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Executive Summary

The state of Hong Kong’s logistics industry is bittersweet. On one hand, the Port of Hong Kong has been struggling to maintain its prominence in the international position. On the other hand, the Hong Kong International Airport is currently the undisputed global leader in air cargo throughput. In regard to land logistics, regional cooperation is fueled by mega-infrastructure projects to enhance cross-boundary connection. Due to the above, this report sees the potential in Hong Kong to become an intermodal logistics and intermediary services hub in order to respond to the current trends, challenges and opportunities presented to the logistics industry now. There are five main strategic directions that are outlined, and they are intended to achieve the report’s goal. At the city level, they are:

• Enhancing logistics facilities,
• Improving freight circulation,
• Leveraging the intermodal logistics potential, and
• Developing intermediary professional services to complement the industry.

At the regional level, it is:

• Utilizing Hong Kong’s competitive advantages in the PRD region to re-establish Hong Kong as the region’s gateway.

Despite the comprehensive strategies provided in this report, there are other concepts that are out of the scope of the project but are worthwhile to continue exploring. The increasing regional cooperation will allow Hong Kong to re-establish itself as the leading logistics centre in the PRD, whereas the ‘Belt and Road’ Initiative will help cement the city as a major logistics hub on the international stage. Furthermore, although the government currently have not expressed any intention to relocate the port, this concept is worthy of further study when taking reference to Shanghai, London and Singapore where they have experience in relocation of port.

In order to reinforce Hong Kong’s position as an international logistics centre, a two-pronged strategy must be undertaken; carry out the strategies outlined in this report, and conduct further studies on concepts that have a large influence on the logistics industry.
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1. Introduction

1.1. Study Background

Anchor Consulting Group was commissioned to conduct a comprehensive study on the development of logistics industry in Hong Kong in three phases: Inception Report, Sectoral Study and Final Report alongside Aceline Ltd and Mavericks Ltd. The aim of the study is to provide a thorough analysis of the development of logistics industry and develop strategies to help Hong Kong’s logistics industry seize opportunities and overcome local and regional challenges.

1.1.1. Overview

Logistics is the lifeblood of the economy of Hong Kong, which is an international metropolis, and its essence is to maintain the city’s competitiveness and prosperity. The trading and logistics sector, the leading pillar industry, accounted for 22.2% of Hong Kong’s gross domestic product (GDP) and contributed to over one-fifth of its total employment in 2015 (Census and Statistics Department [CS&D], 2016). Throughout the last few decades, Hong Kong has taken advantages of its geographical location and institutional systems, such as free port, to develop into a logistics hub with excellent infrastructural facilities.

With increasingly keen competition from neighbouring cities such as those in Pearl River Delta (PRD) and Singapore, logistics industry in Hong Kong is facing some challenges including its spatial constraints. The international trade under a rapid development of innovation and information has become more dynamic and efficient. Each individual component of supply chains becomes more vital to enable global goods movement. To accommodate the new demand for further development, a comprehensive planning for Hong Kong’s logistics industry in terms of land reserved for logistics use, intercity and intra-connectivity, infrastructure and manpower supply is necessary.

This study is a combination of previously completed Inception Report and Sectoral Study which examine the concepts of logistics and key issues in Hong Kong’s development of logistics industry. This report is divided into five major parts. The first part aims to provide an overview of the fundamental and theoretical concepts of logistics. The second part is to figure out the current key issues and opportunities in Hong Kong’s logistics industry through reviewing its current situation and policies. The third part offers an overview and insight into other overseas experiences related to logistics development. Based on the aforementioned parts, the fourth part will provide a holistic spatial planning and development strategies with justifications and recommendations to promote Hong Kong’s logistic industry in the future.

1.1.2. Study Framework

Figure 1 shows the entire framework of the whole study from January to May in 2017.
Figure 1. Study Framework
1.1.3. Study Goal
As one of the four pillar Industries, logistics-related sectors are indispensable to Hong Kong’s economy. It is vital to have a deep understanding of both opportunities and challenges of Hong Kong as a world-class logistics hub, given the importance of the logistics industry to Hong Kong. The goal of this study is -

To formulate spatial planning and development strategies in development of logistics industry by seizing opportunities and overcoming local and regional challenges.

1.1.4. Objectives
With a view to achieving the aforementioned study goal, objectives are identified as follows:
- Review concepts related to logistics development and identify key issues and trends in the current and future development of Hong Kong’s logistics industry
- Identify the roles of Hong Kong’s logistics development in local, regional and global contexts
- Examine and analyse the opportunities and challenges of Hong Kong’s logistics development
- Investigate and explore international experiences of logistics development
- Formulate spatial planning and development strategies to support and enhance the sustainable growth and development of the logistics industry in Hong Kong

1.2. Methodology
In order to understand the logistics development in Hong Kong holistically, both quantitative statistics and qualitative data were obtained through the following methodology (Figure 2) for further analysis and findings.

1.2.1. Desktop Research
The initial desktop research, which was a major method to acquire second-hand data, was conducted to examine academic research papers and surveys to evaluate different key aspects of the logistics industry, particularly infrastructural facilities, relevant policies and proposed plans and consolidation of manpower statistics and views. The official statistics from governmental departments, particularly the Census and Statistics Department (C&SD) of the Hong Kong Special Administrative Region (HKSAR) Government were used for further analysis.

1.2.2 Site Visits
Guided site visits of relevant operators, authorities and institutions were conducted with a purpose of obtaining first-hand sources. A five-day exploratory field trip in Singapore was conducted from 5th March to 9th March to investigate international experience of development of logistics industry and take it as reference for Hong Kong. Local site visits to large logistics companies operating terminal and land logistics, and Hong Kong International
Airport (HKIA) were arranged to gain insights into land, sea and air logistics operation and management.

Figure 2. Study Methodology
1.2.3. Interviews

Face-to-face and phone interviews were conducted to collect primary data from stakeholders and scholars who were from various backgrounds – local logistics operators, academia and government sectors. The means of semi-structured interviews and e-mail conversation were used to obtain interviewee’s opinions and concerns towards the development of logistics industry. The interview notes (see Appendix C) illustrated the viewpoints from various stakeholders (Table 1) which constituted a comprehensive understanding and were incorporated into the content of the study. To assure the confidentiality of the interviewees, their identities are not disclosed or cited in text.

Table 1. Interviewees Background

<table>
<thead>
<tr>
<th>Interviewee(s)</th>
<th>Key Field(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industry</strong></td>
<td></td>
</tr>
<tr>
<td>Local large-scale air freight logistics operator(s)</td>
<td>Air cargo</td>
</tr>
<tr>
<td>Local land based logistics operator(s)</td>
<td>Land Logistics and Supply Chain Management</td>
</tr>
<tr>
<td>Local large-scale sea logistics operator(s)</td>
<td>Sea logistics management and Kwai Tsing Container Terminals (KTCT) Operation &amp; relationship with PRD</td>
</tr>
<tr>
<td>Large-scale sea logistics operator(s) in the PRD region</td>
<td>PRD warehousing and transshipment operation</td>
</tr>
<tr>
<td><strong>Institution</strong></td>
<td></td>
</tr>
<tr>
<td>Former town planning professional(s) from the government</td>
<td>Town planning and strategic planning for logistics industry and relationship with PRD</td>
</tr>
<tr>
<td>Representative(s) from government department related to logistics industry</td>
<td>Business infrastructure and environment, and maritime sector</td>
</tr>
<tr>
<td>Member(s) from the Rural Committee</td>
<td>Brownfield uses and interests of indigenous villagers in the New Territories</td>
</tr>
<tr>
<td><strong>Academic</strong></td>
<td></td>
</tr>
<tr>
<td>Scholar(s) specialising in logistics development and planning in Singapore</td>
<td>Port operation and planning</td>
</tr>
<tr>
<td>Scholar(s) specialising in urban planning and design</td>
<td>Strategic planning for logistics industry and relationship with PRD</td>
</tr>
<tr>
<td>Scholar(s) specialising in Geography</td>
<td>Strategic planning for logistics industry and relationship with PRD</td>
</tr>
</tbody>
</table>
1.3. Report Structure
The study comprises of 10 chapters, starting from the fundamental concepts of logistics to the proposal for future development. The structure of the report is as follows:

Chapter 1  Introduction
Chapter 2  Overview of Logistics in Hong Kong
Chapter 3  Logistics and Supply Chain Management
Chapter 4  Key Trends
Chapter 5  Challenges and Opportunities Faced by Hong Kong’s Logistics Industry
Chapter 6  Review of Other Cities
Chapter 7  Strategies and Recommendations
Chapter 8  Implications of Recommendations
Chapter 9  Further Study
Chapter 10 Conclusion
2. Overview of Logistics in Hong Kong

Good logistics management, involving the provision of place and time utility, can add value to goods or services (Bloomberg, LeMay & Hanna, 2002). In terms of management, logistics industry ensures “right goods are found in the right place, at the right Time, in the right quantity and quality and at the right price” (Inside Careers, 2003). This chapter elaborates on the transport services of logistics industry in Hong Kong and examines their respective characteristics.

2.1. Current Characteristics of the Logistics Industry

As the leading pillar industry in Hong Kong, the logistics industry has been expanding in terms of economic contribution while demonstrating a shrinking trend in the number of employment (Census and Statistics Department [C&SD], 2016c). The labour shortage is expected to deteriorate due to ageing population (Huang & Wong, 2014). The aggregated cargo throughput in Hong Kong is about 284 million tonnes in 2015. At present, Hong Kong possess the world’s largest air cargo hub and the fifth busiest container port (Maritime Herald, 2017).

2.2. Characteristics of the Three Modes of Freights

The tonnage and trade value of three modes of freights are compared as follows. Air logistics has the highest trade value, which is about 39% despite having only lowest volume of throughput (1.3%) (C&SD, 2016a). In contrast, the sea logistics industry is accounted for nearly 90% of the throughput volume but with the lowest trade value (22%) (C&SD, 2015). As for the land logistics, it contributed to about 8% of the cargo throughput and about 38% of trade value (C&SD, 2016a). The characteristics of the different modes of logistics will be further analysed below.
Figure 3. Locations of the Existing and Planned Logistics Infrastructure
Table 2. Key Infrastructure of Different Modes of Logistics

<table>
<thead>
<tr>
<th>Modes of Logistics</th>
<th>Key Infrastructure</th>
<th>Year of Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEA LOGISTICS</td>
<td>Kwai Tsing Container Terminals (KTCT)</td>
<td>1972</td>
</tr>
<tr>
<td></td>
<td>Public Cargo Working Areas (PCWA)</td>
<td>1995</td>
</tr>
<tr>
<td></td>
<td>River Trade Terminal (RTT)</td>
<td>1996</td>
</tr>
<tr>
<td>AIR LOGISTICS</td>
<td>Hong Kong Air Cargo Terminal</td>
<td>1976</td>
</tr>
<tr>
<td></td>
<td>Asia Airfreight Terminal</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Hong Kong International Airport (HKIA)</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>DHL Central Asia Hub</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>Marine Cargo Terminal</td>
<td>2001</td>
</tr>
<tr>
<td></td>
<td>Cathay Pacific Cargo Terminal (CPCT)</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td>Three Runway System (3RS)</td>
<td>2023</td>
</tr>
<tr>
<td>LAND LOGISTICS</td>
<td>Man Kam To Control Point (MKT CP)</td>
<td>1982</td>
</tr>
<tr>
<td></td>
<td>Sha Tau Kok Control Point (STK CP)</td>
<td>1985</td>
</tr>
<tr>
<td></td>
<td>Lok Ma Chau Control Point (LMC CP)</td>
<td>1989</td>
</tr>
<tr>
<td></td>
<td>Route 3 to the Hong Kong Island</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Route 9 links up with Route 8 to Kwai Chung</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td>Route 10 to the Shenzhen Port Area</td>
<td>2007</td>
</tr>
<tr>
<td></td>
<td>Shenzhen Bay Port</td>
<td>2007</td>
</tr>
<tr>
<td></td>
<td>Hong Kong Boundary Cross Facilities</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td>Hong Kong-Zhuhai-Macao-Bridge (HZMB)</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td>Liantang/Heung Yuen Wai Boundary Control Point (LT/HYW BCP)</td>
<td>2018</td>
</tr>
<tr>
<td></td>
<td>Tuen Mun- Chek Lap Kok Link (TM -CLKL)</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td>Tuen Mun Western Bypass(TMWB)</td>
<td>2026</td>
</tr>
</tbody>
</table>

2.2.1. Sea Logistics
The port cargo throughput was about 257 million tonnes in 2015 (PlanD, 2016b). The annual cargo has declined from 28 million TEUs in 2010 to 20 million TEUs in 2016 (BMT Asia Pacific, 2014). Yet, there has been an increase in terms of river cargo from 7 million TEUs to 10 million TEUs during the same period of time. Despite the decrease in TEUs, transshipment has risen from 46.6% (2004) to 51.8% by 2015 (PlanD, 2016b). Port cargo carried lower trade value cargo such as electrical machinery parts, clothing and accessories, and textiles. The port industry accounted for about 24,000 jobs in Hong Kong and contributed to about 1.1% of the GDP in 2014.

