their strong 2PL logistics needs (as explained in Fig. 2.2). As argued above, these three economic theories now present us with a much clearer conceptual understanding of this industry, and therefore can be of use in examining the challenges and opportunities faced by Hong Kong's logistics industry within the PRD and Hong Kong itself. This, as explained, is precisely the overall aim of this research.

Chapter Three The Logistics Industry in the PRD and Hong Kong – Past and Present

The purpose of this chapter is to set out the historical and present contexts of the industry in both the PRD and Hong Kong. This enables a better understanding of the development of the industry and allows us to put this development in the context of globalisation, which has been a key factor in the industry for the past twenty years. In addition, the chapter presents political and economic developments, which are centrally relevant to the industry in both locations. These developments have been primarily the initiatives of the PRC Government. As an aid to understanding to these contexts, the author has also included in this chapter a very apt analogy of an industry that definitely faced similar issues 40 years ago in the United Kingdom (i.e., the UK shipbuilding industry.) This helps to shed light on some of the current issues of the PRD/Hong Kong logistics industry while also enabling us to understand better the key differences between the problems of 40 years ago and those currently faced by the PRD/Hong Kong logistics industry.

3.1 Economic and Logistics Development in the PRD

Since the introduction of economic reforms and an open door policy by the ‘strong man’ Deng Xiaoping in 1978, China has enjoyed very impressive and unprecedented growth, with nearly 10% annual growth in GDP (Bergsten, 2008). China has emerged as an economic powerhouse in the global trade, and is now the third economic power, after the US and Japan, with an export value of more than US\$ 1,218 billion. Merchandise imports already reached US\$ 955 billion in 2007 (National Bureau of Statistics of China, 2009). During the last three decades, China’s rapid growth in foreign trade has been accompanied by a large influx of foreign capital. With cheap production costs and huge

domestic market potential, China has attracted a massive influx of FDI. FDI in Mainland China increased dramatically in the 1980s and early 1990s. In the period 1985-1990, the amount of realised FDI inflows increased at an average rate of 30% per annum (Zhang, 2006). The growth of FDI in China has been dominated by capital originating from Hong Kong, which accounts for approximately three-fifths of the nations' total FDI. Hong Kong has been China's largest external investor since 1979. Approximately four-fifths of Hong Kong's outward FDI goes to China (World Investment Report, 2006), whereas over a third of the outward FDI has flowed into Guangdong Province, where a large part of the PRD lies.

By 2007, China had attracted a total of US\$327 billion in FDI inflows (World Investment Report, 2008). This high level of FDI inflows has transformed China into the world's largest centre of manufacturing, not only in labour-intensive industries such as footwear, clothing and textiles, but also in technology-intensive industries such as electronics, computers, and telecommunication equipment. With its fast-growing foreign trade and investment, China's economy has become much more integrated into the world economy (Zhao et al., 2006). In December 2001, after 15 years of negotiations, China finally joined the World Trade Organization (WTO). Undoubtedly, the country's GDP growth has benefited from its membership into the WTO (Lai and Cheng, 2004; Fung et al., 2005; Zhao et al., 2006; Zhao et al., 2007). China's accession to the WTO has led to a switch in comparative advantage among various exporting countries. Indeed, to a large extent, China's exports have replaced similar exports from other Asian and developing countries due to very low labour cost (the lowest in Asia after Indonesia as of the last decade of the previous century) and efficient production. Furthermore, trade diversion has strengthened China's labour-intensive exports because operating costs in other developing countries such as Malaysia and Indonesia have become comparatively higher (Tait and Li, 1997). However, with increased production

costs in coastal areas, China's cheap labour cost advantage of the early days has gradually diminished. Nevertheless, factor productivity continues to grow at a fast pace due to technology transfer (Ma and Wang, 2001).

China's tremendous GDP growth, particularly in the manufacturing sectors, requires raw materials to be brought to production centres and finished products to be forwarded to world's markets, and thus offers tremendous opportunities for the logistics sectors. Thus, China's logistics industry has also entered a stage of fast growth. Tremendous opportunities exist, albeit together with intense competition, especially since China entered the WTO in December 2001. Between 1992 and 2004, China's logistics industry grew an average of 22.2%, and logistics expenditures accounted for approximately 21.8% of GDP (Wang, 2006).

3.2 Development of the Forwarding Industry in Hong Kong

The forwarding industry supports international trade. Raw materials, components, and semi-finished goods are imported by importers and manufacturers. Through the manufacturing process, these same materials are converted into finished goods. These finished products are then shipped to the world's markets to meet the demand of consumers around the world. In the late 1950s and the beginning of 1960s, shippers of raw materials and finished products in Hong Kong attempted to handle the shipping procedures themselves. Later on, shippers discovered that they could outsource the shipping process to an intermediary who would, in most cases, ship it more efficiently and at less cost. Truckers initially performed the role of intermediary for shipping services, delivering the goods to and from the ports. Later on, these truckers added more attributes to their services, such as preparing documents for the shippers. Thus, the role of the intermediary had changed, and from truckers, they became FFs, which now form the backbone of the non-asset-based LSPs in Hong Kong.

3.2.1 Before the open-door policy

After the Second World War Hong Kong was a small village with approximately 600,000 inhabitants. To counter the US-led blockade immediately after the start of the Korean War in 1951, China started sourcing essential war supplies such as pharmaceuticals, rubber, and batteries through Hong Kong, which was transformed from a small village into an entrepot. Many refugees, mostly Shanghaiese, had fled to Hong Kong to escape communist rule in China. They brought their capital and skills to Hong Kong, and started shipping lines and textiles businesses (Lu and Lu, 2002).

Hundreds of thousands of refugees were smuggled into Hong Kong following the failures of the 'Great Leap Forward' plan introduced in China in 1958, which resulted in the starvation of millions of Mainlanders. In the late 1950s and the beginning of the sixties, refugees from China provided Hong Kong with an abundant supply of human resources and capital for industrialisation (Lu and Lu, 2002). Through these refugees and their capital, together with the relatively cheap land cost in Hong Kong, entrepreneurs in Hong Kong quickly developed a number of low-end manufacturing activities, producing goods such as plastic flowers, wigs, textiles, and lower-end garments. In the beginning of the 1970s, Hong Kong started to manufacture electronics. Famous manufacturers such as Fairchild and National Semiconductors had by then set up their factories in Hong Kong.

Hong Kong is lacking in natural resources, and manufacturers at the time needed to import raw materials such as plastic materials, rubber, cotton, and fabrics. Manufacturers also needed to export their finished goods. Therefore, forwarding services were needed for the importation of raw materials and exportation of finished products. In the late 60s and early 70s, shipping lines did not work with forwarding agents; rather, they worked with shippers and consignees directly. There was very little room for forwarding companies engaged specifically in ocean transportation. Ocean

lines such as OCL, P & O, ScanDutch, and Hapag Lloyd dominated the Far East-Europe trade, whereas American President Lines dominated the trans-Pacific trade. Japanese shipping lines such as NYK and MOSK had also emerged in the Hong Kong market. On surface transportation, importers and exporters normally used shipping lines directly; however, many of them also used truckers to receive and deliver their goods from and to the shipping lines (Shen and Yeung, 2004).

In the meantime, airline companies, most of them members of the International Air Transport Association (IATA), distributed their cargo space through their appointed agents, who were also mostly IATA agents. With lower cost through consolidation service and 5% sales commission from IATA airlines, IATA agents would be in a position to offer cheaper rates to freight service users. British Overseas Airways Corporation (BOAC), Air France, and Lufthansa dominated the European trade, whereas Pan American Airways dominated the trans-Pacific trade. The first airfreight agent emerged in the market when Charlie Lee set up Hecny Transportation Ltd. at the Peninsula Hotel in 1951 and started offering airfreight services for unaccompanied baggage and samples. At more or less at the same time, Flying Cargo Ltd. was established by Roselle Henwood, an American woman. However, the demand for air cargo space could not be met by the storage space of passenger airlines. During the Korean War (1951–1953), to serve the Korean market, Hong Kong airfreight agents seized the opportunity to introduce charter flights using the retired Second World War plane C-46, which had 4 tons of capacity (Lu and Lu, 2002).

Two years after the establishment of Hecny Transportation Ltd. and Flying Cargo Ltd., two more local companies in Hong Kong, namely, General Travel Services Ltd. and Everett Air Cargo Ltd. established their airfreight operations. In the late 1950s and in the beginning of 1960s, other international air forwarders such as Air Express International Ltd. (sold in 2005 to Danzas, a wholly owned subsidiary company of

Deutsche Post), Airborne Express Ltd. (sold in 2008 to DHL, another wholly owned subsidiary company of Deutsche Post), and Schenker, a subsidiary company of German Railways, emerged in the Hong Kong forwarding market.

IATA air lines offered 5% sales commission to IATA agents. However, it was be very difficult for IATA agents to survive on 5% commission. In 1958, IATA airlines introduced a consolidation service, enabling IATA shipments bound for the same destination to be consolidated. This practice of combining shipments optimally, as described under IFF, enabled IATA agents to reach reduce costs. The introduction of consolidation enhanced the profitability of the airfreight industry, and subsequently attracted more entrepreneurs to join the industry. Airfreight forwarders such as Hecny Transportation Ltd., Flying Cargo Ltd., and Air Express International Ltd. first made their fortune from airfreight consolidation services introduced in late 1958 (Kwong, 1988).

From the late 1960s to the mid-1970s, the American government was sending its military supplies to Vietnam during the Vietnam War. Pan American Airways (Pan Am) B707 cargo flights were chartered, each carrying 40 tons of military supplies. On their return flights, the airplanes were empty. Thus, airfreight forwarders, mainly Hecny Transportation Ltd., chartered B707F cargo flights from Pan Am. Each flight initially cost US\$ 10,000 each; however, Hecny Transportation Ltd. could sell the space to retail customers at 200% profit (Lu and Lu, 2002). In 1968, Hecny Transportation chartered 300 flights from Pan American Airways (Kwong, 1988). The huge profit margins on these chartered operations further attracted local entrepreneurs and international FFs to participate in the forwarding industry in Hong Kong. Under the protection of the quota system, and with the growing electronics industries in Hong Kong, Hong Kong FFs enjoyed a steady flow of outbound cargo destined mainly for the US and Western Europe.

3.2.2 After the open-door policy

Deng Xiaoping, the late 'strong man of China' introduced a reform and open door policy in 1978, releasing the potential productivity of 1.3 billion Chinese workers to the world's market. The first group of people to take advantage of China's huge labour force was Hong Kong's business sectors. They had gradually switched their manufacturing process to the PRD since the early 1980s. According to location theory (Dunning, 1993), capital flows from areas with high operating cost to areas with low operating cost. With labour cost as low as US\$ 1 per hour in China (compared to almost US\$ 30 in the United States in urban areas) and cheap land costs, China has benefited from the globalisation of manufacturing. Apart from Hong Kong businesses, companies from the US, Japan, Germany, Korea, Taiwan, and Singapore have also shifted their manufacturing base to China in order to take full advantage of its cheap labour costs and efficient production. The PRD is one of two major manufacturing bases in China and the catchment area for the Hong Kong forwarding sector. Since the 1980s, Hong Kong has become a very important air cargo centre and container port in the world. The following tables demonstrate the importance of Hong Kong air cargo (Table 3.1 and Figure. 3.1) and container throughputs (Table 3.2 and Figure. 3.2).

Table 3.1 Air Cargo Throughput of Hong Kong

Year	In Million Kgs
1999	1,974
2000	2,241
2001	2,074
2002	2,479
2003	2,641
2004	3,094
2005	3,402
2006	3,580
2007	3,742
2008	3,627

Source: Civil Aviation Department 2009.

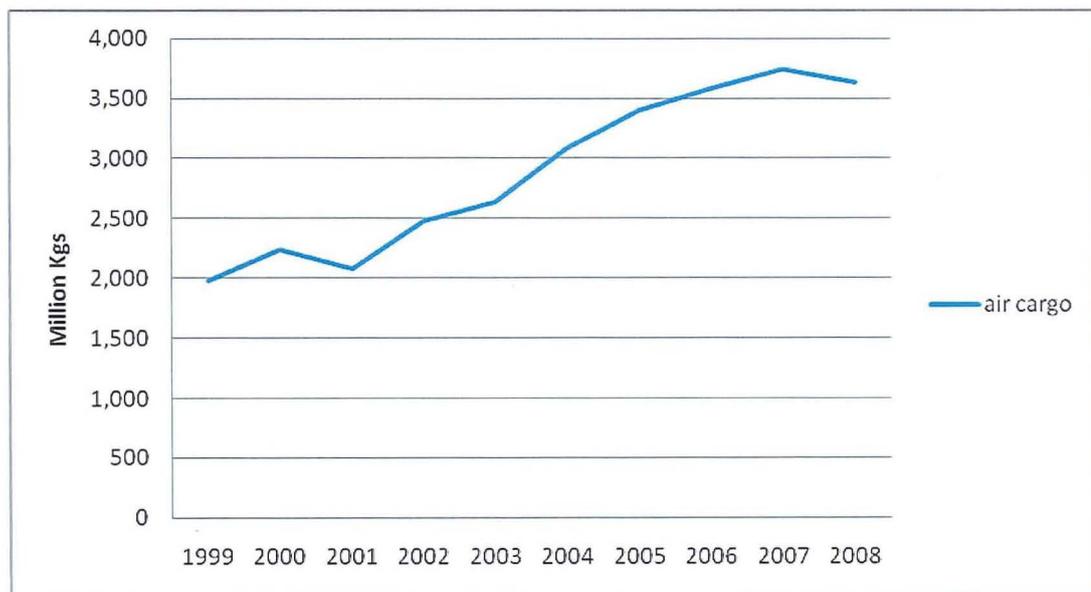


Figure 3.1 Air Cargo Throughput of Hong Kong

Source: Civil Aviation Department (2009)

Table 3.2 Container throughput in Hong Kong and Shenzhen

Period	Hong Kong		Shenzhen	
	'000 TEUs	Growth Rate	'000 TEUs	Growth Rate
1998	14,582	1.4%	1,952	69.8%
1999	16,211	11.2%	2,986	53.0%
2000	18,098	11.6%	3,994	33.7%
2001	17,826	- 1.5%	5,079	27.2%
2002	19,144	7.4%	7,614	49.9%
2003	20,449	6.8%	10,615	39.3%
2004	21,984	7.5%	13,615	28.2%
2005	22,602	2.8%	16,197	18.6%
2006	23,539	4.1%	18,469	14.0%
2007	23,998	2.0%	21,099	14.2%
2008	24,325	1.4%	21,400	1.5%

Source: Hong Kong port development council and Shenzhen port.

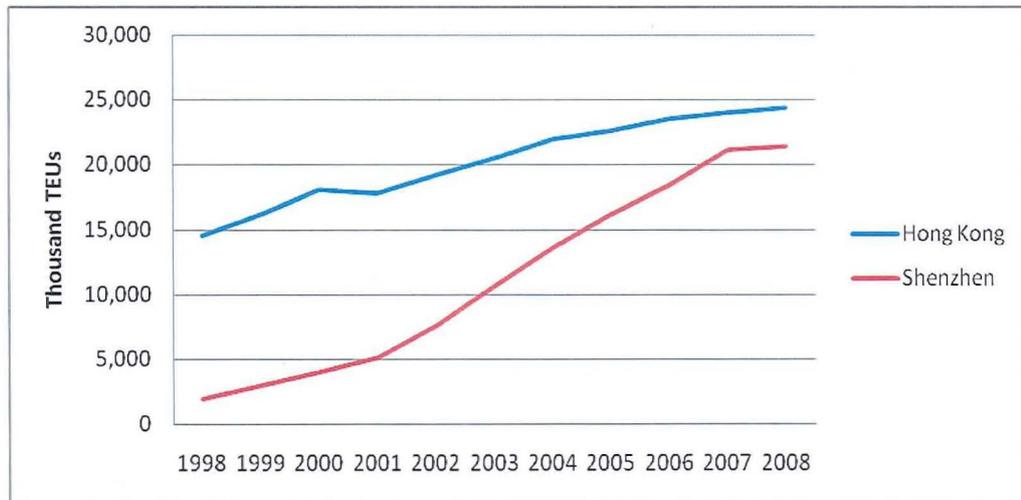


Figure 3.2 Container throughput in Hong Kong and Shenzhen

Source: Hong Kong port development council and Shenzhen port (2009)

The forwarding industry in Hong Kong has grown and prospered from a small number of players of less than 10 in the 1950s to its current 3,000 players, with approximately 1,000 companies specialising in airfreight forwarding and approximately 2,000 companies specialising in ocean forwarding. The Association of Hong Kong Airfreight Agents Ltd. (AHAFA), an airfreight trade organisation, was established in

1966 with eight founding corporate members: Hecny Transportation Ltd., Air Express International, Flying Cargo Ltd., General Travel Services Ltd., Everett Air Cargo Ltd., Airborne Freight Corp., WTC Ltd, and Dietrich Ltd. AHAFa aims to set industry standards, raise professional standards through training, recommend handling tariffs for the members, and interface with government and other trade associations. Airfreight forwarding agents are driven by market forces not only to provide airfreight services but also to provide ocean freight forwarding services. The articles of association of AHAFa was renamed as Hong Kong Association of Freight Forwarding and Logistics Ltd. (HAFFA) in 1989 in order to accept new memberships from other FFs that were primarily engaged in ocean freight forwarding services. The new members accepted into AHAFa/HAFFA since the 1970s have included a number of prominent European players, including Schenker Ltd., Kuhne and Nagel Ltd., ASG Ltd., Panalpina Ltd., and Meadows Ltd. As of 2009, HAFFA has a membership of 360 companies, including prominent local, European, and American corporate members in Hong Kong. It is the only official voice of the forwarding industry practitioners.

Globalisation and outsourcing trends in the manufacturing sectors have offered tremendous opportunities for the logistics and forwarding industries. Globalisation has also accelerated the consolidation in the forwarding industry. In the last ten years, many prominent logistics companies disappeared from the market due to mergers and acquisitions (e.g., Associated Freight was acquired by Thyssen Haniel; Fritz Ltd was acquired by UPS, ASG was acquired by Danzas; Air Express International Ltd was acquired by Danzas, which was acquired by Deutsch Pos; DHL was acquired by Deutsch Post; Wilson was acquired by TNT; Emery Airfreight was acquired by Meno; Jardine Logistics was acquired by BALtrans Logistics; Meno was acquired by UPS; Exel was acquired by Deutsch Post; Star Airfreight was acquired by Schenker; BAX Global was acquired by Schenker; BALtrans Logistics was acquired by Toll; and

ABX Logistics was acquired by DSV).

3.3 Business Environment for the Forwarding Industry

Despite a major consolidation in the forwarding industry taking place in other parts of the world, the majority of freight forwarding companies in Hong Kong have been doing well, thanks to the strong manufacturing activities in the PRD. Thus far, few freight forwarding companies, including the small ones, have been driven out of the market. However, the external environment has changed. The tremendous ocean freight throughput growth in the PRD has come at the expense of Hong Kong's ocean freight throughout growth because the PRD and Hong Kong share the same catchment area. On the other hand, consolidation in the forwarding industry in North America and Europe will inevitably affect FFs in Hong Kong that rely on the sales support of overseas agents, whose number has been diminishing in the consolidation process.

Although Hong Kong has 27 berths altogether operated by HIT, Modern Terminals Ltd, HIT, Cosco, and D Port Ltd., it lost its top container port status in 2005 to Singapore, reflecting the threat and the dilution effect of the PRD ports. Indeed, the growth of the container total throughput in Hong Kong has slowed down in recent years. Arguably, achieving double-digit growth rates on a very large base is difficult for Hong Kong. However, the PRD ports have experienced high, double-digit compounded growth rates in recent years. Observers in the logistics industry predict that the PRD ports will soon overtake Hong Kong as the third largest in the world after Shanghai and Singapore.

Freight forwarding forms a very important role in the logistics industry, which in turn plays a very important part in the value chain. The Smile Curve was first proposed by Stan Shih, Chairman of Acer Computer Taiwan, to depict the importance of distribution services in the value chain (Fig. 3.3). According to the smile curve theory (Jason et al., 1999), the manufacturing part is the lowest in the division of value creation.

Research and development and branding on one hand, sales and marketing and logistics on the other, play much more important parts in value creation. Logistics costs accounted for as much as 18.1% of China's GDP in 2008, compared with 8.2% GDP share in the US and 9.3% GDP share average in the world (Research Center of Logistics, NanKai University, 2009).

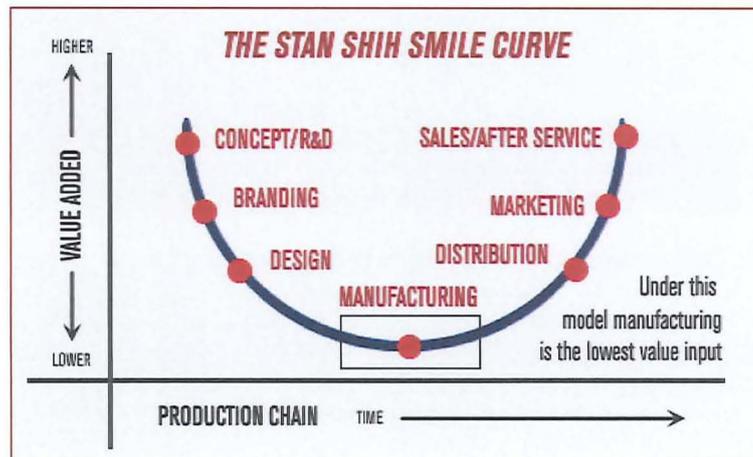


Figure 3.3 The Smile Curve

3.4 Drivers of the Logistics Industry in China

Since the 1990s, global trade has expanded significantly, and there appears to be a consensus on the three most important drivers: outsourcing, globalisation, and freeport development (Nolan and McFarlan, 1995; Earl, 1996). Undoubtedly, the same processes have been major contributors in driving the growth of the logistics industry in China and Hong Kong.

3.4.1 Outsourcing

Outsourcing, defined as the 'turning over to a supplier those activities outside the organisation's chosen core competencies' (Sharpe, 1997), has seen a clear increase in the last few decades (Christopher, 1992; Rao and Young, 1994). There are many reasons enterprises should outsource their products; however, the most compelling reasons are 'to stay competitive' while maintaining a world-class level of quality. To stay

competitive and maximise profit potentials, large companies position themselves to adopt greater market discipline by reducing their product range and reducing their vertical links in the production process (Grant, 1995; Domberger, 1998). The search for greater efficiency in turn has led to increased specialisation. As such, outsourcing is seen by certain authors as a manifestation of this trend (Domberger, 1998). Outsourcing by original equipment manufacturers (OEMs) to contract manufacturers (CM) helps OEMs manufacture products cheaper, faster, and in better quality. CM can take over all aspects of production, from packaging to manufacturing, to actual design of products. This enables OEMs to focus on sales, marketing, and business development. Contract manufacturing thrives when high volumes of goods have to be made according to tight deadlines, using standardised processes, to enable CM to leverage economies of scale to produce each unit at a lower price than the OEM could. Outsourcing manufacturing to China is critical to many American companies in order to maximise productivity. Logistics is one of the particularly popular functions for outsourcing, with specialist service providers taking over part or all of the material movement and storage (Walters, 2007). The use of 3PL has the benefits of lower fixed costs, expert services, combined work to give economies of scale, flexible capacity, lower exposure to risk, increased geographical coverage, and guaranteed service levels (Walters, 2007). Kakabadse and Kakabadse (2002) summarise further achieved benefits of outsourcing such as shared risk and benefits (Willcocks and Fitzgerald, 1994; Quinn, 1999), the reduction of transit periods and transportation costs (Aichlmayr, 2002), greater capacity for flexibility (especially in the purchase of rapidly developing new technologies, fashion goods, or the myriad components of complex systems) (Carlson, 1989, Harrison, 1994), decreased product/process design cycle time, and improved quality (Quinn and Hilmer, 1994). After all, the greatest advantage of outsourcing is the full utilisation of external suppliers' investments, innovations, and specialised professional capabilities that would

otherwise be prohibitively expensive for one enterprise to replicate (Kakabadse and Kakabadse, 2000). As such, outsourcing decisions seem to be beyond considerations of scale and costs and should be integral to an organisation's overall strategy formulation (Quinn and Hilomer, 1994; Venkatraman, 1997; Di Romualdo and Gurbaxani, 1998, Domberger, 1998; Quinn, 1999).

Outsourcing may create undesirable outcomes, such as the creation of additional competitors. The classic example was the outsourcing by Ford for some gasoline engines to Dodge Brothers, which became a division of Chrysler. By 1914, Dodge Brothers was in head-to-head competition with Ford, following their forward integration to produce entire automobiles (Welch and Nayak, 1992).

3.4.2 Globalisation

The increase in outsourcing activities and the opening up of global markets have contributed to supply networks becoming more globalised (Harland et al., 2003). This is mainly attributed to trans-national mobility of capital, information, people, products, and services, leading to 'global entanglements' (Fombrun and Wally, 1992). Strategic intent, global brands, economies of scale and scope, management of the value chain, comparative advantage, market access, the growth of free trade, and improved communication by information technologies (most recently e-business), improved logistics services, and convergence of market demands have all been cited by various authors as additional contributory reasons for globalisation (Harland, 1995; Walters, 2007). According to Meixell and Gargeya (2005), international sourcing has, in recent years, been mainly sought out by managers because of reduced costs, increased revenues, and improved reliability. Manufacturers typically set up overseas factories to benefit from tariff and trade concessions, low labour cost, capital subsidies, and reduced logistics costs in foreign markets (Ferdows, 1997). Further benefits are achieved from access to overseas markets, organisational learning through close proximity to

customers, and improved reliability because of close proximity to suppliers (MacCormack et al., 1994).

The new international economic order is the subject of research and discussions in recent years, as referred to by Bhagwati (2004), Bhalla and Bhalla (1997), Dicken (1998), and Sachs (1998). Apart from the split of the Soviet Union and the rise of China, another main force shaping the world is globalisation. Many researchers have shown that the world is no longer a collection of relatively autonomous countries only marginally connected by trade and generally immune to events in other parts of the world. Globalisation has significant implications for the manufacturing activities in China, particularly in the PRD, which presents tremendous logistics demands.

Globalisation can be defined in several different ways, depending on the level of focus. At a worldwide level, the attributes of economic globalisation are related mainly with the growing economic interdependence among countries, reflected in increasing cross border flows of goods, capital, and knowledge. According to Lubbers (1995) 'globalisation is a process in which geographic distance becomes less a factor in the establishment and sustenance of border crossing, long distance economic, political, and socio cultural relations'. The growth of international trade is one of the most apparent aspects of globalisation. According to a study undertaken by the Federal Reserve Bank of Atlanta (Becsi and Wang, 1997), over the last quarter of a century, imports from high-income nations grew by 39%, imports from low and middle-income regions increased by 61%, and the overall market shares of many developing countries have grown faster than those of advanced economics. The reductions in barriers to international trade have opened the door for export-led growth. Deregulation in the aviation industry introduced by President Reagan at the beginning of the 1980s and the evolution of the Internet have significantly reduced the transportation and communication costs, which have certainly played a major role in the growth of

international trade.

Chong (2007) states that trade is one of the four important features of globalisation. Another important feature of globalisation is capital movement, which travel around the world in the pursuit of profit. In the tide of increasing liberalisation of world trade in goods and services, increased international trades and capital movement cannot be achieved without a greater determination to reduce and eventually eliminate tariff and non tariff barriers. The establishment of the WTO at the conclusion of the Uruguay Round negotiations in 1995 marked a significant development profoundly influencing the globalisation process.

A new global division of labour has changed the pattern of geographical specialisation among countries. International trade and capital flows are among the most important channels of global integration. The movement of goods and services across borders has grown tremendously, accounting for over 45% of world GDP in 1990, up from 25% in 1970 (Prokopenko, 1998). This is evident in the deliberate policy change in most developing countries; developing countries are integrating into the world markets. Globalisation gives developing countries an unprecedented opportunity to catch up with the more advanced countries. Sachs (1996) notes that openness alone cannot constitute an engine of growth. Evidence suggests that, by far, the most important area of government action is the adoption of an open trade policy. If China had not adopted an open door policy in 1978, China could not have benefitted from this unprecedented opportunity. China's low land and labour costs, particularly in the early stage of adopting open-door and reform policies, attracted massive influx of FDIs, most of which were concentrated in manufacturing sectors. However, global companies constantly shift their industry operations in pursuit of more profit, and the opening up of China in the late 1970s and beginning of the 1980s offered irresistible opportunities for their investments. China's export-led trade and manufacturing activities depend on an

efficient logistics industry to bring in the raw materials and semi finished components and to deliver the finished products to the world markets.

3.4.3 Freeport

Strategic Access Ltd., the consultant commissioned by Hong Kong Logistics Development Council and Hong Kong Trade Development Council in November 2007, pointed out in its report that there was a kernel of confidence based on distinctive competitive advantages inspired by Hong Kong's unique 'freeport' status, abiding competitive strength in air cargo activity, and ongoing strength of the Pearl River Delta economy. Hong Kong's 'freeport' status also supports the views of optimistic industry players to develop Hong Kong as a significant regional distribution centre. As a regional distribution centre, goods bound for Hong Kong and China can be stored in Hong Kong's logistics facilities. As a freeport, no duties (with the exception of a few items such as tobacco and automobiles) are to be paid when goods are brought into Hong Kong. When the goods are required by consumers in China, goods are imported into China, and the importing company pays the required import duties. Other goods are bought by millions of tourists from China who visit Hong Kong every year. When Mainland Chinese tourists return to China together with their purchases, they do not normally pay duties. Hong Kong's role as a regional distribution centre was inherited from its Freeport status, established by the British together with Aden and Singapore in the 19th century.

A freeport is a complex and difficult concept to define (Schulze, 1997). Due to its widespread usage over a long period, the term freeport tends to have a slightly different meanings and significance from country to country. Various discussions have been made on the advantages and disadvantages of customs-free territories since the establishment of freeports and free trade zones in Northwest Europe, specifically in Germany and Scandinavia, toward the end of the 19th century. The discussions peaked

in the 1930s when a number of new free trade zones were established in the US (Kaufmann, 1995). Freeports are important components of the general transportation system sector and are linked to the expanding world economy because they represent a means of integration into the global economic system. The concept of a freeport dates back at least to the Roman Empire (Cornell, 1989). There was a need then for transshipment of goods from non-local traders, and freedom from mistreatment was the most pressing issue. The freeport concept has been developed and used extensively by leading European countries in the commercial fields in the past centuries.

Cornell (1989) argues that the first known freeports were the special stockades in the Greek port of Chalcis and Piraeus. Chong (2007) cites that the oldest freeport established expressly to promote trade was the Roman freeport on the Aegean island of Delos. This freeport acted as a customs-free centre for the promotion of trade between Egypt, Greece, North Africa, Asia, and Rome. Later on, Genoa, Venice, and Gibraltar followed suit. Da Ponte (1997) asserts that the historic cities that adopted the freeport strategy to promote trade were mindful of the negative consequences of excessive tax imposed on trade and the importance of a cost-effective business environment. In the last four centuries, the primary focus of seaborne shipping completed its shift from the Mediterranean to the Baltic, and subsequently to the North Sea and its adjacent waters. Shipping routes in Northwest Europe are still the most active today, serving important ports such as Hamburg, Bremen, and Copenhagen. The true forerunner of the free trade zone was the Freeport of Hamburg, which was established as early as 1888 (Chong 2007). Since the 15th century, the German ports of Hamburg, Bremen, and Luebeck have undergone transition from the tight commercial restrictions of the Hanseatic League to independently functioning, commercially competitive city-states that were essentially free from import and export duties. By 1835, all three cities had reached this status. Goss (1990) explains that, shortly after this period, these cities were

forced into a customs union in 1888. Hamburg agreed to reduce the entire custom-free area of the city-state to an isolated, fenced-in zone in the harbour. This zone termed a freeport did not fall under the customs jurisdiction of the customs union, it enjoyed unrestricted freedom of import, export, transit, warehousing, and ships' provisions of supplies. Freeports were granted the special privilege of manufacturing within this area. Goods imported from any country in the world could be brought in without the usual customs formalities and could be stored for an unlimited time in the free trade zone or freeport.

In 1979, the PRD initiated a new international economic policy under which it established four special economic zones (SEZs) in Shenzhen, Zuhai, and Shantou in Guangdong Province and Xiamen in Fujian Province. The zones are designed to provide foreign enterprises with lower taxes, reduced tariffs, more modern infrastructure, flexible labour and wage policies, and less bureaucracy (Crane 1990). By the mid-1980s, the basis for a comprehensive legal structure had been laid out for the Shenzhen SEZ. In the SEZs, industrial and commercial tax exemptions were applied to imported equipment and machinery, raw materials, components and parts, and transportation equipment used for production. For items under state control, such as motor vehicles and consumer durables, the rates were reduced 50% of the standard rates for the SEZs. Industrial and commercial consolidated taxes were waived if the goods produced in the SEZs were either sold within the zones or were exported. However, the duty-free preferential treatment did not apply when goods that were either produced in the SEZs or imported from abroad were shipped to the rest of the domestic market (Ge, 1999). Thus, the benefit and convenience offered by the SEZs cannot be compared with those of the freeport. Consumer products particularly luxury items would not be imported to the SEZs duty-free, which would be the case when they are imported into a 'freeport' such as Hong Kong.

The freeport helps to enhance free trade, promote commercial and industrial activities, and promote investment and technology transfer. The success of a freeport is influenced by its accessibility to all necessary inputs, and its competitive position relative to other zones in terms of the price and quality of services (Drewe and Janssen, 1998).

Hong Kong's freeport status enhances the city's foreign trade, international trade infrastructure, port and airport activities, and its position as regional distribution hub, specified as follows:

- Foreign trade: Goods can be imported and exported duty-free, leading to lower overall landed costs. A small place such as Hong Kong is ranked the No. 11 trading entity in the world, mainly because of its freeport status. Foreign trade requires the support of logistics services.
- International trade infrastructure: Freeport activities develop the international trade infrastructure of the economy, thereby enhancing trade in Hong Kong. Many Hong Kong manufacturers, albeit having moved their manufacturing base to the PRD, continue to use Hong Kong as their base for international trade. International trade infrastructure also requires the support of logistics services.
- Port and airport activities: Trading activities created as a result of being a freeport generate additional traffic in both imports and exports. To handle increased traffic, Hong Kong has had to improve its infrastructural logistics facilities that strengthen its hub position.
- Regional distribution hub: Its freeport status supports Hong Kong's role as a regional distribution hub. Goods can be imported into and exported from Hong Kong free of customs duty. Furthermore, millions of tourists from China can shop in Hong Kong without paying customs duty. Hong Kong, similar to most ports and airports in Asia, suffers from an imbalance of trade owing to noticeably less inbound trade. Bringing the goods into Hong Kong for the local market or for

re-export will fill the much-needed inbound trade. After discharging inbound goods, the much needed empty containers can be used for the outbound trade.