2.2.2. Air Logistics
The air cargo throughput increased from 2.28 million tonnes in 2010 to 4.38 million tonnes in 2015 (PlanD, 2016b). The increase in throughput was contributed by inward air cargoes from
Asian countries (C&SD, 2016a). Air cargo mainly consists mainly of telecommunications and electrical appliances. In total, the industry contributed to 4.6% of the GDP in Hong Kong and employed about 42,000 people by 2016 (C&SD, 2016a). The completion of the 3RS would increase the handling capacity of HKIA with nine million air cargoes by 2030 (PlanD, 2016b), fulfilling the e-commerce growth and transshipment services.

### 2.2.3. Land Logistics

The total cargo throughput volume for land transport is about 22 million tonnes with Mainland China accounted for nearly 98% for exports and 94% for imported goods (C&SD, 2016b). This has made cross-boundary land transport very important. The land logistics employed about 102,000 people in 2016. The boundary control points serve an average traffic volume of 44,000 vehicles per day (THB, 2013). In addition, the proposed logistics infrastructure aims to improve the external connectivity between Hong Kong and the Western PRD, which could improve the efficiency in terms of facilities and time cost.

### 2.3. Position and Relationship Between Different Freight Modes

Sea, air, and land logistics are interdependent within the supply chain. The choice of freight modes is dependent on the nature of goods and the time allowance. Positioned as an international aviation hub, the role of air logistics focused on goods that require high-speed, reliable and secure delivery options. Whereas for sea logistics, though with declining world status in terms of throughput handling, remain an important international sea freight centre and transshipment hub for larger size and low-value goods. There is however a need to strengthen Hong Kong’s status as an international maritime centre in ship finance, management and insurance. Land logistics acts as a connector to secure inland transportation of goods between aeroplanes and containers vessels. It is also essential in transporting daily necessity within the city. Going forward, the land logistics faces constant challenges from land supply and labour cost in sustaining Hong Kong’s position as a regional distribution centre.

In view of the challenges, the government implemented numerous policies and infrastructure to support the growing logistics industry regarding e-commerce and transshipment trends. However, the competitiveness of the Port of Hong Kong has dropped from the first to the fifth in 2016 due to the direct competitions from the ports in Mainland China. At the moment, Hong Kong has substantial capacity to further develop air logistics industry through specialised cargo handling and e-commerce with the utilization of inter-modal partnership. There is a need for Hong Kong to improve the operational efficiency through high value-added logistics services. it is essential to cater for these services with the supply of infrastructure in terms of operation, warehousing, distribution and transportation.

Another important implication from the complementary relationship is the cross-boundary cooperation. There is a need for Hong Kong to gain regional collaboration for widening its
logistics capturing potential. The policies collaboration and regional infrastructure proposed, which would be discussed in the following sections also reflected Hong Kong’s determination in maximizing its advantages for a successful regional logistics hub (Constitutional and Mainland Affairs Bureau, 2010).

2.4. Policy Review
This section gives an overview of policies related to logistics and economic development in Hong Kong. Policies include Policy Address, HK2030+, Study on the Strategy Development Plan for Hong Kong Port 2030, Hong Kong International Airport Master Plan 2030 and those on regional planning.

2.4.1. Strategic Planning of Logistics
It has been identified by the Hong Kong SAR government that Hong Kong is an international logistics hub with the promotion of high-valued logistics service and modern logistics (Information Service Department, 2009). By enhancing connectivity and infrastructure in Hong Kong, it strives to create a conducive environment for the industry to maintain its position as the ‘preferred international and regional logistics hub’ (Hong Kong Logistics Development Council [LOGSCOUNCIL], 2017). Policy Address stresses that logistics industry is vital to the success and growth of Hong Kong’s economy.

Identifying suitable sites for modern logistics facilities, the Hong Kong government aims to facilitate the provision of high value-added logistic services, promote modern logistics and strengthen the competitiveness of logistics development (Office of the Chief Executive, 2015). Logistics industry is not merely a transportation network, but also the management of the entire supply chain. A vibrant maritime cluster providing quality maritime services is also put into the agenda in Policy Address. Maritime cluster includes ship management, ship broking and chartering, ship finance, maritime law, arbitration and marine insurance (Office of the Chief Executive, 2017). Hong Kong Maritime and Port Board is set up to encourage maritime enterprises to do business in Hong Kong and strengthen the development of maritime cluster with the use of commercial and high value-added maritime services (Office of the Chief Executive, 2017).

2.4.2. New Land Supply for Logistics Development
Regarding land supply, potential land supply for logistics use is identified in HK2030+: Towards a Planning Vision and Strategy Transcending 2030 (HK2030+) and New Development Area (NDA) plan. A proactive planning of seeking new land supply for logistics use is observed in both strategic and NDA level of planning.

Being close to HKIA and KTCT, the 50-ha land in Tuen Mun 40, 46 and 10-hecare land combined in 38, 49 are potential sites for additional land for logistics development (PlanD, 2015 & DC,
26

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2015). These two sites will be well-connected to Hong Kong-Zhuhai-Macao Bridge (HZMB), boundary crossing facilities and North Lantau. The land use of these two sites is still under consideration. Moreover, stated in the development plan of the two New Development Area, 10 ha of land are reserved for storage and workshop land in Yuen Long South New Development Area (YLS NDA) and 61 ha of land are designated for logistics facilities and port back-up, storage and workshop in Hung Shui Kiu New Development Area (HSK NDA) (PlanD & Civil Engineering and Development Department [CEDD], 2016a).

More details for land supply will be explained in Section 5.2.5. The new land supply and existing neighbouring development formulate the Northern Economic Belt and Western Economic Corridor, which create employment and generate economic return from the North Western region in Hong Kong (PlanD, 2015).

2.4.3. Strategies for Future Logistics Development

Apart from policies, there are two master plans developed to guide the future logistics development, namely Strategic Development Plan for Hong Kong Port 2030 and Hong Kong International Airport Master Plan 2030.

Study on the Strategic Development Plan for Hong Kong Port 2030

The Strategic Development Plan for Hong Kong Port 2030 is a consultancy study that reviews the port development and provides recommendation enhancing the competitiveness of the Port of Hong Kong. To address the issues including uneven utilisation of facilities, shift of transport mode from trucking to barging and the growth of vessel sizes, strategies are proposed in the consultancy study (BMT Asia Pacific, 2014). One of them is the better use of existing facilities in RTT and PCWAs. It also suggested that a better land use improvement and additional barge berths should be produced in KTCT. With the growing competition among the ports in South China, market share for China has declined, so a better use of existing facilities is preferable than developing container terminal 10 (BMT Asia Pacific, 2014). Coordination of government and private sector is also highlighted (BMT Asia Pacific, 2014).

Hong Kong International Airport Master Plan 2030

Since the start of operation of HKIA in 1998, a 20-year Master Plan has been prepared and is updated every five years by the Hong Kong Airport Authority. Hong Kong International Airport Master Plan 2030 is the latest master plan depicting the strategies of developing airport on the basis of capacity/demand analysis and cost analysis and forecasting the facility need and land use, and the plan aims to cater the growth of the aviation industry beyond 2015 (Airport Authority Hong Kong [AA], 2015). It is identified that there is a continuous growth of air cargo traffic up to 9.8 million tonnes in 2030 (AA, 2015). To cater for the future demand of air traffic, two options are identified for the future development of the HKIA (as shown in Table 3). With the forecast of the growth of air traffic demand, there is a need to construct the Three Runway
System (3RS), which implies that reclamation will be carried on the airport island and more employment will be created from the expansion of the airport. Airport Facilities includes passenger terminal, apron and passenger concourse, automated people mover and baggage handling system.

Table 3. Options of Airport Development in Hong Kong International Airport Master Plan 2030

<table>
<thead>
<tr>
<th></th>
<th>Option 1 Two-runway system</th>
<th>Option 2 Three-runway system (3RS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flight Movement Demand Forecast in 2030</td>
<td>602,000</td>
<td></td>
</tr>
<tr>
<td>Design Capacity (ATMs per year)</td>
<td>420,000</td>
<td>620,000</td>
</tr>
<tr>
<td>Construction</td>
<td>Midfield Development</td>
<td>Reclamation</td>
</tr>
<tr>
<td></td>
<td>Further Expansion of Airport Facilities</td>
<td>Third-runway Aprons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reconfiguration of Passenger</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Terminal 2 (T2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expansion of Airport Facilities</td>
</tr>
<tr>
<td>Capital Investment</td>
<td>HK$23.4 billion (in 2010 dollars)</td>
<td>HK$86.2 billion (in 2010 dollars)</td>
</tr>
<tr>
<td>Direct Employment</td>
<td>101,000</td>
<td>141,000</td>
</tr>
<tr>
<td>Indirect and Induced Employment</td>
<td>143,000</td>
<td>199,000</td>
</tr>
</tbody>
</table>

Source: AA, 2015

2.4.4. Policies on Regional Planning
The major economic and strategic policies on regional planning include Open Door Policy, designation of Special Economic Zones and those highlighted in Hong Kong 2030+.

**Open Door Policy and Designation of Special Economic Zones**
China adopted Open Door Policy in 1978, attracting foreign investment, management skill and advanced technology to coastal cities (Weng, 1998). Hoping to enjoy the low costs of labour and land and reduce production costs, factories in Hong Kong, for instance those of the toy, textiles, garments and electronics industries, moved to cities in the Pearl River Delta (PRD), such as Shenzhen (Chan, 1998; Yeh, 2002). Being designated as Special Economic Zones (SEZs) in 1980, Shenzhen and Zhuhai were considered an “experimenting ground” for economic policies and reforms and a “window” for exploring global trends in market and technological development (Ng, 2003).
Despite the loss of manufacturing industries to the PRD, Hong Kong, now being responsible for offering trading, marketing, banking and shipping services to manufacturing industries, had become a trade centre for South China and a regional and international financial and business centre (Chan, 1998; Yeh, 2002).

**Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA)**

Aiming to encourage economic interaction and cooperation between Mainland China and Hong Kong and open up markets for Hong Kong services and products, the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA) was signed in 2003 (Trade and Industry Department [TID], 2016b). Under the agreement, manufacturers in Hong Kong who would like to import their goods originated from Hong Kong into Mainland China can apply for tariff free treatment for their goods (TID, 2016b).

Moreover, in order to develop electronic customs clearance at control points (CPs), a customs information exchange system between the two sides has been established (TID, 2016b). Qualification of professional services, such as professional accounting services, is also mutually recognised under the agreement. In order to facilitate bilateral trade and investment, laws and regulations have become more transparent and the two sides can provide their commercial and industrial businesses with more information (TID, 2016b). Hong Kong, acting as a ‘springboard’, is able to help companies in Mainland China to enter the global market and at the same time, able to attract foreign businesses hoping to enter the vast Mainland market to invest in Hong Kong (TID, 2016b).

**Policies on Regional Planning Highlighted in Hong Kong 2030+**

As highlighted in ‘Hong Kong 2030+’, the National Thirteenth Five-Year Plan put emphasis on strengthening the cooperation between Hong Kong and Mainland China (Development Bureau [DB] and PlanD, 2016a). This can be achieved by constructing ‘Guangdong-Hong Kong-Macao cooperation platforms in Qianhai, Nansha and Hengqin’, ‘Guangdong-Hong Kong-Macao Big Bay Area’ and deepening cooperation in the Pan-PRD region (DB and PlanD, 2016). China (Guangdong) Pilot Free Trade Zone and ‘Belt and Road’ Initiative could further encourage cooperation within the PRD, other areas of Mainland China and other countries in Asia, Europe and Africa (DB and PlanD, 2016a).

These initiatives and plans will be further explained in the following sections.
Chapter Summary
Chapter 2 gives an overview of Hong Kong’s logistics industry, emphasising the different characteristics, roles and relationships between the sea, air and land transport sectors. The local and regional policies have in fact proven the government’s acknowledgement of the industry’s economic contribution, as well as its continuous effort to strengthen Hong Kong’s competitive edge in the global logistics market.
3. Logistics and Supply Chain Management

Supply chain management and logistics are two distinctive ideas. In this chapter, an introduction of these two concepts will be given. Then, the specialisation of logistics services as well as its impacts on the logistics industry will be discussed.

3.1. Relation between Supply Chain and Logistics

To begin with, the term ‘supply chain’, ‘supply chain management’ and ‘logistics’ shall be clarified. Supply chain refers to a network of organisations that are engaged, through vertical linkages, in various processes that produce value in form of products and services in the hands of end consumers (Benjabutr, 2017). Essentially, a supply chain involves three important processes — flow of physical goods, information flow and funds flow (Figure 4). As for supply chain management (SCM), it is the coordination of production, inventory and transportation among different parties of a supply chain, with an aim of optimising the responsiveness and efficiency of the network (Benjabutr, 2017). Lastly, logistics is all about the 7Rs — “getting the right product, to the right customer, in the right quantity, in the right condition, at the right place, at the right time and at the right cost” (Coyle, Langley, Novack, & Gibson, 2013, p.37).

To summarise, logistics commonly refers to activities within the boundary of a single organisation whereas supply chain refers to networks among organisations that coordinate to deliver a product or service to the market (Benjabutr, 2017). In other words, logistics is the basic component of SCM, being integrated into every single stage of a supply chain.

Figure 4. Relationship between Supply Chain and Logistics
3.2. Evolution of Logistics
Back in the 1980s, logistics tasks (e.g. customer service, purchasing, production planning, warehouse and transport) were carried out by different departments within an organisation (Benjabutr, 2017). However, they were very soon consolidated and came under the same ‘logistics department’ to support the growing complexity of business operations as well as the increased global operations. Owing to the lack of necessary expertise, network and technology, companies started to outsource their logistics tasks. In fact, the specialisation of logistics services and management has provided new business opportunities, leading to the rise of logistics industry with its associated supply chain, in which, Third Party Logistics (3PL) and Fourth Party Logistics (4PL) play a leading part.

3.3. Supply Chain Management of Logistics Services
As mentioned earlier, logistics services are integrated between every stage of the supply chain. In fact, logistics services have its own chain, as shown in Figure 5. Regardless of the stage of the supply chain, the logistics chain will consist of freight forwarders, brokers, transportation charterers, transportation services, and value-added services before transitioning to the next stage of the supply chain. For firms that want to outsource its logistics department, a 4PL company will be used to manage the entire logistics chain. In turn, 4PL companies will find 3PL companies in order to carry out different functions of the chain. There is a flow of information where the 4PL firm acts as a conduit between the client firm and the various 3PL firms. In regard to physical flow, the movement of goods is facilitated by sea, land, and air logistics. Therefore, spatial challenges and current trends of the three sectors of logistics will have an impact on the entire supply chain.
3.4. Impacts of Spatial Challenges on Logistics Chain

The logistics supply chain is highly influenced by trends and challenges related to the sea, land, and air subsectors because each stage depends on the provision of the three transportation services to ensure the flow of goods. There are many physical challenges that have an adverse impact on Hong Kong’s logistics chain. For instance, the congestion in KTCT and boundary control points, shortage of space for warehousing, lack of coordination of brownfields, a missing proactive institutional mechanism and relocation of manufacturing out of the PRD are all spatial challenges that adversely affect the flow of Hong Kong’s logistics chain. Ultimately, identifying these spatial challenges will help Hong Kong’s logistics industry resolve these issues and prepare for any future challenges that may arise.
Chapter Summary

By giving an introduction of supply chain management and its connection with logistics, Chapter 3 illustrates the significance of the sea, air and land sectors in ensuring the flow of physical goods throughout the logistics chain. More importantly, it suggests how Hong Kong’s logistics chain is negatively impacted by various physical challenges. In the following, Chapters 4 and 5 will provide a more in-depth analysis of spatial trends and challenges that the logistics industry currently experiences.
4. Key Trends

The characteristics of the logistics industry, for instance modes of operation, types of goods and the significance of particular parts of the supply chain, change from time to time. This chapter identifies four emerging trends in the industry observed globally or regionally in the PRD region, namely the rising proportion of transshipment, high value-added and specialised cargoes, changes caused by e-commerce and the growing cooperation in the PRD region.

4.1. Rising Proportion of Transshipment

As analysed in Chapter 2, the transportation of goods between different places is not only limited to direct point-to-point service. In Hong Kong, the significance of transshipment has been rising, especially in air logistics with positive economic incentives. As for sea logistics, the use of river barges has been increasingly popular as a more efficient choice over truck for transshipment especially between Hong Kong and the PRD region. Meanwhile, the number of mega vessels is rising.

4.1.1. Increasing Proportion of Air Transshipment

Regarding air logistics in Hong Kong, transshipment cargoes stay in the cargo restriction area of HKIA, and the cargo terminal operators may either distribute or consolidate the imported cargoes before exporting (TID, 2016a). Transshipment services have been a strength of the Hong Kong International Airport (HKIA) and have a growing proportion. With the positive incentives, the industry is attracted to specialise in the transshipment sector. The Air Transshipment Cargo Exemption Scheme for Specified Strategic Commodities allows individual licensing to be waived for certain commodities, including munitions and chemicals (TID, 2016). Traders also enjoy tariff reduction from the Free Trade Agreement Transshipment Facilitation Scheme with the Certificate of Non-manipulation (Customs and Excise Department, 2016).

4.1.2. Growing Significance of River Barge Over Truck

Around 60% of cargoes are transported from Shenzhen to Hong Kong through trucks (C&SD, 2016b). However, river barges are in fact more cost-efficient and save more fuel (Tennessee-Tombigbee Waterway [TTW], 2017; Coosa-Alabama River Improvement Association, 2016) and its significance begins to grow over that of trucks. According to TTW (2017), river barges can travel up to 514 miles/gallon when carrying each ton of cargo, which equals to around ten times of that of trucks and doubles that of trains. This is one of the main reason for the increasing proportion of transshipment to Hong Kong by river barges.

4.1.3. Emerging Mega Vessels

Another trend observed is the emergence of mega-vessels. As illustrated in Figure 6 below, the size of container ships has been increasing, and they gradually demand for deeper water frontage and take a longer period for loading and unloading at berths. Hence, port facilities
are required to be updated to cater for the mega vessels. In fact, the size of vessels doubled in the recent decade. CSCL Globe/MSC Oscar is the world’s largest vessel currently and its capacity exceeds 19 thousand TEUs (Allianz Global Corporate and Specialty, 2014).

Figure 6. Evolution of Container Ships 1968-2016 (Source: Allianz Global Corporate and Specialty, 2014)

4.2. High-Valued and Specialised Cargoes
There is another trend concerning the characteristics of the cargoes. Globally there has been an increasing trend for temperature-sensitive cargoes, such as pharmaceuticals and perishables, despite a rather flat growth on air cargo volume in 2015 and slow anticipated growth for 2016 (OTEL, 2016).

Capturing the opportunities from this emerging trend has become one of the development directions of ‘value-focus’ operation by the HKIA, which has strived for recognised capabilities in the handling of temperature-sensitive products involving different stakeholders from the supply chain such as cargo terminal operators, airlines, pharmaceutical firms, perishable goods distributors. The goal is to establish integrated solutions on time-critical handling of temperature controlled cargo that requires special care in handling and strict operational requirements, and to assist the airport community in adopting the latest industry standards. For instance, all cargo terminal operators (CTOs) of HKIA have received accreditation for Good Distribution Practices and sets of guidelines for the recognised distribution of medicinal products (Hong Kong International Airport [HKIA], 2016).

In such context, the Airport Authority also works closely with the International Aviation
Transport Association (IATA) to achieve the “IATA CEIV Pharma Recognised Airport” status for HKIA, and Hactl has become the first handler in Hong Kong to obtain the certification recently in February 2017 (HACTL, 2017). Some airlines have targeted services towards the handling of pharmaceuticals, perishables, aircraft spare parts or live stocks. For instance, Cathay Pacific has recently introduced a special service that tailors for the handling of wines using cool chain management since these special services are capable of generating better yields than general cargo for airlines (Putzger, 2015).

4.3. Changing Consumption Pattern: E-commerce and the Change of Supply Chain
The popularity of Internet reduces the geographical constraints and leads to the growth of e-commerce which changes the consumption pattern. This section depicts the growth of such online platform and how it influences logistics.

4.3.1. The Digital Era: The Growth of E-Commerce
Rapidly growth of urbanisation leads to a concentrated consumer market. The digital population, referring to population that goes online, grows significantly and the growth of e-commerce will accelerate further as the Internet becomes more popular. By the end of the second quarter of 2016, the sales of e-commerce sales had grown 16%, compared to the same period of 2015, while there was only 2% increase in overall retail (Harrington, 2015). Table 4 also explains that e-commerce is a global trend, which has become an important sector in retailing (Hong Kong Trade Development Council [HKTDC], 2015). Moreover, e-commerce is also quickly developing in the local market. According to a market research in 2016, 88% of consumers in Hong Kong shopped online in the past 12 months (Nielsen, 2016). The young generation, which is aged below 30, is the major active e-shoppers, in which one-third of them shopped online within one weeks, and approximately 50% of them have purchased clothes online (Nielsen, 2016).
Table 4. Sales Values of Internet Retailing (Excluding Tax)

<table>
<thead>
<tr>
<th>Region/Year</th>
<th>2009</th>
<th>2014</th>
<th>2019 (Projected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD (Billions)</td>
<td>% of Total Retail Sales</td>
<td>USD (Billions)</td>
<td>% of Total Retail Sales</td>
</tr>
<tr>
<td>World</td>
<td>311.5</td>
<td>2.7%</td>
<td>839.8</td>
</tr>
<tr>
<td>Asia</td>
<td>64.3</td>
<td>2%</td>
<td>285.6</td>
</tr>
<tr>
<td>China</td>
<td>3</td>
<td>0.3%</td>
<td>164.5</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>0.7</td>
<td>2%</td>
<td>1.5</td>
</tr>
<tr>
<td>Asean</td>
<td>1.4</td>
<td>0.4%</td>
<td>4.4</td>
</tr>
<tr>
<td>North America</td>
<td>119.2</td>
<td>4.3%</td>
<td>251.4</td>
</tr>
<tr>
<td>Western Europe</td>
<td>101.7</td>
<td>3.1%</td>
<td>225.3</td>
</tr>
</tbody>
</table>

Source: HKTDC, 2016a

4.3.2. Change of Supply Chain: The Importance of Last Mile Delivery
The growth of e-commerce brings a complete change in consumer behaviour, which demands an evolution of logistics development. A more robust warehouse network is necessary to support the growth of consumption, especially the online demand. The growth of e-commerce changes the traditional supply chain of logistics for retailing, especially to last mile delivery (Harrington, 2015). Last mile delivery refers to the process of distribution of goods to reach the customer. In order to facilitate an efficient and reliable delivery to the customers to support the rapid growth of e-commerce, retailers and freight forwarders have been invested to expand the network of urban warehouses, so the delivery routes can be shortened. It will then be able to provide efficient delivery to customers who order online.

4.3.3. Reverse Logistics
The growth of e-commerce also leads to return of online orders, which complicates the supply chain. Reverse logistics refers to logistics associated with service after the purchase, which aims to optimise and make aftermarket activity more efficient, so money and environmental resources can be saved (Reverse Logistics Association, 2016). Service includes customer service, depot repair, refurbishment, IT process management, etc. With the growth of e-commerce, allowing customers return items is one of the forms of reverse logistics. In order to attract online customers, retailers allow customers to order and to return items without additional costs. However, the scale of return creates burden to the retailers (Harrington, 2015).
4.4. Enhanced Regional Cooperation

Cooperation between Hong Kong, Macao and the Mainland has been and will continuously be promoted. Their cooperation and the ways to achieve this are mentioned in different plans.

4.4.1. The Outline of the Plan for the Reform and Development of the Pearl River Delta (2008 to 2020)

Guangdong-Hong Kong-Macao cooperation is regarded a vital part of national development strategy under the Outline (Greater PRD Business Council, 2013). Examples of relevant approaches are the implementation of infrastructure projects aiming to connect the three places, support for Hong Kong firms to enter the domestic market in Mainland China, transformation of Hong Kong and Macao processing trade enterprises in the PRD into those specialising in modern services and advanced manufacturing activities and cooperation between Hong Kong and Macao in intellectual property and education (Greater PRD Business Council, 2013).

4.4.2 Framework Agreement on Hong Kong/Guangdong Cooperation

Striving to promote cooperation between Hong Kong and Guangdong province and enhance their exchange, trade and investment, the Framework Agreement provides communication platform for consultation of cooperation projects and offers guidelines on operational procedures and regulations for trade and investment (Panel on Administration of Justice and Legal Services, 2010).