3.5 Manufacturing in the PRD

Not only the Hong Kong investors have relocated their labour-intensive industries to the PRD but the foreign investors including Fortune 500 companies have also followed suit. This growth, low labour costs, and a fast-developing domestic market (Chan et al., 1997) have all led to significant foreign investments in China. Consequently, more than a hundred Fortune 500 companies have operations in China, and many other businesses have made similar investments (Luo, 1996). Low-cost manufacturing and the vast domestic market potential have attracted many MNCs to come. The country's accession into the WTO came with even greater market access. In addition, with a burgeoning middle class, more Chinese now have greater purchasing power both for local and imported goods (Einhorn, 2001). Indeed, China has overtaken the US as the most attractive location for FDIs (Kearney, 2002). By 1995, more than 14 million Chinese were employed in enterprises created or supported by foreign investments (Yu, 1996), and many of these enterprises were international joint ventures in the manufacturing sector (Schroath et al., 1993).

The PRD is now one of the most important manufacturing powerhouses in the world (Zhao et al., 2006). Hong Kong's airport and Guangzhou's airport on the air cargo front and Hong Kong's port and Shenzhen ports, including Shekou, Yantian, Guangzhou and Chiwan on the ocean front, share the same catchment area in PRD. To a lesser extent, manufactured goods from Fujian Province and the provinces adjacent to the PRD also use the airports and ports in the PRD. On the other hand, manufactured goods in Shanghai and its neighbouring areas, such as Ningbo, Hangzhou, Suzhou, and other satellite cities normally use Shanghai's airports for air cargo shipments, and Shanghai and Ningbo ports for ocean shipments. Due to its proximity to the PRD, both

asset-based and non-asset-based Hong Kong logistics sectors have enjoyed tremendous growth.

3.6 Logistics and Forwarding Support for the Manufacturers in the PRD

3.6.1 Logistics Infrastructural Development in the PRD

The Baiyun International Airport in Guangzhou, which became operational with three runways in 2003, caters to domestic, as well as international traffic. This airport, which is linked with 90 airports outside China, will be in head-to-head competition with the Hong Kong International Airport (HKIA). The Baiyun international airport will inevitably dilute Hong Kong's air cargo traffic. Air Southern, the Guangzhou-based airline and one of the three major international airlines in China, is an influential airline based at Baiyun Airport.

The Shenzhen Bao'an International Airport, which commenced operations in the 1990s, focuses on domestic passenger traffic and does not dilute Hong Kong's total air cargo throughput. Discussions on areas of cooperation between the airports of Hong Kong and Shenzhen are underway (Yeung et al., 2009).

Modern port facilities at Shekow, Yantian and Chiwan ports (Tam, 2004; Sit, 2003) were jointly developed and are jointly managed by Hong Kong ocean terminal operators who have enhanced the operational efficiency of the PRD ports. Given the lower port handling charges and freight rates than Hong Kong, these facilities now attract more cargo shipping out from the PRD, so as to dilute Hong Kong's total ocean throughput.

3.6.2 Joint Logistics Infrastructural Development between Hong Kong and the PRD

Since 2000, HACTL has implemented the SuperLink China Direct service, enabling cargo flown into Hong Kong to be transhipped into Mainland China by land. SuperLink China Direct allows both import and export customs clearance and inspection to be done at a dedicated facility at HKIA. A flight number is assigned after

the cargo is loaded onto a truck, and a physical seal is placed on the truck by Hong Kong Customs. The improvements are mainly on the Hong Kong side: advance notice is no longer required, and any needed cargo inspection is done at the airport. Very little is done on the Mainland China side. Trucks are still required to queue up at the Huanggang border. Passing through customs usually takes an hour. If the final destination of the cargo is not in Shenzhen, and if port transfer has been previously approved, only a paper manifest is submitted to Huanggang customs for data-collection purposes. The truck is then bonded and permitted to continue to its destination, where import customs clearance and inspection are performed.

The airport express lane is an improvement over SuperLink China Direct and has been in service since May 2007. The express lane connects HKIA and the Shenzhen Bao'an International Airport. Currently, three freight forwarding companies appointed by three airport terminal operators (i.e., HACTL, Asia Airfreight Terminal Company (AAT), and Shenzhen Terminal) provide services for the express lane. The import and export procedures are the same as those for SuperLink Direct. A traditional seal is still needed. Forwarding companies are required to submit pre-declaration information to Shenzhen's airport customs office. Neither HACTL nor AAT have access to China's H2000 clearance system; thus, they have to submit digital truck manifests through their counterparts in Shenzhen. The cargo truck leaves HKIA once confirmation is received. Substantial improvements have been made on the Mainland China side. While a paper manifest is still needed, a bonded truck can go straight to Shenzhen's airport through the border at Huanggang. No cargo inspection is needed at the border as long as the data on the truck manifest matches and the e-seal is intact. A green lane with an automatic drop arm was created for the service at the Huanggang border. As the truck arrives at the green lane, an e-seal with global positioning (GPS) capability is installed and activated by a unique password. The routing of the e-sealed truck is then tracked and traced by

GPS. An alarm is sounded if the seal is broken. The final clearance process takes place at the airport in Shenzhen. The express lane effectively reduces the inspection time at the Huanggang border from over an hour down to several minutes.

To speed up customs clearance and reduce the bottleneck at Huanggang, express port transfer between Guangzhou Baiyun International Airport and Hong Kong has recently been introduced. This truck-expressway for cross-border quick customs clearance between Hong Kong and Guangzhou has been in a test run since August 10, 2007. Two companies, Northwest and Sinotrans, are the pilot users. Container trucks marked 'Quick-Customs-Clearance' can use the quick-customs clearance driveway of Guangzhou's airport Customs House. The express port transfer driveway is similar to the Mainland China Port of the airport express lane. Cargo trucks coming from Hong Kong are simply sealed by the customs officer with an e-seal lock with a GPS function at Huanggang, and then are directly transited to Guangzhou Baiyun International Airport for customs declaration. The declaration processes at Huanggang can be significantly reduced from one hour to two minutes. The sealed truck can be tracked and traced by the GPS system, enabling Guangzhou customs to quickly locate the trucks. The declaration process is automated, which saves labour costs. This passage can also facilitate the trade of goods in the air-land-air mode and speeds up the passage of goods between Hong Kong and Guangzhou's airport.

Super Link China Direct Service and Airport Express Lane are important initiatives to integrate Hong Kong and the PRD logistics infrastructural facilities. In addition, the central government has also approved the construction of the Hong Kong-Macau-Zhuhai Bridge. Construction will start next year, and the bridge is scheduled to be operational in 2015. Between the governments of Hong Kong and Shenzhen, plans are being studied to build a direct railway service linking the airports of the two cities, which will reduce the transit time to 30 minutes. When these two gigantic

logistics infrastructural projects are completed, the forwarding logistics markets between Hong Kong and Shenzhen will be integrated more closely, paving the way for Hong Kong's forwarding logistics industry, not only to expand into the PRD market at a faster pace, but also for it to be strongly exposed to local competitor in the PRD.

3.7 Impact of Mainland Government on manufacturers operating in the PRD

There are a number of factors the Mainland China government has impacted manufacturers operating in the PRD. In his analysis, Jiang (2005) reveals that four factors have been the major motivations in attracting international pharmaceutical firms' direct investment into China during the period 1980–1998: China's market size and potential, rapid economic development and growth, China's open door policy, and relatively stable political conditions. Among these four factors, the author argues that relative political stability is the most crucial in attracting FDI. In the 11th Five-Year Plan, China's central government has decided to upgrade manufacturing industries from being labour-intensive to capital- and technology-intensive. Low-value-added industries will be relocated to the east, west, and north of Guangdong Province. Instead, automobiles, petrochemicals, and the higher end of the apparel industries will be developed (Chan, 2008). Additional budget will be allocated to research and development to upgrade these industries and their product development. Sales and marketing efforts will also be intensified by creating Chinese brands and selling directly to the world's markets (Yu, 2008), instead of simply manufacturing products for foreign brands. This new strategy, combined with efforts to raise domestic consumption, will impact on the logistics sector because such services are very likely to re-focus their logistics and forwarding activities toward the domestic market. This also increases opportunities for Chinese brands and Hong Kong services in the future. This particular 'opportunity' is investigated in this thesis as part of the overall SWOT analysis in Chapter Six.

3.7.1 Relatively Stable Political Conditions

Investment flows are influenced by political as well as economic factors (Floyd and Summan, 2008). During the Cultural Revolution from 1968 to 1977, China's economic development was very slow or stagnant (Zhao et al., 2006). The Hong Kong business community has invested approximately US\$ 4 billion, which ranks it as the number one among all FDI sources in the PRD and other parts of China (MOFCOM, 2009). China has attracted substantial FDI since it adopted the reform and open-door policy in 1978. The Hong Kong business community would have never invested in China if the country had not enjoyed a relatively stable political environment. Indeed, Taiwan manufacturers considered political stability as the number one consideration in their FDI decisions in international logistics (Lu and Yang, 2006).

3.7.2 Government Policies

In 1978, China decided to adopt a reform and open-door policy. However, foreign investment from 1979 to 1991 had been relatively slow. The turning point was in 1992, when Deng Xiaoping toured Shenzhen and called for acceleration of economic reforms and the opening up of the economy to the outside world (Zhao et al., 2007). The central government adjusted its economic policy to speed up economic reform and to open further the economy to foreign investment by starting to build a legal framework to standardise market operations. New regulations covered corporation law, bankruptcy law, stock trading law, and many other commercial regulations (Jiang, 2005). During the period 1992–1998, China received almost 10% of total world FDI inflow and absorbed over 28% of the total FDI inflow to developing countries and over 46% of total FDI inflow to Asian countries. The Southeast Asian region attracted approximately US\$ 480 billion FDI flows in the period 1992–1998; approximately 50% of this amount went to China (UN Conference on Trade and Development, 1999).

In an attempt to attract FDI, one of China's strategies was to open more SEZs. As of the end of 2002, five SEZs had been established: three in Guangdong, one in Fujian and one in Hainan Province. In 1984, 14 coastal cities, known as open coastal cities (OCCs), were opened up for FDI. SEZs and OCCs were the two most important policy initiatives for attracting FDI to China. China's Foreign Economic Statistical Yearbook 2002 revealed that the largest sources of FDI were Hong Kong and Taiwan, particularly during the period from the late 1980s to the early 1990s. Kang et al., (2006) has inferred that investment in China is largely concentrated in the manufacturing sector, a sector that creates tremendous demand for logistics and forwarding services.

Guangdong Province, which contains three SEZs and the PRD, has attracted ample inward FDI from other Asian economies, especially from Hong Kong and Taiwan, and has remained the largest FDI recipient, sharing at least one-third of the national total FDI as of 2000 and more than a quarter of the national total in 2003. The continuous high influx of manufacturing FDI during the last two decades has made the PRD in Guangdong the 'world's largest manufacturing base' (Ng and Tuan, 2006).

3.7.3 New Labour Laws

New labour laws were introduced in January 2008; however, as a result, many events were blamed on these regulations. Huawei, the electronic giant, experienced the mass resignation of 10,000 employees. Wal-Mart reduced 40% of its sourcing from China and abruptly laid off staff. Many shoe factories in the PRD closed down, and more than 10,000 Hong Kong enterprises operating in China were on the verge of closure as of June 2009. Some employers are not prepared to sign contracts with their employees and are not keen to cover their health insurance. Both employers and employees are searching for answers to these problems (Wang, 2008). Critics regard the new labour laws as 'too forward-thinking' and not realistic under China's present economic environment. The new labour laws tend to over-protect the interests of

employees and neglect the interests of employers; they do not create a win-win situation. They also create conflict and worsen the relationship between employees and employers (Ho, 2008).

Geor, a labour law expert, states in 'Magazine Workers 2008.3' that the new labour laws are too restrictive to the employers because they cannot lay off staff. Even if staff members make unreasonable requests, employers cannot terminate their contracts. Wang, a professor of economic management at Tsinghua University, argues that employee benefits cannot be achieved through legislation. Low-level employees who require more protection will not obtain what they want under the new labour law; on the contrary, their interests will be damaged the most (Workers, 2008). Ho, a professor of politics at the Legal University of China, shares his views in 'Workers.2008.3', stating that he did not foresee the serious repercussions of the new labour laws. Increasing labour costs has caused the closure of thousands of shoe factories. Moreover, more than 10,000 Hong Kong enterprises are in danger of closure. A huge number of SMEs are planning to relocate in order to survive. For example, in a recent interview, David Leung of Cheung Yuen International (Hong Kong) Paper Ltd. was quoted as stating that social insurance for 2,000 workers of a factory will cost the company an extra RMB 8 million, which does not include housing, pension, medical insurance, and unemployment funds. He commented that the company has not been able to adjust to the new costs resulting from the new labour laws (Workers, 2008). It appears that the new labour laws introduced in January 2008 have not received much support from employers. On top of the competition from a country such as Vietnam in labour-intensive industries and EU quota restrictions on shoe exports from China, the additional costs of meeting new labour requirements will increase operating costs. The purpose of new the labour laws introduced in January 2008 was to protect the welfare of workers and the legislation is on the right direction. In reality, it will create short-term

disadvantages for investors.

3.7.4 Corporate Tax Policy

Scholes et al., (1992) argue that tax rules influence investment decisions by affecting the rate of return on assets. They assert that rates of return on assets can vary because (1) returns on similar assets are taxed differently if they are located in varying tax jurisdictions, and (2) those located in the same jurisdiction are taxed differently if they are classified under different legal entities (Tung and Cho, 2000). Tax incentives play a major role in attracting business and influencing business investment decisions. Developing countries often use various tax incentives to attract foreign investments and new technologies (Hadari, 1990; Usher, 1997). China uses corporate income tax rates to regulate national business activities. The central government offers a favourable tax rate of 15% to companies operating in the 5 special economic zones (Shenzhen, Zhuhai, Shantou, Xiamen, and Hainan), 32 economic and technology development zones, 13 free-trade zones, and 52 high-tech development zones (Wu et al., 2007).

Tung and Cho (2001) have examined whether (1) concessionary tax rates and tax incentives are effective in attracting FDI into designated investment incentive zones and cities and (2) whether more favourable tax incentives provided by the new tax law in 1991 were effective in increasing the amount of FDI. Consistent with their hypotheses, the zones and cities with lower tax rates and greater tax incentives attract more FDI than other areas. In addition, more favourable tax incentives provided by the 1991 tax law were more effective in increasing FDI during the 1992–1994 period compared with the 1988–1991 period. Their findings are consistent with those of Sony (1975), Root and Ahmed (1978), and Hartman (1984). Since 1979, the institution of tax laws and the use of tax incentives have stood out to be the most important policies in attracting FDI. As foreign firms look for more cost-effective locations to do their business, zones and cities with lower tax burdens have benefited from more FDI. Shenzhen, Zuhai, and Shantou

are three of the five designated SEZs in the PRD that have benefited most from the favourable 15% tax rate offered by the central government.

To take advantage of this low tax rate, many companies moved their registration locations to those areas. The main requirements for registration location change in China are if (1) two-thirds of shareholders agrees to the change and (2) registration location must be one of the main office locations (not necessarily the headquarters). Once these requirements are met, a firm can change the registration location by submitting a notification change to the appropriate authority. Wu et al., (2007) cites the example of China Vision Holdings Ltd., which announced in its 2002 annual report that it had changed its registration location to Pudong District in order to take advantage of the low tax rate of 15%. Foreign investors investing in manufacturing activities in the Dongguan area, another very important manufacturing base in the PRD, have also taken advantage of the favourable tax by registering their operations in one of the SEZs. There is no evidence that all manufacturers in the PRD who provide high logistics demands to the 3PL and forwarding service providers have benefited from the 15% tax rate. However, as the PRD is the world's top manufacturing base, manufacturers operating in Shenzhen, Zhuhai, and Shantou and those who do not operate in these three SEZs can change their registration office so that they can benefit from the low tax rate.

3.7.5 Appreciation of the RMB

For a number of years, China has been under pressure from the US and EU to revalue its currencies. On July 21, 2005, China introduced a mechanism to benchmark the RMB with a basket of foreign currencies. The basket of foreign currencies is widely believed to include the currencies of its active trading partners such as the US dollar, Euro, Japanese yen, and the Korean won. The RMB appreciated 2% against the US dollar from 8.27 to 8.11 to a dollar (Shao, 2009). The appreciation of the RMB has created both short-term and long-term, negative and positive, impact on manufacturing

activities in the PRD and the rest of the Guangdong Province. Guangdong Province has been the show-window of China's reform and open-door policy and has successfully developed very strong export-led manufacturing activities. Manufacturing activities took up 49.5% or RMB 1.074.725 billion out of the total GDP worth RMB 2,170.128 billion in 2005 (Shao, 2009). In Guangdong Province, 40% of total manufacturing activities are for export; this creates tremendous logistics demand. Although Guangdong is a large manufacturing and exporting province in China, most of its manufactured products are at the lower end, labour-intensive, and with low value contribution to the value chain. On the other hand, manufacturers and exporters find little room to improve their export prices due to competition in the competitive global markets. Those who have opted to stay in labour-intensive industries have chosen to relocate their factories to Hunan and Jiangxi Provinces, or outside China to countries such as Vietnam or Cambodia. It will be more efficient and cost effective to ship the finished products made in Hunan and Jiangxi Provinces through other ports such as Ningbo or Shanghai. Those who have relocated to Vietnam and Cambodia will most likely use global and or local logistics service providers. In contrast, there are manufacturers who have decided to close their operations. Tong (2008) argues that 2,789 out of 6,000 porcelain manufacturers had withdrawn from the export market from January to September 2007. Shoe and toy manufacturers in Guangdong have been badly hit by the appreciation of the RMB. In the PRD alone, according to the statistics released by Chinese customs, the number of shoe manufacturers was reduced from 4,759 in 2007 to 2,428 in 2008. The profit margin of textile, apparel, and handicrafts manufacturers who stayed in the export markets has also dropped by 5% to 15% (Shao, 2009).

The appreciation of the RMB has, in the short term, weakened the competitive advantage of manufacturers in the PRD and Guangdong Province and subsequently dampened logistics demand.

3.8 Impact of Hong Kong Government on Forwarding Services Providers

FFs and LSPs need to ship their goods entrusted by their customers through airlines and shipping lines for international traffic. Airlines and shipping lines cannot serve Hong Kong without an airport, in the case of air transportation, and shipping terminals, in the case of ocean transportation. Without airlines and shipping lines, the logistics industry could not have prospered in Hong Kong in the last three decades. The impact of the Hong Kong government on 3PL and FFs can be direct, such as building the world-class HKIA and the creation of the Hong Kong Logistics Development Council, and indirect, such as creating a pro-business environment and enhancing the competitiveness of logistics in Hong Kong. The impact of the Hong Kong government, whether direct or indirect, has helped Hong Kong build a world-class logistics industry, which serves the logistics needs of the PRD well.

3.8.1 Hong Kong Airport

The Hong Kong International Airport is managed by the Hong Kong Airport Authority (HKAA), which is a statutory corporation wholly owned by the Hong Kong SAR government. The HKAA was formally established on December 1, 1995 when the Airport Authority Ordinance was brought into effect as a continuation of the 1990 Provisional Airport Authority. The HKAA provides, operates, develops, and maintains Hong Kong's airport at Chek Lap Kok in order to maintain Hong Kong's status as a centre of international and regional aviation (Hong Kong International Airport Annual Report 2007/ 2008). Under the land grant signed on December 1, 1955, the government granted the HKAA up to year 2047 legal rights to run the entire airport site at Chek Lap Kok, together with the rights necessary to develop such site for the purpose of its business.

As at March 2008, the airport is served by 88 airlines linking Hong Kong to 157

major cities around the world (Hong Kong International Airport Annual Report 2007/2008). In 2008, Pan-PRD (provinces of Guangdong, Fujian, Jiangxi, Hunan, Guangxi, Guizhou, Sichuan, Yunan, and Hainan in south and southwest China) used Hong Kong for their trading activities (Hong Kong Trade Development Council, 2009). To be specific, Hong Kong handled US\$ 66.7 billion in exports or 13.2% of total Pan-PRD exports and US\$ 210.6 billion in imports or 61.7% of total Pan-PRD imports.

Hong Kong used to handle a greater volume of imports than exports for Pan-PRD due to its freeport status. Import goods ultimately bound for Pan-PRD were brought in and warehoused in Hong Kong without import duty and pending further transportation into the Pan-PRD area. The statistics also indicate that many exports from Pan-PRD were shipped through other channels other than Hong Kong.

In 2008, Hong Kong's airport handled 3.6 million tons of air cargo throughput. Hong Kong accounted for 59.53% in 2006, 56.57% in 2007, and 57.2% in 2008 of China's national total in terms of air cargo throughput. In 2008, 35.5% of Hong Kong's external trade, including re-export, were shipped by air. Without a world-class airport built by the government, the logistics industry could not have made a contribution of 20% to Hong Kong's GDP (2008) (Hong Kong Port Development Council, 2010).

3.8.2 Port Governance in Hong Kong

Re-export and outward processing are the two notable forms of trade between Hong Kong and Mainland China (Sung, 1998). Raw materials and semi-manufactured goods are exported to China for further processing. Finished products from Mainland China, particularly from the PRD, are shipped to the world's markets via Hong Kong. In 1990s and early 2000, Hong Kong's external trade was carried predominantly by sea transport; however, the trend has changed due to the PRD ports' cost advantage and service improvement.

The Marine Department of Hong Kong SAR is responsible for administration of

port and marine time affairs. It has responsibility for vessel traffic management, the safety standards of all classes and types of vessels, and other regulatory matters. It is also involved in the strategic planning of port developments (Cullinane and Song, 2007). However, neither the government nor the Marine Department (the de facto 'port authority' with respect to many aspects of port operations) owns or operates container terminal facilities. The private sector finances, develops, and operates terminal facilities. There are four privately owned terminal operators: Modern Terminals Ltd., DPI Terminals, Hong Kong International (HIT) Ltd., and COSCO-HIT Terminals (HK) Ltd. In the past, a high level of operational efficiency enabled the terminals to handle throughput at capacity levels higher than the designed capacity. The port is served by approximately 80 international shipping lines providing over 400 container liner services per week to over 500 destinations worldwide (Cullinane and Song, 2007). It has experienced a remarkable growth in throughput over time, reaching approximately 22 million TEUs in 2004 (Containerization International, 2005). Hong Kong is expected to be able to cope with forecast cargo of approximately 30 million TEUs by 2010 (Ip, 2003). The figures seem to indicate an impressive absolute amount; however, in terms of annual growth, it is a low, single-digit growth compared with a double-digit annual growth in the PRD ports.

3.8.3 Hong Kong Logistics Development Council (LOGSCOUNCIL)

Hong Kong's airport was relocated from Kai Tai in Kowloon to Chek Lap Kok in 1998. During the first few days immediately after the relocation of the Hong Kong International Airport, HACT and AAT, the franchised cargo terminal operators at the new airport were unable to locate outbound cargo, and inbound cargo was not stored in the designated areas. As a result, many passenger and dedicated cargo flights left Hong Kong without filling up with their pre-planned loadings. Exporters could not ship out their cargo in a timely manner. FFs and importers were unable to collect their incoming cargo within a reasonable timeframe.

Many perishable items that arrived by air during that period were stuck at the airport and were delayed in delivery, and finally had to be disposed of. Local media estimated that Hong Kong lost HK\$ 4.6 billion daily in external trade during this chaotic period. Thus, government officials and the business community began to realise the important contribution of aviation and related industries. The logistics industry players also voiced their desire to obtain access to a platform into where they can input their ideas relating to the industry. The Hong Kong Logistics Development Council (LOGSCOUNCIL) was formed in December 2001 as a result.

The terms of reference of the Council state support for the development and promotion of the 'Logistics Hong Kong' initiative, which aims to strengthen Hong Kong's role as the preferred international and regional transportation and logistics hub. More specifically, LOGSCOUNCIL aims to do the following:

- Implement directives from the Steering Committee on Logistics Development (LOGSCOM) chaired by the Financial Secretary
- Provide a forum for the public and private sectors to discuss and coordinate matters concerning 'Logistics Hong Kong'
- Carry out joint projects (between the public and private sectors) for 'Logistics Hong Kong' (LOGSCOUNCIL 2001)

The LOGSCOUNCIL is another major form of support the Hong Kong government offers to the Hong Kong logistics industry.

3.8.4 Creating a Pro Business Environment

- Low corporate/personal tax

Hong Kong taxes are among the lowest in the world, and the tax regime is simple and predictable. The profits tax is the same for foreign and local companies: a low 16.5%. The actual tax bill is often even less after various deductions and depreciation allowance. There is also no capital gains tax in Hong Kong. Salary tax rates come at a

maximum rate of 15%, and are imposed only on all salary incomes of individuals derived in or from Hong Kong (Invest HK, 2009). Thus, low personal taxes motivate decision-makers to choose Hong Kong as a regional office.

- Zero-tolerance of corruption

Corruption involves hidden cost that leads to less competitive products and services. Under a corrupt environment, companies are not free to pursue their business interests on a level playing field (Invest HK, 2006) and incur hidden costs in doing business. Prior to 1974, Hong Kong had the characteristics of a typical developing country in Southeast Asia, easily nurturing corruption when its economy changes rapidly (Liao 2008). Since it was founded in 1974, the Independent Commission Against Corruption (ICAC), a highly authorised and independent anti-corruption agency reporting directly to the Chief Executive of Hong Kong SAR government, properly redesigned incentive structures and a fundamental change in constitutional design that would uphold the rule of law (Ding et al., 2007; Liao, 2008). As a result, Hong Kong is one of the most corruption-free economies in the world where cronyism, influence-peddling, and bribery are met with zero-tolerance. Zero-tolerance of corruption eliminates hidden costs in doing business. Furthermore, after its successful transformation to build a clean government in a pervasively corrupt environment, Hong Kong has become one of the cleanest cities in the world to do business (Liao, 2008).

- Efficient customs services

Every day, many vehicles cross the Hong Kong-Shenzhen borders, bringing in finished products from Pan-PRD to be shipped via Hong Kong's airport and/or port to the world's markets, and returning loads of raw materials and components to the factories in Pan-PRD. Without transparent, efficient, and predictable customs services, Hong Kong logistics service providers cannot offer a time-definite physical flow of service.

- **Transparent legal system**

Hong Kong's fair, transparent, and efficient legal system is one of the cornerstones of its economic development. The practice of Western law underpins the Hong Kong free market, with a legal system characterised by a level playing field, due process, protection of property rights, and enforcement of legal contracts (Lee, 1995). The legal system is guaranteed by the 1984 Sino-British Joint Declaration and Hong Kong Basic Law (Invest HK, 2009). Hong Kong's legal system keeps investments safe in spite of regular upheavals in the mainland (Lee, 1995). A November 1994 survey of 500 corporate executives in 32 countries, published by Fortune Magazine, rated Hong Kong above New York and London as the world's best city for doing business (Lee, 1995).

- **World-class financial services**

Fund flow is one of the three dimensions in supply chain management. Hong Kong is a world-class financial centre without any foreign exchange control, and this ensures efficient transfer of payment for transaction-fund flow. The last phase of a business transaction can be handled in a split of a second. Investors around the world regard Hong Kong as a world-class financial centre and the best way to access China's booming market (Lee, 1995). There is a growing trend for the larger logistics companies to become involved in the fund flow through factoring arrangements.

- **World-class IT service support**

With rising customer expectations, many LSPs have searched for ways to improve their services (Lai et al., 2004b). Timely and easily accessible information that facilitates the flow of goods should be made readily available to facilitate decision making (Kumar, 2001). Increasingly, many Hong Kong-based LSPs are counting on the leverage offered by information technology (IT) to attain a competitive edge through reduced costs, increased productivity, and improved customer services (Lai et al., 2004b). Undoubtedly, IT plays an important enabling role in logistics. Several surveys

have been conducted to investigate the use and importance of IT in supporting logistics operations (Hardaker et al., 1994; Gutierrez and Duran, 1997; Piplani et al., 2004). Closs et al., (1997) has shown that IT capabilities significantly influence the overall competence of logistics. IT not only improves the effectiveness and efficiency of logistics processes, the successful implementation of IT can also have a significant impact on the practice of logistics strategies and on choices of organisational structure (Bowersox and Daugherty, 1995). The implementation of IT to support logistics process can lead to a wide range of potential benefits, such as reducing errors from data entry and improvements in customer services.

In a study conducted by Lai and Cheng (2004), respondents to a survey rate 'quick response and access to information', 'improves customer service', 'enhances competitiveness', and 'reduces data re-entry (and data may be used immediately) and errors' as major benefits, receiving more than 4 points in a 1 to 5 scale. The study shows that data communication technologies (e-mail, Internet, EDI, intranet) are widely used in logistics. This is because communication technology is one of the key factors in the use of IT to support logistics operations among all of the parties in a supply chain (Hammant, 1995). IT is one of the main enablers of improved efficiency and service for many LSPs in Hong Kong (Lai and Cheng, 2004). This is, of course, supported by the theoretical arguments underpinning TCE and RBV, as explained in Chapter Two, where IT is seen as fundamental to competitive advantage.

3.9 Local Mainland Logistics and Forwarding Services Providers

Prior to 1978, under a centrally planned economy, only state-owned logistics companies were licensed to offer traditional logistics services (Hong and Liu, 2007). Jiang and Prater (2002) identified underdeveloped infrastructure, government regulations, and lack of professionalism as the weaknesses of China's traditional distribution system. According to Goh and Ling (2003), the logistics infrastructure

curtails the ability of multinational companies to leverage China's full potential. From early 1980 to 2001, before China's accession into the WTO, foreign logistics companies were allowed to form joint-venture companies with Sinotrans and other state-owned companies, with state-owned companies having the controlling interest. During this period, local LSPs in China only offered basic transportation and warehousing services with very little value added (Hong and Liu, 2007; Tam, 2004). During the same period, global and Hong Kong-based logistics companies that dominated the free on board (FOB) export traffic from China, both for air and ocean, could only handle their controlled traffic in China, with their liaison offices offering information and technical advice. However, these companies outsourced the physical handling of the traffic to Sinotrans and other licensed, state-owned logistics service providers. In the process, most of the profits were retained by global and Hong Kong-based LSPs. Local licensed logistics companies, including those operating in the PRD, had to be satisfied with low handling fees.

After China's accession into the WTO in 2001, foreign companies, including Hong Kong-based logistics companies and private companies in China, have been able to obtain a license from the Ministry of Foreign Trade and Economic Cooperation (MOFTEC) to trade as logistics and freight forwarding service providers. Prominent global logistics players such as DHL, UPS, and FedEx started trading in China (Hong et al., 2004). Despite the logistics barriers and challenges, however, China's booming economy, its accession to WTO, and e-commerce development are the factors driving the improvement of China's logistics system and infrastructure. Based on Korea's experience with manufacturing investments of 93.2% and 85.5% for the periods 1989–1993 and 1999–2003, respectively, Kang et al., (2006) has inferred that investments in China are also largely concentrated in the manufacturing sectors. Manufacturing sectors create greater logistics demand than other sectors such as finance

and retail. Indeed, logistics is one of the fastest growing industries in China (Yu, 2007). In 2004, logistics contributed RMB 845.9 billion in added value, which is 6% of GDP and 19.5% of the service sector's added value (Ou, 2006). China's accession into the WTO has accelerated and driven the growth and development of the logistics sector. However, logistics expenditures accounted for an annual average of 21.8% of China's GDP for the period 1992–2004 (Logistics Information Centre of the China Federation of Logistics and Purchasing, 2005) compared to only 10% in developed countries (Goh and Ling, 2003). This shows a huge room for improvement and has hence created opportunities for professional global and Hong Kong-based LSPs in their China operations. Tremendous opportunities exist, together with intense competition, especially since China entered the WTO in 2001 (Hong and Liu, 2007). The average growth rate of the logistics industry in China was 23% for the period 2001–2005 (Badham and Sense, 2006), 24% in 2006, and 26.2% in 2007 (Logistics Information Centre of the China Federation of Logistics and Purchasing, 2008). In 2007, China's logistics industry already contributed about RMB1.7 trillion in added value or 17.6% of the added value of the service industry (Logistics Information Centre of the China Federation of Logistics and Purchasing, 2008). With the logistics industry being gradually opened up after 2001, foreign logistics companies, including Hong Kong-based companies with proper logistics and forwarding licenses, began to trade directly with shipping lines, airlines, and other asset-based LSPs. Local logistics services that were no longer protected by licensing requirements lost their competitive edge had to concentrate on asset-based logistics activities, providing local transportation and warehousing services. Currently, no study is available on the issue of segmenting the forwarding sector from the logistics industry in China. Thus far, local forwarders involved in international freight forwarding were believed to have been merely involved in local transportation and warehousing activities. This research is intended to fill this

gap in current knowledge. The analysis of these issues is provided in Chapter Six.