Regarding logistics, Hong Kong and Guangdong would organise conferences together so as to deepen their cooperation in logistics industry (People's Government of Guangdong Province, 2017). Furthermore, they would build a data sharing platform which allows information on sea transport, ports, and weather conditions to be shared between them (People's Government of Guangdong Province, 2017). As a result, the level of safety and efficiency in sea transport in PRD could be enhanced (People's Government of Guangdong Province, 2017). There are also measures that strengthen their cooperation in innovation and technology and financial and professional services (People's Government of Guangdong Province, 2017).

4.4.3. National Thirteenth Five-Year Plan (2016-2020)

Under the National Thirteenth Five-year Plan, Hong Kong would be supported in enhancing its status as an offshore RMB centre, an international asset management, trade, shipping and financial centre and international legal and dispute resolution services centre in Asia-Pacific (National Development and Reform Commission [NDRC], 2016). The technology and innovation industry in Hong Kong would also be supported. As a result, financial, professional, trade and logistics services in Hong Kong would be upgraded to the high-end and high value-added level (NDRC, 2016).
Hong Kong and Macao are encouraged to actively participate in the ‘Belt and Road’ Initiative’, and there would be support for the enterprises in Hong Kong, Macao and the Mainland to enter the global market (NDRC, 2016). It is vital to strengthen the market connectivity between the Mainland and Hong Kong and to facilitate the cooperation and exchange, such as in the fields of financial services, innovation and technology, between Hong Kong, Macao and Guangdong province (NDRC, 2016). Thus, the development of Guangdong-Hong Kong-Macao cooperation platforms in Qianhai, Nansha, and Hengqin and Guangdong-Hong Kong-Macao Greater Bay Area are promoted (NDRC, 2016). ‘Belt and Road’ Initiative and Guangdong-Hong Kong-Macao Greater Bay Area will be further discussed in Section 5.2.6 and Section 9.

**Chapter Summary**
Chapter 4 analyses the key logistics trends that Hong Kong faces at present. To keep pace with change, it is important for the logistics industry to keep an eye on the global trends (e.g. the increasing size of mega-vessels and the growth of e-commerce) while leveraging the latest regional-local patterns of transshipment and port cooperation. In response to these trends, Hong Kong encounters a range of challenges, which will be discussed with the opportunities that come along in the next chapter.
5. Challenges and Opportunities Faced by Hong Kong’s Logistics Industry

In addition to the emerging trends such as the rising proportion of transshipment, high valued and specialised cargoes, e-commerce as well as regional cooperation, this chapter further analyses the challenges and opportunities for Hong Kong’s logistics industry and examines the relative spatial implications.

5.1 Challenges

Five challenges regarding the logistics industry are identified below. They are the insufficient capacity and overall planning of operational facilities, lack of land supply for supporting logistics facilities, spatial mismatch between working and living place, lack of leading institutional body and proactive institutional mechanism as well as competition with neighbouring cities and countries.

5.1.1. Insufficient Capacity and Lack of Overall Planning of Operational Facilities

Further explaining the elements in Chapter 2, this section looks into the possible challenges of the operational facilities for different freight modes.

Capacity Constraints

One of the major challenges lies on the capacity regarding the existing infrastructure of the different modes of logistics. The capacity of the facilities is particularly critical to the sea logistics’ container handling operations. Every decade, the TEU capacity of container ships double due to cost-savings for carriers (OECD, 2015). It is therefore necessary for the Port of Hong Kong to accommodate the mega vessels’ physical requirements. By 2016, the KTCT was dredged to a depth of -17.5m (CEDD, 2014) but the depth along the berths of KTCT remains -15.5m (Hong Kong Container Terminal Operators Association Limited [HKCTOA], 2017). This affects the competitiveness of the Hong Kong’s Port as compared with nearby Ports in face of the ongoing mega-vessels trends.

Moreover, congestion of KTCT has been an issue for sea logistics. The loading and unloading time for ships at the port are prolonged given the emergence of mega-vessels. For instance, the average time for vessels berthing at KTCT rose from 13.1 hours in 2013 to 19 hours in 2016 (Marine Department [MD], 2016) and this trend will continue due to limited space available for ocean berths expansion. The growing proportions of river-to-ocean transshipment at KTCT are contributed by the high inland trucking cost that makes river barges from South China usually stay at sea for one to two days for cost-saving instead of first going to RTT and export the cargoes later in KTCT. This situation accelerates the congestion due to insufficient river berths presented. Thus, there is a need for terminal operators to provide additional river berths within proximity to increase operation efficiency.
As for air logistics, a continuous expansion of cargo handling facilities and transport linkages are crucial in view of the rapid increase in cargo throughput. Despite the additional runway capacity, the present master planning has not designated locations for temperature-sensitive cargo handling within the Airport Island nor the 3RS. At the same time, under the tightening air cargo security standards, Hong Kong shall prepare for 100% screening of unknown consignors under the new Registered Agent Regime enhancement (Civil Aviation Department, 2013). It implies that there is a huge demand for additional screening facilities for rebuilding pallets and screening in large quantities. Therefore, it is necessary to explore possible solutions in expanding the handling capacity of specialised cargoes and screening facilities.

The capacity of some major boundary control points (BCPs), such as Lok Ma Chau and Man Kam To, is saturated, and this prolonged the time for vehicles to pass through customs control during peak hours. Although the situation would be alleviated with the introduction of the Liantang/Heung Yuen Wai Boundary Control Point, many operators are still concerned about the capacity of future road infrastructure from the BCPs linking Route 9.

**Coordination and Planning of Facilities**

This issue is considered to be very important for sea logistics. China’s relaxation of cabotage rule in Shanghai Free Trade Zone has liberalised mainland’s trade and further hampered the Port’s competitiveness, making a need for Hong Kong to plan for a different role in global shipping. Only a few concrete measures have been made by the government in addressing the losing competitiveness of Hong Kong in face of global and regional trends, causing Hong Kong to miss the golden opportunity in developing maritime services and to compete with other cities. Careful planning over the different roles of port facilities is thus necessary to address the changing regional and global conditions.

In particular, there has been a significant difference between the technological level of KTCT and other port facilities. For instance, RTT has been incompetent for river trades due to double handling and technological application. There is a lack of robot automation and technology within the warehouse and cargoes handling operations. This is mostly attributed to the reluctance of the small and medium sized operators to improve the situation. As a result, there is a need to formulate strategies in improving the competitiveness of port facilities so as to improve intra-coordination of facilities and maximise utilization rate of individual facilities.

As for air logistics, there is an over-reliance on Lantau Link as the only direct transport link between HKIA and the urban areas. Even the TM-CLKL will be completed by 2018, its capacity in catering the extra traffic flow with the 3RS remains uncertain. Given the continuous prosperity of HKIA as the global aviation hub and the future development on the Lantau Island, more efforts should be placed on the planning of internal and external transport network between Lantau Island to the urban areas (Legislative Council Secretariat, 2016).
5.1.2. Lack of Land Supply for Supporting Logistics Facilities

Even though logistics industry is a leading pillar industry in Hong Kong, land provision of logistic use is limited due to land scarcity and lack of management of this resource with fixed supply. With a growing trend of logistic demand, space has become more vital to the entire development as it is highly associated with resource allocation, operational efficiency and cost. The followings are the major challenges faced by supporting logistics facilities.

Inadequate Supply of Warehousing Space

In general, the warehousing or storage uses often occupy land use in “I” Zone and “OU(B)” Zone as well as brownfields. The industrial land uses in the former two zones become more vital by virtue of a great demand of storage generated by the expansion of the retailing sector (Leung, 2015). Comparatively, the lower rent of “I” Zone is more attractive to meet the operational and space requirement of logistics operators. The vacancy rates of flatted factories and private storage are low with less than 10% since 2004, particularly under 5% for several years for private storage (Figure 7).

Nonetheless, Other Specified Use (Business) Zone was introduced to allow industrial property for both industrial and commercial purposes on the Outline Zoning Plan (OZP) in 2001 due to the changing needs caused by economic restructuring (PlanD, 2000). In April 2010, “revitalization of measures to facilitate the redevelopment and wholesale conversion of older industrial buildings” was introduced to release floor space of industrial use for changing socio-economic needs (DB, 2010). These initiatives encouraged investors to utilise original industrial buildings for non-industrial purposes. The continuity of rezoning of “I” Zone and redevelopment of “OU(B)” increases the insufficiency of supply of suitable floor space for logistic facilities. According to the report of Colliers International (2017), a 1.7 million sq. ft warehouse developed by the China Merchants Group will be the only new supply completed in 2017.
According to Report on 2014 Area Assessments of Industrial Land in the Territory of Planning Department (2015), 42% of the land zoned as “I” Zone and “OU(B)” is for logistic storage use (Table 5). However, non-industrial uses, for instance food and beverage, art studio and various centres, occupy over a half of the space in factory premises (PlanD, 2015). This shows that the original industrial space is being replaced by other uses. In addition, it is estimated that the floor space demand of general logistics and warehouse is 16.06 million sq. m in 2018 and 16.90 million sq. m in 2018 (Legislative Council, 2016). It will be a challenge for the existing floor space for logistics use (11.64 million sq. m) to satisfy the future needs with requirement for general logistics warehousing.

Table 5. The Current Uses of Industrial Buildings in Hong Kong

<table>
<thead>
<tr>
<th>Industrial stock (million sq. m)</th>
<th>Total stock (GFA)</th>
<th>Manufacturing</th>
<th>Logistics</th>
<th>Non-industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I” Zone</td>
<td>9.93</td>
<td>0.83</td>
<td>5.37</td>
<td>3.73</td>
</tr>
<tr>
<td>“OU(B)” Zone</td>
<td>15.16</td>
<td>1.04</td>
<td>5.04</td>
<td>9.08</td>
</tr>
<tr>
<td>Other Zones</td>
<td>2.76</td>
<td>0.31</td>
<td>1.23</td>
<td>1.22</td>
</tr>
<tr>
<td>TOTAL</td>
<td>27.85</td>
<td>2.18</td>
<td>11.64</td>
<td>14.03</td>
</tr>
</tbody>
</table>

Source: Leung, 2015
Lack of Affordable Warehousing Space
From the view of stakeholders, purchasing a premise is often preferable to renting for securing expansion capability and the long-term investment. Despite the inadequate supply, in fact, the rental price and price of industrial property which accommodate a large amount of warehousing facilities, have followed the rise of overall rental prices of Hong Kong property market (RVD, 2017) (Figure 8 and 9). For instance, the Prime warehouse rents increased by 7.1% in 2015 and this posted the strongest cumulative growth among all property sectors in Hong Kong since the global financial crisis (Ma, 2016). The rental cost of warehouse often contributes to 40-50% of the operational cost (HKTDC, 2013).

In addition, the monthly average rate of renting warehouses with cargo-lift access is about HK$8.9/sq. ft and HK$18/sq. ft for those with ramp access, and they were ranked as the third most expensive global prime warehouse rentals in 2011 (HKTDC, 2013). In terms of spatial arrangement, the SMEs in the sector tend to utilise traditional or newly built industrial buildings while the large-scale operators are more capable of using modern logistics facilities with highly efficient services. Hence, the soaring rent of warehouse in market has substantially increased the operation costs of logistics service providers, particularly being unaffordable for small and medium operators. Further, landlords tend to offer short term lease which constrains the operators’ incentives for investment.

Figure 8. Price Indices of Different Land Use (Source: RVD, 2017)
Potential Demand Increase of Just-In-Time Logistics

The demand of warehousing space is likely to intensify with the completion of new infrastructure projects (Ma, 2016). After the construction of 3Rs in HKIA, the busiest airport for cargo in the world, in 2020, it is estimated the cargo volumes will be increased with 4.2% per annum and this projected increased volume will translate into an additional 300,000 sq. ft. of demand in warehouse each year (Ma, 2016). In addition, HZMB and TM-CLKL would possibly boost the demand through providing an easier access for goods in-and-out movement from the city and PRD. Also, logistics operators will leverage on the advantages of HKIA to deliver Just-In-Time logistics solutions (Ma, 2016). In this way, the warehousing facilities inside Hong Kong would become more essential as time of clear customs and costs in transportation will be lower than bonded warehouses outside.

In response to the rise of reverse logistics and last mile delivery, more land is required to provide space for logistics to improve efficiency by better utilization of resources and reduction of traffic congestion. For example, space for warehouses in proximity to recruitment areas and customers for reverse logistics, distribution centres and loading bays and consolidation centres within urban areas for last mile delivery are necessary.

Potential Demand Increase Caused by China’s E-commerce Regulation

Cross-border e-commerce bloomed in Mainland China in 2014, and the regulation and policies have become clearer in e-shopping. It forces Chinese government to regulate its taxation policies to widen tax revenue and control the consumption behaviour. On 8th April, Chinese authorities declared to change the rules intentionally that apply currently to digital cross-border sales (Gentlemen, 2016). Foreign products will have to be labelled and registered in accordance with Chinese regulations and laws. Furthermore, an additional tax will be applied
in the later product purchase through e-commerce platform. Since the new regulations bring limitations to logistics operators, they will tend to store the products in Hong Kong rather than free trade zones in Mainland China (Li, 2016). This recent change of cross-border e-commerce regulations has the potential to attract operators and increase warehouse demand in Hong Kong as a “sheltered bay” due to its flexibility.

**Spatial Problems of Brownfields and Port Back-up Land (PBL)**

Since the land supply for logistics use is insufficient and unaffordable, the operators tend to use the abandoned uncultivated agricultural land in the New Territories for non-agricultural uses (Jim, 2016). It can be categorised into five main types including container storage, warehouses, logistics operations and other workshops such as vehicle repair. Brownfield has recently been recognized as possible land supply for logistics development now and future. However, the government faces several challenges such as existing active uses and multiple ownership when it tried to reorganise the existing land use in the brownfields site for releasing land to develop comprehensively. Spatially, despite the time-consuming consultation and negotiation, other land supply for relocating existing operations on the brownfield sites has to be considered with the same requirements for instance cheap land and extensive outdoor space.

According to Town Planning Board (2008), port back-up land (PBL) is defined as the land used for essential port-related activities that do not necessarily have to located within the port. One-fifth is located within the container terminal areas and the others are in the brownfield in the New Territories. PBL consists of five major categories including container storage and repair yards, container freight stations, truck parks and repair yards, freight forwarding services centres and logistics centre (TPB, 2008). Similarly, apart from land ownership, competing land uses and other environmental concerns, there are also spatial problems in PBL. For instance, the Short Term Tenancy (STT) discourages tenants to invest in related facilities and they tend to convert it into other financially beneficial use such as vehicle parking due to no restrictions of use. So, it leads to an unbalanced land provision and allocation for PBL usage.
For both PBL and brownfield, spatially, the scattered distribution in the New Territories makes the relevant land inefficient to be used (Figure 10). There is a lack of provision of supporting infrastructure including road network and facilities. Thus, the operations become less cost-effective. In addition, the disperse distribution makes the conversion of brownfield sites more complex and difficult. Since the volume transshipment and urban logistics are growing, the land use conflicts have become more intensified and land demand has increased. The illegal expansion of brownfield sites is an evidence of increasing demand. As a result, government should implement a comprehensive plan to consolidate and rearrange the land supply problems.

5.1.3. Spatial Mismatch Between Working and Living Place
Another upcoming challenge in the logistics industry is related to spatial mismatch. The declining labour force poses challenges to the logistics industry for future development. Regarding sea logistics and air logistics, there is a significant spatial mismatch between the working location and living place of labour which gives a warning sign of the sustainability of labour force in logistics industry.

Spatial Distribution of Jobs in Sea and Air Logistics Sectors
In various port facilities in Hong Kong, including KTCT, RTT, six PCWAs, mid-stream operations, anchorages and private wharves, there are in total 88,000 jobs provided for port and related sectors (THB, 2015b). KTCT provides in total 40,000 direct and indirect jobs, and Kwai Tsing
District has the shortest distance to the port. In reviewing the working population in Kwai Tsing District (Table 6), there are in total 248,485 working population and 30,363 people work in logistics and related industries (C&SD, 2011). Among these 30,363 working population, only 15% of the labour force is working in the same district (Table 7) (C&SD, 2011). The data imply that most of the labour do not work and live in the same district, and this may create a burden for them in terms of time cost and money cost for commuting every day.

Table 6. Working Population in Kwai Tsing District

<table>
<thead>
<tr>
<th>Industry</th>
<th>Working Population in Kwai Tsing District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>12 097</td>
</tr>
<tr>
<td>Construction</td>
<td>21 934</td>
</tr>
<tr>
<td>Import/export, wholesale and retail trades</td>
<td>57 651</td>
</tr>
<tr>
<td>Transportation, storage, logistics</td>
<td>30 363</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>22 310</td>
</tr>
<tr>
<td>Information and communications</td>
<td>7 449</td>
</tr>
<tr>
<td>Financing and insurance</td>
<td>10 425</td>
</tr>
<tr>
<td>Real estate, professional and business</td>
<td>33 675</td>
</tr>
<tr>
<td>Public administration, education, human health and social work activities</td>
<td>31 911</td>
</tr>
<tr>
<td>Miscellaneous social and personal services</td>
<td>18 805</td>
</tr>
<tr>
<td>Others</td>
<td>1 865</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>248 485</strong></td>
</tr>
</tbody>
</table>

Source: C&SD, 2011
Table 7. Place of Work of Kwai Tsing’s Working Population

<table>
<thead>
<tr>
<th>Place of Work of Kwai Tsing Workforce</th>
<th>Working Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>In same district</td>
<td>37 272</td>
</tr>
<tr>
<td>In another district</td>
<td></td>
</tr>
<tr>
<td>- Hong Kong Island</td>
<td>41 056</td>
</tr>
<tr>
<td>- Kowloon</td>
<td>65 387</td>
</tr>
<tr>
<td>- New towns</td>
<td>56 946</td>
</tr>
<tr>
<td>- Other areas in the New Territories</td>
<td>10 445</td>
</tr>
<tr>
<td>No fixed places/Marine</td>
<td>19 795</td>
</tr>
<tr>
<td>Work at home</td>
<td>10 857</td>
</tr>
<tr>
<td>Places outside Hong Kong</td>
<td>6 727</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>248 485</strong></td>
</tr>
<tr>
<td>Proportion of working population with place of work in same district (%)</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Source: C&SD, 2011

The same situation could be also found in air logistics sector. Labour force in HKIA is specifically examined as the major employment source in air logistics sector in Hong Kong. According to HKIA (2016), there is only 23% of the labour lives in the neighbouring districts, such as Tung Chung, Kwai Tsing and Tuen Mun. Workers living in these districts can reach the airport within 30 minutes (Figure 11). It is found that most of the workforce in HKIA lives in Hong Kong Island and Kowloon side. This indicates a significant spatial mismatch pattern between working and living place (HKIA, 2016). In such case, the commuting distance and time become a negative factor in attracting people to work in logistics industry since the location of workplace is not preferable, the high commuting cost even discourages new workforce to enter the industry. There is a pressing need to respond to the spatial mismatch between
workforce living location and job opportunities in a district with comprehensive spatial planning and transportation connection.

HKIA Workforce with 15 minutes Travelling Time

![HKIA Workforce with 15 minutes Travelling Time](image)

Figure 11. HKIA Workforce with 15 minutes Travelling Time (Source: HKIA, 2016)

5.1.4. Lack of Leading Institutional Body and Proactive Institutional Mechanism
Apart from the challenges in spatial context, this section evaluates the institutional body and institutional mechanism regarding logistics industry in Hong Kong.

**Lack of Leading Institutional Body**
Transport and Housing Bureau is the decision-making authority which is mostly relevant to logistics industry. In the existing institutional framework, there is no single institutional body overseeing the entire industry and promoting the competitiveness of logistics development in Hong Kong. To mitigate the institutional gap between the government and the industry, the Logistics Development Council (LOGSCOUNCIL) was established in 2001. Chaired by the Secretary for Transport and Housing, it serves as a platform for different stakeholders in the industry to share and interact (LOGSCOUNCIL, 2017). Members are appointed by the Chief Secretary for Administration from both public and private sectors.

Hong Kong Maritime and Port Board (HKMPB) is another institutional body set up by the government in planning maritime and port-related strategies. It aims to facilitate long-term development of maritime industry and development of the Port of Hong Kong (Hong Kong Maritime Port Board [HKMPB], 2016a). In terms of operation and land allocation, there are several government department in charge of. The departments are shown in Figure 12. Different functions are well allocated to government departments. However, there is a lack of
a leading institutional body overseeing the entire logistics industry. Although the LOGSCOUNCIL has a leading role to consolidate opinions and facilitate coordination among stakeholders, it has limited executive power (BMT Asia, 2014). Reviewing the work the LOGSCOUNCIL in the past ten years, the major work ranges from promoting logistics to the general public, organising forums and seminars and arranging visits to various logistics facilities outside Hong Kong (LOGSCOUNCIL, 2017). More proactive actions can be taken to lead the industry to become more competitive.

**Limited Access to Policy Making Process of Representative Bodies**

Apart from institutional body, there are also several representative bodies from the industry to facilitate coordination and communication between stakeholders in the industry. Representative bodies are shown in Figure 12. Concerning about their own interests, they voice their opinions to the government department. For instance, Hong Kong Association of Freight Forwarding and Logistics Ltd. (HAFFA) expressed their support on the reinstatement of cargo fuel surcharge mechanism. HAFFA had urged the Civil Aviation Authority (CAD) since 2016 to reinstate the charge fuel surcharge mechanism, as it could maintain the equitable, clear and transparent system for Hong Kong’s industry (Hong Kong Association of Freight Forwarding and Logistics Ltd., 2017). Representative bodies such as HAFFA set up meetings occasionally for specific issues. However, in the existing institutional framework, there is no regular meeting or mechanism for the representative bodies to contribute to policy making.

![Figure 12. Government Bodies and Representative Bodies of Logistics Industry](image-url)
5.1.5. Competition with Neighbouring Cities and Countries

The fifth challenge is induced by rising competition with neighbouring cities and countries, taking into account the possible relaxation of cabotage rule, relocation of factories from PRD and the improving efficiency of competing airports and ports.

Relaxation of Cabotage Rule

Maritime Code of China stipulated that vessels performing cargo shipping between ports in Mainland China must register in China or carry a Chinese flag, and foreign vessels and those carrying a foreign flag are not allowed to perform domestic shipping (Wong, Wong, Wang, Mo and Leung, 2016). This is referred as cabotage rule. Following the principle of ‘One Country, Two Systems’ and thus not being regarded a Chinese port, Hong Kong benefitted from the cabotage rule since a foreign vessel having loaded a cargo in a Chinese port must make a transit to Hong Kong before loading a cargo in another Chinese port (Wong et al., 2016). Therefore, Hong Kong is considered a vital port for “North East Asia transshipment to other international destinations” (Wong et al., 2016).

Because of the relaxation of cabotage rule in Shanghai Free Trade Zone (SHFTZ) in 2013, Chinese-owned vessels that do not hoist the Chinese flag are allowed to load a cargo in Shanghai Free Trade Zone and unload it in another Mainland Chinese port. As a result, it is likely that shipping lines would shift their transshipment to other Chinese ports, for instance the port of Shenzhen, and the present throughput of Hong Kong could be reduced by 14% (Wong et al., 2016). As the ports in Mainland China, such as those of Qingdao, Ningbo and Guangzhou, have become more equipped and have enough capacity to handle the increasing throughput demand, they are also lobbying for a relaxation of cabotage rule in their own ports (Chen, 2016; Fendos, Koo & Lee, 2016). If there is further relaxation of cabotage rule in other ports in the Mainland, Hong Kong’s transshipment and port business are very likely to drop drastically.
Relocation of Labour-Intensive Manufacturing Processes from Pearl River Delta

Faced with escalating production costs due to the implementation of new labour law and more stringent regulations on environmental protection and rising awareness of corporate social responsibility, labour-intensive manufacturers in the Pearl River Delta (PRD) started to relocate to countries that are with lower production costs and little protection of labour rights, for instance Vietnam (Zhu & Pickles, 2014; Wang et al., 2009). In addition, the Chinese government would like to upgrade its economy to one that is of a higher level of technology and higher wage (Wang, Appelbaum, Degiuli & Lichtenstein, 2009). In order to move up the value chain, some companies now focused on innovation and invested in Research and Development (R&D) (Zhu and Pickles, 2014).

Being the destinations of the relocation, countries offered incentives to foreign manufacturers. For example, Bangladesh provided foreign apparel manufacturers with 10-year income tax reduction (Zhu and Pickles, 2014). With the influx of Foreign Direct Investment (FDI) and rising availability of skilled workers, the receiving countries were able to handle more sophisticated manufacturing processes (Yang, 2016). Furthermore, more and more raw materials suppliers had also relocated their factories to those countries in addition to manufacturers. Consequently, the entire industrial chain had formed in those countries (cited in Zhu & Pickles, 2014).
The relocation of factories had facilitated port development in the receiving countries. For instance, in the past, in order to be loaded onto the long-haul, cargo from Vietnam had to be shipped to Kaohsiung or Hong Kong, a transshipment hub, due to the lack of a deep-water port in Vietnam (cited in Zhang, Loh & Van Thai, 2015). After the opening of Cai Mep International Terminal in southern Vietnam in 2009, cargo business in Vietnam had increased thanks to the introduction of direct shipping lines from Vietnam to the U.S. and Europe (cited in Zhang et al., 2015). As a result, Hong Kong lost its role as a transshipment hub, and it is possible that Hong Kong’s transshipment and port business would decline in the long-run.