With regards to asset-based logistics development in China, transportation infrastructure variables have been shown to be prohibitive and significant by many empirical studies in terms of attracting FDI, even though they use non-uniform sets of variables (Broadman, 1996; Coughlin and Segev, 2000; Cassidy and Andreosso-O'Callaghan, 2006). The Chinese Government has invested heavily in railways, inland waterways, and highways. Beijing, Shanghai, Guangdong, and Hainan are the highest ranked cities/provinces (Kang et al., 2006) in terms of highway length to province size (total highway length compared with size of the province/region/city). In the case of Shanghai and Guangdong, extensive highways to the ports and airports would indeed reduce transportation costs and help reduce overall supply chain costs. The cost of operations and the quality of infrastructure are the factors frequently considered by FDI investors. A well-developed transportation system reduces production costs by reducing the costs of importing components and machinery and of exporting outputs (Kang et al., 2006)

Logistics infrastructure and company management of logistics activities greatly influence operational efficiency and competitiveness (Zhao et al., 2007). In terms of logistics infrastructural developments, Guangdong has caught up quickly with Hong Kong by upgrading and investing in its airports and ports in the PRD. The new, three-runway Guangzhou Baiyun International Airport, located in Guangzhou, the capital of Guangdong Province, was completed in 2006 and has since attracted several international airlines such as United Airlines, Northwest Orient, Lufthansa, and Air France. Furthermore, additional berthing spaces were added to Yantian Port in its third stage of development; five additional berthing spaces were added to Shekow Port in its second stage of development (Yantian and Shekow are two large ports on the Mainland China side of the PRD) and; a sea freight terminal in Tai Charm Wan is being built by Modern

Terminal, a Hong Kong sea freight terminal operator (Tam, 2004). In the Eleventh Five-Year Plan, the central government is pushing through the second-stage development of the Baiyun (Guangzhou) airport and the expansion of Shenzhen's airport. The logistics infrastructural development in the PRD in the last 10 years, with or without Hong Kong investments, has indeed placed the Baiyun airport and the seaports in Yantian and Shekou in the world-class league of infrastructure development and enhanced operational efficiency, particularly for ocean-going traffic. In the ten years prior to 2008, Shenzhen ports enjoyed enviable double-digit growth in total ocean traffic throughput, from 70% in 1998 to 14% 2007 (Shenzhen Ports, 2008). Such tremendous growth (70%) is unsurprising given the small base to begin with. However, the 14% growth in 2007 was, in absolute terms, much more significant. In the past several years, many global and the bigger Hong Kong-based LSPs have secured the required licenses and established their offices in Shenzhen, which enlarged the base of the industry. Hence, although Hong Kong's ocean traffic throughput growth has slowed down in the last ten years, global and Hong Kong-based LSPs, through their international sales network, have held a dominant share of Shenzhen's ocean traffic throughput. The smaller Hong Kong-based LSPs that do not have Shenzhen facilities normally outsource their physical handling to local LSPs in the PRD. In terms of air cargo development, Shenzhen's airport caters mainly to domestic air cargo and poses no threat to Hong Kong's airport. In 2005, the Baiyun airport carried 506,988 tons of cargo, whereas Hong Kong's airport carried 3,154,289 tons (Fung et al., 2005). With massive expansion plans, the Baiyun airport has the capacity to handle more international air cargo traffic. However, the cream of the profit from international air traffic going through the Baiyun and Shenzhen airport has been generally retained by global and Hong Kong-based LSPs that handle cargo traffic either through their own setups or through local subcontractors in the PRD. Local LSPs make their revenues in local

handling fees. These local players previously contributed a low value to the supply chain; however, the situation has changed gradually. This is because concerned PRD governments have made various efforts to improve the professionalism of local LSPs by aiding in hardware and software development. Clearly, from a SWOT analysis perspective, this presents one of the threats to the predominant position of Hong Kong logistics companies. This (and other threats and opportunities to be identified later in the thesis) is analysed in Chapter Six.

3.10 Analogy from the Shipbuilding Industry

The loss of Hong Kong's top container port status and the rapid growth of the PRD ports in terms of container throughput have led the government officials' and the business community in Hong Kong to question whether Hong Kong will become another port of Venice in the future. After an introduction of the past and present development of the logistics industry in Hong Kong and the PRD areas, the author has conducted research in an effort to forecast the development of the Hong Kong logistics industry. The research shows similarities between the Hong Kong logistics industry and the British shipbuilding industry in its early days when the British shipbuilding industry had a lion share of the world market. The challenges from new competitors abroad and the lack of trust between management and workers led to the downfall of the British shipbuilding industry. Since the Hong Kong logistics industry is facing a similar situation as the early British shipbuilders, a brief review of their experiences and lessons of the past can shed light on the future of the Hong Kong logistics industry and provide hints on how to keep the PRD exporters to continue using Hong Kong as their preferred airport and port.

Britain's shipping industry enjoyed undisputed international supremacy between 1890 and 1914. However, this was followed by a gradual loss in world market share during the interwar years, and Britain sustained an absolute decline in output between

1948 and 1970. In contrast, European shipbuilding expanded at an unprecedented rate after World War II (Lorenz, 1991). Shipbuilding was one of the few heavy industries in which Britain maintained a position of international supremacy in one or two decades before World War I. Britain accounted for 60% of the world's output of ships as late as 1913, producing an export tonnage that exceeded the total production of Germany and the United States put together, Britain's two major competitors at that time. By the mid-1960s, British shipbuilding had been reduced to comparative insignificance, accounting for less than 10% of world output. Over 70% of addition to the UK fleet was produced abroad during the period between 1965 and 1970. The same trend is developing in Hong Kong's total ocean traffic throughput versus the total throughput in the PRD ports (including Hong Kong's port). In 1998, Hong Kong accounted for 88% or 14.582 million TEUs of the total ocean traffic throughput in the PRD ports, including Hong Kong port. By 2008, Hong Kong share was reduced to 53%, or 24.325 million TEUs, out of total ocean throughput in the PRD of 45.725 million TEUs.

Lorenz (1991) states that, at that time, the rapid growth in world demand for ships and increasing acceptance of standardised vessels in international markets conferred the competitive advantage on foreign shipbuilders employing bureaucratic methods suitable for 'mass' production. Elbaum and Lazonick (1986) agree that British business decision-makers, though rational, were constrained by 'institutional rigidities' from adopting the corporate forms of management required for competing in mass markets. Lorenz (1991) argues that the decline of the UK shipbuilding industry is due to 'bounded rationality' or the limitations in the ability of humans to process the mass of information required for making optimal decisions. This failure due to bounded rationality was demonstrated by the British management's uncertainty over the need for organisational change during the decade or so following World War II, as well as in the lack of trust between labour and management that resulted in a failure of cooperation

over proposed institutional reforms between 1958 and 1965.

On average, the British shipbuilding industry produced 75% of the world's market between 1892 and 1899; however, the share fell to approximately 60% between 1900 and 1949 (Lorenz, 1991). This 15% share decline resulted as shipbuilding capacity expanded on the Continent and the United States, generally behind protective barriers. However, Britain's control of the unprotected parts of the export market remained uncontested. Britain also enjoyed a considerable advantage in labour productivity as shown in Table 3.3.

Table 3.3 Labour Productivity in Shipbuilding

	Number Employed	Tons Constructed	Output per Head (Tons)
U.K.	85,000	1,290,369	15.2 (average for 64 firms)
U.S.A	33,340	385,511	11.6 (average for 11 firms)
Germany	31,310	198,097	6.3 (average for 14 firms)
France	28,650	134,037	4.7 (average for 11 firms)

Sources: Lorenz, 1991

Britain's share of world production dropped dramatically during World War I. Britain quickly re-established its dominant position during the post-war reconstruction, producing an average of 45% of the world's output between 1920 and 1929. British shipbuilders sustained a further loss of the world market share during the 1930s, accounting for an average of only 35% of the world market share due to protectionist policies and government subsidies abroad. Post-1935, Germany, Sweden, and Holland made inroads into neutral third-country markets formerly controlled by Britain. For the first time, they also attracted significant orders from British fleet operators. Britain's share of the world export market declined from over 40% in the period 1927–1930 to 21% in the period 1936–1938. Supply-side factors further worsened the decline of Britain's world market share because its major Continental competitors offered comparatively quick delivery. Although there was a more than twofold increase in world output in the 1950s, the proportion of ships built in Britain was cut from 40% to 15%. World demand expanded at an unprecedented rate in the 1960s; however, British shipbuilding industry

sustained an absolute decline and accounted for only 5% of world output by the end of the 1960s behind Japan, Sweden, and West Germany (Table 3.4).

Table 3.4 Percentage Shares of the World Export Market*

Year	Britain	Japan	Germany	Sweden	France
1948-1950	35.0	2.2	0.3	18.3	0.1
1951-1955	22.0	10.6	14.9	12.9	2.1
1956-1960	6.9	31.6	20.7	12.0	5.8
1961-1965	4.5	38.8	13.0	15.7	5.5

Source: Lorzen, 1991

*in terms of tons launched

By the 1960s, there was a considerable shortfall in labour productivity, once the strength of the British shipbuilding industry. Labour costs were approximately 20% of total shipbuilding costs. Steel and capital, the other two most important components of costs, were roughly the same for the British and Continental shipyards. During the early 1960s, the average British shipyard processed approximately 15 tons of steel annually per 1,000 square feet of fabrication area, compared with 36 tons in a Continental shipyard. Lorenz (1991) attributes the poor outcome of the British shipyard and the dramatic competitive reversal of this once successful industry to the following reasons:

- Success and decline, 1890–1939

British shipbuilders captured both their expanding domestic market and much of the foreign market from 1860 to 1880. Competing foreign maritime nations lacked developed iron, steel, and engineering industries, as well as sufficient skilled labour to supply shipyards. Capturing the home and foreign markets gave British shipyards a greater continuity of demand for different classes of vessels. This allowed British shipbuilders to achieve a degree of specialisation among shipyards that were impossible in other maritime nations. British shipyards, on the average, showed a preference for more labour-intensive methods in order to lay off labour during cyclical downturns.

Foreign shipyards pursued a different strategy of greater mechanisation, although eliminate skilled labour from the production process was impossible. However, as a group, British ship producers offered high continuity of employment, which contributed in building up and maintaining regional pools of skilled labour. By the end of the nineteenth century, the skilled trades were highly unionised. Unions imposed restrictions that clearly constrained the ability of employers to reorganise the division of labour and introduce new machinery. However, unionism conferred important benefits in terms of cyclical flexibility in hiring and firing, the organisation of work, and the acquisition of skills. The unions provided variety of forms of insurance, including unemployment, sick, and superannuation pay. These benefits contributed to maintaining the attachment of skilled workers to the shipbuilding area.

- Competitive decline, 1948–1970

After 1930, a number of significant changes in market conditions and technology progressively shifted the competitive advantage toward yards using more systematic management methods. As world energy use shifted from coal to oil, demand for tankers grew. Tankers are relative simple vessels, with long flat surfaces that can easily be built with standard components. The rise of large-scale and capital-intensive shipbuilding diminished the importance of flexible access to a highly skilled and mobile work force. British shipbuilders had experienced periodic and severe depression in demand, which made it reasonable for them to form cautious expectations concerning any future growth in demand for standard or similar vessels that might shift the competitive advantage toward bureaucratic methods. After World War II, foreign producers experienced unanticipated benefits from a system that past labour market constraints had compelled them to adopt. British builders witnessed equally unanticipated declining fortunes.

- Enterprise organisation as compromise

The legacy of distrust between labour and management engendered by conflicts

proved inimical to the industry's performance when its continued success depended on organisational reform. In 1958, prompted by declining profitability and the loss of domestic markets to foreign shipbuilders, the Shipbuilding Employers Federation initiated internal discussions concerning a comprehensive reform of working practices to improve productivity. The discussions resulted in the 1962 Plan that the employers presented to the unions at the national level to offer in exchange for the relaxation of demarcation rules among the skilled trades and the acceptance of training provisions providing the upgrade of non-apprenticed semiskilled workers to skilled positions. The plan did not receive the support of the unions, which were sceptical of management's claim that the changes were needed to ensure the industry's survival. Productivity bargaining was reasonably successful in securing flexibility among the hull construction trades organised by the Amalgamated Society of Boilermakers. Although productivity bargaining was a notable success in shipbuilding industry relationship, this was only applied in the local modification of the craft system of production. This neither led to a radical departure in the direction of bureaucratisation of work administration, nor was it accompanied by a substantial improvement in the industry's competitive performance. According to a 1973 report by Booz Allen Hamilton, the shipbuilding industry sustained losses with no increase in labour productivity between 1967 and 1971.

- Evolutionary economics and competitive decline

Lorenz (1991) asserts that British shipbuilders during the decade or so following World War II were uncertain whether changing market conditions would undermine the profitability of their established routines; however, they were certain that if they attempted to alter the terms of the compromise, they would run into trouble with a labour force that would view the proposed reform as a trap. Under these conditions, for British producers not to change was reasonable. British management attempted to build up trust concerning proposed institutional changes, triggered by bankruptcy and closure

of shipyards between 1962 and 1965. The political constraint of finding a set of changes that both management and labour perceived as mutually beneficial provides plausible reasons why organisation reform after 1965 only amounted to local modification of the craft system. By the early 1960s, British shipbuilders were well aware that their increasingly successful competitors were using fundamentally different management techniques. The failure of the British to change, however, should not be understood solely in terms of British management's 'blindness', much less of their incompetency. British businessmen may have been lucky when they succeeded; however, they were not stupid when they failed. According to Lorenz (1991), they were simply constrained by the lack of trust.

- Decline of British shipbuilding industry and the trend of the Hong Kong forwarding logistics industry

The Hong Kong forwarding logistics industry has benefited from the logistics needs of the manufacturers in the PRD in an environment where there was very little competition from the Guangzhou airport and the PRD ports. The forwarding industry in the PRD had not taken off before 2000. Since the beginning of the 21st century, however, Hong Kong's shipping industry has recorded much lower throughput growth due to competition from the PRD ports. Herein, the downfall of the British shipbuilding industry cannot be used as an exact analogy of the Hong Kong logistics industry due to two main reasons:

- 1) In contrast with the condition of the British shipbuilding industry, management and workers in the Hong Kong forwarding logistics sector have enjoyed an amicable relationship, which has not stopped employers from expanding or retaining their market shares in the PRD.
- 2) Then, the major market of the British shipbuilding industry was abroad. The British shipbuilding industry failed to adjust in facing the uncertain

market environment. Fortunately, the catchment area for Hong Kong's logistics industry since the 1980s has been the PRD, which is only one-hour driving distance from Hong Kong.

The Hong Kong forwarding logistics operators can choose to do nothing and stay in Hong Kong, or they can expand their operations to China, particularly in the PRD market. History will confirm that the latter strategy will best serve the interests of the Hong Kong forwarding logistics industry.

In this part, the author first reviewed the economic and logistics development in China and the three drivers for the logistics industries (outsourcing, globalisation, and freeport status) as defined and explained above. The author then reviewed the literature on manufacturing in the PRD, government influence on manufacturing operations in terms of political conditions, government policies, new labour laws, corporate tax policies, and appreciation of the RMB. Since the Hong Kong government also plays very important roles in the forwarding services sector, Hong Kong's airport, port governance, LOGSCOUNCIL, and the pro-business environment are also discussed. Finally, the competition from the local Mainland service providers is introduced.

In the next section, the author examines the logistics development in Shanghai, Taiwan, Singapore, and India, which are perceived to be competing with Hong Kong's logistics industry in various ways. These four have been selected for comparison because, to some extent, their recent throughput growth trends in the Asia region follow those of the PRD and Hong Kong. This comparison will help the reader gain a more holistic view when analysing the challenges and opportunities faced by the Hong Kong logistics industry.

Chapter Four Regional Comparison

4.1 Shanghai Logistics Industry

Shanghai is now China's biggest industrial city and is the economic and financial centre of China. Whereas Hong Kong has retained its dominant role as a logistics gateway for Southern China, and Beijing serves as the logistics gateway for Northern China, Shanghai serves as logistics gateway for Eastern and Central China, particularly for the Yangtze River Delta (YRD) area and 200 inland ports along the Yangtze River.

In 2007, Shanghai's import and export trade reached US\$ 520.91 billion, an increase of 21.5% from the previous year and the third consecutive year of more than 20% growth rate (Yiu and Lau, 2008).

Despite the high growth in China's logistics industry, before China accession into WTO in 2001, many characterised the logistics industry in China as underdeveloped, fragmented, and hampered by local protectionism that resulted from the dominance of state-owned enterprises enjoying the privileges of monopolistic regulations (Baldinger, 1998; Mann, 2001; Powers, 2001; Jiang and Prater, 2002). Sinotrans, the state-owned logistics enterprise, dominated the nation's logistics markets, including Shanghai.

Foreign logistics companies had to cooperate with Sinotrans by either appointing it as an agent or setting up a joint venture with it as minority shareholder. Very strong air cargo throughput growth was recorded, from 127 tons in 1990 to 1,936 million tons in 2004 or a 1,527 percent growth (Fung et al., 2005). Following China's accession into the WTO, the logistics market has been opened up to foreign logistics companies. As a result, foreign logistics companies, particularly global logistics companies, have set up their own operations in Shanghai by offering their own services, instead of going through their joint venture companies or their agents in Shanghai. The logistics industry

has been transformed from an industry dominated by Sinotrans and a few smaller state-owned enterprises, to an industry consisting of many privately owned and foreign logistics providers (Hong, 2007). All these changes have raised the quality of logistics services and integrated Shanghai's logistics industry into the global supply chain. From 2004 to 2009, total air cargo throughput has continued to show double-digit growth most of the time.

Air cargo in Shanghai is handled by two airports, namely, the Shanghai Hongqiao International Airport, which was transformed from a military to a civilian airport in 1972, and the Shanghai Pudong International Airport, which became operational in 1991, with a second runway added in 2005. Hong Kong's airport has a capacity of 9 million tons in total air cargo throughput (Hong Kong Airport Authority, 2008). The combined designed capacity of Shanghai's two airports is 6 million tons of total air cargo throughput (Shanghai Airport Authority, 2010). With a total air cargo throughput of 2.982 million in 2009. Even at a growth rate of 15% per annum, the designed capacity of the Shanghai airports will be able to cope with capacity demand till 2014, while the Shanghai government is working to expand the handling capacity of both airports.

On the shipping side, up to end of 2007, there were 35 shipping lines offering 2,183 trips per month to foreign destinations. Two hundred direct trips have been established from Shanghai to the US, Europe, Australia, Africa, East Asia and South Asia (Xu, 2009). In 2007, 35% of Shanghai's total container throughput came from 200 ports along the Yangtze River (Xu, 2009). Container traffic in Shanghai largely relies on Waigaoqiao and Yangshan ports. The Waigaoqiao Port became operational in 1993 and continues to undergo expansion. Yangshan Port, a deep-water port built into a reclaimed island connected to Shanghai by a 32.5 km bridge (<http://www.donghai-bridge.com.cn>), started operations in 2005. Although ocean traffic in Shanghai has developed rapidly in

the last few years, logistics infrastructural development has been lagging behind. Sea and land transportation have not been integrated. Furthermore, logistics soft skills have been negatively affected by bureaucratic procedures, lengthy customs formality, poor logistics services, and unclear rule of law (Gao, 2009; Yiu and Lau, 2008).

Qualified logistics professional support is a bottleneck in Shanghai's logistics development (Yao, 2009; Yiu and Lau, 2008; Gao, 2009; Zuo, 2009). High value-added 3PL logistics has been lagging behind (Yiu and Lau, 2008; Gao, 2009; Zuo, 2009) and needs to be refocused to enhance the overall logistics development in Shanghai.

Many best practices in physical flow are less imitable. However, technologies on information flow are difficult to imitate and, on some cases, non-substitutable. In this area, sustainable competitive advantage can be created. Many studies have identified the upgrade of information technology as the way to raise the professionalism of the logistics industry standard in Shanghai (Yiu and Lau, 2008; Gao, 2009). From 1992 to 2003, Shanghai had enjoyed more than 11.9% GDP growth on average, and GDP per capita reached US\$ 4,909 in 2003 (Ding et al., 2005). As part of the plan to achieve sustainable development for Shanghai, 'information harbour' was conceptualised by economists, industries, and the government in 1994. The 'Digital City Shanghai' strategy was announced by the Shanghai Municipal Government in 2002. The Shanghai Municipal Government had added the modern logistics project to the Tenth Five-Year Plan. A Shanghai City logistics information platform was created with four parts: (1) strategies of Shanghai logistics information platform technologies and businesses; (2) standards of modern logistics information technologies; (3) key technologies of construction of modern logistics information systems; and (4) a pilot system for the Shanghai logistics information platform (Ding et al., 2005). The 'Digital City Shanghai' strategy reflects the vision of the city leaders in Shanghai in moving toward a knowledge-based economy. Building the Shanghai City logistics information platform

can be explained by the RBV theory on the creation of sustainable competitive advantage. However, the poor soft skills of logistics industry practitioners in Shanghai is a reflection of the poor implementation of the vision of Shanghai leaders.

Ningbao, another major port in the YRD, competes with Shanghai in container traffic; however, the dilution effect of Shanghai's total container throughput is nothing like the dilution effect of the PRD ports on Hong Kong. This is because the PRD ports almost took half of the total 45 million TEUs in the PRD catchment area in 2009.

Table 4.1 illustrates Shanghai's tremendous growth both in terms of air cargo and container total throughput. In terms of container throughput, in 2007, Shanghai overtook Hong Kong as the world's second largest container port after Singapore. Judging from its rapid growth, Shanghai will soon overtake Singapore as the top container port in the world. Shanghai airports have enjoyed high growth rates and are expected to overtake Hong Kong as the top airport in terms of air cargo throughput within 5 to 10 years. Indeed, Shanghai will compete with Hong Kong as top air cargo centre; however, it will not compete with Hong Kong for air traffic because the catchments areas for the Shanghai logistics industry are the Yangtze River Delta (YRD) and the cities along the Yangtze River. For this reason, Shanghai's logistics industry competes with Hong Kong's in a very small way. In a more macro perspective, the YRD and the PRD are competing with each other in attracting investments from other provinces in China and abroad. In this respect, the logistics industries of Shanghai and Hong Kong are competing with each other on an indirect basis.

Table 4.1 Container and Air Cargo Throughput of Shanghai

	Container Throughput(Million TEUs)	Air cargo Throughput (Million tons)
2000	5.6	0.878
2001	6.3	0.804
2002	8.6	1,075
2003	11.3	1,397
2004	14.6	1,936
2005	18.8	2,217
2006	21.7	2,532
2007	26.2	2,948
2008	28.0	3,019
2009	n/a	2,982

Sources: Shanghai statistical year book 2009 and statistical data on CAAC

4.2 Taiwan Logistics Industry

Taiwan's logistics market scale is rapidly expanding, with estimates of GDP growth to reach 90% and of 66% growth for the logistics market from 2000 to 2011 (The Republic of China Yearbook, 2009). Taiwan's logistics industry is now at a rapid growth stage (Tsai et al., 2007). Taiwan is an island-based economic entity at the centre of the Asia-Pacific region, and its prosperity is highly dependent on export trade. Its location puts it at an advantageous position to make use of global production resources and marketplace. In a report by the United Nations Conference on Trade and Development (2007), Taiwan's deadweight of vessels was ranked as the 11th largest in the world as of January 1, 2007, accounting for 2.54% of total world fleet. In container port traffic, Taiwan was ranked as the world's seventh largest, and the Port of Kaohsiung in particular has remained in the top six positions since 1980. The country has three international container ports: Kaohsiung Harbour, Keelung Harbour (near Taipei), and Taichung Harbour. Kaohsiung Harbour is the largest container port in Taiwan, accounting for 75% of total container traffic, whereas Keelung and Taichung account

for 16% and 9% of total container traffic respectively (The Republic of China Yearbook, 2009). Located at the heart of the Asia-Pacific region, Kaohsiung Harbour offers an average shipping time of 53 hours to five major ports in the region, making it the ideal location for an international company's Asian distribution centre. With facilities sufficient to serve as a large-scale port for commercial ships, Kaohsiung Harbour has a tide range of 0.75 meters and an average temperature of 25°C, making it one of Asia's best ports. In addition, the Port of Kaohsiung is slated to start construction of an Overseas Container Centre, which will be able to accommodate 10,000 ton ships. The Logistics DistriPark (Kaohsiung) is one of the major DistriParks in Asia, including Keppel DistriPark (Singapore), Alexandra DistriPark (Singapore), Pasir Panjan DistriPark (Singapore), Hong Kong International Distribution Centre (Hong Kong), and Yokohama Port Cargo Centre (Japan) (Lu, 2004). As of March 2008, among the major container shipping companies, Taiwan's Evergreen Marine Corp. was ranked the fourth largest container carrier in the world, whereas Yang Ming Lines and Wan Hai Line were ranked 16th and 20th respectively (Yang et al., 2009).

Taiwan's production model for the IT industry is in step with world trends because production methods lean toward developing logistics management. Taiwan industries are closely linked with the global supply chain because many major international IT companies consider Taiwan a central purchasing location. Compared with other Southeast Asian countries providing transportation services, Taiwan offers competitive advantages with its free trade ports, R&D, and comprehensive processing services, all of which bring added value to products. Furthermore, as a result of the significant growth in foreign trade, the container shipping service industry in Taiwan has become highly competitive, and the percentage of foreign maritime firms entering this market has remained consistently high (Lu, 2007). Foreign container shipping companies that have established Taiwan operations include Maersk SeaLand, Hanjin/DSR-Senator,

MSC, NOL/APL, K-Line, MOL, CMA/CGM, Hapag-Lloyd, COSCO, and OOCL. Increasing competition is likely to continue in the future, and will consequently force container shipping service firms to build logistics service capabilities that are inimitable and durable to reduce cost and increase service satisfaction in the global market (Lai, 2004). Container shipping is an international industry; findings from a study of container shipping service in Taiwan could apply to liner shipping in other countries.

Taiwan's ODM/OEM industry has played an important role in system product manufacturing since the 1980s. It has good, cooperative relationships with well-known European and American brands, and is a key part of the international supply chain of the high-tech industry. Taiwan also has top-quality human resources. With entrepreneurial spirit, its employees are capable and experienced with state-of-the-art corporate management. Taiwan's ODM/OEM manufacturers have played the roles of 'Total Service/Solution Supplier' with strong design and manufacturing capabilities, flexibility, and logistic capability. They are important partners of leading brand manufacturers and are influential in the global industry. Taiwan has been the OEM and ODM centre of the world for high-tech products, especially in the IT and electronic products manufacturing. According to the statistics released by the Institute for Information Industry in 2008, Taiwan's products make up 85% and 80% of installed Windows PC-related products and network communication equipment in the global market respectively (The Republic of China Yearbook, 2009). Since Taiwan is closely adjacent to Mainland China, it has geographical and language advantages. At the same time, Taiwan demonstrates high acceptability toward new technologies. Hence, it is in a position to become the R&D and test centre for products aimed at the global ethnic Chinese markets. Taiwan enterprises are not only the first-class suppliers of the world's leading companies; they are also capable of developing subsystems. In addition, Taiwan businesses have close connections with international brands, which enable the establishment of strategic

alliance for R&D and innovation. Furthermore, Taiwan businesses in Mainland China enjoy the language and cultural advantages, which help multinational companies invest and set up production facilities in Mainland China. Through the linkage with international markets, Taiwan's industries have become the development test-bed for the Asian market or the Greater China market, paving the way for entry to the emerging markets in East Asia. After the opening of 'cross-Strait' direct links, Taipei has become the hub of the dual golden routes in the Asia-Pacific region. The routes from Taipei go north to Tokyo and Seoul, west to Shanghai, and south to Hong Kong, Singapore and the capitals of the ASEAN countries. Furthermore, Taiwan's location is of economic and military importance. It is the gateway between Europe, America, Japan, and the booming Asia-Pacific markets. It is also the first choice for multinational company headquarters in the Asia-Pacific region. Taiwan and Mainland China have signed six agreements since the cross-Strait contact channels were re-established in May 2008 (The Republic of China Yearbook 2009). Cross-Strait negotiations have stepped up into the normal phase, which help Taiwan continue its role as a stepping-stone for global multinational companies to enter Chinese market and help local companies deploy their business globally.

The global economic centre is moving from the West to the East. The marketplace in focus is also moving from mature markets to emerging and developing markets. Goldman Sachs uses three indices (workforce growth, capital reserves, and technology growth) to forecast GDP growth rates of many countries, and selects countries for its N-11 (next eleven) list, of which seven are Asian countries. This list indicates that the Asia-Pacific region is becoming the centre of global economy. China and India are at the centre of the Asia-Pacific region (The Republic of China Yearbook, 2009). Their strong economies have made them the new driving force of the world economy. Thus, Taiwan is geographically and culturally close to the centre of the world's biggest

growing economies.

With such advantages, Taiwan businesses can set up overseas production bases in Mainland China. Taiwan's modularisation and mass production capabilities and many key technologies make it the important supporting force for East Asia to become the largest production base in the world. In 2006, Mainland China accounted for 82.15% of Taiwan's outward investment, the highest, followed by the six ASEAN countries and the US, accounting for 21.98% and 16.44% respectively, of Taiwan investments (The Republic of China Yearbook 2009). The proportion of overseas production in total orders received increased to 32.97% from 20.11% in 2001 (it was 10.65% in 1998). Mainland China is the major OEM region for overseas production, accounting for 28.01% of total orders received (The Republic of China Yearbook 2009).

Taiwan is actively promoting the normalisation of cross-Strait trade and lifting unnecessary restrictions so that it can completely link to the international value chain and create a three-win situation for Taiwan, foreign companies, and China. With cross-Strait industrial cooperation, Taiwan industries will be integrated into the Greater China economic circle, creating new investment opportunities for Taiwan and the foreign companies in Taiwan. Taiwan businesses can further become the best partners for multinational companies operating in the Asia-Pacific region. With the normalisation of cross-Strait trade, both local and foreign companies can completely make use of Taiwan's potential advantages. These companies can establish cooperative partner relationships with multinational companies through the 'platform' of Taiwan, enhance their cross-strait industrial deployment, and increase their competitiveness in the global market.

Currently, Taiwan has two international airports (i.e., Taoyuan and Kaohsiung) and six international harbours (i.e., Kaohsiung, Keelung, Taichung, Hwalian, Anping and Suaou, in the order of their business volume). Taiwan has complete international

transportation facilities and logistics capability. Furthermore, Taiwan has passenger transportation systems, railways, highways, and domestic airports for domestic long-distance transportation. Taiwan also has complete railway networks throughout the island. The high-speed railways started operations in 2005, which has tremendously reduced the travel time between North and South Taiwan. Domestic airports are available in Taipei, Taichung, Hualian, Taitung, Chiayi, Tainan, Pingtung, Kinmen, and Machu. The metropolitan areas are being developed with MRT systems, including the Taipei MRT and the Kaohsiung MRT systems, making metropolitan life more convenient.

In a study comparing Hong Kong and Kaohsiung, Lu and Yang (2006) find that the Port of Hong Kong's competitive advantage is related to factors with regard to resources, port activity, political risk, policy, and economic activities (specifically, among these factors are labour quality and skilled labour force, communication facility, information system, simplified customs procedures, efficiency of port operations, frequency of sailings and flights, guarantee of foreign investment policy, relaxation on foreign exchange, political stability, local regulatory environment, government administration efficiency, transparency of foreign labour policy, and per capita income). In contrast, Kaohsiung is better than Hong Kong in terms of the support of relevant firms, proximity to raw material sources, and transport linkage.

Before 2000, the Taiwan logistics industry had lost, and the Hong Kong and Shanghai logistics industry had gained, in terms of total throughput due to the shift of manufacturing industry from Taiwan to the PRD and the YRD. Since the beginning of 2000, Taiwanese shipping companies have been allowed to solicit ocean traffic from the Mainland China ports. Direct links on air services between Mainland airports and Taiwan airports were also established in 2009 when the Taiwanese airlines, China Airlines and Eva Airlines, started aggressively soliciting air cargo traffic in the

Mainland, transshipping via Taiwan. Both Taiwanese shipping lines and airlines have successfully solicited container and air traffic in the PRD, transshipping via Taiwan at the expense of 2PL operators in Hong Kong.

4.3 Singapore Logistics Industry

Its port, airport, and industrial estates have been central to Singapore's economic success. Singapore's international competitiveness in transport is under increasing threat from its regional neighbours, particularly in sea and air transport. Its neighbouring countries are in the process of improving their infrastructure and pursuing policies to promote themselves as alternative hubs for sea and air traffic in the region. Singapore's regional hub position is increasingly challenged.

- **The Port of Singapore as a regional hub**

The Port of Singapore is clearly ahead of its regional competitors. It has been competing with Hong Kong as the world's top container port since 1992, and has become the world's top container port since 2005. Table 4.2 illustrates the container throughputs of the ports of Hong Kong and Singapore in the last ten years.

Table 4.2 Container throughputs of the port of Hong Kong and Singapore

Year	Hong Kong (Million TEUs)	Singapore(Million TEUs)
1999	16.2	15.9
2000	18.1	17.1
2001	17.8	15.6
2002	19.1	16.9
2003	20.4	18.4
2004	21.9	21.3
2005	22.6	23.2
2006	23.5	24.8
2007	23.9	27.0
2008	24.3	29.0

Source: Hong Kong Shipper's Council & Singapore Port Authority

The Port of Singapore is located along the Straits of Malacca, which is the main shipping route between East and West. Oil Companies' International Marine Forum estimates that over 600 ships transit the Straits every day (The Business Times, 1997). The importance of this shipping route has not diminished over time. With deeper draughts, large ships have been able to serve Singapore, which is blessed by nature without typhoons and other natural calamities that create chaos for port operations and freight movement.

Port efficiency and quality

Murphy et al., (1992) find port charges an important determinant of port choice. Singapore's direct port charges are much higher than other ports in the region. The neighbouring countries are constantly trying to develop their ports in order to attract more cargo and shipping lines to use their port facilities. Malaysia, in particular, has been trying to reduce the volume of cargo transshipping to the Port of Singapore by lowering its port charges, improving infrastructure and efficiency, and using other measures, including the imposition of additional levies for cargo coming out of and entering into Singapore.

A number of distribution parks and the latest information systems are operated with advanced equipment in 37 berths at the Port of Singapore Authority-run port and 5 berths at Jurong Port. The efficiency of the Port of Singapore, both in terms of the utilisation of the port's assets, such as cranes, berths, terminal areas, labour and tug, and operational efficiency reflected in port charges, places it in the same league as other top ports of Hong Kong, Rotterdam, and Kaohsiung.

Competition from neighbouring ports

Singapore is the world's busiest container port, served by 200 shipping lines that connect it to 600 ports in 123 countries (Maurno, 2006). In 1994, none of the cargo from Penang was transhipped through Port Klang. In the first nine months of 1996, 60,000 TEUs from Penang were shipped through Port Klang, reducing the cargo transhipped through the Port of Singapore to 57%. In 1990, approximately 70% of its four million TEUs were accounted by containers transhipped from neighbouring ports (Airriess, 1993). On October 16, 1997, Business Times reported that 50% of Malaysia's sea cargo was shipped via the Port of Singapore. The Malaysian transhipment Port of Tanjung Pelepas, which was hardly known in international shipping as of the year 2000, has transformed itself into the largest container port in Malaysia by 2005, weathering the increasingly tough competition from Singapore.

The Thai Transport Ministry also announced plans to cut dependency on transhipments through Singapore in light of its high port tariffs. Incentives have been offered to shipping lines, such as lower handling charges for master vessels in return for loading their cargo directly at Laem Chabang in Eastern Thailand. The Philippines has also been seriously marketing the location, good infrastructure, and natural harbours of Subic Bay as a regional port hub since the expiry of the lease agreement between the US and the Philippines. Although these ports are currently way behind Singapore in terms of throughput and infrastructure, they are also geographically well located to service

Asia; with adequate investments in technology and infrastructure, in time, they can become a real threat to Singapore as a regional port hub.

Based on the determinants of hub port choice, the Port of Singapore has fared much better than its regional counterparts. However, other countries in the region are exerting efforts to divert cargo from Singapore and promote their ports as transshipment ports through various incentives. As 80% of throughput of the Port of Singapore relies on transshipments, the port has to continue attracting transshipments by its high level of efficiency, reliability, and lower total supply chain costs.

Airport and air cargo traffic

Globalisation and the liberalisation of international trade remain the prime motivation forces behind the tremendous change that is taking place in the airport transport industry. Singapore Airlines is one of the main proponents of liberalisation and greater deregulation of air services. Singapore's Changi Airport has served as a major regional hub and was the best airport for many years before Hong Kong's airport was relocated to Chek Lap Kok in 1998. However, in the light of intense competition among airlines and airports within the ASEAN countries, whether this comparative advantage is maintained remains to be seen.