Social stability, clearer investment laws and protection of intellectual property rights are vital to foreign manufacturers and companies (Kimura, 2006). If the receiving countries would like to further attract them to relocate to their countries, they had to improve their legal system and reinforce social stability (Kimura, 2006).

*Increasing Competitiveness of Neighbouring Airports and Ports*
Ports in the PRD Region Taking Over the Gateway Position

Ports, especially those in the PRD region such as Shenzhen and Guangzhou, are apparently taking over Hong Kong’s position as the gateway to the mainland market. There are two reasons concerning the rising competitors to explain the shift, namely the differences in costs and container standards. Firstly, the Port of Hong Kong was the monopolistic gateway for South China before the 1990s (Wang & Slack, 2000). However, the ports of Yantian and Shekou started international call in 1994, with lower total handling costs, for example port operation costs and inland transport costs than that of Hong Kong. In terms of port operation costs, Hong Kong’s Terminal Handling Charge (THC) is higher than a similar charge, the Original Receiving Charge (ORC) in Shenzhen. Regarding the inland transport costs, the trucking cost to Yantian or Shekou is also lower than that to Hong Kong, as “double licence” is required for the latter cross-boundary drivers. In fact, about 90% of these truck drivers are from Hong Kong, while their salaries are ten times of that in the Mainland (Wang & Slack, 2000).

Another competitive advantage of the two ports is the more up-to-date container standards. To be specific, docks and road systems in Yantian are designed to cater the world-class large vessels and long trucks for containers from the United States which usually exceed 40ft long. The port in Shekou and Nansha, alternatively, focuses on the business of intra-Asia shipping routes, and therefore is designed for standardised containers instead. Hong Kong was not positioned in terms of the role of port, for example whether to upgrade the handling capacity for bigger vessels. Hence, it highlights the need for Hong Kong to reconsider the advantages and her role in regional logistics development, or else the port will lose the comparative advantages to other ports which focus on specific businesses.

Rising Handling Capacity of Neighbouring Airports

While the construction of 3RS guarantees quite a substantial gain in runway capacity, the project is scheduled for completion in 2024. While HIKA is approaching saturation (AAHK, 2013), the expansion plans of nearby airports in the coming decade are more proactive in comparison, including Shenzhen, Guangzhou, Shanghai, Singapore and Korea (AAHK, 2017). Air cargoes arriving Hong Kong may then be catered by those airports. The role of HKIA as the gateway to the PRD will be less significant. Hence service efficiency and quality in Hong Kong should be maintained with high standards while should provide higher variety of services to cater the needs of different firms and types of goods to maintain the relative competitiveness.

5.2. Opportunities

In spite of the challenges in the above, six major opportunities are identified, namely enhancing connectivity through road infrastructure development, expansion of air cargo facilities, development of intermediary service, innovation and technology enhancement, new land supply and more initiatives facilitating regional interaction and cooperation.
5.2.1. Enhancing Connectivity Through Road Infrastructure Development

Road infrastructure projects are essential in increasing connectivity and reducing time cost. Consequently, transport of goods can be more efficient.

*Hong Kong-Zhuhai-Macao Bridge (HZMB) Linked with Hong Kong Link Road (HKLR) and Hong Kong Boundary Crossing Facilities (HKBCF)*

Flows of people and goods between Hong Kong, Macao and Guangdong province had increased significantly in recent years. Nevertheless, as there was a lack of direct land transport connecting Hong Kong to the western PRD, cars had to take a long detour through Hume Bridge to reach the western PRD from Hong Kong (Highways Department, 2011). This had led to high transport cost and long transport time (Highways Department, 2011). Thanks to the HZMB which improves connectivity, transport cost and time can be reduced drastically and freight transport and flow of passengers between Hong Kong and western PRD can be facilitated (Highways Department, 2011). Hong Kong Link Road (HKLR) links the HZMB Main Bridge and Hong Kong Boundary Crossing Facilities (HKBCF) which is on an artificial island and provide cross-boundary cargo and passenger clearance facilities (Highways Department, 2011).

Goods from the western PRD can be transported to HKIA and KTCT with a lower cost and in a shorter period of time (Highways Department, 2011). This would make HKIA and KTCT more attractive to manufacturers in western PRD. So, the HZMB can help reinforce Hong Kong’s status as a trade and logistics hub (Highways Department, 2011).

Table 8. Travel Time Change After the Construction of Hong Kong-Zhuhai-Macao Bridge (HZMB)

<table>
<thead>
<tr>
<th>Origin - Destination</th>
<th>Current Distance and Travel Time</th>
<th>Distance and Travel Time Using HZMB</th>
<th>Reduction in Distance and Travel Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zhuhai - KTCT</td>
<td>About 200 km and About 3.5 hours</td>
<td>About 65 km and About 75 mins</td>
<td>&gt; 60%</td>
</tr>
<tr>
<td>Zhuhai - HKIA</td>
<td>About 200 km and About 4 hours</td>
<td>About 40 km and About 45 mins</td>
<td>&gt; 80%</td>
</tr>
</tbody>
</table>

Source: Highways Department, 2011

Tuen Mun-Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB)

They provide a direct route linking the northwest New Territories, HKBCF, HKIA and Lantau
Island, thus offering an alternative access to HKIA, reducing traffic in Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway and travel time between northwest New Territories and Lantau Island (Highways Department, 2011). Goods can reach HKIA from northwest New Territories in a shorter period of time. So, HKIA’s status as a regional and international aviation hub can be enhanced (Highways Department, 2011).

Table 9. Travel Time Change After the Construction of Tuen Mun-Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB)

<table>
<thead>
<tr>
<th>Origin – Destination</th>
<th>Current Distance and Travel Time (Through Tuen Mun Road and Ting Kau Bridge)</th>
<th>Distance and Travel Time Through TM-CLKL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuen Mun South - HKIA</td>
<td>About 35 km</td>
<td>About 13 km</td>
</tr>
<tr>
<td></td>
<td>About 30 mins</td>
<td>About 10 mins</td>
</tr>
</tbody>
</table>

Source: Highways Department, 2011

**Liantang/Heung Yuen Wai Boundary Control Point (LT/ HYW BCP)**

Another opportunity will be the LT/ HYW. It will connect with the expressway systems including the Fanling Highway and further to Shenzhen-Shantou Expressway and Shenzhen-Huizhou Expressway (DB & PlanD, 2016b). LT/ HYW BCP will be able to divert the traffic flow in existing BCPs, Man Kam To and Sha Tau Kok, the main access to eastern parts of Shenzhen and Guangdong. Moreover, it will reduce the travel time between Hong Kong and Guangdong, hence to the counterparts in the Southern China (Civil Engineering and Development Department [CEDD], 2015). Area surrounding LT/ HYW BCP is a strategic location for building logistics facilities as costs of cross-boundary transportation are lower. Also, land rent is expected to be relatively lower than the ones in urban area or traditional industrial districts. Situated in the east end of the Northern Economic Belt, the Liantang/Heung Yuen Wai Boundary Control Point is expected to support the development of the New Territories (DB & PlanD, 2016b).
5.2.2. Expansion of Air Cargo Facilities

As HKIA is expected to reach its maximum capacity by 2020, 3RS will be constructed in order to prevent bottlenecks of air cargo throughput from occurring (HKIA, 2011). The spillover effects of this expansion will bring opportunities to the entire logistics industry because the expected increase in air cargo throughput must be accommodated. This will include increased demand for landborne and seaborne transportation services, which are facilitated by the completion of major infrastructure projects.

Opportunities from the Expansion of Air Logistics Facilities

The construction of the third-runway and the air cargo-related facilities have become the catalyst for major connectivity-related infrastructure in Hong Kong. In particular, the Tuen Mun – Chek Lap Kok Link (TM-CLKL) and the HZMB are major infrastructure projects that are intended to improve integration of the HKIA at the regional scale. There is an opportunity for TM-CLKL to position Tuen Mun as a sea and air logistics hub due to its proximity to HKIA, where the time distance is expected to be eight minutes (Highways Department, 2010). Furthermore, the RTT is located in Tuen Mun, which could potentially become a major player in the Port of Hong Kong since the proportion of river trade is increasing due to the cost of cross-boundary trucking. The need for expansion of air logistics facilities will also provide opportunities for Tuen Mun Areas 40 and 46 to be used for logistics-related activities, which will be linked by the TM-CLKL. The land availability may provide opportunities for large consolidation centres and accommodate the trend for high-valued logistics facilities.
Implications on Key Trends

In regard to the trend of increasing throughput proportion of transshipment, the expansion of air logistics facilities will solidify the RTT’s position in the Port of Hong Kong. The RTT will become a hub for river cargo that is destined for the airport, while KTCT will continue to serve as a hub for cargo that is intended to be shipped internationally. This is due to the proximity of Tuen Mun to the HKIA after the completion of the TM-CLKL. Furthermore, the changing consumption pattern that is leading the rise of e-commerce has led to the demand for land logistics for last-mile delivery as well as reverse logistics. High-value added services are also becoming increasingly in demand and will require more land to facilitate this trend. The opportunity created by expansion of air cargo-related facilities will improve the robustness of the entire logistics industry by increasing the flexibility of cargo movement through integrating land, sea and air logistics.

5.2.3 Development of Intermediary Service

Another opportunity is to develop intermediary service of logistics in Hong Kong. This section depicts the opportunities for Hong Kong to further strengthen the maritime cluster.

Flow of Information and Capital

As discussed in Section 3.1, apart from physical goods flow, logistics also includes information flow among organisations in the market (Benjabutr, 2017). Maritime industry is one of the examples of flow of information and capital. A maritime cluster comprises sectors engaging in both physical and information and capital flow. Physical flow includes cargo handling and vessel operations, while information and capital flows include services supporting the shipping industry, and high value-added services, such as finance and legal services (BMT Asia, 2014).

Development of Maritime Cluster in Hong Kong

Hong Kong is the 8th largest trading economy with international trade and a continual expansion of maritime service cluster (HKTDC, 2016a). Independent from China shipping registration, Hong Kong is the fourth largest shipping register in the world, following Panama, Liberia and Marshall Islands (United Nations [UN], 2015). As shown in the Table 10, Hong Kong accounts for 8.6% of the world’s total ship registration. As of January 2015, there are more than 2,425 vessels registered in Hong Kong (UN, 2015). Apart from ship registration, Hong Kong is a home to 800 maritime companies and provides them with a range of comprehensive and professional service, including ship financing, insurance, broking, ship management and maritime law services (HKTDC, 2016a).
Table 10. Flags of Registration with the Top Five Largest Registered Fleets (as of 15 January 2015)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country/Territory of Ownership</th>
<th>Number of Vessels</th>
<th>Share of world total, vessels</th>
<th>Deadweight tonnage (1,000 dwt)</th>
<th>% Share of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Panama</td>
<td>8351</td>
<td>9.33</td>
<td>352192</td>
<td>20.13</td>
</tr>
<tr>
<td>2</td>
<td>Liberia</td>
<td>3143</td>
<td>3.51</td>
<td>203832</td>
<td>11.65</td>
</tr>
<tr>
<td>3</td>
<td>Marshall Islands</td>
<td>2580</td>
<td>2.88</td>
<td>175345</td>
<td>10.02</td>
</tr>
<tr>
<td>4</td>
<td>Hong Kong</td>
<td>2425</td>
<td>2.71</td>
<td>150801</td>
<td>8.62</td>
</tr>
<tr>
<td>5</td>
<td>Singapore</td>
<td>3689</td>
<td>4.12</td>
<td>115022</td>
<td>6.58</td>
</tr>
</tbody>
</table>

Source: UN, 2015

**Strengths of Hong Kong**

The tax regime is one of the strengths of Hong Kong to further expand the maritime service. Profits tax rate does not exceed 16.5% with very few other taxes and duties (HKMPB, 2016b). International shipping operations can enjoy profits tax exemption and companies can retain large proportion of their business income. Hong Kong has double taxation relief arrangements with 42 parterres, including the Chinese mainland, US, UK, Korea, Netherlands, New Zealand, Singapore, Belgium, Denmark, Norway and Germany, which can enhance the attractiveness of the business environment to the investors.

Another factor contributing to the development of maritime cluster is the availability of experienced professional services in Hong Kong. Take maritime insurance as example, Hong Kong has a wide range of international marine insurance service providers. As of March 2016, there were over 84 authorised ship insurance companies in Hong Kong, in which 52 of them are local insurers (HKTDC, 2016). In terms of institutional and legal framework, Hong Kong is an excellent maritime legal and dispute resolution centre (HKMPB, 2016b). Specialist Admiralty List in High Court, bilingual professionals, arbitration intuitions are available in Hong Kong, which makes Hong Kong an ideal place for commercial development and dispute resolution (HKMPB, 2016b).

5.2.4. Innovation and Technology Advancement

In facing the ever-changing global market, innovation and technology is one of the vital elements for Hong Kong’s quest to maintain the position of logistics hub. Innovation and technology has two specific roles in logistics, namely the reduction in spatial and labour requirement and the increase in enhance operational efficiency.

**Reduce Spatial and Labour Requirement**

The advanced use of technology requires less space and labour than traditional operation
system. This can cope with the shortage of land and labour. By introducing automation machines and robotics, it could reduce operational manpower and at the same time help the industry to standardise the services quality (DP World, 2015). The required spaces for storages in warehouses and distribution centres could also be alleviated since the productivity is improved, and the operational activities, such as packing, labelling and ticketing, are speeded up with automation system. The flexibility of space is further enhanced especially in local small and medium scale logistics providers as they do not have large space for storages (DP World, 2015).

**Enhance Operational Efficiency**

In terms of enhancing operational efficiency in logistics industry, technology facilitates the flow of information, goods and services which would become smooth and well-ordered. It also integrates the business processes along the supply chain (SD Advocates, 2015). Through the deployment of Automated Truck Identification System (ATIDS) and Radio Frequency Identification (RFID) technology in transportation services, the track and trace ability is enhanced by providing better visibility of information, such as location, order status and delivery schedule (Hong Kong International Terminals Limited [HIT], 2017).

Moreover, the cold chain transportation with specialised cargo handling is introduced to handle temperature-sensitive goods such as perishable products and pharmaceuticals (HKIA, 2016). In the gate operation, Common Tractor Identity Card and Smart Dual Move System are used in the entire procedure which further increase the efficiency and the quality of customer services (HIT, 2017). The operation in warehouses and distribution centres have also been enhanced via various value-added logistics functions. For example, the application of Just-in-Time, Finished Goods Inventory and Vendor Managed Inventory boosts the the operation procedures (BMT Asia, 2014).

To complement with Internet of Things and electronic communication system across the entire supply chain, the integration of various technologies provides vast potential for Hong Kong to sustain the role of international logistics hub. In order to keep up the trend with the most advanced logistics technologies, capital investment and support from private and public sectors are inevitable, sufficient funding and resources should be provided in order to foster the R&D activities in the industry. Not only could the use of technology boost the competitiveness of logistics industry, it could also help reduce spatial requirement which is especially important the Hong Kong context. Innovation and technology could ultimately provide synergy along the entire supply chain from different transportation modes and logistics suppliers to consumers.
5.2.5. New Land Supply for Logistics Development

This section discusses how planned and potential land supply provides opportunities for the sustainable growth of Hong Kong’s logistics industry, including both physical operations and intermediary services.

![Map of Locations of the New Land Supply](image)

**Figure 16. Map of Locations of the New Land Supply**

### New Land Supply to Support Physical Operations

**Tuen Mun Areas 38, 40, 46 and 49**

At present, the government has identified four parcels of land at Tuen Mun Areas 40 and 46 as Potential Development Areas (PDAs). Two Logistics Development Sites (LDSs) are also designated in the adjacent Areas 38 and 49. Covering a total area of 60 ha, these PDAs and LDSs will be connected with the Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Boundary Crossing Facilities (HKBCF), North Lantau via the Tuen Mun-Chek Lap Kok Link, as well as the Northwest New Territories with the proposed Tuen Mun Western Bypass (Planning Department [PlanD], 2015). In addition to the linkages with the Hong Kong International Airport (HKIA) and the logistics back-up sites in New Territories, the PDAs and LDSs are close to River Trade Terminal. Therefore, Tuen Mun Areas 38, 40, 46 and 49 are potentially a strategic location for intermodal transshipment facilities.

**Tsing Yi, Airport Island and HKBCF Island**

The government has currently designated 28 ha, 17 ha and 12-20 ha of land in Tsing Yi, Airport Island and HKBCF Island respectively for logistics support purposes (HKIA, 2011; Hong Kong
Special Administrative Region Government [HKSARG], 2017; Legislative Council Secretariat, 2015). While the lands in Tsing Yi and HKBCF Island provide adjacent areas for developing high value-added facilities and warehouses related to air logistics (HKSARG, 2017; Legislative Council Secretariat, 2015), the reserved sites on Airport Island provide additional space for cargo terminal expansion and special cargo handling (HKIA, 2011).

**ST/LMC Development Node, MKT Logistics Corridor and NTN New Town**  
With reference to Hong Kong 2030+, the government has proposed to allocate land for logistics activities in all three PDAs in New Territories North (NTN), namely San Tin/Lok Ma Chau (ST/LMC) Development Nodes, Man Kam To (MKT) Logistics Corridor and NTN New Town (PlanD, 2016c). Given the short distance from at least one of the boundary crossing points, these proposed sites are suitable for developing modern logistics to support cross-boundary land freight services near the important gateways.

**New Land Supply to Intermediary Services**

**East Lantau Metropolis**  
Positioned as the third central business district (CBD3), the East Lantau Metropolis (ELM) is proposed to situate in the central water between Hong Kong Island and the main island of Lantau (Figure 16) (PlanD, 2016a). The ELM will provide an excellent breeding ground for the cluster of logistics intermediary services, such as shipping finance and aviation legal services, as it is close not only to the traditional CBD (i.e. approximately four kilometres from Central) but also to the major logistics infrastructures, for example HKIA and HKBCF of HZMB in Lantau (PlanD, 2016).

5.2.6. Initiatives Facilitating Regional Interaction and Cooperation

Regional interaction and cooperation is increasingly important, and it can be enhanced by different initiatives.

**China (Guangdong) Pilot Free Trade Zone**

The Free Trade Zone was officially established in April 2015 and consists of three areas with a total area of about 116 sq. km (HKTDC, 2017a). The three areas are namely, Qianhai-Shekou Area of Shenzhen, Hengqin Area of Zhuhai and Nansha Area of Guangzhou (HKTDC, 2017a). Their locations are shown in Figure 17. Objectives of the Free Trade Zone include forming a regulated, international and market-oriented business environment, facilitating investment and trade and enhancing cooperation between Hong Kong, Macao and Guangdong province (HKTDC, 2017a).

Each area would have different functions. Qianhai-Shekou would put emphasis on cooperation between Hong Kong and Shenzhen in modern services, for example modern
logistics, information and technology and finance (HKTDC, 2017a). Hong Kong, with a high level of internationalisation, sound legal system and advanced port system, the Area has the potential to be developed into an international centre for trade in services and hub port of China (HKTDC, 2017a). As for Hengqin, it would focus on the development of industries in tourism, health, leisure, education, culture, technology and financial and commercial services (HKTDC, 2017a).

Regarding Nansha, it has been poised to be an international logistics, trade and shipping centre, and Guangdong, Macao and Hong Kong would cooperate in providing professional and financial services, development of information technology and commercialization of achievements in technology (HKTDC, 2017a). There would also be “outbound investment service zone” in Nansha which would emphasise the development of business services sector and promotion of foreign trade. Small and medium-sized enterprises (SMEs) would be encouraged to set up their headquarters in the area so as to form a cluster. Additionally, measures would be carried out to help SMEs from Hong Kong and Macao enter the market in mainland China, and at the same time, help SMEs from the Mainland to enter the international market (HKTDC, 2017a).

Figure 17. Map of China (Guangdong) Pilot Free Trade Zone (Source: HKTDC, 2017a)
**Guangdong-Hong Kong-Macao Greater Bay Area**

The Greater Bay Area was promoted in the Dedicated Chapter on Hong Kong and Macao in the National 13th Five-Year Plan in March 2016 (Ming Pao, 2017). It was then mentioned by Premier Li in the annual government work report a year later (Ming Pao, 2017).

The Greater Bay Area covers an area of over 56,000 sq. km and has a population of over 66 million (Cheung, 2017; Ming Pao, 2017). It includes Hong Kong and Macao and nine cities in Guangdong province, namely Zhaoqing, Guangzhou, Huizhou, Shenzhen, Dongguan, Zhongshan, Zhuhai, Foshan and Jiangmen (Ming Pao, 2017). Their locations are shown in Figure 18. It is worth noticing that the Gross Regional Domestic Product (GRDP) of the Greater Bay Area is about US$1.3 trillion (Ming Pao, 2017; The State Council, 2017), and this number is similar to the Gross Domestic Product (GDP) of Australia and larger than that of Spain (World Bank, 2017).

Figure 18. Map of Guangdong-Hong Kong-Macao Greater Bay Area (Source: Ming Pao, 2017)

The Greater Bay Area has the potential to enhance connectivity between Hong Kong and Mainland China and promote regional economy (The State Council, 2017). It could be developed into a first-class international centre in finance, trade, technology, innovation, transportation and shipping (HKTDC, 2015a). Furthermore, the Greater Bay Area could promote ‘complementarity’ and avoid vicious competition among the eleven cities (Cheung, 2017; Ming Pao, 2017; Ng, 2017). So, each city, based on their own advantages, would have a unique function and role to play in the Greater Bay Area. The role of some cities in the Greater Bay Area is shown in Table 11.
Table 11. Roles of Selected Cities in the Greater Bay Area

<table>
<thead>
<tr>
<th>City</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dongguan</td>
<td>International high-end manufacturing base</td>
</tr>
<tr>
<td>Foshan</td>
<td>International high-end manufacturing base</td>
</tr>
<tr>
<td>Guangzhou</td>
<td>Modern services centre in south China</td>
</tr>
<tr>
<td>Huizhou</td>
<td>Petrochemicals base</td>
</tr>
<tr>
<td>Jiangmen</td>
<td>Advanced manufacturing base in mainland China</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>Technological research and innovation centre</td>
</tr>
<tr>
<td>Zhongshan</td>
<td>Advanced manufacturing base in mainland China</td>
</tr>
<tr>
<td>Zhuhai</td>
<td>Advanced manufacturing base in mainland China</td>
</tr>
</tbody>
</table>

Source: HKTDC, 2015a

Hong Kong, as an international city, could lead the city cluster to go global and focus on providing maritime services, such as financial and legal services (HKTDC, 2015a; Cheung, 2017; Ming Pao, 2017). Hong Kong’s role in Guangdong-Hong Kong-Macao Greater Bay Area related to the development of logistics industry would be further discussed in Section 9.1.

‘Belt and Road’ Initiative

The Initiative was first announced by President Xi in 2013 and its action plan was authorised by the State Council with two main components, Maritime Silk Road and Silk Road Economic Belt (Tian, 2016), as shown in Figure 19 below. The Initiative involved 65 countries which accounted for about 60% of the total population in the world, 30% of the world’s GDP and 24% of the world’s total household consumption (Chin & He, 2016). It has the potential to enhance market integration, create new trade ties and facilitate infrastructure development (McBridge, 2015).
Acting as a major platform enhancing logistics and trade, Hong Kong could be a centre for business matching, sourcing, exhibitions and conventions in Asia and offer services for instance financial advisory, research and development, risk assessment and project feasibility studies for infrastructure projects in rail, aviation and maritime transport (Commission on Strategic Development, 2016; HKSARG, 2017; HKTDC, 2017b). With a sound legal system, Hong Kong could offer services in consultancy, professional international legal and dispute resolution (HKTDC, 2017b; Commission on Strategic Development, 2016).

Moreover, Hong Kong, following the principle of ‘one country, two systems’ and having a high degree of autonomy, would be able to foster new economic and trade ties and sign Investment Promotion and Protection Agreements and Free Trade Agreements with countries involved in the Initiative (Commission on Strategic Development, 2016). Hong Kong’s role in ‘Belt and Road’ Initiative related to the development of logistics industry would be further discussed in Section 9.1.
**Chapter Summary**

Chapter 5 includes a thorough study of the present challenges and opportunities that Hong Kong’s logistics industry faces, identifying their underlying spatial implications. With these challenges and opportunities, the industry is indeed at a turning point for continuous growth in the future. Therefore, it is crucial for Hong Kong to not only seize the existing opportunities, but also turn these challenges into new possibilities. In this regard, case studies from other cities are reviewed in Chapter 6.
6. Review of Other Cities
The following three topics will be reviewed corresponding to the three flows of the logistics supply chain as mentioned in Section 3.1 which are physical flow of goods, information flow, and funds flow. Relocation and expansion of ports deal with the physical movement of goods, while the review of other cities’ institutional structure is related to the flow of information between the industry and the government. Lastly, the intermediary services deal with how the flow of funding influences on the spatial distribution of logistics intermediary service firms within a city.