In the early 1970s, the facilities of the old airport at Paya Lebar Air Base could not cope with the rapid increase in passenger demand after the introduction of wide-body aircrafts such as Boeing 747 and the McDonnell Douglas DC-10. The new airport at Changi became operational with two runways and three terminals in 1981. Airfreight tonnage increased more than 16-fold between 1975 and 1995. The existing facility is capable of handling 4.28 million of air cargo until 2012.

Transshipments account for 50% of Singapore's total air cargo throughput. As displayed in Table 4.3, Singapore's total cargo throughput has lagged behind Hong Kong's by a substantial margin.

Table 4.3 Air cargo throughput of Hong Kong and Singapore in million kgs

Year	Hong Kong's Throughput	Singapore's Throughput
1999	1.974	1.50
2000	2.241	1.68
2001	2.074	1.51
2002	2.479	1.64
2003	2.641	1.600
2004	3.094	1.780
2005	3.402	1.830
2006	3.580	1.910
2007	3.742	1.890
2008	3.627	1.850

Source: Hong Kong Airport Authority
(<http://www.Changiairportgroup.com.sg/cag/html>)

Local traffic contributes 50% to Singapore's total air cargo throughput. Manufacturing activities have been and will continue to be the backbone of the international and intercontinental traffic. Thus, the shift of electronic manufacturing activities to low-cost locations such as China and Brazil has weakened Singapore's total air cargo throughput. Transhipments from neighbouring countries contribute the other 50% of Singapore's total air cargo throughput; however, this cargo traffic is under pressure from neighbouring countries such as Malaysia and Thailand, which are catching up very fast by improving their air cargo infrastructure and narrowing the gap in service quality.

Third-party logistics support

In the area of 3PL development, Maurno (2006) states that Singapore offers the world's best logistics capability and performance. In a survey conducted by the World Bank in November 2007, Singapore came on top among 150 countries using a 'Logistics Performance Index' that measured customs procedures, logistics costs, infrastructure quality, the ability to track and trace shipments, timeliness in reaching destination, and competence of the domestic logistics industry. According to Brian Lutt, president of Singapore-based APL Logistics, a subsidiary company of Tamasak, the investment arm of Singapore Government, the connectivity that Singapore offers from sea, air, land, to flow of information, flow of finances, flow of physical documents, flow of physical cargo is unique in the world.

Twenty of the world's twenty-five leading 3PLs have established a presence in Singapore, whereas 6,000 multinational corporations use the hub for logistics. Approximately 3,600 of those multinationals have located their regional headquarters in Singapore, including Boeing, Citigroup, ConocoPhillips, Exxon Mobil, Lockheed Martin, Raytheon, IBM, and Lenovo. Many of these multinationals use Singapore for transportation and distribution alone. Louis Vuitton, Moet and Hennessy (LVMH) established a regional distribution centre in Singapore, and from there they distribute more than 50 brands of luxury goods, such as Christian Dior and Givenchy, to the Asia-Pacific region, the US and Canada. Clearly, 3PL logistics development in Singapore is ahead of its neighbouring countries, including Hong Kong.

Statistically, in terms of total air cargo throughput, Singapore's forwarding industry has a lower market share than its counterpart in Hong Kong. As airfreight forwarders gradually dominate the airfreight sector with their market share up from 76% in 1997 to 85% in 2007 (MergeGlobal, 2008), Singapore's forwarding industry appears unable to

manage the relationship with its end customers as closely as its counterpart in Hong Kong.

While Hong Kong and Singapore are competing to be the leading regional CL hub, the Singapore's freight forwarding industry has posed a very low threat to Hong Kong's as they serve different catchment areas.

4.4 India Logistics Industry

International cargo traffic is mainly sent by sea and air. However, approximately 90% of global cargo is moved by ships. In 2005, the Jawaharal Nehru Port Trust (JNPT)-run port in Mumbai handled 3 million TEUs or 60% of India's total cargo value. In contrast, Singapore handled 24.8 million TEUs, and Hong Kong handled 23.2 million TEUs (Ray, 2005).

Together with Brazil, Russia, and China, India has been grouped together by economic analysts as the BRICs. Plentiful natural resources, relatively young population (except for Russia), and large land areas are the common characteristics of BRIC members (Wu and Lin, 2008). Economists suggest they will assume major roles in the energy, natural resource, and capital resource markets, and in the future will become the world's leaders in manufacturing and consumption. Another set of developing countries, the N-11, are viewed as having great economic development potential that could rival or surpass the BRICs (O'Neill et al., 2005). The N-11 consists of South Korea, Indonesia, Vietnam, the Philippines, Pakistan, and Bangladesh in Asia, Nigeria and Egypt in Africa, Mexico in North America, Iran in the Middle East, and Turkey. Many multinational companies have eyed these emerging markets among the BRICs and N-11 members as primary investment destinations (Zhang, 2007) to save on labour cost and gain decisive competitive advantage. In this regard, logistics is an important component of a nation's economy since it affects productivity, distribution efficiency, interest costs, and energy

costs (Razzaque, 1997). Following China's rise, India is set to emerge as a new economic power, and the scale of its logistics sector will inevitably expand as a result.

Ujjainwala (2008) finds that India spends 14% of its US\$ 691 billion GDP on logistics, and transportation accounts for 35% of logistics costs. In the last decade, total transport demand in India has grown by 10% annually. India's domestic transport system, however, has serious service deficiencies that are, by international standards, highly inefficient, and this deficient system has become a major barrier to economic growth (Langley et al., 2007). According to the Indian Ports Association (IPA), the turnaround time at Indian ports improved from 8.5 days in 1996–1997 to approximately 3.5 days in 2006–2007. However, this is still slow if compared to the turnaround time of 1–1.5 days at the major international ports. For example, the turnaround time at Hong Kong's port is only 10 hours (CILT Institute of Logistics). Efficient port handling can lead to lower tariffs on export, which, in turn, improves the competitiveness of a country's product in international markets (Gonzalez and Trujillo, 2007). India has already shown its exceptional ability in the service sector, and it intends to become a global techno-manufacturing hub (Johnson, 2005). India has experienced massive output increase in recent years, with its economic growth rate estimated at around 8.5% per year in 2006; GDP per capita is rising 7.5% annually, a rate set to be doubled in a decade's time. Accordingly, the government's target of reaching GDP growth of 10% in 2010 is achievable (ISCC, 2007). With GDP growing at over 9% per year and the manufacturing sector enjoying double-digit growth rates, India's logistics industry is at a turning point and is expected to reach a market size of over US\$ 125 billion a year in 2010 (OECD, 2007). However, India's performance in several aspects, compared with other leading nations and its BRIC counterparts, is clearly lagging behind, suggesting there is a long way to go for India (Pillania, 2007).

Using a revealed comparative advantage (RCA) model introduced by Balassa (1965)

to assess the competitiveness of the transportation service sector, India was in decline between 2000 and 2001 but rebounded in 2002 and 2003. India's transportation services sector is the most competitive among the BRICs and trails only France and Japan among the G7 countries, and Egypt and Korea among the N-11 countries (Wu and Lin, 2008). Using RCA, in the period 2000–2003, India's freight service sector interestingly was more competitive than those of any of the other BRIC countries and trailed only Japan among the G7, and Egypt and Korea among the N-11 countries (Wu and Lin, 2008). Although India's transportation and freight services were at a level similar to those found in G7, JNPT's container ports were found to be inefficient between 2000 and 2005, indicating a need for an overhaul of equipment (Ray, 2005). The port's management needs to upgrade the facility's equipment and machinery if they hope to accommodate the growing volume of imports and exports expected to be shipped through the port in the future. At the same time, the port must also rapidly expand its overall capacity to avoid bottlenecks because India's exports are growing at 20% a year. Infrastructure congestion is another key challenge that India needs to deal with (Langley et al., 2007). The logistics industry in India is hampered by poor infrastructure in roads, communication and ports, and complex regulatory structures.

Langley et al., (2007)'s findings on India's insufficient logistics infrastructure are echoed by Kenneth Glenn, president of APL for South Asia, who states that the lack of world-class infrastructure and high port and inland costs are continuous factors that will limit India's economic progress. According to Glenn, as global sourcing and manufacturing continue to shift to Asian locations, foreign investors would choose to invest near ports with world-class efficiency in port infrastructure.

By late 2008, approximately 25% of world container ship capacity is comprised of vessels with at least 6,000 TEUs. India does not yet have a port that can handle this class of ships. Glenn attributes the acute congestion to the imbalance of container trade toward

Mumbai's Jawal Nehru Port Trust (NPT), which accounts for approximately 60% of India's total volume.

India's ports handle over 80% of the country's merchandise trade; however, the performance of India's ports has never been satisfactory (De, 2003; De and Ghosh, 2002; Gosh and De, 2000). Currently, port infrastructure in India is managed by the concerned ministry or regulatory agency or government-appointed trustees and autonomous bodies.

The objective of having ports under the public sector is to have benefits for service seekers. However, experience shows that ports under the public domain are not adaptable to the changing needs of users, and that the services offered suffer due to bureaucratic delay (De Maton, 1997). This archaic organisational structure is not only incapable of broad reforms, but also deters private sector initiatives and inhibits operational effectiveness in terms of capacity expansion and performance of ports (Sajikumar, 2008).

Public sector ports largely fail due to factors such as rigidity in the hierarchy in making decisions, labour's political affiliations (which lead to slowness and work stoppage, poorly trained labour, and low equipment handling), inability to raise resources on time (as it requires budgetary allocation), slowness in adopting modern technology, and failure in providing choices of services and in fostering competition. Sajikumr (2008) argues that ports in India can be better served by the private sector because decisions are flexible, and the private sector is better equipped to meet changing market requirements.

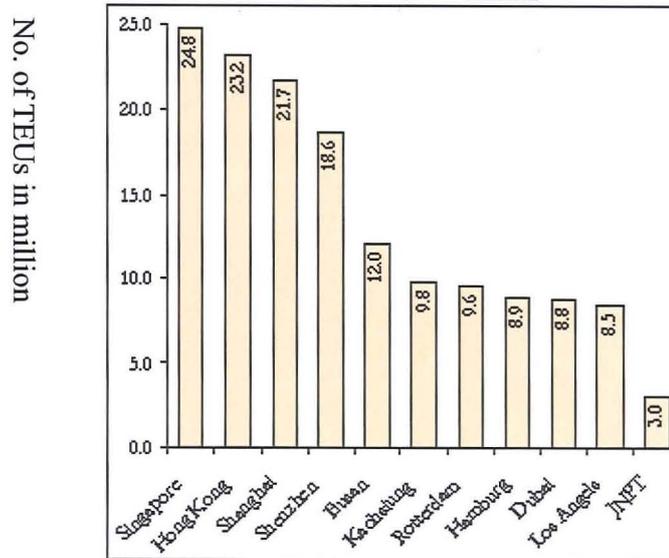
The current capacity available at Indian major ports for container traffic is approximately 4 million TEUs, which will be increased by 2010 when traffic is estimated to reach 8.66 million TEUs (Jose, 2005). An ESCAP study on port development strategies has concluded that in order to handle the anticipated port container traffic in 2011, the South Asian region alone will require approximately 40

new berths (Paul, 2005).

Drewry Shipping Consultants reports that a 10,000 TEU capacity ship results in 37% operating cost savings compared with a 4,000 TEU capacity ship. With significant technological development in container shipping, single engine vessels of 10,000 TEU capacity and above can now be built. The Chinese shipping line COSCO ordered from Hyundai Heavy Industries four super-post-Panamax ships of 10,000 TEU capacity, each costing approximately US\$ 127 million, which were delivered last year. An ESCAP study also revealed that by 2011, of the 490 large container vessels that will be in service globally, approximately 130 ships will be of 10,000 TEU capacity and above. Thus, India will need a mega-container transshipment terminal in order to capture this transshipment business.

With existing ports and terminals in need of deeper channels, alongside depths, and many new ports being set up, dredgers are in huge demand. Thus, India is taking to task the various agencies responsible for expanding transport infrastructure and services to draw up long-term plans to cope with the rapid growth in demand (CILT World, 2006) (See Figure 4.1).

Chart 3: Ranking of Container Ports of the World, 2006 ('000 TEUs)



Source: *Journal of Commerce*, 2006

Figure 4.1 Ranking of container port of the world

The choice in 3PL services reveals positive and significant impact on business performance; however, 3PL practices are still at a nascent stage in India. A growing awareness that competitive advantage comes from the delivery process as much as from the product has been instrumental in upgrading logistics from its traditional backroom function to a strategic boardroom function (Razzaque and Sheng, 1998). A company may consider providing the function in-house, or it can outsource the function and pay for the service. According to a number of studies, 3PL services are widely used in North America (Lieb, 1992; Lieb and Randall, 1996) and Europe (Lieb et al., 1993). Similar studies have focused on logistics issues in the Asia-Pacific region (Millen and Sohal, 1996), Singapore (Bhatnagar et al., 1999), and Indochina (Goh and Ang, 2000). Over the last few years, these areas have benefited from the use of 3PL services. However, currently, there has been no comprehensive study reported in the literature that has focused on 3PL services in India (Sahay and Mohan, 2006). A study by Sahay and Mohan (2006) has revealed poor roads, low-quality trucking services,

limited access and connectivity to rural markets, slow speed and low load factors in the rail transport system, poor utilisation of air cargo space, and poor, inefficient seaports and shipping facilities and infrastructure.

All the above-mentioned factors have adversely affected the logistics performance of India both in terms of lead-time and costs (Korgaonker, 1990a, 1990b). However, a host of policy changes currently underway, including the introduction of an 'open sky' policy, introduction of integrated cargo management system at four metro airports, granting of infrastructural status to the shipping industry, and tax benefits for the development of transport mode, are expected to bring about a positive change in the Indian transportation environment. These will provide vast opportunities for companies offering logistics services in the country and hence augurs good news for Indian organisations to reduce logistics costs by using 3PL services to enhance supply chain efficiency.

Limited research has been done on CL activities. The author has found no research work on forwarding logistics. Further research should focus on managing 3PL relationships, selection, and contract management of 3PL services providers, particularly on forwarding logistics for building collaborative supply chain partnership; future studies should also focus on identifying critical success factors for 3PL implementation and establishing performance measures or long-term 3PL relationships.

India's logistics industry does not directly compete with that of Hong Kong. However, the growth of manufacturing industry in India may have an indirect negative impact on the Hong Kong logistics industry. Many economic journals have hypothesised on the challenge posed by the India's manufacturing industry to China's because of the sheer size of India's population. The opening of China since 1978 has captured the opportunities in manufacturing industry created by the globalisation process. Thus, it requires twice the effort of India to catch the same of the opportunities

captured by China. Furthermore, without the support of an efficient logistics industry, India will find it more difficult to compete with China in the manufacturing industry. Little evidence exists that the India's logistics industry poses any significant threat to Hong Kong.

Chapter Five Research Method

5.1 Research Philosophy

Researchers may use different methodologies to investigate similar types of problem around the world because there is no absolute method of exploring a particular research problem (Adams et al., 2007). Research work consists of diligent search, studious inquiry, and investigation or experimentation aimed at the discovery of new facts and findings. Broadly, it may relate to any subject inquiry with regard to collection of information, interpretation of facts, and revision of existing theories or laws in the light of new facts or evidence. Research is undertaken to enhance our knowledge of what we already know and to extend our knowledge regarding aspects of the world of which we know either very little or nothing at all, enabling us to understand better the world we live in. In the business arena, research is generally undertaken in order to make sound business decisions.

Broadly speaking, there are two main domains of research frequently observed in the literature: the empirical and the theoretical. 'Empirical', in this context, means 'based on evidence from the real world'. This is in contrast to 'theoretical', which refers to ideas that are abstract or purely analytical. Both methods are used in business research. Sound evidence is superior to arguments based on false evidence, limited evidence, or no evidence. Evidence has to be collected from the social world around us, and this requires doing empirical research. In this thesis, the author uses the empirical research approach but placed within the context of the TCE, RBV, and LSA theoretical frameworks. To be specific, there are two streams of empirical studies: qualitative and quantitative research. The qualitative method investigates the 'why' and 'how' of

decision making, not simply the 'what', 'where', and 'when'. Therefore, smaller but focused samples, rather than large samples, are more often needed. Qualitative methods produce information only on the particular cases studied, and any more general conclusions are only hypotheses (informative guesses). Quantitative research refers to the systematic empirical investigation of quantitative properties and phenomena, and their relationships. Quantitative research aims to develop and employ statistical models, theories, and/or hypotheses pertaining to phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation, theory, and expressions of quantitative relationships. This research adopts a combination of these two streams of thinking to gain a better resolution to the research questions. In particular, in the first stage, the author used the qualitative approach and conducted focused interviews in order to gain a deep contextual understanding of the research questions. Based on this, the author then conducted a large-scale survey to generate data that would enable the research questions to be answered more fully. The philosophical approach is therefore a combination of the tenets of normative and positive economics. This overall approach therefore determined the design of the research in its various stages.

Distinguishing the research method from the research methodology is of vital importance. A research method is a way of conducting and implementing research, whereas research methodology is the science and philosophy behind the research. The latter goes into the heart of how we know what we know and allows understanding of the very strict constraints placed upon our concept of what knowledge actually is. Furthermore, this allows us to understand the different ways in which knowledge can be created, and what might be right or wrong. The whole purpose of research is to extend and deepen our knowledge of the world.

A suitable approach for a research study is to go through the process of organising,

planning, and conducting research and then analysing, and reporting research findings (Popper, 1979). Possibly, this can be conceived as a research cycle (Fig. 5.1). This is drawn from Popper's (1979) original exposition of this systematic procedure. Adams et al., (2007) also summarise the stages of research, which includes the following: 1) specify the real problems; 2) set up a model (from theory); 3) formalise the model; 4) solve the problem; 5) interpret the results; 6) validate the model; and 7) generalisation.

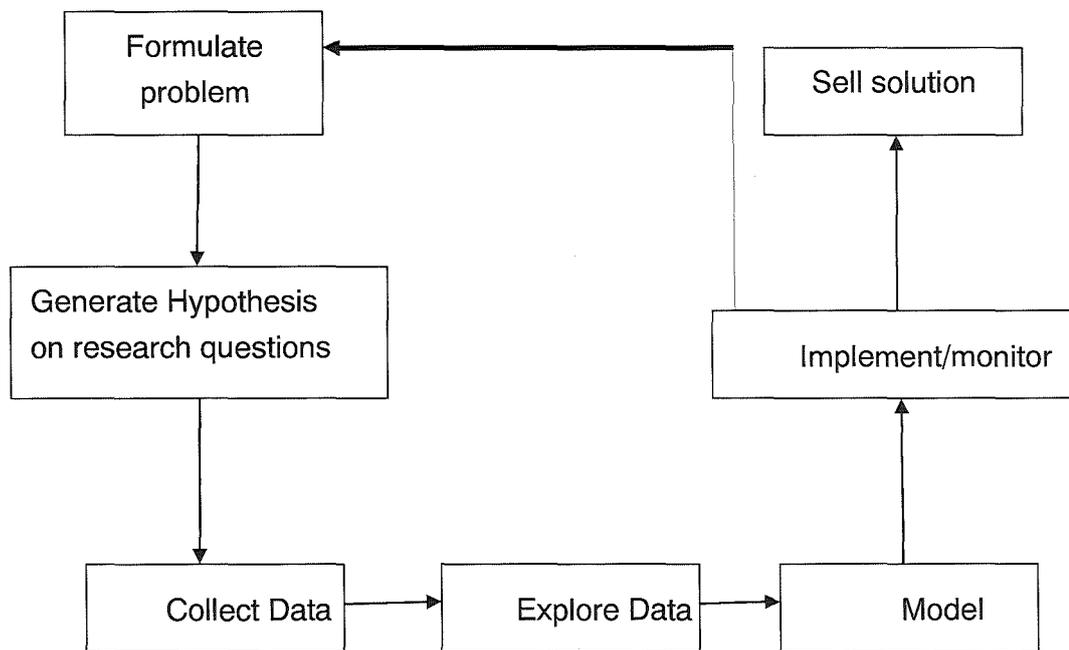


Figure 5.1 The Research Cycle

The cyclical nature of this is to be found in the component 'implement/monitor' because it is at this stage that we know if our model is actually valid and working as theoretically as expected. If this is not the case, we need then to re-think the problem itself, and more than likely, it will be necessary to re-formulate the problem. At this point, 'selling the solution' needs to be bypassed since the 'solution' has not worked

5.2 Research Design

Based from the research questions and the theories, an operational framework was developed to guide the research design (see Fig. 5.2). The first research question is

whether the Hong Kong logistics industry will continue to serve the manufacturers in the PRD. To answer this question, the author evaluated the manufacturers' perception of the logistics performance, which is used as a proxy for the desire of using Hong Kong logistics service. The author relies on TCE and RBV to explore factors that influence logistics performance. RBV argues that a firm's performance is determined by its resources, which are the capabilities and procedures. In this research, the author uses the practice of JIT supply chain as a proxy for logistics resources. This is because JIT supply chain includes very advanced operations and cannot be easily copied by competitors. Therefore, it meets the VRIN requirement (valuable, rare, inimitable, and non-substitutable). In addition to resources, the TCE argues that competitive advantage is also influenced by transaction cost, which is determined by asset specificity and uncertainty.

In this research, asset specificity is represented by the integration between manufacturer and logistics service provider, and uncertainty is represented by the legal system and customs. The integration means that the manufacturer and logistics service provider need to develop procedures and make investment jointly, which are not shared by others. Therefore, it is a relationship-specified asset. Business in China is characterised by unpredictability in the efficiency and effectiveness of legal system and customs. Therefore, the legal system and customs are critical sources of uncertainty that managers must consider. The second research question is whether the PRD will continue using Hong Kong as the airport and seaport for their products. To answer this question, the author investigated the logistics service providers' anticipation of the market as a proxy.

If the logistics service providers have a very optimistic expectation for the future, this means that the airport and seaport of Hong Kong will continue to serve the PRD area. LSA theory is used to determine the factors that influence logistics service

providers' anticipation. To be specific, the author uses government policies and regulation, industry-shifting, competition, and operating cost. According to the arguments of LSA, government policies and regulations comprise the administrative dimension, whereas industry-shifting and competition represent the market growth dimension. Basically, the operating cost refers to human resource availability; thus, it represents an infrastructure dimension. Hence, using the theoretical insights of TCE, RBV, and LSA and their relationship to the different levels of the logistics industry as depicted in Fig. 2.2 (Chapter Two), we can now operationalise the factors that need to be examined. This is done as shown in Figure 5.2.

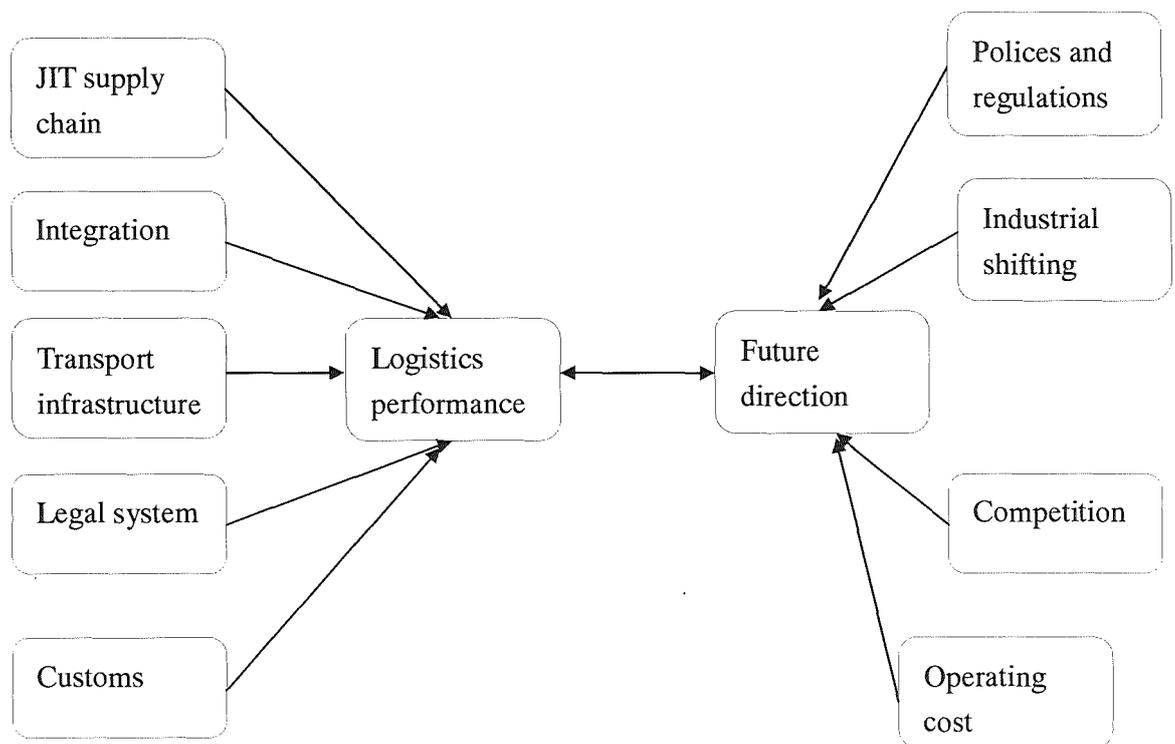


Figure 5.2 Operational Framework

The author decided to separate data collection into two parts. The first part is more exploratory in nature. Interviews were conducted mainly by face-to-face personal interview. Telephone interviews were also used with government officials, industry leaders in the logistics sectors, logistics service users, and people from the academia.

The interviews were guided by semi-structural protocols, which are based on the literature and the author's personal experiences (see Appendix I). Then, based on the results of these exploratory interviews, the author designed a large sample survey to explore further the competitiveness and challenges faced by the Hong Kong logistics industry. The questionnaire was sent to both manufacturers and LSPs, who were also both the suppliers and customers of logistics services. This design could gather the opinion of the main players in the market, which helped the author gain a more holistic understanding of the industry. The following chart illustrates the design of this research (Figure 5.3).

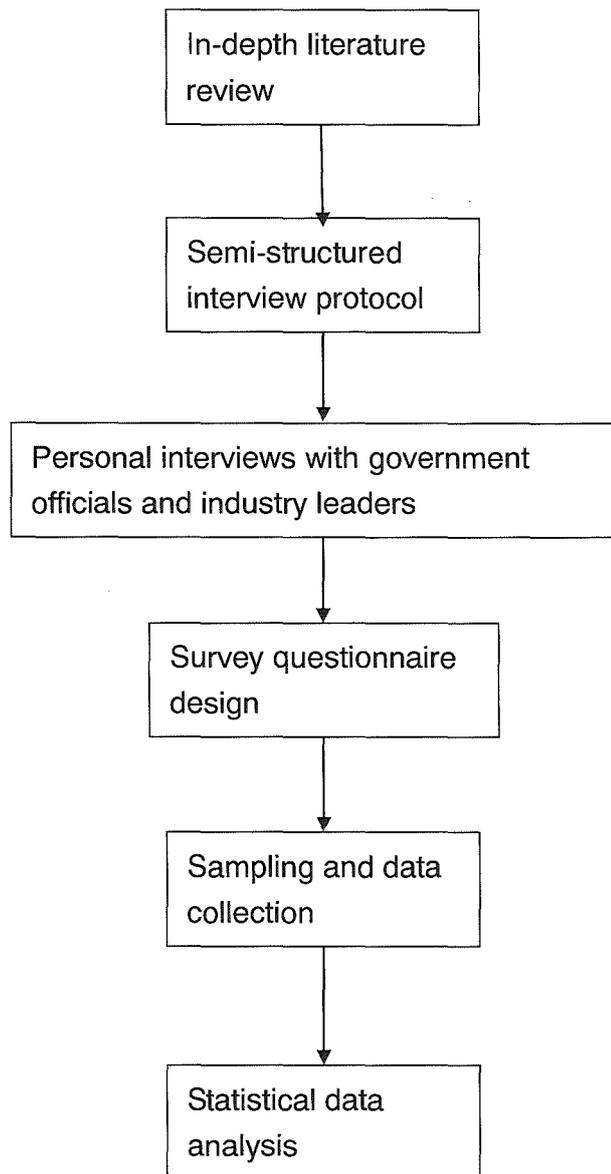


Figure 5.3 Research design

5.2.1 First stage: exploratory interviews

A study (Converse and Presser, 1986) has found that personal interviews refer most often to a one-to-one situation where a single interviewer administers an interview schedule to a single respondent. Interviews can be structured and unstructured. Structured interviews are designed to collect either quantitative or qualitative information from a small to mid-size sample. Structured interviews assume that there is a common language for all potential respondents; question formats have equal meaning

to all. In contrast, unstructured interviews are designed to collect qualitative information from a small-sized sample. This is called intensive interviewing or in-depth interviewing. These interviews assume that the respondents have a particular knowledge and experience on which they can elaborate (Chong, 2007). Foddy (1992) explains that in these interviews the situation has been analysed before the interview, and the researcher is seeking additional information. The interview guide specifies the topics on which information is sought. Such interview focuses on the respondent's subjective experiences, and it allows respondents to describe in detail the situation as it is meaningful to them and allows the interviewer to freely probe and ask follow-up questions (Chong, 2007).

Personal interviews are viewed as the most effective in terms of response rates, whereas questionnaires by mail/email surveys tend to display low response rates (De Vaus, 1996). Personal interviews generally provide the greatest flexibility in terms of question design, and are viewed as an effective method when dealing with complex research topics (Foddy, 1992). The greatest challenge in interviewing is to minimise the interviewer's influence on the respondent. Beed and Stimson (1985) explain that the most important concerns in an interview are the following: interviewer recruitment and training, scheduling the interviews, preparing the materials needed, organisation and supervision of field work, follow-ups for missed interviews, coding and transcribing interviews, and last, analysis and interpretation of findings.

5.2.2 Second stage: survey and statistical analysis

Expert opinion from personal interviews has been used as the basis of questionnaire design. The questions asked in a survey must be clear and unambiguous. The person being surveyed may not understand the intention if the questions are unclear. Moreover, the meaning of the questions must be absolutely clear, especially if the researchers are not present while the respondents are taking the survey (Adams et al.,

2007). Research by Sudman and Bradburn (1982) shows that a questionnaire is the product of the research problem, the theory, method of administration, and methods of data analysis. Babbie (1983) and De Vaus (1996) cite three basic steps in the design of the questionnaire. In the case of this research to ascertain the challenges and opportunities of the Hong Kong logistics industry, three basic steps were followed. First, a conceptual model was created. This includes outlines of the research problem, the purpose of the research, research design, variables, and hypotheses. Second, the questionnaires were designed and produced. Third, questions were constructed to collect data to be measured at the designed level and to answer the research questions by means of adequate responses.

- Questionnaire design

The author designed two kinds of questionnaires that were sent to manufacturers and logistics service providers based on the results of the personal interviews. The anchor questions asked are variations of 'Please indicate whether you agree or disagree with each statement'. The Likert scale (from 1 = strongly disagree to 7 = strongly agree) is used to capture respondent opinion on the surveyed questions. In each questionnaire, a short paragraph introduces the background and objectives of the research. The manufacturer questionnaire includes four sections. Section A features the company profile, which aims at gaining the demographic information, such as name of the company, contact information of the informant, size of the company (number of employees and annual sales), industry, and ownership. Section B measures the performance of logistics service providers. To be specific, the author evaluated the cost, quality, flexibility, and satisfaction of logistics services from the buyers' perspective. Section C measures two supply chain practices used by the manufacturer. The first part is on the degree of JIT operations in the supply chain. The other practice is on the degree of manufacturing logistics integration. Integration refers to the degree to which

the manufacturer can strategically collaborate with their logistics service providers and collaboratively manage the intra- and inter-organisation processes to achieve effective and efficient flow of products and services, information, money, and decisions with the objective of providing maximum value to the customer at low cost and high speed. To capture the tenets of the integration, the author measured manufacturer-service provider integration by the degree of information sharing between the two parties, working together, and joint decision making. Section D is about the role of Mainland China's government. In this part, the author tried to assess the impact of the legal system and the efficiency of the customs system.

For the logistics service provider questionnaire, the first part is also used to capture demographic information, such as company name, information on the informant, services provided, ownership, annual sales, and locations of operations and customers. Section B evaluates the impact of policies and regulations, such as industry upgrading, appreciation of RMB, tax regulations, and the new labour law, on logistics operations. Section C explores the operating cost of service providers, mainly the human resource cost. Section D relates to the competition environment, which is measured by the appreciation of RMB and globalisation. Section E focuses on the effects of industrial shifting. Through the literature review, the author suggests that several factors, such as the new labour law, corporate tax policies, government policies, and appreciation of RMB, are pushing manufacturers from the core the PRD areas to the Pan-PRD area (Guangxi, Guizhou, Jiangxi, and Fujian), which has a cost advantage. Whether this provides an opportunity for Hong Kong logistics service providers to expand business or a threat for losing LSA has yet to be established. Logistics service is closely tied to manufacturing operations; thus, the purpose of this section is to gain an insight on how this trend in manufacturing affects the Hong Kong logistics industry. Section F asks for possible actions and policies that might increase the competitiveness of the industry,

such as 24-hour cross-border customs, lower land cost, and 'open sky' policy. In Section G, the author asks respondents about why they import/export through/not through Hong Kong. The factors include customs, tax, and land cost. Finally, the author asks whether the service provider will expand their business. In the case of both survey questionnaires, a pre-test was undertaken to ensure that all questions were being properly understood by respondents and also that they were being understood in the same way as the author defined the items.

- Sampling

This thesis is an exploratory study, and there is no existing database containing the information that can help the author analyse the challenges and opportunities for the Hong Kong logistics industry. Moreover, the perceived subjective data is more suitable in capturing how managers make real decisions. Thus, instead of using a database, the author collected first-hand information. To explore the research questions, the author collected data from manufacturing companies and logistics service providers in the Pearl River Delta (PRD) and Hong Kong. The author used random sampling to collect the data. In Hong Kong, there is hardly any manufacturing activity per se. Instead, most Hong Kong companies keep their manufacturing facilities in China, but use Hong Kong as a hub to control and direct the flow of materials, finished goods, information, logistics, and finances. In contrast, the PRD area has very close connections with the Hong Kong logistics industry. Manufacturers in the PRD forms the main customers for Hong Kong's logistics service and the LSPs in the PRD are the main competitors. To gain a representative sample frame for manufacturers, the author used the membership directory of the Federation of Hong Kong Industries (FHKI) as the sampling pool. FHKI was established in 1960 under Ordinance Chapter 321 of the Laws of Hong Kong. Its objectives are the following: to promote and foster the interests of Hong Kong's industrial and business communities; to promote trade, investment, technological

advancement, manpower development, and business opportunities in Hong Kong; and to represent business views and to advise the government on policies and legislation that affect business. Out of the four large trade associations in Hong Kong, the General Chamber of Commerce Hong Kong and the Chinese Chamber of Commerce Hong Kong represent traders who are not generally engaged in manufacturing activities that require logistics services. Due to the cross-memberships between FHKI and the Chinese Manufacturers Associations and the dominant position of FHKI as a trade association for manufacturers, FHKI is more representative of the manufacturers in Hong Kong who require the support of the logistics industry in Hong Kong and the PRD. FHKI includes 27 groups covering different industries, among which are chemical and pharmaceutical industries; building materials; electrical and optical products; electronics; metal and machinery; food, beverages, and tobacco; jewellery, leather and miscellaneous textiles; mould and die; plastics industry; toys; printing, bookbinding, and paper products; watches and clocks; information technology; environmental industries; and automobile components. Questionnaires to manufacturers were sent out by email to 2,000 members in March 2009. Questionnaires for logistics service providers were sent out by Shipping Gazette, a popular shipping guide publisher in Hong Kong, to its 1,000 members in its first weekly magazine edition in March and April 2009. This magazine is published every Monday and Wednesday. Furthermore, it provides the following information: import/export shipping schedules; carrier's sailing services; shipping news; directories of logistics service providers; real shipping tools dedicated to shippers; and service providers in Hong Kong, Macau, and the PRD region. Shipping Gazette offers free subscription to LSPs in Hong Kong and the PRD. Questionnaires sent out by Shipping Gazette ensured that that the sample will cover all kinds of LSPs randomly.

- Pilot study

After the sampling frame was decided, the e-mail survey method was used to collect the data. Before the author launched the full-scale study, the author pilot-tested the questionnaire using a sample of a few manufacturers and logistics service providers to make sure that the questions were understandable. Very little change was required because of the pre-tests.

- Data collection

Recommendations by Dillman (1999) to use e-mail and Internet survey were adopted wherever possible. To ensure a high valid response rate, guidelines recommended by Adams et al., (2008) were observed. One challenge for this research was collecting reliable data on the challenges and opportunities in the logistics service industry. After consulting with logistics service providers, the author decided that the best method was to obtain one key informant who is knowledgeable about the SCM within the manufacturing companies and the executive of the logistics service company. This person usually comes with such titles as supply chain manager, logistics manager, vice-president, or director, and is supposed to be knowledgeable about the firm's logistics decisions. The use of a single informant is not uncommon in this line of research or, generally speaking, in empirical research. The author's pre-test of the survey proved that such an informant existed in each company contacted; the author needed to identify these people before the questionnaires were sent. Therefore, the author called each of the selected companies to identify the right contact person. For this research, closed questions were asked to restrict the choice available to the respondents; often, the respondents find these questions easy to deal with. Closed questions on checklist and ranks and attitude statements were designed to collect data on product/service lines, sales turnover, and attitude statements of the respondents.

After the telephone call, questionnaires were sent out by e-mail with a covering note highlighting the objectives and the potential contributions of the study to the

identified informants. Both follow-up telephone calls and follow-up e-mails were used to improve the response rate. Follow-up e-mails were also sent if the respondents could not find the questionnaire that was sent to them earlier. If there were excessively missing data, respondents were contacted by phone to clarify missing data in their responses.

Some non-sampling errors can arise from design, reporting, and processing errors, as well as from errors due to faulty response or non-response. The questionnaire was designed and checked carefully to ensure that it was as clear as possible for the respondents. Respondents were encouraged to give true information with a promise to keep the information confidential. Questionnaire was sent out again in order to eliminate non-response bias.

Out of 2,000 questionnaires sent out to the FHKI, 100 responded by emails. Out of 1,000 questionnaires sent out by Shipping Gazette in its first weekly magazine in March and April 2009, 60 responded by fax. The response rate of the manufacturer questionnaire is 5% and the logistics service provider is 6%. In this regard, open questions asking respondents to describe issues or state their views and feelings attract low response rates because respondents are too busy and will not find time to respond to the questionnaires even if they find writing prose no difficulty. Another phenomenon in Hong Kong is that too many surveys are carried out by students, commercial organisations, and educational institutions. Response rates to surveys in Hong Kong are very low. Even very reputable universities in Hong Kong find it hard to obtain desirable response rates and often use coffee coupons and other similar tools to induce higher response rates. This is no different or worse than the results of surveys in other markets because surveys are over-used, and people and organisations are tired of surveys; as a result, response rates are poor (Adams. et al., 2007). Non-response bias should also be checked by comparing the responses from the early respondents and late respondents.

Respondents who respond early are those who are interested in the survey topic. Respondents who respond late are those who do not and will only respond after being followed up by the researcher. The author found that the response by the early respondents and late respondents in the questionnaires were similar. The author evaluated non-response bias by comparing the early and late replies to all variables using t-test (Handfield and Bechtel, 2002; Stank et al., 2001). No significant differences were found, which suggests that non-response bias is not a big problem in this study.

- Statistical methods

In this analysis, four main statistical techniques (e.g., exploratory factor analysis, Cronbach's alpha, cluster analysis, and analysis of variance) are used. Factor analysis is a statistical method used to describe variability among observed variables in terms of fewer unobserved variables called factors. The observed variables are modelled as linear combinations of the factors, plus 'error' terms. The information gained regarding the interdependencies can be used later to reduce the set of variables in a dataset. The analysis will isolate the underlying factors that explain the data. It is an interdependence technique, and the complete set of interdependent relationships is examined. There is no specification of dependent variables, independent variables, or causality. Factor analysis assumes that all the rating data on different attributes can be reduced to a few important dimensions. This reduction is possible because the attributes are related. The rating given to any one attribute is partially the result of the influence of other attributes. The statistical algorithm deconstructs the rating (called a raw score) into its various components and reconstructs the partial scores into underlying factor scores. The degree of correlation between the initial raw score and the final factor score is called a factor loading. It is a statistic commonly used as a measure of the internal consistency reliability of a psychometric instrument and how well a set of variables or items measures a single, unidimensional latent construct. Exploratory factor analysis can be

used to reduce the number of variables by combining two or more variables into a single factor. For example, performance at running, ball-throwing, batting, jumping, and weightlifting could be combined into a single factor such as general athletic ability. Usually, factors are selected by grouping related items. In the Q factor analysis technique, the matrix is transposed and factors are created by grouping related people. For example, liberals, libertarians, conservatives and socialists, could form separate groups. It is also used in the identification of groups of inter-related variables to see how they are related to one another.

Cronbach's α (alpha) is a statistic commonly used as a measure of the internal consistency reliability of a psychometric instrument. It was first named as alpha by Lee Cronbach in 1951, as he had intended to continue with further instruments. Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. Alpha can take values between negative infinity and 1, although only positive values make sense. Some professionals, as a rule of thumb, require a reliability of 0.70 or higher (obtained on a substantial sample) before they will use an instrument. Obviously, this rule should be applied with caution when α has been computed from items that systematically violate its assumptions. Furthermore, the appropriate degree of reliability depends upon the use of the instrument. For example, an instrument designed to be used as part of a battery may be intentionally designed to be as short as possible, and thus be somewhat less reliable. Other situations may require extremely precise measures, with very high reliability. It will generally increase when the correlations between the items increase. For this reason, the coefficient is also called the internal consistency or the internal consistency reliability of the test. Cronbach's alpha measures how well a set of items (or variables) measures a single unidimensional latent construct. When data have a multidimensional structure, Cronbach's alpha will usually be low.

Cluster analysis or clustering is the assignment of a set of observations into subsets (called clusters) so that observations in the same cluster are similar in some sense. The k-means algorithm assigns each point to the cluster whose centre (also called centroid) is nearest. The centre is the average of all the points in the cluster, that is, its coordinates are the arithmetic mean for each dimension separately over all the points in the cluster. Hair et al., (1998) suggest that researchers should use both hierarchical and non-hierarchical methods. Hierarchical procedures are used to examine the number of clusters that should be formed, and the non-hierarchical method is applied to produce clusters. Both hierarchical and non-hierarchical cluster procedures are used in the study. The author used the analysis of the agglomeration coefficient and the dendrogram to decide the number of the clusters. The agglomeration coefficient is the squared Euclidean distance between the two clusters being combined. A small coefficient indicates that homogenous clusters are merging. The joining of two very different clusters results in a large coefficient (Hair et al., 1998). A large percentage change in the agglomeration coefficient indicates that two non-homogeneous groups will be combined in the further agglomeration. A dendrogram is a visual representation of the steps in hierarchical cluster analysis. It identifies the clusters being combined and the values of the coefficients at each step.

Analysis of variance (ANOVA) is a statistical model in which the observed variance is partitioned into components due to different explanatory variables. It is used to test hypotheses about differences between two or more means. The t-test based on the standard error of the difference between two mean values can only be used to test differences between two mean values. When there are more than two mean values, comparing each mean with each other mean value using t-tests becomes possible. However, conducting multiple t-tests can lead to severe inflation of the Type I error rate. Analysis of variance can be used to test differences among several mean values for

significance without increasing the Type I error rate. The ANOVA tests the null hypothesis in which samples in two or more groups are drawn from the same population. To do this, two estimates are made from the population variance. These estimates rely on various assumptions. The ANOVA produces an F statistic, which is the ratio of the variance calculated among the means to the variance within the samples. If the group mean values are drawn from the same population, the variance between the group mean values should be lower than the variance of the samples, following central limit theorem. A higher ratio therefore implies that the samples were drawn from different populations. The degree of freedom for the numerator is $I-1$, where I is the number of groups. The degree of freedom for the denominator is $N - I$, where N is the total of all the sample sizes.

After the introduction of the conceptual framework and the research design for both exploratory interviews and surveys, the next section focuses on the analysis of both the qualitative and quantitative data. To be specific, SWOT is used to analyse the information gained from the interviews. The first-hand data collected from the survey is first validated, and then analysed using the statistical techniques introduced in this section. The results of the analysis are also presented.

Chapter Six Analysis and Results

6.1 Qualitative analysis of interviews

Qualitative data are required to understand the in-depth motivations for people's behaviour and feelings (Adams et al., 2007). Face-to-face interviews are frequently used in business research. In order to answer the research question on the challenges and opportunities of Hong Kong logistics industry and how this is related to the manufacturers in the PRD area, the author conducted interviews with 5 government officials, 10 manufacturers/shippers, and 10 logistics service providers (LSPs) in Hong Kong. The literature review indicates that the development of the logistics industry is determined by location-specific advantages, which can be understood from transaction cost economics and resource-based view of the firm. To be specific, the literature shows that China's economic development is based on its manufacturing capability, which provides many business opportunities for logistics service providers. This is because the foreign manufacturers have outsourced their production activities, and there are many OEM factories in the PRD. These OEM firms need to import raw materials and export the finished goods to overseas markets. The globalisation trend also increases the demand for logistics services. Manufacturers/shippers require logistics services from the LSPs mainly in the PRD and, to a lesser extent, from the Hong Kong market as well. Therefore, the author interviewed manufacturers/shippers to ask their opinion on the threats and opportunities for LSPs. The literature review also indicates the policies and regulations of both the PRD and Hong Kong government, such as labour law, tax policy, appreciation of the RMB, customs, legal system, and financial and IT support. Since government officials in the Hong Kong Logistics Development Council and the Transport Bureau are responsible for creating the pro-business environment that attracts

private sectors to build the necessary logistics infrastructure to facilitate the needs of the LSP's, the author interviewed them to gain the insights into the government's impact. LSPs are the real players in the market, and their opinion can help to gain a more holistic understanding of the impact of business environment and operating costs on the logistics industry and what they expect for future business. Most LSPs have set up their head/regional offices in Hong Kong and their subsidiary companies in the PRD. To sum up, the interviewees are the representative of government, manufacturers, and LSPs.

When asked regarding the opportunity for Hong Kong LSPs' participation in the China market, the Chairman of Hong Kong Terminal Operators Association opined that the container terminals in the PRD are as efficient and as productive as the Hong Kong container terminals because they are all managed by the same team of professionals. All stakeholders want to make as much money as possible in both Hong Kong and the PRD terminals. Therefore, Hong Kong LSPs have already contributed a lot in the development of the domestic logistics market in the PRD. Benefited by the outsourcing and globalisation trend, the development of the manufacturing activities in the PRD provides tremendous opportunities to the Hong Kong-based LSPs. However, Hong Kong-based LSPs are less competitive than their counterparts in the PRD and in the rest of China because of the latter's close proximity to the manufacturing centres. The Chairman of HAFFA was more optimistic about the future of Hong Kong forwarding logistics sector because it is asset-light, more mobile, and responds to market changes much quickly, which enable the players to meet business opportunities. The General Manager of CMA and former Chairman of the Hong Kong Liner Shipping Association agreed that its freeport status strengthens Hong Kong's role as a regional distribution centre. This greatly improves the inbound traffic to Hong Kong, which positions the much-needed empty containers to Hong Kong for the outbound traffic. Most interviewees voiced their confidence in Hong Kong logistics industry because of its

world-class logistics infrastructure and superior supply chain capabilities. The proposed third runway for HKIA will enhance Hong Kong's air connectivity. Government officials and business leaders are optimistic that the integration between Hong Kong and the PRD, accelerated by the construction of high-speed railways links and the Hong Kong-Zuhai-Macau Bridge, will bring about new opportunities to the logistics industry, particularly in the forwarding sector. In 2008, a consultant was commissioned by the Hong Kong Logistics Development Council and the Hong Kong Trade Development Council to evaluate the competitiveness of the city's logistics industry. Consequently, the shortage of logistics professionals who have been attracted into the Mainland China market was identified by the consultant as a threat to Hong Kong's logistics industry. In contrast, the Chartered Institute of Logistics and Transport in Hong Kong argues that the manpower shortage is an opportunity for the young and up-coming logistics practitioners to undergo training and retraining. Some industry practitioners have expressed pessimism regarding Hong Kong's total container throughput growth because of the dilution effect of the PRD ports. However, optimistic practitioners with strong overseas sales network in the forwarding logistics subsector state that the 2008 record of over 45 million TEUs throughput in the PRD catchment area including Hong Kong is an opportunity.

The approaches by the Hong Kong government and the PRD governments to support their logistics industry are different. The Hong Kong government has created a pro-business environment, whereas the PRD governments support their logistics industry by the introduction of protectionism measures. Hong Kong authorities emphasise the city's efficient customs services and its role as a regional office because of its world-class legal, financial, and IT services. The interviewed business leaders expressed concern about the increasingly tense Sino-American relations, high operating costs, new labour laws introduced in 2008, and the appreciation of the RMB, but they

are relaxed about China's relatively stable political environment and the opportunities brought about by China's accession into the WTO, which enhances the logistics industry development in the PRD and rest of China.

The SWOT analysis is used to evaluate all interviews (Table 6.1). SWOT is a strategic planning method used to evaluate the strengths (attributes of the person or company that are helpful in achieving objectives), weaknesses (attributes of the person or company that are harmful in achieving objectives), opportunities (external conditions that are helpful in achieving objectives), and threats (external conditions which could do damage to objectives) involved in a project or in a business venture. This technique is very useful in analysing qualitative data because it can assist researchers to integrate fragmented evidence in gaining fundamental insights. As SWOT is a qualitative analysis, the author used his experience to summarise the findings and draw conclusions from the interviewees on the strengths, weaknesses, opportunities, and threats on the Hong Kong logistics industry that cannot be quantified. This is, of course, a key weakness of SWOT analysis; however, it still provides researchers with a tool for analysing qualitative information provided by industry experts. This is in fact very similar to the procedure used in Delphi forecasting, which is a purely subjective method. Both SWOT and Delphi share the same weaknesses, but also similar strengths. Without these methods, researchers simply have no way of assigning a reasonably logical meaning to qualitative judgments. However, Delphi forecasting is not being applied in this thesis. The SWOT analysis undertaken in this research is provided below.

In the table we define 'strong support' to mean that the Hong Kong government has identified the logistics industry as one of the four pillars of the Hong Kong economy by creating the Hong Kong Logistics Development Council to underpin this. The organisation represents industry leaders, government, and other stakeholders, and regularly advises the government on key issues facing the industry. Extremely strong

support means that the Hong Kong logistics industry relies on the sales effort of its overseas sales network, without which Hong Kong logistics companies would have a hard time to survive. Industry experts in the qualitative interviews strongly emphasise this particular feature as a key success factor for the industry.

Table 6.1 SWOT analysis

Strengths

	Hong Kong	The PRD
Infra. Facilities	World class	Improving
Logistics professional	Increasingly drawn by the PRD market	Lagging behind & attract logistics professionals from Hong Kong
Government support	Strong support	Strong support through regulations
Customs services	Transparent & efficient	Unpredictable
Regional office status	World class	Lagging behind
Overseas sales network	Extremely strong	Trying to catch up with HKG
Legal system	Transparent	Needs improvement
Tax system	Simple and low tax system	Attractive in SEZs
IT/financial support	Strong support for SCM	Needs improvement

Weaknesses

	Hong Kong	The PRD
Operating costs	High	Low
Location from M cent	Less favourable than the PRD	Very favourable

Opportunities

	Hong Kong	The PRD
Political stability	Very stable	Stable
Air & ocean	Excellent	Catch up very fast on ocean connectivity
WTO	Increase logistics demand	Increase logistics demand

Threats

	Hong Kong	The PRD
Sino-US relationship	Amicable	Cautious
Competition from other production centre	Not immediate	Not immediate
RMB appreciation	Weakening logistics demand	Weakening logistics demand
New labour laws	Not significant	Not significant
Labour supply	Getting difficult	Getting difficult

The result of the SWOT analysis gives many insights on whether the PRD manufacturers will continue to use Hong Kong's airport, seaport, and logistics industry. According to the LSA, the decision of manufacturers to choose Hong Kong's port and logistics service providers over competitors in Mainland China is determined by competitive advantages. The SWOT analysis suggests that the strengths of Hong Kong include infrastructure, logistics professionals, government support, customs service, regional office status, overseas sales network, legal system, tax system, and IT/financial support. The opportunities include political stability, as well as air and ocean connectivity. The strengths give Hong Kong many LSAs in terms of market growth, infrastructure, and administration. To be specific, Hong Kong has built world-class logistics infrastructural facilities capable of handling up to 9 million tons of total air cargo throughput compared to a high of 3.74 million tons of total air cargo throughput in 2007. The Hong Kong Airport Authority is planning to add a third runway in HKIA. Furthermore, the Hong Kong seaport has a designed capacity of 30 million TEUs to meet the forecast growth up to 2010 (Ip, 2003). Hong Kong and Shenzhen are connected by roads with four 24-hour border crossings that bring in truck and container loads of finished products for shipping out in Hong Kong's airport and port. However, logistics infrastructural facilities in the PRD are also improving very fast. Hong Kong ocean cargo terminal operators are investing and managing the ports at the PRD. The Guangzhou Airport is set to have a fifth runway. Hong Kong has trained and developed world-class freight logistics professionals. The PRD is lagging behind and offers financial incentives to attract Hong Kong logistics professionals to work in the PRD to support its fast development. In response, the Hong Kong government has given its strong support by creating a pro-business environment. The PRD government has given strong support to local players through protectionist measures. Local protectionism is a widely documented problem in China that is manifested in many ways. One

manifestation is provincial, wherein local government regulate economic activities that disfavours non-local entities. Examples include vehicle licensing requirements and highway usage regulations that discriminate against vehicles with operation bases outside of the locality.

Apart from the LSAs, the RBV suggests that these VRIN resources are the main reasons for manufacturers to select Hong Kong instead of local port and service providers. Hong Kong customs is a very important resource due to its extremely efficient and predictable service. In contrast, the PRD customs is unpredictable. Hong Kong is a desirable location for regional offices; however, facilities in the PRD are catching up to attract enterprises to set up their regional offices there although they lagged behind for quite a long time. The PRD government has taken several measures to attract foreign firms. For example, it might allocate money to build business parks. It has also built top-notch office buildings, with or without private sector's participation. The local government might also provide financial support, such as preferential tax rates and investment subsidies, to encourage companies from home and abroad to establish their headquarters in the PRD. The government will also invest to improve local human resources by building training centres and by inviting educational agencies to train professionals for the service sectors. Hong Kong's forwarding industry, in comparison, has built a very powerful international sales network; however, the local forwarding industry in the PRD has started to catch up. Both Hong Kong and the PRD enjoy a stable political environment, which provides confidence to investors to continue investing in the PRD. Hong Kong has built excellent air and ocean connectivity in order to attract goods from/to the PRD and transshipments via Hong Kong whereas the PRD is catching up in its air and ocean connectivity. To some extent, the entire province of Guangdong used to depend on Hong Kong's overseas sales network to produce much of its business revenues.

Hong Kong's legal system is another important resource and is the cornerstone of its success, whereas the legal system in the PRD has a lot of catching up to do. There is a warning of the need to distinguish between what is stated in the legal system and what actually happens under China's legal system. In drafting new laws, the PRC has declined to copy any other legal system wholesale, and the general pattern has been to issue laws for a specific issue or location. Often, laws are drafted on a trial basis and redrafted after several years. This process of creating piecemeal laws has led to many missed, confusing, and contradictory situations. These have led to more judicial decisions setting commercially precedent values than in most civil cases. In formulating laws, the PRC has been influenced by a number of sources, including traditional Chinese views toward the role of law, the PRC's socialist background, the German-based law of the Republic of China in Taiwan, and the English-based common law used in Hong Kong. In comparison, Hong Kong has an easy and low tax rate system. In this respect, Shenzhen is one of the four SEZs enjoying a 15% corporate tax; however, the rest of the PRD, with the exception of Huizhou, does not enjoy the same tax benefit. Hong Kong has advanced IT support to the logistics industry and supply chain management, enabling funds to be transferred in seconds, whereas the PRD has to catch up in IT system development. In this regard, the PRD has also been actively promoting the development of digital content and animation industries in recent years. With its strength in the provision of information services, Hong Kong is well placed to support the development of these industries in the PRD. Moreover, as Mainland enterprises are gradually implementing the 'Go Global' policy, Hong Kong can act as the launching pad for these enterprises to expand overseas markets.

The SWOT analysis further indicates the weakness of Hong Kong ports and logistics service providers, including operating costs and distance from manufacturing centre. The TCE states that the economic exchange is determined by the transaction cost,

which refers to the total cost incurred during the exchange. Both the operating cost and distance from manufacturing centre increase the transaction cost between the manufacturer and logistics service providers. To be specific, because of high land and labour costs, operating cost for the logistics industry in Hong Kong is high. There is constant pressure from freight users to ship goods out from the PRD to reduce freight and related costs. The distance from manufacturing centres is another component for the transaction cost. Hong Kong's port is relatively far from the manufacturing base compared with the local competitors; this means higher transaction cost for transportation. The threats to Hong Kong ports and logistics service providers are also related to the transaction cost. For one, the Sino-US relationship creates a great deal of uncertainty for the logistics service providers. Managing an amicable Sino-US relationship is a challenge for Chinese leaders, and the US administration needs to reorient itself in the face of a rising China. The competitiveness and scale of manufacturing capacity of China cannot be replaced by other nations in the foreseeable future. The nearest competitor is India; however, India has a number of weaknesses, such as poor logistics infrastructural facilities, that prevent it from competing with China in the current, and perhaps the next, decade. This also constitutes other kinds of uncertainties for the LSPs. These uncertainties greatly increase the transaction cost for using Hong Kong's port and LSPs. Moreover, the appreciation of the RMB in recent years will likely continue for a number of years, weakening the PRD export competitiveness and subsequently reducing its outbound forwarding logistics demand. Both the new labour laws introduced in January 2009 in China and labour supply will inevitably increase the manufacturing costs in the PRD, and thus result in a higher transaction cost.

Through the interview and the SWOT analysis, the author determined that Hong Kong's port and logistics industry's strength lie on their LSAs and resources, which also

form their opportunities for future development. However, their weaknesses and threats lie on the increase in transaction cost compared with the competitors. Therefore, the results of the interview suggest that the manufacturers in the PRD will continue to use Hong Kong ports and logistics industry because of their LSAs and resources. However, the Hong Kong logistics industry also needs to find out ways to reduce their transaction cost, which might compromise its competitive position.

6.2 Measurement validation

Before presenting the statistical data analysis results, emphasising the importance of data validity is essential. This is because data collected by surveys and other empirical means is of little use unless their reliability and validity can be demonstrated (Flynn et al., 1990). According to O'Leary-Kelly and Vokurka (1998), the methodological issue of construct is generally ignored in most empirical research in the operations management area. Therefore, before the validation of the statistical analysis, the author needs to assess the reliability and validity of constructs proposed in this study for otherwise, the results of the analysis will have no meaning. In this section, the measurement properties of each construct are evaluated in a rigorous way.

Content validity means that there is a consensus among the subjects and researchers that the items used in the study cover all the important dimensions of the latent constructs to be measured. The content validity depends on how well the researchers design the measurement items to cover the domain of the constructs to be measured (Nunnally, 1978). According to Kerlinger and Lee (2000), content validation is a wholly rational judgment process and cannot be numerically tested. The common method of ensuring content validity is to select appropriate measurement items from an extensive literature review and as evaluated by practitioners and knowledgeable researchers. In this study, all of the items were extracted from the previous studies and based on the results of the first-stage interviews with logistics service providers and government

officials. Suggestions from academics and practitioners in the stage of questionnaire design and pilot test helped the author improve the measurement items further. Therefore, content validity is ensured in this study.

Unidimensionality indicates that all of the items are measuring a single theoretical construct (Li et al., 2005). There are two reasons for the author to purify the measurement items used in this study before the rigorous validation of proposed model. First, this study is exploratory in nature because it is the first study to investigate the threats and opportunities faced by the Hong Kong freight forwarding industry by a researcher with strong logistics background. Second, the respondents of this study are Hong Kong manufacturers and logistics service providers who are to some extent different from Western manufacturers in management behaviour. However, the majority of measurement items used in this study is extracted from studies in which Western manufacturers are the major target respondents. Therefore, the author needs to use rigorous methods to filter the measurement items before further study.

As suggested by Narasimhan and Jayaram (1998), the author did an exploratory factor analysis (EFA) for each construct to ensure the unidimensionality of the scales. Factor analysis is particularly useful for survey data because it enables the researcher to reduce a large number of dependent variables (such as the responses to 30 questions) to a smaller number of 'factors' that include all the variables. The key assumption of the method is that each variable is strongly correlated with one another (but not necessarily perfectly correlated) such that they are essentially measuring a different aspect of the same idea (or construct). A related assumption includes normality in the distribution of the errors from the observations. To this extent, the method contains the same statistical assumptions as multiple regression, but without the problem of multicollinearity, which is often present when the number of dependent variables is high (Norusis, 2005). This present study applies factor analysis for the following reasons: it is manageable given

the number of questions 'tested' in the surveys, it enables a reduction of these questions to a set of constructs that are easily interpreted, and Cronbach's alpha factor is produced automatically within SPSS to measure the reliability of the factors.

The indicator items are deleted if they are loaded on more than two factors or if their factor loadings are smaller than 0.5. Such a threshold value is suggested by Johnson and Wichern (1998). Moreover, the items that did not load on the factor they were intended to measure but on the factors they were not intended to measure were also deleted, following Chen and Paulraj (2004). After items purification, the author again conducted EFA again to ensure unidimensionality. Eigenvalues and percentage of explained variances for each construct are provided in Tables 6.2, 6.3, 6.4, and 6.5. As evident from these tables, all of the items loaded on one factor they intend to measure, and the factor loadings are all greater than 0.5.

Table 6.2 Factor analysis of the logistics service provider's performance,

Just-in-time supply chain, and Legal system

	Logistics service provider performance Eigenvalue=5.785	Legal system Eigenvalue=2.815	Just-in-time supply chain Eigenvalue=2.424
Our services provider offers a high level of responsiveness to our needs	.907	.162	.013
Our services provider offers a wide range of services	.865	-.009	-.055
Our services provider offers reliable services	.850	.261	.121
Our services provider is user friendly	.822	.227	.134
Our services provider offers fast pick up and delivery	.759	.173	.199
Our services provider offers the lowest total logistics costs	.718	-.078	.195
It is difficult to take legal actions to get a fair judgment	.086	.893	.002
The judicial system is difficult to be executed smoothly	.187	.816	.156
The costs (fee and time) of settling disputes among companies through legal action is high	.156	.816	.155
Legal services in China such as arbitration system and law firms need to be improved	.105	.810	.002
Relevant laws (such as contract laws and intellectual proper laws dealing with disputes need improvement	.030	.769	.245

Table 6.2 (CONTD.) Factor analysis of the logistics service provider's performance, Just-in-time supply chain, and Legal system

Our suppliers are linked with us by a pull system	.119	.065	.801
We use JIT production and Kanban system	-.114	-.002	.793
Our suppliers deliver to us on a just-in-time basis	.171	.124	.763
We receive daily shipments from most suppliers	.085	.195	.754
Our customers receive just-in-time deliveries from us	.271	.133	.687
Total variance explained	36.155%	17.595%	15.151%

Table 6.3 Factor analysis of the manufacturer service provider's integration, Hong Kong and
mainland customs satisfaction

	Manufacturer service provider integration Eigenvalue=7. 001	Hong Kong customs satisfaction Eigenvalue=1. 937	Mainland customs satisfaction Eigenvalue=1. 515
We share our service demand forecast with our services provider	.848	.084	-.050
Our major services provider helps us to improve processes	.841	.179	-.096
We and our services provider informally work as a team together	.840	.302	.081
There is a high level of information exchange with our service	.829	.122	-.006
Our services provider offers fast pick up and delivery service	.820	.086	.102
We hold meetings with our service providers on a regular basis to solve problems	.809	.372	.127
We develop a mutual understanding of responsibilities with our services provider	.800	.414	.047
We make joint decisions with our services provider about ways to improve overall logistics cost efficiency	.771	.101	.263
We conduct joint planning to anticipate and resolve operational problems with our service provider	.771	.094	.389
Overall, we are satisfied with the current services provided by Hong Kong customs	.233	.954	-.008

Table 6.3 (CONTD.) Factor analysis of the manufacturer service provider's integration,
Hong Kong and mainland customs satisfaction

Overall, we are satisfied with the current systems and procedures provided by Hong Kong customs	.218	.940	.092
Overall, we are satisfied with the current systems and procedures provided by Mainland China customs	.066	.016	.952
Overall, we are satisfied with the current services provided by Mainland China customs	.081	.061	.951
Total variance explained	53.851%	14.901%	11.655%

Table 6.4 Factor analysis of the future direction, government policies and Regulations

	Government policies & regulations Eigenvalue=3.616	Future direction Eigenvalue=1.569
State enterprises in China observe the regulations and new labour laws	.834	.049
The new labour laws introduced in January 2008 increase your operating costs substantially	.761	.161
You always observe the tax regulations and labour laws	.702	.322
Upgrading the industries in PRD	.646	.000
The taxes in PRD are too high that affect bottom-line	.609	.419
You will expand your operations in other parts of China and Asia	.230	.890
You will expand your operations in other parts of China	.096	.862
Your business will continue to grow	.107	.843
Total variance explained	45.204%	19.613%

Table 6.5 Factor analysis of the logistics service provider's operating cost, competition and industry shifting

	Industry shifting Eigenvalue=2.985	Competition Eigenvalue=2.191	Operating cost Eigenvalue=1.671
If our customers branch out to other parts of Asia, we will also branch out there to serve them	.871	-.132	.004
If our customers branch out to YRD and Buhai area, we you will also branch out there to serve them	.851	-.013	.182
If our customers branch out to the areas adjacent to PRD you will also branch out your operations there to service your customers	.788	.233	-.002
Appreciation of RMB has reduced the volumes of business from your existing customers	.111	.864	-.111
As a result of appreciation of RMB, you have lost market shares	-.026	.845	.063
As a result of appreciation of RMB, your customers have put pressure on you to reduce your rates	.322	.699	.076
Despite of very competitive environment, your business has continued to grow	-.189	.555	.138
It is difficult to recruit staff in Hong Kong	.067	.167	.781
You need to increase the salaries of your staff in Hong Kong and China substantially in the last few years to keep your staff	.273	-.146	.710
It is difficult to recruit staff in China	-.250	.011	.657
It is difficult to find managerial staff in Hong Kong who are prepared to move to China	.384	.201	.510
Total variance explained	27.135%	19.922%	15.192

Reliability is defined as the stability and consistency of the measurement items, which means the degree to which the items are free from random errors. Flynn et al., (1990) suggest that the most accepted measure of a measure's internal consistency is Cronbach's alpha. Cronbach's alpha is a test for a model or survey's internal consistency. It is designed to assess the reliability of a rating that summarises a group of survey answers, which measure some underlying factor such as 'agreement' or 'disagreement' with a statement across a sample of individuals. A score is computed from each test item, and the overall rating is the sum of these scores over all the test items. The reliability is defined as the square of correlation between the scale that is measured and the underlying 'construct' this scale is measuring. The 'rule of thumb' often applied for a good value of the alpha coefficient is equal to or greater than 0.7 (see Schmitt, 1996). The key assumption of this procedure is that all the items being measured are unidimensional, which simply means they cannot have any other meaning. For example a response of 'Yes' or 'No' cannot be interpreted as anything else other than Yes or No. In this current study, any survey instrument must be carefully pilot tested to ensure that respondents cannot misinterpret survey questions. The surveys for this study were all pilot-tested to ensure the removal of any ambiguity in the questions, and further ensure that the items being referred to would have a single dimensional meaning.

Table 6.6 and Table 6.7 show the Cronbach's alpha results. The alpha values are larger than 0.70, with the threshold value recommended by Nunnally (1978) and Flynn et al., (1990). Therefore, the reliability of the constructs used in the study is ensured.

Table 6.6 Reliability analysis of manufacturer's responses

Construct	Number of items	Cronbach's alpha
Logistics service provider performance	6	0.900
Legal system	5	0.891
Just-in-time supply chain	5	0.835
Manufacturer service provider integration	9	0.947
Hong Kong customs satisfaction	2	0.957
Mainland customs satisfaction	2	0.929

Table 6.7 Reliability analysis of logistics service provider's responses

Construct	Number of items	Cronbach's alpha
Future direction	3	0.860
Government policies regulations	5	0.779
Industry shifting	3	0.826
Competition	4	0.742
Operating cost	4	0.621

6.3 Analysis of the surveys

After data-cleaning, 78 of the returned manufacturer and 49 logistics service provider questionnaires were found to be usable, resulting in a 5% response rate. The profiles of the surveyed manufacturers are listed in Tables 6.8, 6.9, 6.10, and 6.11 and shown in Figs. 6.1, 6.2, 6.3, and 6.4. The responses of logistics service providers are listed in Tables 6.12, 6.13, 6.14, 6.15 and 6.16 and shown in Figs. 6.5, 6.6, 6.7, 6.8, and 6.9. Nearly one in five (17.9%) were from the electronics and communication equipment industry. The textile and apparel industry constituted 15.4% of the respondents. To validate the sample, the author calculated the percentage of added value of each industry in the whole manufacturing sector in Guangdong Province, which is used as a proxy for the industry distribution of the sample shown in Table 6.8 (Statistics

Bureau of Guangdong Province, 2009). Since the value-added method does not count the real number of the firms, some discrepancies are evident. Considering this measurement error, the sample has similar industry distribution as in Guangdong Province, which indicates the representativeness and the validity of the sample.

Table 6.8 Profile of the respondents--- manufacturing industry

Industry	No. of Responses	% of the sample	% in Guangdong
Electronics & communication equipments	14	17.9	20
Textile & apparel	12	15.4	13
Electrical equipments	6	7.7	11
Transportation equip	2	2.6	6
Machinery	3	3.8	3
Chemical & petrochemical	1	1.3	1
Rubber & plastics	3	3.9	4
Metal	1	1.3	2
Wood & furniture	2	2.6	2
Publishing & printing	3	3.8	3.2
Toys	5	6.4	n.a.
Watches & clocks	3	3.8	n.a.
Others	23	29.5	n.a
Total	78	100.0	

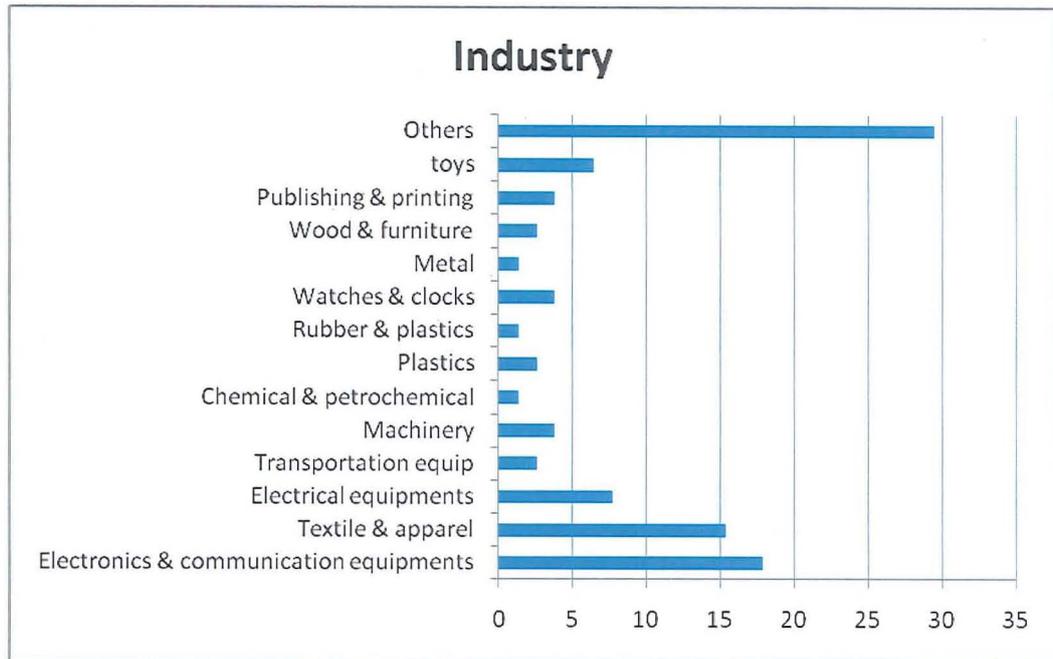


Figure 6.1 Profile of the respondents--- manufacturing industry

The percentage of small and medium enterprises with less 100 employees is 84.6%, and small companies with less than 50 employees comprises 71.8% of the respondents.

Table 6.9 Profile of the respondents--- manufacturing Number of employees

Number of employees	No. of Responses	%
Less than 50	56	71.8
51 – 100	10	12.8
101 – 200	1	1.3
201 – 300	4	5.1
301 – 500	0	0
501 – 1000	2	2.6
1001 – 2000	1	1.3
2001 – 5000	1	1.3
over 5000	2	2.6
Not specified	1	1.3
Total	78	100.0

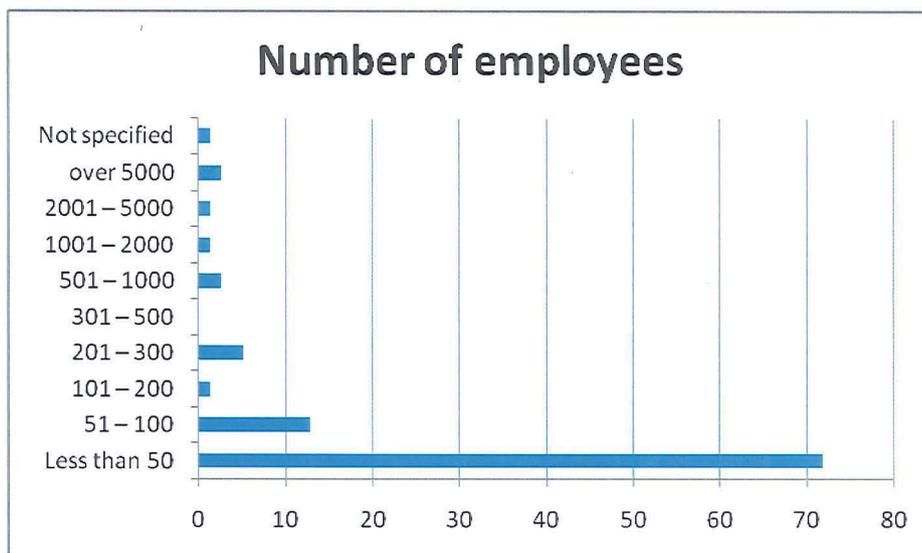


Figure 6.2 Profile of the respondents--- manufacturing Number of employee

Half of the surveyed manufacturers are owned by Hong Kong interests. Most of the other respondents are either state-owned (17.9%) or owned by foreign interests (19.2%).

Table 6.10 Profile of the respondents--- manufacturing Ownership

Ownership	No. of Responses	%
State owned	14	17.9
100% owned by Hong Kong interest	39	50.0
100% owned by foreign interest	15	19.2
Joint venture between Hong Kong interests and other interests	7	9.0
Not specified	3	3.8
Total	78	100.0

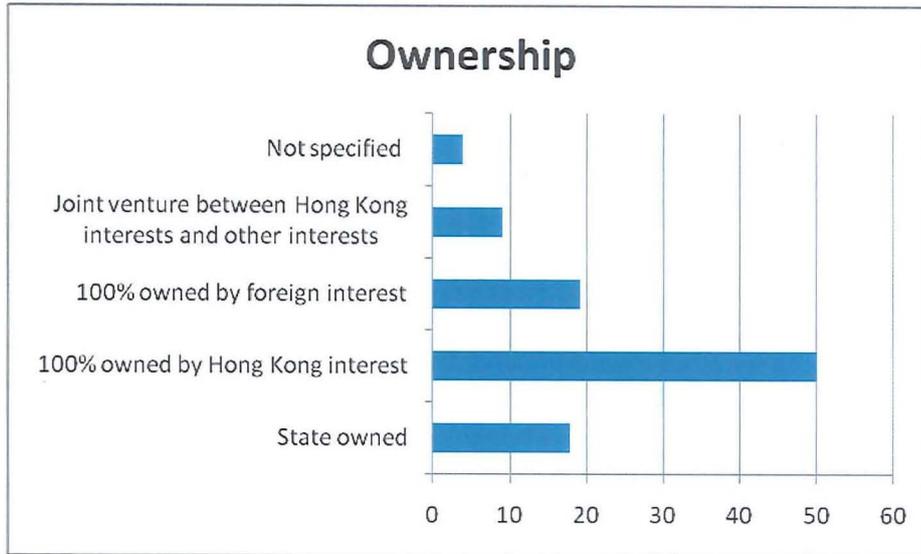


Figure 6.3 Profile of the respondents--- manufacturing Ownership

For the 2007 annual sales, 60.2% of the manufacturers recorded below HK\$ 100 million. On average, respondents have been in the industry for 20 years. This indicates that they are all experienced manufacturers, and their opinion is very valuable for evaluating the development of the industry.

Table 6.11 Profile of the respondents--- manufacturing Annual sales turnover in HK\$ million in 2007

Annual sales turnover in HK\$ million in 2007	No. of Responses	%
5 and less	3	3.8
5.1 – 10	11	14.1
10.1 – 15	14	17.9
15.1 – 25	4	5.1
25.1 – 30	1	1.3
30.1 – 50	6	7.7
50.1 – 100	8	10.3
100.1 – 250	9	11.5
250.1 – 500	2	2.6
500.1 – 1000	3	3.8
Over 1000	2	2.6
Not specified	15	19.2
Total	78	100.0

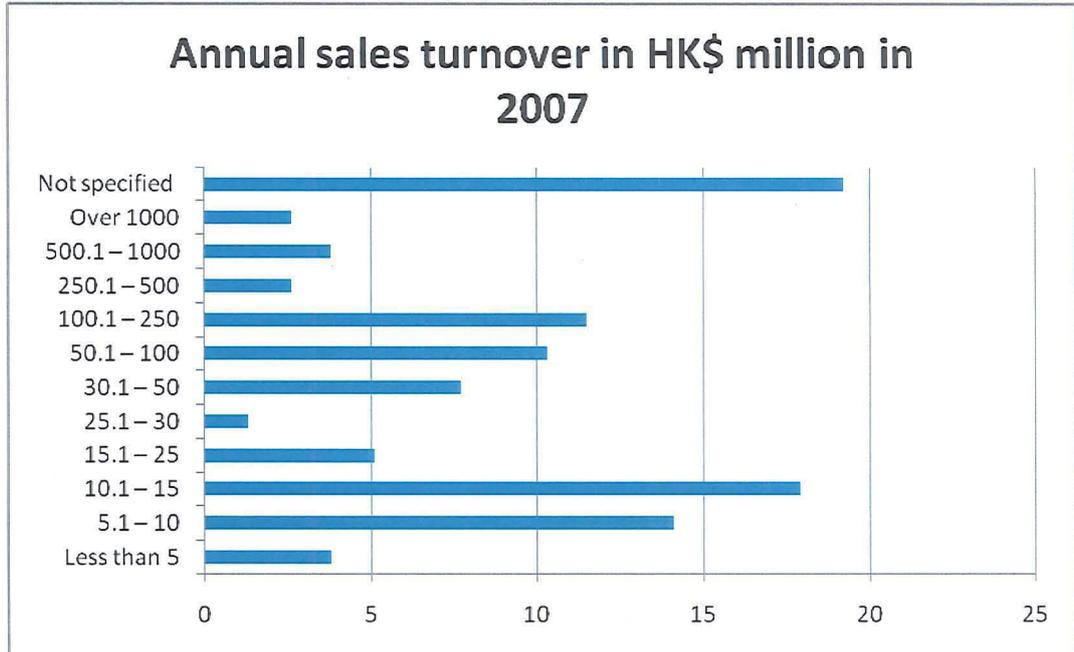


Figure 6.4 Profile of the respondents--- manufacturing Annual sales turnover in HK\$ million in 2007

Logistics service providers normally offer one or several types of logistics service functions, such as freight forwarding, 3PL, warehousing, trucking, and 4PL. More than 80% of the logistics service provider respondents provide freight forwarding services. The same respondents offer 3PL (40.8%), warehousing (42.9%), trucking (44.9%), and 4PL services (10%).

Table 6.12 Profile of the respondents--- logistics service provider service profile

Service profile	No. of Responses	%
Freight forwarding	40	81.6
Third party logistics	20	40.8
Four party logistics	5	10.2
Warehousing	21	42.9
Trucking services	22	44.9
Other	10	20.4

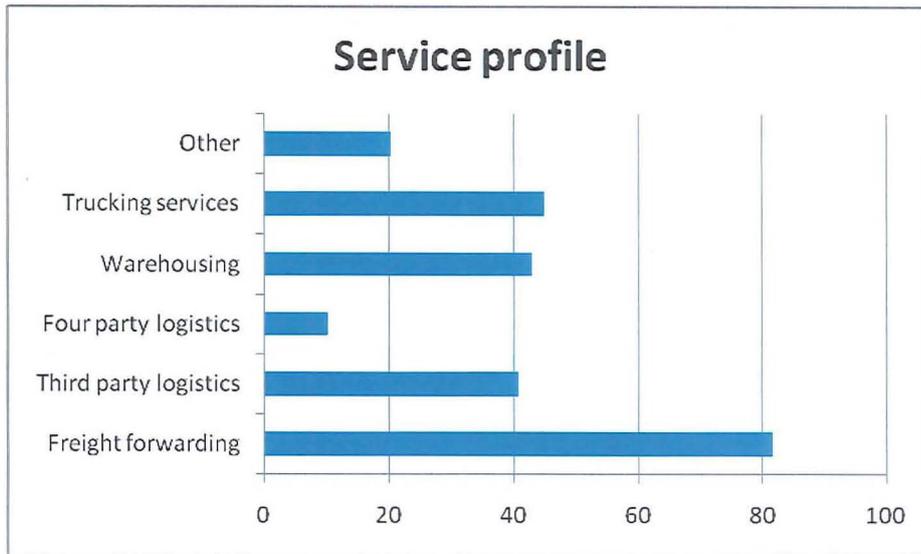


Figure 6.5 Profile of the respondents--- logistics service provider service profile

Approximately half of the surveyed logistics service providers are owned by Hong Kong interests. Majority of the remaining companies are owned by foreign interests (40.8%).

Table 6.13 Profile of the respondents--- logistics service provider Ownership

Ownership	No. of Responses	%
100% owned by Hong Kong interest	25	51.0
100% owned by foreign interest	20	40.8
Joint venture between Hong Kong interests and foreign interests	4	8.2
Total	49	100.0

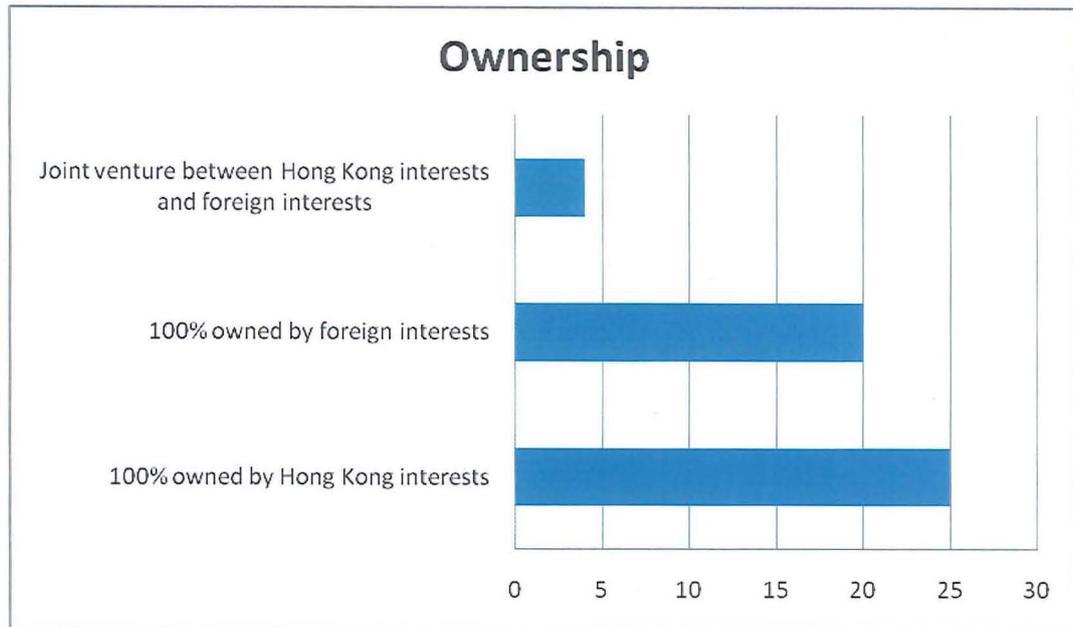


Figure 6.6 Profile of the respondents--- logistics service provider's Ownership

For the 2007 annual sales turnover, 53% of the logistics service providers garner below HK\$ 100 million. This is typical in the PRD area because the majority of firms are SMEs.

Table 6.14 Profile of the respondents--- logistics service provider Annual sales in HK\$ million in 2007

Annual sales in HK\$ million in 2007	No. of Responses	%
Less than 5	4	8.2
5.1 – 10	1	2.0
10.1 – 15	3	6.1
15.1 – 25	3	6.1
25.1 – 30	2	4.1
30.1 – 50	5	10.2
50.1 – 100	8	16.3
100.1 – 250	2	4.1
250.1 – 500	8	16.3
500.1 – 1000	3	6.1
Over 1000	2	4.1
Not specified	8	16.3
Total	49	100.0

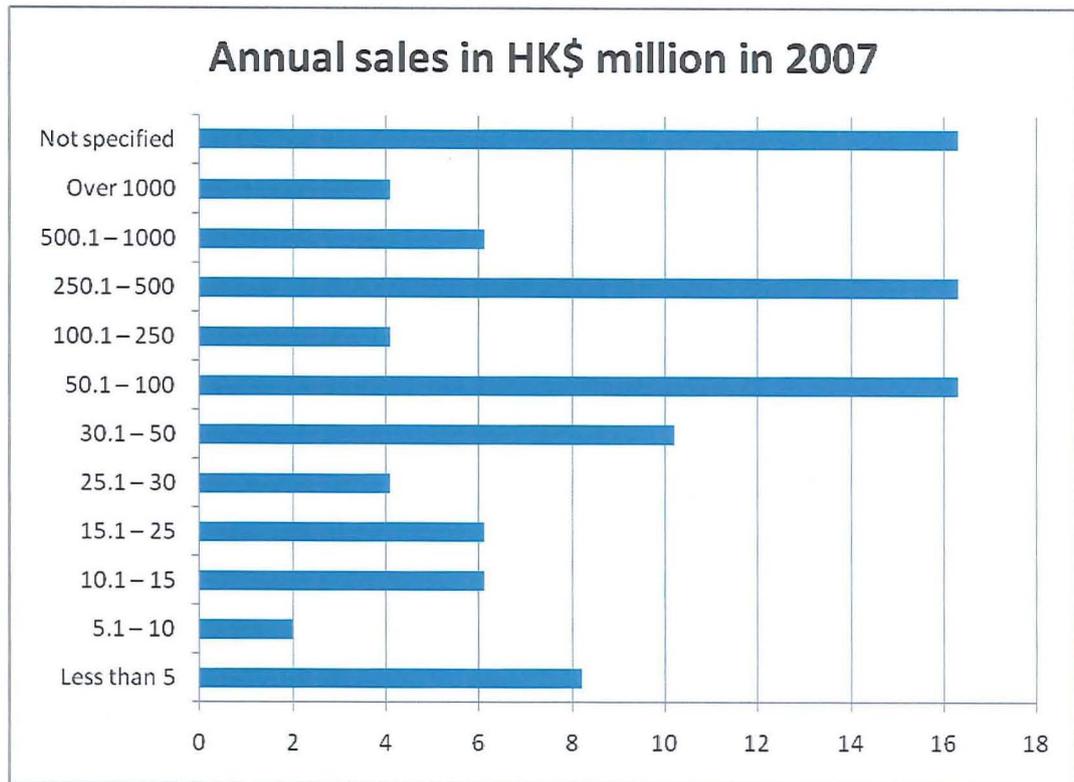


Figure 6.7 Profile of the respondents--- logistics service provider's Annual sales in HK\$ million in 2007

Approximately one-third of the respondents have operations around the world, and 26.5% have operations in other parts of Asia. The rest of the respondents are Greater China-based operators.

Table 6.15 Profile of the respondents--- logistics service provider Locations of Operations

Locations of operations	No. of Responses	%
Hong Kong	5	10.2
Hong Kong & PRD	5	10.2
Hong Kong, PRD and other parts of China	10	20.4
Hong Kong, mainland China and other parts of Asia	13	26.5
Hong Kong, rest of Asia, Europe & Americas	16	32.7
Total	49	100.0

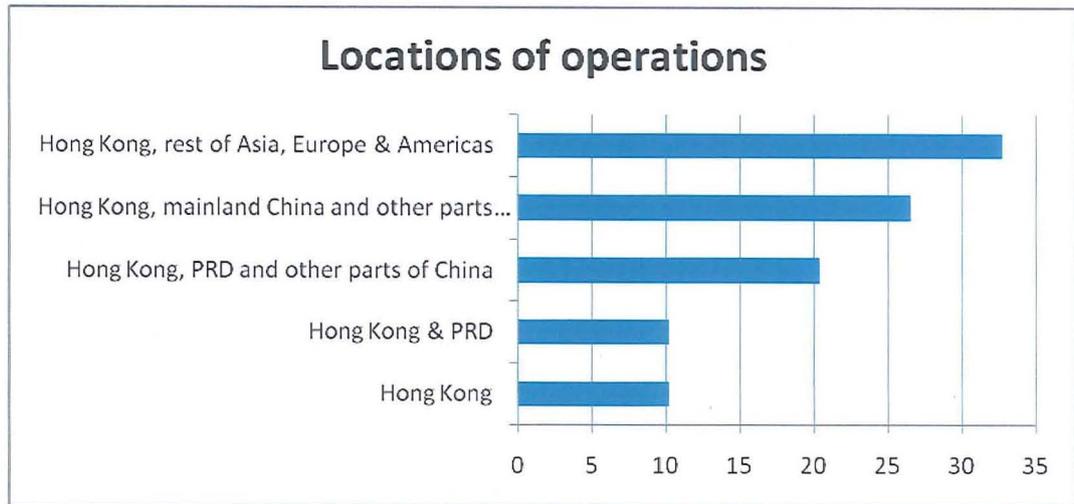


Figure 6.8 Profile of the respondents--- logistics service provider's Locations of Operations

In terms of customers, 42.9% of the respondents service customers around the world, and 36.7% focus on Asia customers. The rest of the respondents only focus on China customers. Hong Kong logistics service providers have very good ocean and sea connectivity; this may be the reason the majority of their customers are located overseas. Moreover, since the Hong Kong logistics industries have started penetrating the Mainland market, they also serve many China customers. Therefore, the survey results on customer locations are typical for the Hong Kong logistics service providers.

Table 6.16 Profile of the respondents--- logistics service provider Locations of Customers

Locations of customers	No. of Responses	%
Hong Kong & PRD	4	8.2
Hong Kong, PRD and other parts of China	6	12.2
Hong Kong, mainland China and other parts of Asia	18	36.7
Hong Kong, rest of Asia, Europe & Americas	21	42.9
Total	49	100.0

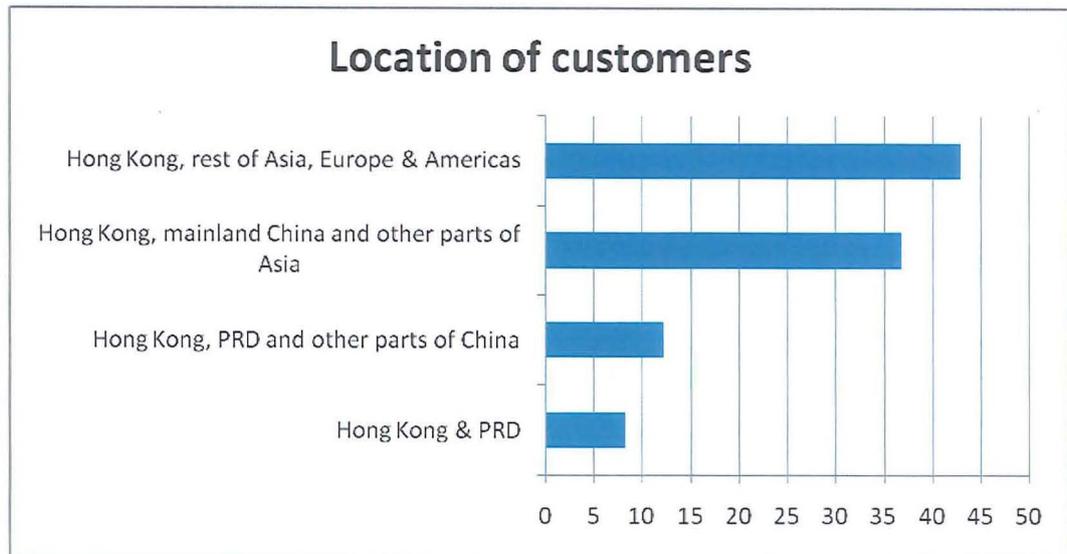


Figure 6.9 Profile of the respondents--- logistics service provider's Locations of Customers

The analysis was conducted by initially calculating the mean, standard deviations, and correlations among all constructs (Table 6.17), which was performed based on the theories and literature review and validated in the previous section. The results indicate that the main constructs are moderately correlated with one another. The highest correlation is between MSPI and LSPP (0.681), and the MSC does not correlate with other variables except for LS, which is reasonable. This is because the MSC is under the control of China LS.

Table 6.17 Mean, standard deviations and correlation--- manufacturing

	LSPP ^a	LS	JSC	MSPI	HKSC	MSC
legal system (LS)	.296**					
Just-in-time supply chain(JSC)	.273*	.277*				
Manufacturer service provider integration (MSPI)	.681**	.243**	.373**			
Hong Kong customs satisfaction (HKSC)	.517**	.414**	.059	.449**		
Mainland customs satisfaction (MSC)	.090	.177	.283**	.191	.092	
Mean	2.838	3.240	4.211	3.254	2.636	3.993
Sd.	1.023	1.097	1.261	1.143	1.158	1.255

^a LSPP stands for logistics service provider performance; **: p<0.01, *: p<0.05

Table 6.18 The result of cluster analysis---manufacturing

	Cluster		F value
	High performance	Low performance	
Mean value	3.91	2.24	126.091 (p=.000)
Number of cases	28	50	

Manufacturers' perceived logistics service performance is measured by six items. The aggregated value is used as a taxon in K-mean cluster analysis to divide the manufacturers into two groups (Table 6.18). The manufacturers in first cluster have significantly higher score in the perceived logistics performance than the second cluster. Therefore, the author named it high performance and the other one low performance. Results show that nearly one third of manufacturers belong to the high- performance group.

Table 6.19 The result of ANOVA analysis---manufacturing

	High performance	Low performance	F value
Hong Kong based provider	4.02	2.83	10.534 (p=.002)**
Mainland based provider	4.82	4.29	1.710(p=.195)
Just-in-time supply chain	4.66	3.96	5.943(p=.017)*
Manufacturer service provider integration	3.94	2.87	19.559(p=.000)**
Legal system	3.72	2.97	9.144 (p=.003)**
Hong Kong customs	3.18	2.33	10.787(p=.002)**
Mainland customs	4.18	3.89	.939(p=.336)

** p<0.01; * p<0.05

ANOVA was used to compare the locations of the service providers, logistics integration, JIT supply chain practices, and the government's role (Table 6.19). The results reveal that the high-performance and low-performance manufacturing groups have statistically significant difference when using Hong Kong-based service providers. This means that Hong Kong-based service providers can significantly improve the manufacturers' logistics service performance, whereas the use of Mainland service

providers will not improve logistics performance. The JIT supply chain was measured by five items. The results reveal that the high-performance group uses significantly higher level of JIT supply chain than the low-performance group. This is consistent with the argument of RBV, which states that JIT supply chain is a very important resource for improving the performance. Manufacturer and service provider integration was measured by nine items. Statistically, the high-performance group achieves higher level of integration than the low-performance group. These results indicate that application logistics integration can really improve a manufacturer's logistics performance. The explanation can be provided by TCE, which argues that the relationship-specific asset (e.g., integration) can reduce the transactional cost and then improve the performance. The Mainland's legal system was measured by five items. The results show that the high-performance group more firmly believes that the Mainland's legal systems need more improvement in comparison to the low-performance group. This indicates that the role of government is very important in improving logistics performance. Based on the arguments of LSA, the legal system does bring advantages to Hong Kong. The measurement of the satisfaction toward the customs system of Hong Kong and of the Mainland is listed in Appendix II. The analysis shows that there are significant differences in the satisfaction of Hong Kong customs between the high-performance and low-performance groups, but not on the satisfaction of Mainland customs. This also reveals that Hong Kong customs is associated with logistics performance improvement, whereas Mainland customs is not related to the logistics performance. This is also consistent with the arguments of LSA, wherein Hong Kong has the advantages over Mainland competitors. This analysis shows that the resources, LSA, and transactional cost of Hong Kong logistics industry are all important for improving logistics performance. Therefore, the answer for our first research question is 'Yes'.

Table 6.20 Mean, standard deviations and correlation--- logistics service provider

	FD ^a	GPR	IS	CO	OC
Government policies and regulations (GPR)	.416**				
Industry shifting (IS)	.538**	.226			
Competition (CO)	.444**	.586**	.111		
Operating cost (OC)	.047	.098	.234	.140	
Mean	3.027	2.829	3.582	3.260	4.175
Sd.	1.211	1.052	1.309	.951	1.077

^a FD stands for future direction; **: p<0.01, *: p<0.05

For the logistics service providers, the analysis was conducted by initially calculating the mean, standard deviations, and correlations among all constructs, as shown in Table 6.20. The results indicate that only the FD is moderately correlated with other variables. The highest correlation is between FD and IS (0.538), and the OC does not correlate with other variables, which is reasonable. This is because the cost is not the main concern for logistics service providers when they make decisions.

Table 6.21 The result of cluster analysis---logistics service provider

	Cluster		F value
	Optimistic group	Pessimistic group	
Mean value	4.62	2.45	81.375 (p=.000)
Number of cases	13	36	

The author evaluated future directions of these companies by asking whether they planned to continue their business in China. The aggregated value is used in the K-mean cluster analysis to divide the respondents into two groups (Table 6.21). The logistics service providers in the first cluster have significantly higher confidence in the market than those in the second cluster. Therefore, the first group was named the optimistic group, while the second was called the pessimistic group. The results show that nearly one-fourth of the logistics service providers are optimistic about the future. The results shows that nearly one-fourth of the manufacturers belong to the high-performance group.

Table 6.22 The result of ANOVA ---logistics service provider

	Optimistic group	Pessimistic group	F value
Government Policies and Regulations	3.31	2.65	3.891 (p=.054)
Operating cost	4.00	4.24	.464(p=.499)
Competition	3.65	3.11	3.168(p=.082)
Industry shifting	4.69	3.18	16.958(p=.000)**

** p<0.01; * p<0.05

ANOVA was used to examine the effects of government policies and regulations, operating costs, competition environment, and industry-shifting on future market expectations (Table 6.22). Government policies and regulations were measured by five items, and industry-shifting was measured by three items. Marginally, the optimistic group believes that policies, regulations, and industry shifts are more important than does the pessimistic group. This indicates that the government policies and regulations are important determinants for logistics providers' expectations for the market. This is consistent with the arguments of LSA, which suggests that the administration is an important dimension for competitive advantage. The analysis shows that Hong Kong is better than the PRD in terms of police and regulation. Moreover, the analysis also indicates that industrial shifting is another important determinant. This can be explained by LSA theory, which states that market growth is another source of advantage. The operating cost of the logistics service providers is measured by four items. However, the author does not find significant difference between the optimistic group and the pessimistic group in their opinion on operating cost. The same picture can be seen on competition environment, which as measured by four items. The result indicates that there is no statistically significant difference between the optimistic group and pessimistic group in perception on the competitiveness of the environment. This indicates that integration between Hong Kong and PRD makes the LSPs compete in the

same business environment, As a consequence, the impact of competition and operating cost has similar effects on both the PRD and Hong Kong players. Therefore, integration will not influence the expectation for the future and whether to shift to Hong Kong from the PRD. In the questionnaire response, a number of LSPs seem to think that cost is not an issue. However, they made the comments in the context of competing with other LSPs that have more or less the same cost structures in terms of labour cost, rental for office and warehouse, trucking cost, and others. This shows that in this research context, the competition and operating cost are not LSA. To summarise, the results reveal that government policies and regulations and industry-shifting have significant effects on future market expectations in the logistics industry, whereas operating cost and competition environment do not affect such expectations. Since Hong Kong has more LSAs over the PRD, the answer to our second research question should be 'Yes'.

The author also investigated the main reasons for customers to export/import goods from/to Southern China to/from overseas via Hong Kong by air. The main reasons are due to the policies and actions taken by the Hong Kong government to enhance the competitiveness of the Hong Kong forwarding industry from the service provider's perspective. The results are listed in Tables 6.23, 6.24, 6.25, and 6.26 and Figs. 6.10, 6.11, 6.12, and 6.13.

Table 6.23 The reasons to export through Hong Kong by air

	No. of Responses	%
Efficient and predictable customs clearance in Hong Kong	38	77.6
More direct flights from Hong Kong to final destinations	38	77.6
Predictable transit handling in Hong Kong	38	77.6
More reliable forwarding services	37	75.5
Tax or duty advantages	16	32.7
Better flight connections	36	73.5
Lower total transportation costs	9	18.4
Customers' requests (eg. FOB HK)	26	53.1
Quality control in Hong Kong	32	65.3
Consolidation of shipments in Hong Kong	26	53.1
Others	3	6.1

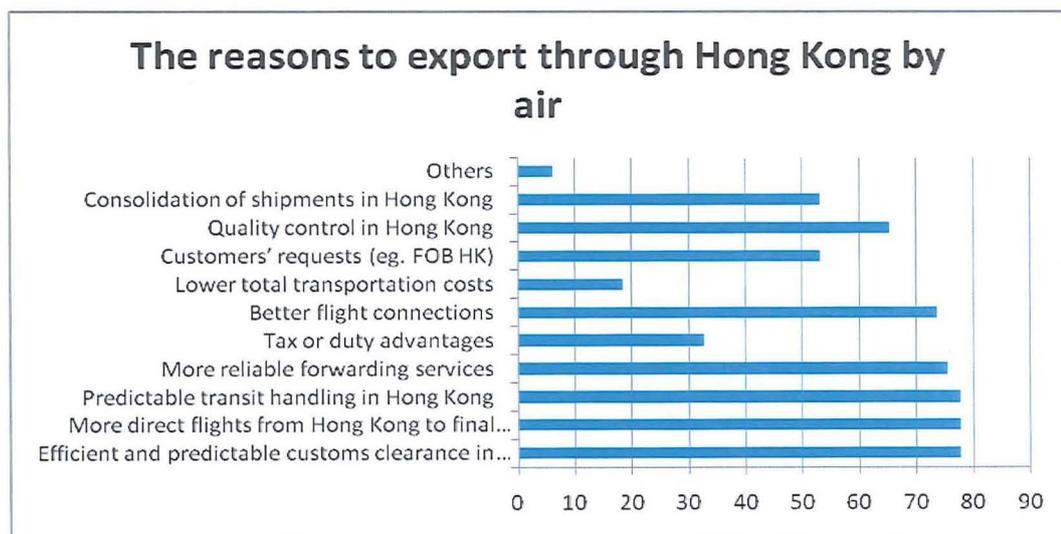


Figure 6.10 The reasons to export through Hong Kong by air

The analysis indicates that the main reasons for exporting goods from South China

to overseas via Hong Kong include Hong Kong's efficient and predictable customs clearance, more direct flights to final destinations, predictable transit handling, and reliable forwarding service. This suggests that Hong Kong's administration is its main LSA, and the transaction cost is lower because of low uncertainty.

Table 6.24 The reasons to import through Hong Kong by air

	No. of Responses	%
Efficient and predictable customs clearance in Hong Kong	36	73.5
More direct flights from Hong Kong to final destinations	38	77.6
Predictable transit handling in Hong Kong	29	59.2
More reliable delivery	31	63.3
Tax or duty advantages	22	42.9
Better flight connections	31	63.3
Lower total transportation costs	5	10.2
Customers' requests (eg. FOB HK)	24	49
Quality control in Hong Kong	25	51
Profit from the lower consolidation rates to Hong Kong	16	32.7
Others	3	6.1

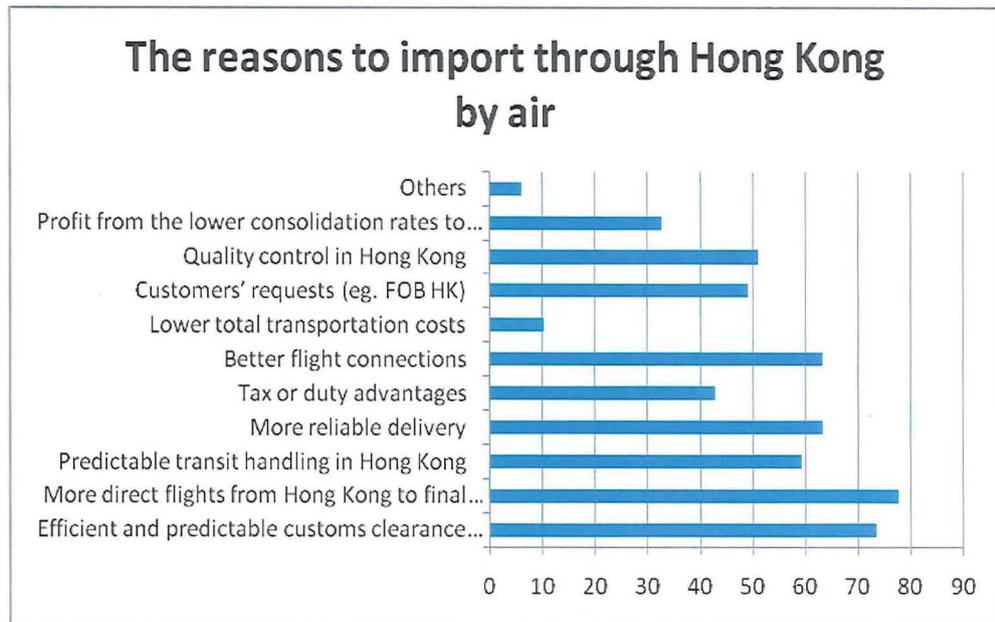


Figure 6.11 The reasons to import through Hong Kong by air

The main reasons for importing goods to Southern China from overseas via Hong Kong by air is similar to the reasons for exporting. The efficient and predictable customs clearance in Hong Kong reduces the uncertainty and leads to lower transaction cost. More direct flights from overseas to Hong Kong is an important intangible resource that Hong Kong has over its PRD competitors.

Table 6.25 The reasons for customers to export goods directly from Southern China to overseas by air

	No. of Responses	%
Low costs in S. China	40	81.6
Customers' request (e.g. FOB China)	28	57.1
Customs requirement	21	42.9
Faster delivery	6	12.2
Others	5	10.2

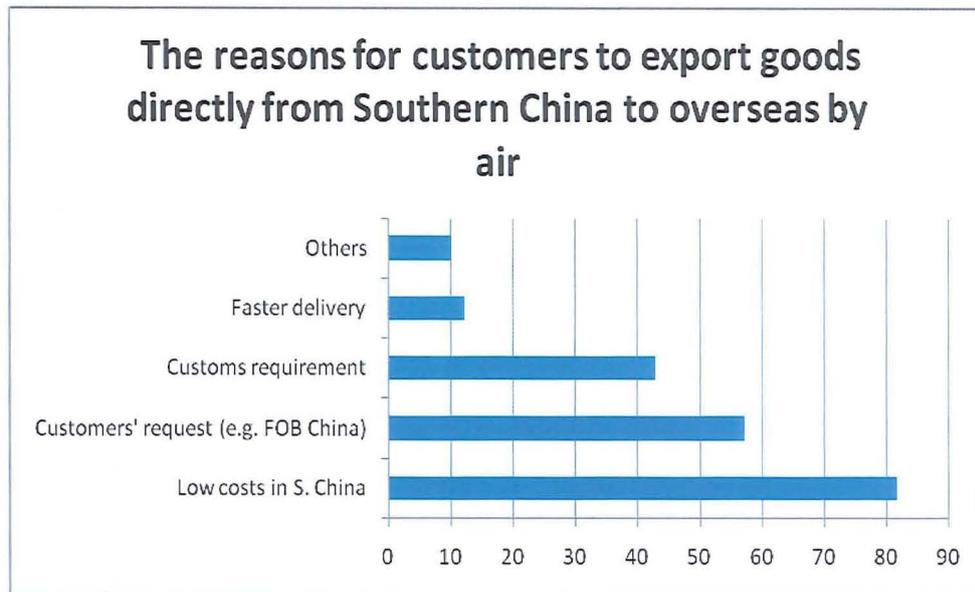


Figure 6.12 The reasons for customers to export goods directly from Southern China to overseas by air

Table 6.26 The reasons for customers to import goods directly from Southern China to overseas by air

	No. of Responses	%
Low costs in S. China	29	59.2
Customers' request (e.g. FOB China)	32	65.3
Customs requirement	16	32.7
Faster delivery	13	26.5
Others	2	4.1

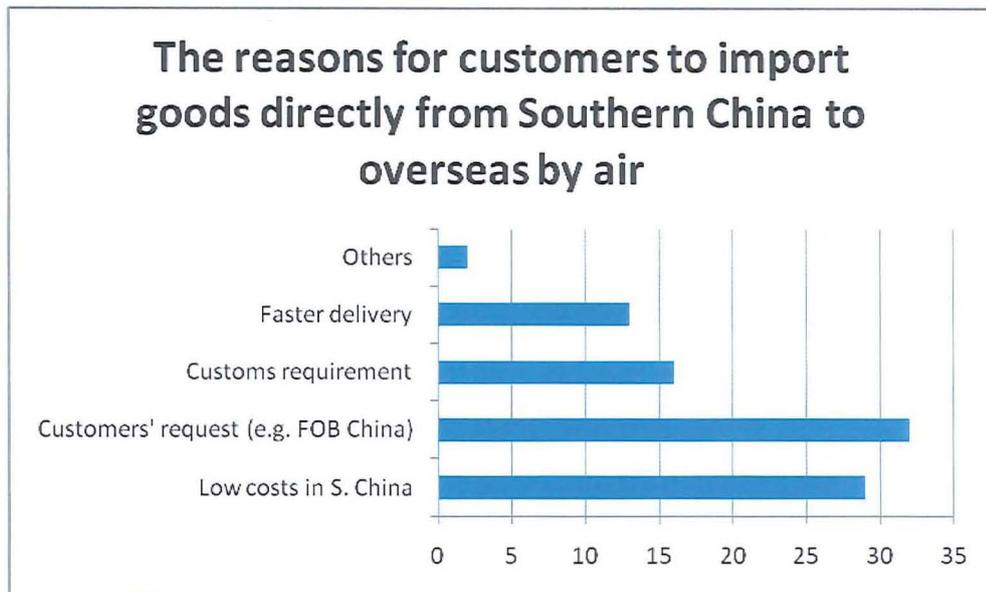


Figure 6.13 The reasons for our customers to import goods directly from Southern China to overseas by air

Low cost and high customer demand are the main reasons goods are directly exported/imported from/to Southern China to overseas by air. This shows that the LSAs of the PRD over Hong Kong are cost and distance from the manufacturing centre, which is consistent with Hong Kong's weakness, as shown in the SWOT analysis. Since the core competence of Hong Kong's port and logistics industry is not cost but the quality of service, this result indicates that because of weaknesses at present, the PRD LSPs are unable to compete with Hong Kong LSPs directly, hinder the LSAs of Hong Kong, and attract customers that originally use Hong Kong services. This is because cost is not their concern, and they want high service quality. Therefore, the ones using Hong Kong logistics services and port will remain loyal and will not turn to the PRD.

Table 6.27 Policies and actions that should be taken by Hong Kong government

	No. of Responses	%
24-hour cross-border customs clearance policy	43	87.8
Lower land cost for logistics industry	45	91.8
Improved air cargo facilities at Hong Kong Airport	23	46.9
Accelerated open sky policy	18	36.7
Improved ocean freight facilities at Hong Kong port	30	61.2
More subsidized training programme for logistics industry	27	55.1
Other	8	16.3

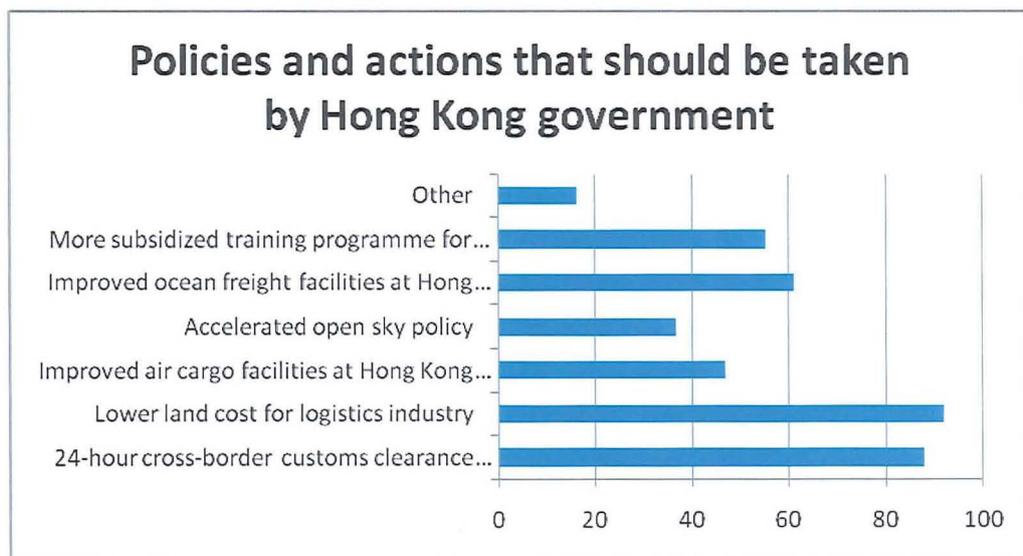


Figure 6.14 Policies and actions should be taken by Hong Kong government

The policies of 24-hour cross-border customs clearance and lower land cost for the logistics industry are believed to be the most important by the logistics service providers (Table 6.27 and Fig. 6.14). The literature indicates that the government plays very important roles in the competitiveness of the logistics industry. The RBV views government's policies as important resources, the LSA posits that the government's

administration and improvement in infrastructure are sources of comparative advantage, and TCE also hints that government regulation reduces opportunism and then decreases transaction cost. As the author mentioned before, the PRD's LSAs lies in operating cost and being near the manufacturing centre. However, through the policies of 24-hour cross-border customs clearance and lower land cost, the Hong Kong port and logistics industry can greatly reduce the disadvantage over PRD competitors. Moreover, improved facilities at HKIA and port, 'open sky' policies, and the training program can improve the resources of Hong Kong port and logistics industry and enhance their core competence and bring more competitive advantage. Therefore, customers will continue to use Hong Kong ports and logistics industry because of this capability improvement.

Chapter Seven Discussions of Key Results

In this chapter, the key findings of the interviews and survey are discussed. In particular, the first part includes the challenges faced by the Hong Kong logistics industry branching into the domestic market in China and the limitations of the asset-based logistics branching out from Hong Kong. Challenges and opportunities for the Hong Kong logistics industry in general, including Hong Kong's freeport status are also discussed. The second part covers the interpretation of survey results. The key findings including the factors associated with logistics performance and future expectations are discussed. The results are interpreted within the context of the theoretical concepts presented in Figure 2.2, Chapter Two.

7.1 Interpretation of the results with interviewees

All interviewees considered it very difficult, if not impossible, for the Hong Kong LSPs to become involved in the growing domestic markets in Mainland China. Even currently, most of the importers buy from the manufacturers in China, including the PRD, on FOB Hong Kong terms. Most of the finished goods in the PRD are trucked to Hong Kong to be forwarded to the world's markets by ocean and by air. Increasingly, more and more finished goods manufactured in the PRD are shipped out from the PRD ports and Guangzhou airport. The HKIA will be able to maintain its top air cargo status in terms of total throughput for a few more years because of its efficiency and connectivity with the major airports around the world. Manufactured goods from the PRD are generally trucked to the terminals of the Hong Kong LSPs by the manufacturers in the PRD. Forwarding logistics operators do not become involved in the trucking from the PRD to Hong Kong and have not developed working relationships with the manufacturers in terms of trucking services. This pattern also applies to the process management for the

goods manufactured and shipped out from the Yangtze River Delta (YRD) area. The more ambitious and forward thinking Hong Kong LSPs branching out to the PRD have not been involved in the domestic trucking market. The domestic logistics market has stayed at the basic stage, providing domestic trucking and offering basic warehousing services. Due to low profit margins, Hong Kong LSPs have not been exposed to the logistics users, nor are they interested in the domestic logistics market.

Asset-based infrastructural logistics operators will be less fortunate than their non-asset-based counterparts in branching out and participating in the fast-growing domestic logistics markets in Mainland China. Asset-based operators such as airport and port operators cannot move their fixed infrastructure to China, and can only handle the traffic brought in from the PRD and other parts of China by the truckers or feeder services. This is a classical example of asset specificity, an important construct in TCE, which has little value outside the exchange relationship (Grover and Malhotra, 2003). Nevertheless, asset-based infrastructural firms such as HIT and the Hong Kong Airport Authority have been successfully branching out to the China market by setting up joint ventures with local operators. HIT has set up joint ventures in the Yantian Port of the PRD and Shanghai, whereas the Hong Kong Airport Authority has acquired a 49% stake of the Hangzhou Airport Authority and a management contract at Zhuhai Airport. The Hangzhou and Zhuhai Airports were not interested in the capital injection; rather, they were interested in the service capabilities brought by the Hong Kong Airport Authority to upgrade their service standards and ultimately to generate profit. Admittedly, the return on investment as minority shareholders and the benefit to Hong Kong as a whole will be less significant than their own operations in Hong Kong. In contrast, non-asset-based logistics operators, including CL, freight forwarding logistics and 4PL operators, are at the forefront in managing the relationship with logistics service users and tend to offer one-stop solutions. They will not only continue to handle the logistics

requirements from the logistics services users in the PRD, they also pick up new business opportunities as their customers outsource their products from other parts of China outside the PRD. China is committed to increasing its domestic consumption. People in China, particularly the fast-growing middle class, will consume more and increase their appetite for imported luxurious items, which will offer tremendous additional logistics opportunities, a source of revenue with exponential potential.

Hong Kong LSPs have less exposure with importers in China and may not benefit from the fast-growing consumer market in China, at least in the short term. Progressively, as Hong Kong LSPs employ more local sales and marketing personnel and become more integrated into China's economy, they will be able to offer their 3PL skills and participate in the fast-growing consumer market in Mainland China. Their logistics experience and skill will assist their customers reducing coordination cost.

The Hong Kong logistics industry has been very successful in building up its international sales network through which they manage the relationship with importers in the US and Western Europe. The same importers that source manufactured goods in the PRD may also source the manufactured goods in the other parts of China. Traditionally, a majority of the ocean going shipments were transhipped via Hong Kong's port. With improved ports in the PRD and with the participation of the management of Hong Kong expertise, total throughput shipping out/in of the PRD ports has increased and has become almost at par with that of Hong Kong's port in 2008. Since 2005, four years after China joined the WTO, Hong Kong forwarding logistics operators were able to obtain their forwarding license and started trading in the PRD under their own names. The total PRD market was 45 million TEUs in 2008. Thus, there is a tremendous opportunity for Hong Kong forwarding logistics operators to increase their market shares in the PRD, a market that they were unable to handle or had handled previously through local licensed forwarding logistics companies.

As a freeport, Hong Kong does not levy import duties on goods brought in to its territory. Raw materials and semi-finished products are brought into Hong Kong, and kept and managed in the port mainly by logistics operators. Most of the inventory managed is for the manufacturing activities in the PRD. Due to predictable and efficient customs services, raw materials and semi-finished goods can be delivered to the manufacturers in the PRD on a time-definite basis to eliminate or reduce unpredictability and changeability, which affect market conditions and, subsequently, profit (Klein 1989; Klein, Frazier, and Roth 1990).

Indeed, Hong Kong's logistics industry can take advantage of its freeport status to strengthen Hong Kong's position as a preferred regional distribution centre. Goods can be kept in Hong Kong, not only to satisfy Hong Kong shoppers, but also to cut short the lead-time in order to support different commercial activities in China and in this region. Buyer consolidators receive finished goods from different suppliers, such as from the Philippines, Thailand, and China, and consolidate all goods and ship them as one single shipment to the buyers in the US and Western Europe.

The Secretary for Transport and Housing Bureau of the Hong Kong SAR government points out that the Hong Kong logistics sectors cannot compete with their Mainland counterparts on cost but have to move up gradually in the value chain toward high-end services. The Legislative Councillor representing the transport and logistics constituency states that value-adding is the way forward for the Hong Kong logistics industry to stay ahead of the competition at all times. She also adds that the industry needs to enhance the quality of logistics services through adoption of technology and by manpower training. Transparency in governance, the pro-business environment, user-friendly rules and regulations, and hassle-free customs have to be maintained. She has responded positively to the question of whether FFs should actively expand into the PRD by taking advantages of CEPA arrangements. Both top government official and

legislator relating to the logistics industry advocate value-creating strategies, a key concept under RBV that applies to 2PL and 3PL referred to in Fig. 2.2.

The general manager of CMA and former Chairman of Liners Association Hong Kong also advocates strengthening the role of Hong Kong as a regional distribution centre. His rationale is that since Hong Kong is a regional distribution centre, containers packed with imported goods can be used to fill the much-needed outbound cargo shipping out of Hong Kong. Additional popular take-off/landing time slots at Chek Lap Kok have been taken up by well-established airlines. A number of airlines operating in Hong Kong have to accept less convenient departure/arrival times. Many airlines have to take-off after midnight and arrive before six in the morning. Currently, Hong Kong is linked to more than 150 cities around the world by air; however, the Hong Kong Airport Authority has committed to offering air connectivity to 180 cities around the world. The consultant commissioned by Hong Kong Logistics Development Council and Hong Kong Trade Development Council in 2007 has told the author that increased air connectivity will increase air cargo capacity offered to the logistics industry to cope with the capacity demand by the logistics services users. The rationale is to spread the operating costs by increasing transaction frequency. Moreover, another LSP manager emphasised that the improved air connectivity between Hong Kong and China will speed up the movements of goods between 110 cities outside China and 40 airports inside China. Goods shipped out of 110 airports outside China can be transhipped via Hong Kong to 40 airports inside China and vice versa in a time-definite manner. This efficiency is due to predictable customs formality and world-class ground handling efficiency in Hong Kong. Elimination of uncertainty in these elements will reduce transaction costs (Klein, 1989, Klein, Frazin, and Roth 1990).

The Chairman of Hong Kong Terminal Operators Association has stated that the Hong Kong-Zuhai-Macau Bridge, which is expected to be completed by 2015, will

facilitate the movement of goods from the provinces in Southwestern China, such as the Guangxi and Sichuan Provinces. Logistics service users from these provinces have the options to use Shekou or Hong Kong for ocean freight, Guangzhou Airport or HKIA for airfreight, or Shanghai both for ocean and airfreight. He also adds that the ports in the PRD are jointly invested and managed by Hong Kong interests, and that this represents a horizontal inter-organisational cooperation to reduce transaction costs (see Rindfleisch and Heide, 1997). Therefore, the author predicts that Hong Kong's port and airport will excel in the competition with their counterparts in China, in terms of total transit time and supply chain management. Part of the traffic originating from Sichuan Province traditionally 'fed' into Shanghai may be rerouted via Hong Kong after the completion of the Hong Kong-Zuhai-Macau Bridge. This point is also echoed by other government officials.

The Chairman of HAFFA has opined that with a non-asset or asset-light business model, forwarding logistics operators can easily branch out to China, particularly in the PRD, which is a fast expanding market with tremendous potentials. According to an interviewed manufacturer, the move to Mainland China of many experienced Hong Kong logistics practitioners to pursue better career opportunities is a reflection of the quality and professional knowledge of Hong Kong logistics practitioners. From the logistics operators' point of view, they need to train up qualified logistics professionals to ensure their quality services. However, additional job opportunities have been created to fill the vacancies left by those Hong Kong logistics professionals who have moved to China. According to the President of CILTHK, Hong Kong has the opportunity to build itself as a logistics human resources centre that supports the logistics industry in China.

A number of logistics service users agree that forwarding logistics operators are at the forefront of logistics businesses by managing customer relationships and doing a

good job with importers in the major markets such as North America, Western Europe, and Japan through their own offices, or through working with agents around the world. Several shippers state that they not only source from the PRD but also from the YRD and other parts of China. The Chairman of Sea Freight Association Hong Kong has told the author that, after China relaxed the control of forwarding logistics licensing requirements in China, Hong Kong forwarding logistics operators can easily branch out to the PRD. They have a good chance of capturing part of the 23 million TEUs that are shipped out of PRD ports. Other LSP managers also agree that their international sales network stands a very good chance of getting part of the forwarding logistics business in fast-growing markets such as the YRD and Bohai areas. The sooner Hong Kong forwarding logistics operators branch out to the PRD, the YRD, and Bohai areas, the higher the probability for them to share a slice of the fast growing logistics markets in these areas.

Government officials have emphasised the importance of integrating Hong Kong into the PRD and GPRD markets. They state that the Hong Kong government's role is to create the business environment to motivate the private sector to integrate with the PRD logistics industry at a faster pace. Through Hong Kong government's effort, Hong Kong has been included into the master planning of the GPRD planning commission since March 2009. Several LSPs opine that it is Hong Kong government's forward-looking dynamism that drives several mega transportation projects. The Hong Kong-Zhuhai-Macau Bridge started construction in the beginning of 2010. Furthermore, the Guangzhou-Shenzhen-Hong Kong Express Rail Link has been approved by the Hong Kong government pending budget approval by the Finance Committee of Legislative Council. The Express Rail Link will cement Hong Kong's position as the business gateway to China, and will open up a wealth of new business opportunities. It will make commercial activities between Hong Kong and the

Mainland smoother and attract more foreign investors who will see Hong Kong as the portal to the China market. With a one-hour business circle created by the Express Rail Link, Hong Kong logistics sectors will be able to penetrate into the logistics markets in the major cities in the PRD. More and more Hong Kong logistics operators are anticipated to branch out into the PRD markets.

Ambitious local LSPs emphasised that due to the non-asset-based flexible structure, Hong Kong's forwarding logistics operators will be in a better position to be integrated into the PRD manufacturing logistics industry. They will continue to manage the relationship with importers and gain their confidence. The same decision-makers who decide the choice of LSPs for shipments going out via Hong Kong's port also decide the choice of LSPs for shipments going out of PRD ports. The international sales network established by Hong Kong's forwarding logistics industry will put them in a more advantageous position in their competition with their counterparts in the PRD.

7.2 Interpretation of the results of the surveys

Electronic and communication equipment (17.9%) and textile and apparel (15.45%) manufacturers are the main industry players in the PRD. The sample also covers a wide scope of industry types. This indicates that manufacturers in the PRD are expanding their business. Increasingly, they have developed more sophisticated industrial clusters that help them not only to keep their existing competitive advantage, but also to move up the global value chain. Approximately 80% of the sample of manufacturers comprises SME companies with less than 100 employees, and 40% of them have sales turnover of less than HK\$ 15 million. This also reflects that, collectively, SMEs are the main economic power in the PRD area and rely on imports and exports. They are highly connected to the global economy. Since the SMEs lack experience and resources to develop overseas markets, Hong Kong LSPs can help them expand their overseas markets. These characteristics of the manufacturers in the PRD

explain why the economic growth in the PRD brings many business opportunities for Hong Kong LSPs. This finding suggests that the Hong Kong government and business community should pay much more attention to SMEs. Concerning ownership, the author finds that many of the manufacturers are owned by Hong Kong interests. They share a similar culture with Hong Kong LSPs, which will reduce the transaction cost during collaboration. This is because that there are fewer conflicts if two parties have common beliefs and expectations of behaviours that result from having a similar culture. Consequently, the uncertainty and the opportunism are reduced, which leads to lower transaction cost. This also provides an opportunity for Hong Kong LSPs to participate in the Mainland market and share the benefits of economic growth.

The author finds that the main service provided by Hong Kong LSPs is freight forwarding (81.6%). During the survey, the author ascertained that one of the distinct competitive advantages of Hong Kong LSPs versus Mainland LSPs is their international sales network, followed by their professional skills and Hong Kong's freeport status. Furthermore, a majority of the respondents identified themselves as globally based (Hong Kong, China, rest of Asia, Europe, and America). This indicates that Hong Kong is a regional distribution centre, and that the main responsibility of LSPs is to ship finished goods and raw materials between China and the overseas markets. As Hong Kong's aviation industry continues to prosper and as the connectivity between Hong Kong and the PRD improves, LSPs' intangible assets (e.g., overseas experiences and connections) become more and more important in creating value. Therefore, the non-asset-based forwarding logistics business is one of the best ways to utilise soft skills fully. Half of the LSPs are owned by Hong Kong interests, which means that, in terms of infrastructure and culture, they are more familiar with doing business locally. Combining with the fact that many manufacturers are also owned by Hong Kong interests, this 'match' provides opportunities for LSPs to expand their businesses into

the PRD areas. Annual sales show that Hong Kong LSPs are evenly distributed in size. This indicates different LSPs might have their specialised markets. For the big ones, they may focus on serving a wide range of customer types to gain economies of scale, whereas for the small ones, they may be very flexible in providing customised services to some niche markets. In this way, the industry keeps a very good mix so that every customer can find a suitable supplier for its needs. This will lead to a very competitive environment and offers opportunities to the players.

The results indicate that the use of Hong Kong-based logistics providers is significantly differentiated between high-performance and low-performance manufacturers. However, there are no significant differences in terms of the choice of Mainland logistics providers. This indicates that Hong Kong logistics service providers are more capable in improving manufacturers' logistics performance. The literature review suggests that Hong Kong has a relatively pro-business environment compared with the PRD market, especially in financial services and IT service support. The interviews also reveal that Hong Kong logistics operators have been very successful in building up the international sales network through which they manage the relationship with importers in the US and Western Europe. Based on RBV, there are valuable resources that determine the capability and competitive advantage. Since Hong Kong-based LSPs have more resources than their PRD competitors, they play a more important role in determining the manufacturers' logistics performance. Although there is empirical evidence indicating that the PRD LSPs are catching up, the existing competitive advantages are important opportunities for Hong Kong LSPs to expand their business because the PRD LSPs have a long way to go before this can be accomplished. This is also echoed by the interviewees that many experienced Hong Kong logistics practitioners have been attracted into the Mainland market.

The results suggest that the applications of JIT supply chain and

manufacturing-logistics integration are also positively associated with logistics performance. The manufacturing activities in PRD areas, associated with China's high speed of economic growth, have been viewed as important drivers of the development of the LSPs. However, according to RBV, whether the advanced logistics infrastructure can contribute to the overall performance is also determined by the manufacturers' own resources. The interviews suggest that, currently, for Hong Kong LSPs, increasing exposure with importers in China is relatively difficult, and they may not benefit from the fast-growing consumer market in China at least in the short term. The reason might be related to the application of manufacturing practices. The TCE argument emphasises total cost in transactions. In this context, if the manufacturers have tedious internal operations, it would be very costly for manufacturers to coordinate the logistics operations with LSPs. This might lead to higher transaction costs. However, the implementation of JIT supply chain and integration greatly reduce the transaction cost between manufacturer and LSP. The application level of advanced manufacturing practices constitutes a great challenge for Hong Kong LSPs if the Mainland manufacturers have not developed suitable resources in terms of processes and procedures. Becoming involved directly with the PRD's manufacturers' everyday operations would become very difficult for the Hong Kong LSPs. Therefore, the author suggests that Hong Kong LSPs take appropriate actions to help PRD manufacturers to develop their manufacturing practices that help them to fit in better with LSPs operations. These activities might demand resources; however, in the long run, it might help Hong Kong LSPs to penetrate PRD markets and partake in the benefits of China's economic development.

The legal system and efficient customs service in Hong Kong can explain the difference between high-performance and low-performance manufacturers. However, the efficiency of China customs does not affect performance. This can also be explained

by TCE. To be specific, an inefficient legal system will cost companies more during a transaction. Without a transparent legal system to enforce contracts, cooperation between two companies would be difficult and sometimes impossible, and companies would incur extra expenses to protect their interests by weeding out undesirable outcomes. This leads to higher transaction costs. In contrast, under a transparent legal system, companies incur lower transaction costs, leading to better financial performance. Customs also plays a similar role. However, interestingly, only Hong Kong customs significantly affect performance positively. The author attributes the efficient customs service in Hong Kong to its more professional orientation compared to their counterparts in China. If the LSPs and manufacturers are familiar with Hong Kong customs services, they will conduct their business with predictable outcomes and achieve better returns on their investments. However, China customs is not well developed, which prevents LSPs from delivering predictable outcomes, no matter how hard they try. Under this situation, LSPs ability to deliver is constrained by the uncertainty of China customs services. Thus, Hong Kong customs is associated with efficient logistics performance, whereas China's customs is not. Therefore, LSPs should study the regulations of Hong Kong customs to improve logistics performance. The same effort may or may not bring the desired results from China's customs.

In exploring the future directions of LSPs, the author has found that government policies and regulations significantly affect LSPs' future decisions. The interviews and literature review reveal that the Hong Kong government affects the performance of the LSPs through several ways, such as the construction of the third runway at Chek Lap Kok Airport, building the Hong Kong-Zhuhai-Macau Bridge, introducing a simple and low corporate/personal tax system, zero-tolerance of corruption; transparent legal system, and world-class financial and IT service support. The pro-business environment gives Hong Kong LSPs a competitive edge compared with their counterparts in the PRD.

Based on RBV, the pro-business environment creates competitive advantages for Hong Kong LSPs. Therefore, a more favourable business environment will encourage the LSPs to expand their business.

The author also finds that industry-shifting also plays its role in determining LSPs' future decisions. The development of the Chinese economy is unbalanced; the PRD area is much more advanced than the other areas, such as Guangxi, Yunnan, and Guizhou provinces. Along with increasing labour and land costs, some manufacturers are considering moving out of the core areas of the PRD, such as Dongguan, Shenzhen, and Zhongshan, to the surrounding areas. This is also facilitated by the government policies and regulations since the PRD government plans to 'upgrade' its industries, whereas the surrounding areas are keen to take over the lower-end assembly industries in order to drive their economic growth. Operating costs will drive manufacturers to the areas where competitive advantages are created. To some manufacturers, moving out of the PRD into other areas becomes a good option. Relocation of industries into the hinterland or outside China will create logistics demand. LSPs will find it easier to enter a new market along with the manufacturers. Therefore, industry-shifting provides a great opportunity for Hong Kong-based LSPs to expand their business to other areas inside and outside China.

Interestingly, the competition does not significantly affect LSPs' future decisions. China's high-speed economic growth creates many business opportunities for the LSPs. While operating in a very competitive environment, Hong Kong LSPs are still able to find new business, which can be credited to a well-developed international network and the focus on different market niches compared with local LSPs. However, the literature review indicates that local LSPs are improving their capabilities and 'catching up' on some aspects. Hong Kong LSPs have to stay ahead and find ways to maintain their competitive advantage. One possible way is to invest more in external networks, which

will help them to further differentiate themselves from local LSPs in China. The other way is to cooperate with local LSPs by developing their capabilities.

Surprisingly, operating cost does not significantly affect decisions on future directions. According to TCE and LSA, cost is an important determinant of business decision. The plausible explanation may come from the author's focus on human capital to measure cost. Thus, this result indicates that the cost for human resources in the PRD area will not become a constraint for LSPs because competitors have more or less cost structure in human resources. The new labour law introduced in 2008 also increases the labour cost in PRD, which reduces its cost advantage compared with Hong Kong. Moreover, in recent years, the PRD government has not only attracted capable workers from the whole country, it has also supported the local educational institutes to train logistics workers. In addition, China's high-growth economic development has also attracted a good supply of expatriate logistics professionals to work in China. Thus, PRD will have less competitive disadvantages compared with Hong Kong in terms of human resources support. Hiring suitable staff in the PRD is not a problem for Hong Kong LSPs who do not view operating cost as an important factor for their future development in China because their competitors will have the same burden. This finding shows that human resource is no longer a location-specific advantage for Hong Kong. However, this is still an opportunity instead of a challenge for Hong Kong LSPs because they can opt to improve their human resources, which will support them when they expand their business in the PRD.

The survey shows that the most important reasons for PRD's export/import shipping through Hong Kong by air are dependable logistics services, which include efficient customs service, direct flight to final destinations, predictable transit handling, reliable forwarding services, better flight connections, consolidation, and quality control in Hong Kong; lower line-haul is not the main reason. These indicate the location-specific

advantages of Hong Kong in the form of the soft skills and intangible resources of its LSPs, but not on the lower line-haul cost reduction. To be specific, Hong Kong customs' significance is related to logistics performance. Thus, the efficiency and effectiveness of the customs will attract the customers to go directly through Hong Kong. The interviews reveal that the development in the aviation industry, such as the third runway in HKIA, has been viewed as an important way to improve the competitiveness of Hong Kong LSPs. Furthermore, Hong Kong LSPs offer better supply chain solutions in terms of more direct air connectivity with overseas markets. These intangible resources, combined with tangible infrastructure benefits, provide Hong Kong a unique position in this area and drive customers to ship directly from Hong Kong to overseas markets. The survey also indicates that Hong Kong LSPs are good at providing world-class forwarding logistics services. Coupled with predictable transit handling and quality service, Hong Kong LSPs offer value-added services and greatly reduced transaction cost by controlling for the risk during transportation. Therefore, shipping through Hong Kong incur greater direct shipping cost; however, the service quality is much better, resulting in a lower overall transaction cost. According to RBV and LSA, Hong Kong LSPs should focus more on their knowledge and other intangible resources (such as air connectivity with overseas markets, knowledge on quality control and consolidation, and freight forwarding service) because these are the source of their competitive advantages. The Hong Kong government's role is to assist Hong Kong-based LSPs to differentiate themselves by offering high-quality value-added services.

The main reasons for shipments going out from PRD port/airports are requests from customers for lower shipping costs. This suggests that Hong Kong and the PRD complement each other and have their own separate, market niches. Manufacturers that focus on a cost leadership strategy will ship directly from the PRD ports to reduce cost. In contrast, manufacturers that focus on a differentiation strategy and that demand high

service quality will ship through Hong Kong. Based on the arguments of LSA, this result indicates that Hong Kong's advantage lies in its service quality, whereas South China's advantage depends on its low-cost position. At the same time, these characteristics also provide both opportunities and challenges for Hong Kong LSPs. With the development of China's economy and upgrading of industry focus, some manufacturers in the PRD demand high-quality and value-added logistics services. These demands cannot be satisfied by local LSPs. Quality LSPs are more dedicated to high-end customers but they might lose market share from customers who require low-cost services unless they have a different strategy to deal with this market segment. Since SMEs are more interested in cheaper shipping costs, the author suggests that Hong Kong LSPs apply differentiation and cost leadership strategies in order to maintain their market shares both in the high- and low-end segments of the market in order to partake fully in the benefits of market developments in PRD logistics services.

From the LSPs' perspective, the 24-hour cross-border customs service, low land cost for logistics industry, and improved ocean freight facilities are the necessary policies and actions for improving competitiveness. These activities are evidently highly related to operating costs. As evident from the previous analysis, the location-specific disadvantage of Hong Kong LSPs compared with PRD competitors lies in high operating costs. To compete with the PRD logistics service providers, Hong Kong LSPs need to reduce their operating costs dramatically. Some of the costs are out of the control of LSPs and require government assistance (e.g., infrastructure development, land and labour cost, and regulations). To be specific, the 24-hour cross-border policy enables LSPs to deliver goods from South China to Hong Kong without delay. This not only greatly reduces inventory and transportation cost, it also decreases total lead-time. However, Hong Kong's land cost is much higher than that of the PRD. This greatly increases Hong Kong LSP's operating cost. Affordable land exclusive for logistics use

offered by the Hong Kong Government will greatly enhance Hong Kong LSPs' competitive advantages. Developments in logistics infrastructure will also help Hong Kong LSPs reduce transaction cost and enable them to offer more competitive pricing to customers. Hong Kong LSPs have captured, and will continue to capture, the high-end of the market by offering dependable quality logistics services. Although local LSPs in the PRD still have the low-cost advantage over Hong Kong, with the help of the Hong Kong Government, LSPs can trim their operating costs and reduce the gap.

8.1 Conclusion

The Hong Kong forwarding logistics industry has benefited from the strong logistics demand of manufacturers operating in the PRD. If the operating environment in the PRD does not motivate the manufacturers to stay, demand for forwarding logistics services will weaken. With China's relatively stable political environment, low wages, and affordable land cost, the PRD will continue to attract foreign direct investment particularly in the manufacturing sectors. In turn, manufacturing industries in the PRD will continue to demand forwarding logistics support.

The author argues that manufacturing activities in the PRD will continue to benefit from the trends in outsourcing practice and globalisation in manufacturing. For the foreseeable future, there does not seem to be a viable substitute anywhere in the world for China, where large and competitive manufacturing facilities can be set up to satisfy the needs of consumers around the world. This substitute cannot be found in India, in Vietnam, or elsewhere, because China's opening has enabled it to capture just in time the opportunity given by globalisation in manufacturing, an opportunity that arrives once in a century. This has also enabled China to build clusters in the manufacturing sector that generate very large economies of scale.

If the competitive advantages of the manufacturing sector in the PRD can be established, the question to be answered is whether Hong Kong's forwarding logistics industry can maintain and expand its market shares in the PRD market. The Managing Director of Hong Kong Air Cargo Terminal Ltd. (HACTL) has predicted that in the next six to eight years, the Hong Kong air cargo industry will continue to lead the world in terms of total air cargo throughput. However, with the dramatic infrastructure

improvements on Guangzhou Airport and the active participation of global and, to a lesser degree, of Hong Kong-based forwarding logistics groups in the PRD logistics market, the scene will gradually change as more air cargo will be shipped out from Guangzhou Airport. With Hong Kong gradually integrated into the PRD economy, global or Hong Kong-based forwarding logistics groups will also take advantage of Guangzhou Airport to maximise their profit opportunity by managing the expectations of their customer accordingly. The PRD area has also made significant investments to improve its airport and seaport facilities. The developments of modern port facilities at Shekow, Yantian and Chiwan ports, the construction of the Hong Kong-Macau- Zhuhai Bridge, and the building of direct railway service linking Hong Kong Airport and Shenzhen Airport will all greatly improve the logistics infrastructures. Moreover, the SuperLink China Direct service, the airport express lane, and Quick-Customs-Clearance closely tie Hong Kong and the PRD together. All these logistics infrastructural developments will facilitate the quality Hong Kong logistics operators to penetrate into the PRD logistics market in a more integrated manner.

In terms of ocean freight, there has been clear evidence that more and more shipments have been and will be shipped through the PRD ports. In this respect, asset-based operators such as the terminal operators at Hong Kong's port and, to a lesser degree, the trucking operators moving cargo between the PRD and Hong Kong, will see their market shares stagnate or become gradually reduced. Nevertheless, there is less negative impact on forwarding logistics operators that operate with an asset-light business model and can move or adjust their operations to avail themselves of better business opportunities. They handle the entire processing of shipments and manage the relationship with most of importers who pay freight charges. The forwarding logistics industry does not have asset specificity issues, which are a key element in transaction cost economics. Its market is not limited to Hong Kong, but the whole of the PRD and

the rest of China including Shanghai, Ningbo, Qingdao, Xiamen, and Tianjin.

This thesis has developed a conceptual framework based on three theories: transaction cost economics; resource-based value; and location-specific advantages. TCE focuses on the cost of economic exchange between two parties, RBV analyses the resources and competences of the firm, LSA explores the impact of the business environment. Therefore, combining these three theories can provide a holistic view of the challenges and opportunities faced by the Hong Kong logistics industry. The author conducted several interviews and survey to test this model. Empirical evidence shows that the strengths of the Hong Kong logistic industry lie in infrastructure facilities, professional logistics personnel, government support, customs services, regional office status, overseas sales network, legal system, tax system, and IT/financial support, whereas its weaknesses are operating costs and location from the manufacturing centre. The business environment creates not only opportunities in terms of political stability, air and ocean connectivity, and WTO membership but also threats in terms of the Sino-US relationship, competition from other production centres, RMB appreciation, new labour laws, and shortage in labour supply. Moreover, the analysis also indicates that the PRD will continue to use the Hong Kong logistics industry, particularly for high-end products. Compared with the PRD logistics operators, Hong Kong LSPs have developed and accumulated more resources (e.g., JIT supply chain, legal system, and customs system) that are important for improving manufacturers' logistics performance and reducing associated transaction cost. Moreover, PRD exporters will also continue to use Hong Kong's airport and seaport because they enjoy more LSAs (e.g., government policies, rule of law, predictable customs service, fair competition, and industrial shifting). These are important determinants for LSPs to plan their future directions.

8.2 Contributions

In Chapter One of this thesis, a number of contributions were identified, and these

are expanded upon below. This thesis represents the following:

- The first detailed analysis of the views of manufacturers, logistics companies, and governments in the industry: a number of detailed and in-depth interviews with key players were undertaken to ascertain their views on the current state and future challenges and opportunities facing the logistics industry in Hong Kong. These provide clear insights into the thoughts at the official level, as well as those of the industry and manufacturers, and represent a very rich source of information that can be built upon in future research. These interviews also highlight key issues that have clearly been in the minds of the key players but have not been aired until now.
- The first detailed statistical analysis of the future implications for the industry: the surveys undertaken for this research are the first, to the author's knowledge, to focus upon a wide range of issues and variables that directly relate to the challenges and opportunities facing the logistics industry. The factor analysis results are strongly robust and indicate that many of the 'fears' expressed by the key players (interviews), as well as the industry itself, are unjustified. However, this does not mean that the industry has a 'rosy' future if no strategic action is taken. The SWOT analysis, derived largely from statistical analysis results, suggests that there are still a number of issues facing the industry that need to be addressed.
- An analysis of the extent to which current theory can help to explain logistics developments in this part of the world: the standard theories represented in transaction cost economics, resource-based value, and location-specific advantage, all from economics, are in themselves insufficient to explain the historical development or the likely future path of the industry in the PRD region. This is largely because of the limitations these theories contain in relation to the specific case of the logistics industry in a specific regional context.
- An assessment of the limitations of current theory in the context of the PRD region:

The theories focused upon in this research have a number of limitations. This is largely because of these theories are mainly Western in origin and do not fully take account of cultural issues specific to the region, the dramatic impact of globalisation on the region, and the very rapid growth rates in many of the PRD regional economies. This is unsurprising; however, these limitations do allow for future research to start building upon on how these theoretical models can be better developed to deal with the specifics of regional economic development.

- The development of a more useful conceptual tool for understanding the industry in the PRD region: the academic literature on the logistics industry in general tends to be rather descriptive in terms of classifications of the various components that make up the industry. However, this research has been able to show that, in fact, very strong insights provided by TCE, RBV, and LSA theories enable us to understand better the industry and its role in economic development. However, these do not suffice for all kinds of classifications in the industry; we have been able to show that different levels of the logistics industry (2PL, 3PL, and 4PL, for example) are more attuned in their functions to different elements within these theories. Hence, only some elements of the three theories are actually useful in analysis of different sectors within the industry as a whole. This is very important because it allows future research to focus upon these key elements and possibly to build better and more insightful models that can be used to develop a more comprehensive theoretical framework.
- A critical analysis of the Hong Kong forwarding industry's future direction: overall results show that the industry in Hong Kong is unlikely to suffer terminal decline. Its future appears reasonably bright, but only if the industry can better integrate its activities with the PRD manufacturers and the PRD logistics service providers. A 'do nothing' strategy is simply not an option because investments by

the PRD-based providers continues apace, and thus, the Hong Kong industry will need to invest in order to maintain its market share in the future. Other actions required are discussed in the following section.

8.3 Recommendations

The Hong Kong logistics industry cannot compete with its counterpart in the PRD on prices. The strengths of the Hong Kong logistics industry are its efficiency and overall supply chain management effectiveness. The industry needs to strengthen and invest in high value-added consolidation and deconsolidation services to attract buyers and retain its customers from around the world. The industry has to move up on the value creation chain by specialising in high-value products such as wine and pharmaceutical logistics, which require profound professional knowledge, in addition to the general merchandise such as apparels and electronics.

By leveraging on Hong Kong's freeport status, logistics operators can build on and strengthen Hong Kong as a regional distribution centre. Luxury items can be kept in Hong Kong and re-forwarded to Mainland China consumers only if and when the goods are required. By carrying imported goods into the distribution centres in Hong Kong, the much-needed empty containers will be positioned in Hong Kong for the export of manufactured goods.

Hong Kong's experienced and knowledgeable logistics professionals have been drawn into the Mainland logistics markets. Government and academic institutions should make an extra effort to train and develop logistics professionals to meet the needs of the logistics sector, not only for Hong Kong, but also for the fast-expanding Mainland market. Indeed, the Institute of Chartered Logistics and Transport in Hong Kong and the Hong Kong Association of Freight Forwarding and Logistics Limited have jointly offered a training course designed for logistics professionals at the entry/intermediary levels, with financial support from the Hong Kong Logistics Development Council. The human resources pool built in Hong Kong through

continuous training and development will not only support the Hong Kong logistics industry in Hong Kong, but also the head office functions of logistics companies who have branched out into Mainland China.

With the financial assistance of Hong Kong Logistics Development Council, a Digital Trade and Transport Network (DTTN) has been established and is being operated by Trade Link Ltd. and other IT service providers specialising in trade and service sectors. The logistics industry should work very closely together with Trade Link Ltd. or similar IT service providers to add attributes to the industry-wide electronic platform for the continuous improvement of logistics services efficiency.

Hong Kong will continue to lead the world in total air cargo throughput for the foreseeable future. However, there are signs of saturation on the operations at HKIA. Many airline operators have to accept less-favourable take-off/landing times very early in the morning or after midnight. The author recommends that the Hong Kong government introduce measures that will support Hong Kong-based LSPs in their efforts to strengthen the Hong Kong market share and to penetrate the Mainland market. Such measures would include subsidised training for logistics professionals, arbitration services, and advocacy for a level playing field in licensing requirements for Hong Kong logistics companies operating at the PRD and other parts of China. The author suggests that the LSPs work very closely with manufacturers when they consider shifting their manufacturing to other areas and take logistics costs into consideration. Holding aviation exhibitions, expanding air connectivity, and facilitating LSPs expansion into the China market particularly in the PRD will provide opportunities for Hong Kong LSPs. To be specific, the Hong Kong government can do its part to support further air cargo throughput growth by doing the following:

- 1) Building the third runway that would enable Hong Kong Airport Authority to accommodate more flights operating out of HKIA
- 2) Increasing the take-off/landing frequencies within the given operating hour by upgrading

the technology at the airport control tower and staff capability by continuous training

- 3) High-level liaison with the Mainland government in an effort to improve utilisation of airspace time. At the moment, utilisation of airspace in eastern China, a very important passage for East Asia and trans-Pacific routes, is constrained by military control. Take-off and landing during the day cannot be done at an optimal level because of certain restrictions.

The strength of the non-asset-based logistics industry in Hong Kong is in forwarding logistics, which manages the relationship with customers in major markets such as North America and Western Europe, either through its own network or agency relationship. Both assets-based and non-asset-based air-related logistics operators, will hold on to their leading positions at least for a few more years to come. On the shipping side, the throughput at the PRD ports has almost caught up with that of Hong Kong's port. However, most the forwarding logistics part of the ocean traffic on the other side of the border is still in the hands of Hong Kong-based logistics operators. Fortunately, for Hong Kong logistics operators, the PRD market is one of the most important logistics markets in the world and is close to Hong Kong. While they still maintain their excellent relationship with the ultimate customers overseas, they should make a major effort to branch out at least to the PRD market or to the other major logistics markets in China such as Shanghai, Xiamen, Qingdao, Tianjin, and Ningbo. If they do not take steps to do this major transformation to turn themselves into China logistics players, their position will be replaced by strong local logistics operators emerging in the PRD or other parts China. Non-asset or asset-light logistics operators such as forwarding logistics operators, unlike non-mobile asset-based logistics operators, are sufficiently mobile to geographically adapt and expand their operations to meet the needs of their customers.

8.4 Limitations and future research

This research is an attempt to provide an analysis of the prospects for the Hong

Kong-based forwarding logistics industry. This study does not provide a very detailed discussion of the division of works within various sectors of the logistics industry. In-depth knowledge is required in the logistics industry to understand the importance of relationships between forwarding LSPs and the ultimate freight-paying parties that decide whom to use and where to ship their goods from the PRD and other parts of China.

The shipbuilding industry has shifted from the UK to the European continent, Japan, Korea, and China. The forwarding logistics industry has shifted from Japan to Hong Kong, Taiwan, Korea, and China. Fortunately, for the forwarding logistics operators in Hong Kong, one of the world's most important catchment areas for the forwarding logistics business is within one-hour driving distance from Hong Kong.

Apparently, the forwarding logistics practitioners in Hong Kong logistics industry have an optimistic view on their future role in the PRD and the Great PRD market. This is because the core competence of non-asset-based LSP is intangible knowledge and experience, and not tangible investments. This means that they can move together with customers to enter new markets without much sunk cost at a specific location. In contrast, the core competencies of asset-based LSPs are tangible facilities, a classic example of the issue of asset specificity. Further research is required to establish whether home-grown forwarding logistics operators in the PRD can replace Hong Kong-based forwarding logistics operators in the PRD market. Such research could benefit from utilising the conceptual framework developed in Chapter Two of this thesis.

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Appendix I Semi-structured interview protocol

Following questions were posed to government officials in Hong Kong, logistics service providers, logistics service users and academia:

- Any chance for Hong Kong logistics industry to participate the fast growing domestic logistics markets in Mainland China?

- Will Hong Kong logistics industry be marginalized in the fast-growing Mainland China consumer market, they key driver for growth in the decade ahead?

- What advantages do Hong Kong's Freeport status offer to Hong Kong logistics industry?
- In view of Hong Kong's free port status, is there an opportunity for Hong Kong logistics industry to strengthen its role as a regional distribution centre?

- To what extent the third runway in Hong Kong will strengthen Hong Kong airport as the top cargo airport in the world in the current and next decade?

- To what extent improved air connectivity between Hong Kong and China will strengthen Hong Kong's top cargo airport positions?

- To what extent will the Hong Kong-Zuhai -Macau Bridge bring new opportunity to Hong Kong logistics industry?

- Since many experienced Hong Kong logistics practitioners have been drawn into the

Mainland market, is that an opportunity other than a threat to Hong Kong logistics practitioners and Hong Kong logistics industry?

- Should Hong Kong logistics industry aggressively branch out into PRD and the coastal cities in China?

- How can Hong Kong's logistics industry integrate with the PRD logistics industry with a faster pace?

- Is the freight forwarding sector better placed than contract logistics sector in the integration process between Hong Kong and the PRD logistics industry?

Appendix II Questionnaires sent to Manufacturers

Challenges and Opportunities of Hong Kong Logistics Industry

I. Background

Hong Kong logistics industry, particularly in the freight forwarding sector, has faced increasing challenges and lost its top position on the container traffic. On the air cargo front, although Hong Kong freight forwarding sector is still leading the world as top air cargo centre, Hong Kong Government and private sectors are wondering the long term substantiality of Hong Kong as the top air cargo centre in the world.

II. Survey Objectives

This exercise is part of the process to find out whether Hong Kong freight forwarding sector has satisfied and played an indispensable role in the supply chain for the manufacturers and other logistics services users in the Pearl River Delta.

Section A – Company profile

A1. Your company name _____

Name of your department _____

Your name _____

Your position in the company _____

Email address _____

Telephone/ Fax _____

How long your company has been in business _____

A2. Number of employee of your company

- Less than 50 51 – 100 101 – 200 201 – 300
 301 – 500 501 – 1000 1001 – 2000 2001 – 5000
 over 5000

A3. Types of manufacturing (please tick one box)

- Food & beverage Electronics & communication equipments
 Textile & apparel Electrical equipments
 Transportation equip Machinery
 Chemical & petrochemical Plastics
 Rubber & plastics Watches & clocks
 Precision instruments Pharmacy
 Metal Wood & furniture
 Publishing & printing Jewellery
 Toys Others _____

A4. Ownership structure of the company (please tick one box)

- State owned
 100% owned by Hong Kong interest
 100% owned by foreign interest
 Joint venture between Hong Kong interests and other interests

A5. Annual sales turnover in HK\$ million in 2007 (please tick one box)

- Less than 5 5.1 – 10 10.1 – 15 15.1 – 25 25.1 – 30
 30.1 – 50 50.1 – 100 100.1 – 250 250.1 – 500
 500.1 – 1000 Over 1000

Section B – Your logistics services provider

The following statements describe your forwarding services provider(s). Please indicate whether you agree or disagree with each statement.

Please note that Strongly Agree = 1 and Strongly Disagree = 7

1. Our services provider offers the lowest total logistics costs	1	2	3	4	5	6	7
2. Our services provider is user friendly	1	2	3	4	5	6	7
3. Our services provider is flexible to meet our changing needs	1	2	3	4	5	6	7
4. Our services provider offers a wide range of services	1	2	3	4	5	6	7
5. Our services provider offers high value added services	1	2	3	4	5	6	7
6. Our services provider offers reliable services	1	2	3	4	5	6	7
7. Our services provider offers a high level of responsiveness to our needs	1	2	3	4	5	6	7
8. Our services provider offers fast pick up and delivery	1	2	3	4	5	6	7
9. We are satisfied with the service quality of our services provider	1	2	3	4	5	6	7
10. We are satisfied with the rates offered by our services provider	1	2	3	4	5	6	7
11. Overall, we are satisfied with our services provider	1	2	3	4	5	6	7
12. Our services provider is a Hong Kong based logistics service provider	1	2	3	4	5	6	7
13. Our service provider is a Mainland China based logistics Service provider	1	2	3	4	5	6	7
14. The existing service provider is our choice	1	2	3	4	5	6	7
15. We use the existing service provider(s) to comply the requirements of our customers	1	2	3	4	5	6	7
16. We have minimized our logistics costs by using our existing service provider	1	2	3	4	5	6	7
17. We have been able to refocus on our core business by using our existing service provider	1	2	3	4	5	6	7

Section C – Your supply chain management practices and logistics operations

C1. Please indicate to what extent you agree or disagree with each of the following statements about your plant and organization.

Strongly Agree = 1 and Strongly Disagree = 7

1. We seek short lead time in designing our supply chains	1	2	3	4	5	6	7
2. We purchase in small lots to reduce supplier lead time	1	2	3	4	5	6	7
3. Our company strives to shorten supplier lead time to avoid inventory and stock outs	1	2	3	4	5	6	7
4. Our suppliers deliver to us on a just-in-time basis	1	2	3	4	5	6	7
5. We receive daily shipments from most suppliers	1	2	3	4	5	6	7
6. We can depend upon on-time delivery from our suppliers	1	2	3	4	5	6	7
7. Our suppliers are linked with us by a pull system	1	2	3	4	5	6	7
8. Our customers receive just-in-time deliveries from us	1	2	3	4	5	6	7
9. We can adapt our production schedule to meet sudden changes of demand from our customers	1	2	3	4	5	6	7
10. Our customers have a pull type link with us	1	2	3	4	5	6	7
11. We postpone the purchase of components that differentiates final product configurations until the latest possible moment	1	2	3	4	5	6	7
12. We rely on flexible suppliers for components that differentiates final product configurations	1	2	3	4	5	6	7
13. We use JIT production and Kanban system	1	2	3	4	5	6	7
14. We work with suppliers to improve inter-organizational processes	1	2	3	4	5	6	7
15. We work with customers to improve inter-organizational processes	1	2	3	4	5	6	7
16. We try to reduce response time throughout the supply chain processes	1	2	3	4	5	6	7

C2. Please indicate whether you agree or disagree with the following statements concerning integration or information sharing between your organization and your major logistics service providers.

Strongly Agree = 1 and Strongly Disagree = 7

1. There is a high level of information exchange with our service providers	1	2	3	4	5	6	7
2. We access to our service providers' system to tract our shipments	1	2	3	4	5	6	7
3. Our service providers share its shipment schedule and capacity with us	1	2	3	4	5	6	7
4. We share our service demand forecast with our service providers	1	2	3	4	5	6	7
5. Our major service providers help us to improve processes	1	2	3	4	5	6	7
6. We hold meetings with our service providers on a regular basis to solve problems	1	2	3	4	5	6	7
7. We and our service providers informally work as a team together	1	2	3	4	5	6	7
8. We conduct joint planning to anticipate and resolve operational issues	1	2	3	4	5	6	7
9. We develop a mutual understanding of responsibilities with our service providers	1	2	3	4	5	6	7
10. We make joint decisions with our service providers about ways to improve overall logistics cost efficiency	1	2	3	4	5	6	7
11. We and our service providers achieve goals on logistics collectively	1	2	3	4	5	6	7
12. Our service providers work with us to design the customized billing	1	2	3	4	5	6	7

Section D – The role of Mainland China Government

D1. Please indicate whether you agree or disagree with the following statements.

Strongly Agree = 1 and Strongly Disagree = 7

1. Relevant laws (such as contract laws and intellectual property laws) dealing with disputes need improvement	1	2	3	4	5	6	7
2. The costs (fee and time) of settling disputes among companies through legal action is high	1	2	3	4	5	6	7
3. It is difficult to take legal actions to get a fair judgment	1	2	3	4	5	6	7
4. The judicial system is difficult to be executed smoothly	1	2	3	4	5	6	7
5. Overall, litigation is an effective means to settle disputes among companies	1	2	3	4	5	6	7
6. Legal services in China such as arbitration system and law firms need to be improved	1	2	3	4	5	6	7

D2. Please indicate whether you agree or disagree with the following statements concerning the customs used by your company most frequently in Hong Kong and Mainland China.

Strongly Agree = 1 and Strongly Disagree = 7

1. Overall, we are satisfied with the current services provided by Hong Kong customs	1	2	3	4	5	6	7
2. Overall, we are satisfied with the current systems and procedures provided by Hong Kong customs	1	2	3	4	5	6	7
3. Overall, we are satisfied with the current services provided by Mainland China customs	1	2	3	4	5	6	7
4. Overall, we are satisfied with the current systems and procedures provided by Mainland China customs	1	2	3	4	5	6	7

We appreciate your patience and assistance in responding to the above questionnaires. A copy of the findings will be shared with you when the survey is completed.

Appendix III Questionnaire sent to Logistics Service Providers

Challenges and Opportunities of Hog Kong Logistics Industry

I. Background

Hong Kong logistics industry, particularly in the freight forwarding sector, has faced increasing challenges and lost its top position on the container traffic. On the air cargo front, although Hong Kong freight forwarding sector is still leading the world as top air cargo centre, Hong Kong Government and private sectors are wondering the long term substantiality of Hong Kong as the top air cargo centre in the world and whether Hong Kong freight forwarders will lose their market share gradually.

II. Survey Objectives

This exercise is part of the process to identify challenges faced by and opportunities available to Hong Kong logistics industry particularly in freight forwarding sector. The findings of this survey will be shared with other logistics players in Hong Kong.

Section A – Company Profile

A1. Your Company's Name: _____

Name of your department: _____

You're Name: _____

Your position in the company: _____

Email address: _____

Telephone Fax: _____

A2. Your Service Portfolios (please tick)

- | | |
|-----------------------|--------------------------|
| Freight forwarding | <input type="checkbox"/> |
| Third party logistics | <input type="checkbox"/> |
| Four party logistics | <input type="checkbox"/> |
| Warehousing | <input type="checkbox"/> |
| Trucking services | <input type="checkbox"/> |
| Other | <input type="checkbox"/> |

How long has your company been in business: _____ Years

A3. Ownership structure of the company (please tick one box)

- | | |
|---|--------------------------|
| 100% owned by Hong Kong interests | <input type="checkbox"/> |
| 100% owned by foreign interests | <input type="checkbox"/> |
| Joint venture between Hong Kong interests and foreign interests | <input type="checkbox"/> |

A4. Annual sales in HK\$ million in 2007 (please tick one box):

- | | | | | | | | |
|--------------------------|-------------|--------------------------|---------------|--------------------------|-----------------|--------------------------|-------------|
| <input type="checkbox"/> | Less than 5 | <input type="checkbox"/> | 5.1 – 10 | <input type="checkbox"/> | 10.1 – 15 | <input type="checkbox"/> | 15.1 – 25 |
| <input type="checkbox"/> | 25.1 – 30 | <input type="checkbox"/> | 30.1 – 50 | <input type="checkbox"/> | 50.1 – 100 | <input type="checkbox"/> | 100.1 – 200 |
| <input type="checkbox"/> | 200.1 – 500 | <input type="checkbox"/> | 500.1 - 1,000 | <input type="checkbox"/> | More than 1,000 | | |

A5. Locations of operations (please tick one box):

We have operations in

- | | |
|---|-----|
| Hong Kong | [] |
| Hong Kong & the PRD | [] |
| Hong Kong, the PRD and other parts of China | [] |
| Hong Kong, mainland China and other parts of Asia | [] |
| Hong Kong, rest of Asia, Europe & Americas | [] |

A6. Locations of your customers (please tick one box)

- | | |
|---|-----|
| Located in Hong Kong only | [] |
| Located in Hong Kong & the PRD only | [] |
| Located in Hong Kong, the PRD and other parts of China | [] |
| Located in Hong Kong, China and other parts of Asia | [] |
| Located outside Hong Kong and China as we rely
on our international sales network to get FOB traffic originating from
Hong Kong and China | [] |

Section B – Impact of Government Policies and Regulations on your Operations

To what extent do you agree or disagree that the following policies and regulations are helping your industry? Please put a circle around ONE of the numbers in the scale of 1 to 7:

Please note that Strongly Agree = 1 and Strongly Disagree = 7

If you circle 4 this means you do not agree or disagree with the statement

1. Upgrading the industries in the PRD	1	2	3	4	5	6	7
2. Relocating the assemble industry to the East/west/north of the PRD	1	2	3	4	5	6	7
3. Appreciation of RMB	1	2	3	4	5	6	7
4. Clean environment	1	2	3	4	5	6	7
5. The taxes in the PRD are too high that affect your bottom-line	1	2	3	4	5	6	7
6. The new labour laws introduced in January 2008 increase your operating costs substantially	1	2	3	4	5	6	7
7. State enterprises in China observe the tax regulations and new labour laws	1	2	3	4	5	6	7
8. You always observe the tax regulations and new labour laws	1	2	3	4	5	6	7

Section C – Operating Costs

To what extent do you agree or disagree that the following statements? Please put a circle around ONE of the numbers in the scale of 1 to 7:

Please note that Strongly Agree = 1 and Strongly Disagree = 7

If you circle 4 this means you do not agree or disagree with the statement

1. The strong RMB has reduced your gross profit margin	1	2	3	4	5	6	7
2. It is difficult to recruit staff in Hong Kong	1	2	3	4	5	6	7
3. It is difficult to recruit staff in China	1	2	3	4	5	6	7
4. You need to increase the salaries of your staff in Hong Kong and China substantially in the last few years to keep your staff	1	2	3	4	5	6	7
5. You can absorb the extra costs relating to the new labour laws	1	2	3	4	5	6	7
6. You need to transfer the managerial staff from Hong Kong to support your operations in China	1	2	3	4	5	6	7
7. It is difficult to find managerial staff in Hong Kong who are prepared to move to China	1	2	3	4	5	6	7

Section D - Competition

To what extent do you agree or disagree with the following statements? Please put a circle around ONE of the numbers in the scale of 1 to 7:

Please note that Strongly Agree = 1 and Strongly Disagree= 7

If you circle 4 this means you do not agree or disagree with the statement

1. Appreciation of RMB has reduced the volumes of business from your existing customers	1	2	3	4	5	6	7
2. As a result of appreciation of RMB, you have lost market shares	1	2	3	4	5	6	7
3. As a result of appreciation of RMB, your customers have put pressure on you to reduce your rates	1	2	3	4	5	6	7
4. As a local company, you are unable to compete with global companies in terms of services	1	2	3	4	5	6	7
5. As a local company, you are unable to compete with global companies in terms of rates	1	2	3	4	5	6	7
6. Despite of very competitive environment, your business has continued to grow	1	2	3	4	5	6	7

Section E - Impact of the Industry Shifting

The following statements are descriptions of impact on your customers because of industry shifting. To what extent do you agree or disagree with the following statements?

Please put a circle around ONE of the numbers in the scale of 1 to 7:

Pease note that Strongly Agree = 1 and Strongly Disagree = 7

If you circle 4 this means you do not agree or disagree with the statement

1. If our customers branch out to the areas adjacent to the PRD you will also branch out your operations there to service your customers	1	2	3	4	5	6	7
2. If our customers branch out to the YRD and Buhai area, we you will also branch out there to serve them	1	2	3	4	5	6	7
3. If our customers branch out to other parts of Asia, we will also branch out there to serve them	1	2	3	4	5	6	7
4. Despite of industry shifting, our business continues to grow	1	2	3	4	5	6	7
5. Because of industry shifting, our business has been stagnant/decreased	1	2	3	4	5	6	7
6. Competition from local Chinese forwarders is increasingly noticeable	1	2	3	4	5	6	7
7. Despite of difficult operating environment as a result of industry shifting, we will continue to stay in the business	1	2	3	4	5	6	7
8. Because of difficult operating environment, we are considering to merge our business with other forwarders	1	2	3	4	5	6	7

Section F - What policies and actions should be taken by Hong Kong government to enhance competitiveness of Hong Kong forwarding industry (please tick)?

1. 24-hour cross-border customs clearance policy
2. Lower land cost for logistics industry
3. Improved air cargo facilities at Hong Kong Airport
4. Accelerated open sky policy
5. Improved ocean freight facilities at Hong Kong port
6. More subsidised training programme for logistics industry
7. Others _____

Section G1 - What are the main reasons for your customers to export goods from Southern China to overseas via Hong Kong by air (please tick)?

1. Efficient and predictable customs clearance in Hong Kong;
2. More direct flights from Hong Kong to final destinations;
3. Predictable transit handling in Hong Kong;
4. More reliable forwarding services;
5. Tax or duty advantages;
6. Better flight connections;
7. Lower total transportation costs;
8. Customers' requests (eg. FOB HK)
9. Quality control in Hong Kong;
10. Consolidation of shipments in Hong Kong;
11. Others (please specify) _____

Are the above factors sustainable in the coming 1-5 years in view of better logistics infrastructural development in S. China (please tick)?

Yes No

G2. What are the main reasons for your customers to ship goods directly from Southern China to overseas by air (please tick)?

1. Low costs in S. China;
2. Customers' request (e.g. FOB China);
3. Customs requirement;
4. Faster delivery;
5. Others (please specify) _____

G3. What are the main reasons for your customers to import goods from overseas to Southern China via Hong Kong by air (please tick)?

1. Efficient and predictable customs clearance in Hong Kong;
2. More direct flights from origins to Hong Kong;
3. More predictable transit handling in Hong Kong;
4. More reliable delivery;
5. Tax or duty advantages;
6. Better flight connections;
7. Lower total transportation costs;
8. Customers' requests;
9. Quality control in Hong Kong;
10. Profit from lower consolidation rates to Hong Kong
11. Others (please specify)

G4. What are the main reasons for your company to import goods from Oversea to Southern China directly by air (please tick)?

- 1 Low costs in S. China; []
- 2 Customers' requests; []
- 3 Customs requirement; []
- 4 Faster delivery; []
- 5 Others(please specify) []

Section H Future Direction

Please put a circle around ONE of the numbers in the scale 1 to 7:

Please note that Strongly Agree = 1 and Strongly Disagree = 7

If you circle 4 this means you do not agree or disagree with the statement

In view of the changing operating environment:

1. Your business will continue to grow	1	2	3	4	5	6	7
2. You will expand your operations in other parts of China	1	2	3	4	5	6	7
3. You will expand your operations in other parts of China and Asia	1	2	3	4	5	6	7
4. You will close down your operations in Hong Kong and the PRD and relocate to Vietnam and other parts of S East Asia	1	2	3	4	5	6	7
5. You will merge your business with other logistics service providers	1	2	3	4	5	6	7

We appreciate your patience and assistance in responding to the above questionnaires.

A copy of the findings will be shared with you when the survey is completed.