6.1. Relocation and Expansion of Ports: Shanghai and Singapore
In order to encourage the economic growth and sustain the port development, many seaport cities actively enhance the expansion and construction of port and related facilities, some even propose to abandon the old ports and to rebuild the new port far from the highly dense city centres (SD Advocates, 2015). The relocation and expansion of port is not a new issue in the global logistics industry. Shanghai and Singapore have gone through the port relocation and expansion recently (SD Advocates, 2015). In Hong Kong, some reflections from stakeholders in sea logistics also suggested that the relocation of the current KTCT might be a possible and sustainable strategy for long-term port development, yet further investigation and consultation should be conducted. In the following, the key incentives of relocation and expansion of ports in Shanghai and Singapore would be reviewed and the possibility of Hong Kong’s port relocation would be further discussed.

6.1.1. Shanghai: Yangshan Deep-water Port Overcomes the Limitation of Water Depth
Shanghai, being the world’s largest and busiest container port, handled 36.54 million TEUs in 2015 (HKTDC, 2016a). The port in Shanghai actually consists of three separate container port sites, including Wusong Port, Waigaoqiao Port and Yangshan Port (Figure 20).
The Wusong Port is the oldest port in Shanghai, was the main port prior to the 1990s and used for domestic container vessels primarily (McKinnon, 2011). Later on, the Wusong Port’s capacity was saturated and was then outpaced by the new Waigaoqiao Port in the late 1990s, and the current uses of Wusong Port are for cruise and passengers terminal. The Waigaoqiao Port, located adjacent to Waigaoqiao Free Trade Zone and Bonded Logistics Park, still serves as the major container port in Shanghai (McKinnon, 2011). However, since the Waigaoqiao Port was limited by the water depth in Yangtze River, the central government decided to develop the Yangshan Deep-water Port in 2001 and the Port subsequently operated in 2005. In this way, the limitations of inadequate draft to accommodate mega vessels in Waigaoqiao and Wusong river-based ports could be overcome (Chapman, 2011).

The Yangshan Port is capable of handling the largest container ships nowadays and allows berths with -15 m depth (Chapman, 2011). By 2020, Yangshan Port could handle over 25 million TEUs annually with total 50 berths (SD Advocates, 2015). Not only has the relocation of key port in Shanghai changed the history of Shanghai’s sea logistics of having no deep-water port, a solid foundation has been also built for developing Shanghai into an international shipping centre.
6.1.2. Singapore: New Port Relocation for Long-term Growth

In Singapore, the proposal of new port relocation was raised in 2010 by the Economic Strategies Committee in Singaporean Government (BMT Asia, 2014). The Consolidation Plan was carried out in 2012 and decided to relocate the port from Pasir Panjang and Tanjong Pagar to Tuas by 2027 (BMT Asia, 2014) (Figure 21).

![Map of Singapore showing port relocation](image)

Figure 21. Relocation of Ports in Singapore (Source: BMT Asia, 2014)

The major factor in proposing the new port facility is to optimise the use of land in optimal development. As the population growth has increasing in current 10 years, various urban issues such as land use conflicts, traffic congestion and insufficient infrastructures would occur. The existing port infrastructures occupied in the South Waterfront are in a strategic location for future development. Hence, the idea of freeing up the prime land in Tanjong Pagar and Pasir Panjang was carried out in order to increase the efficiency of land use by providing residential, commercial and mixed-used development in the future. At the same time, the existing port infrastructures would be relocated to Tuas, the Southern West of Singapore, to form a new hub for major logistics development (Wong, 2016). The site selection of Tuas is also its located far away from the city centre, and this would reduce land use conflicts, and Tuas would have more available space for port development and related logistics facilities (BMT Asia, 2014). The plan of Singapore is to relocate all the port activities to Tuas Port in 2027, and the new Tuas Port would earmark the future generation of Singapore’s Port development. It will allow 65 million TEUs to be handled every year, up from 40 million TEUS nowadays (Wong, 2016).
6.1.3. Lessons to Be Learned
The review of Shanghai’s expansion and Singapore’s relocation of port has provided some insights for future port development of Hong Kong in optimizing the land efficiently. Although Hong Kong has no current plan in expanding or relocating the port, further analysis and investigation should be taken out in order to search for a possible strategy for long-term development. It is also reflected that some stakeholders or professionals have raised that the idea of port relocation might be possible in Hong Kong. One of the major arguments is that the original design of KTCT is for direct cargoes, however, transshipments are now the major services in the port, which the current port configuration may not fit such purposes and the design may be not up-to-date for current operation (BMT Asia, 2014). The new port master plan should be further studied. Moreover, Kwai Tsing District has been developed into a busy and populated district, from learning Singapore’s cases in freeing up the prime land for residential development, it may be possible for Hong Kong to free the land in KTCT for future residential and mixed-use development so as to satisfy the population need.

6.2. Institutional Design
As discussed in the previous sections, logistics does not only require transportation of goods moving in and out the city, but also a holistic plan to facilitate infrastructure construction, coordinate transport network and provide a favourable business environment. Through reviewing institutional model in Singapore, Shanghai, a proactive institutional leadership is observed.

6.2.1. Proactive Organisational Leadership by the Government
Looking into the case of Singapore and Shanghai, it is found that a proactive organisational leadership is the key success factor to develop visionary master plan and promote the growth of logistics.

**Singapore**
The Ministry of Trade and Industry Singapore introduced Industry Transformation Map (ITM) of logistics. There are ITMs for 23 industries under 6 clusters in Singapore, addressing productivity improvement, skills development, innovation development and internationalisation, in a partnership with stakeholders in the industry (Ministry of Trade and Industry Singapore, 2016). It acts as a master plan, to establish a vision of the sectors and set goals to provide employment opportunities in the country. Other industries include construction, real estate, security, healthcare, education. The Logistics ITM has a clear vision to reinforce Singapore's position as a global logistics hub. Identifying the opportunities, global trends, challenges and strategies of the industry, the Logistics ITM aims to leverage the operations excellence through supporting private sectors invest in suitable process methodologies and technologies, in order to improve overall collaboration of the industry (Economic Development Board [EDB], 2016).
Establishment of Centres of Innovation and Centres of Excellence in Singapore collaborates with local research institutions and universities and bolsters the logistics innovation. The Logistics ITM regards this as a promotion of Singapore as a favourable location for leading manufacturers to advance the supply chain management (EDB, 2016). Furthermore, the Logistics ITM also envisions the long-term growth of logistics in Singapore. Through adoption of technology and deepening of specialisation, Singapore government would support market expansion and the increase of international presence in logistics market (EDB, 2016).

In this case, a clear vision and position of logistics are well identified by the EDB. The ITM gives a direction of the industry in both short and long terms. As the leading government agency of logistics, EDB also facilitates concrete cooperation with different government departments, as well as private operators in facilitating operational efficiency and presence in the international market. The proactive leadership of the Singapore government also encourages the research and development of technology application in day-to-day operation, which leverages the competitiveness of the industry.

**Shanghai**

Apart from the example of Singapore, a proactive institutional leadership can also be observed in logistics. In Figure 22, the governance of logistics in Shanghai is shown. Shanghai Municipal Transport and Port Authority and Shanghai Municipal Council is under supervision of Shanghai Municipal Government.

![Figure 22](source: McKinnon, 2011)

Take the port operation as example, Shanghai Municipal Council has 44% of ownership of Shanghai International Ports Group (SIPG), which is in charge of the port operation (McKinnon, 2011). As SIPG is the only port operator in the Port of Shanghai, it implies the Shanghai Municipal Council, being the major shareholder of SIPG, has the decisive power of the port operation. Unlike Hong Kong privately operated ports, the Shanghai Municipal Council has the authority to directly implement guidelines and policies of port operation, demarcate and
authorise berths in the port, and supervise the entire port operation (McKinnon, 2011). Being supervised and operated by the same authority, port operation would be able to adhere to the direction and principles of the municipal government. In the other way, the municipal government can have a better understanding of the actual operation and difficulties of running the port business.

6.2.2. Lesson to be Learned
Regarding the previous two examples of institutional support of logistics, there are few factors can be summarised. Firstly, similar to the ITM in Singapore, a visionary and comprehensive master plan is required for the growth of logistics in Hong Kong. A clear position of the industry can guide the industry in short and long term. Especially for infrastructure construction, it takes a long time from planning, designing to actual construction. This is the reason why a long-term proactive plan is needed.

Furthermore, a stronger leadership can be observed as a successful factor of logistics development. In Singapore, the EDB has a close partnership with different representatives from the industries, and this makes the government easier to implement and provide incentives for the business sectors, according to their actual needs. The feedbacks from the business sector can always be reflected to the government in return. In Shanghai, the model is slightly different. As the municipal government owns large proportion of the port operation company, it can supervise and implement corresponding policies easily and efficiently. Hong Kong should adopt the appropriate model, in order to provide holistic actions in the dynamically changing business environment.

6.3. Intermediary Professional Services
In every industry, professional intermediaries play a fundamental role in ensuring smooth transaction of information and funds throughout the supply chain. According to Benjabutr (2017), a professional intermediary is defined as a firm or person who facilitates related parties in business deals, negotiations, and investment decisions. In the logistics industry, intermediary professional services include consulting, marine insurance, aviation finance etc., covering the sea, air, and land sectors. Among these, the development of maritime services is relatively mature, forming more noticeable spatial patterns. In fact, the term ‘maritime services’ is a common name for all intermediary services related to sea logistics. Therefore, two cities, namely London and Singapore, are reviewed below for their development of maritime services.

6.3.1. London
The reason of reviewing the case of London is because it is currently ranked as the world’s leading maritime finance and law centre (Jakobsen, Mellbye, Osman & Dyrstad, 2017). At the city-scale, a spatial distribution pattern of the location of maritime professional services could
be identified in London. According to Fisher Associates (2004), most of the intermediary services firms are clustered in London EC3 postcode area, which is the City’s insurance district. In other words, maritime intermediaries prefer to concentrate in close proximity to an established financial district. Furthermore, many internationally important maritime organisations such as Lloyd’s Register and the Baltic Exchange are also located in the area, meaning that major institutions act as a catalyst to attract related firms to establish in the general vicinity. Many insurance, legal, and consulting firms specialising in maritime services wish to locate near its respective traditional service cluster. This is the reason why many intermediary firms concentrate in EC3 of London (Fisher Associates, 2004).

6.3.2. Singapore
Since 2013, Singapore has secured its position of the world’s leading maritime city, playing a significant role in all aspects of the maritime industry (Jakobsen et al., 2017). Currently, the city-state is ranking first in the aspect of “Port and Logistics”, second in “Maritime Technology” and fourth in “Maritime Finance and Law” (Jakobsen et al., 2017). This provides evidence for the positive spillover effects of between these three aspects. It is also suggested that Singapore’s world-beating port infrastructure as well as the increasing R&D investment in logistics and supply chain have made it the most attractive location for maritime services companies (Jakobsen et al., 2017).

6.3.3. Lessons to be Learned
In reference to the review of London, a maritime intermediary cluster will prefer to be located near traditional financial and legal clusters. In the context of Hong Kong, they are mainly in CBD1. The distance to CBD1 must be taken into consideration when the government is intending to proactively establish an intermediary services cluster in Hong Kong. Although Hong Kong is considered as one of the top four financial centres in the world, its ninth position as a maritime finance and law centre (Jakobsen et al., 2017) is relatively weak and reflects the fact that Hong Kong’s intermediary services industry is not wisely capitalizing the status of city’s international financial centre.

In regard to the review on Singapore, it is clear that possessing and maintaining a world-class port is very important in complementing the growth of maritime intermediary services. Due to Singapore’s strength in both intermediary services and port infrastructure, they are able to maintain its position as the world’s leading overall maritime centre (Jakobsen et al., 2017). Since 2015, Hong Kong’s position as a global maritime centre has weakened, dropping from fifth to eighth (Jakobsen et al., 2017). Therefore, Hong Kong should strive to maintain its port status in conjunction with developing its maritime intermediary services sector in order to continue competing at the international level.
Chapter Summary
The case studies reviewed in Chapter 6 provide valuable insights into how the industry’s competitiveness can be sustained through improving the efficiency of the three flows of the logistics supply chain (i.e. physical flow of goods, information flow and funds flow). Successful experiences of other cities can be adapted and applied to the local context of Hong Kong, to varying degrees. In the next chapter, sets of strategies and recommendations will be presented, with reference to these examples.
7. Strategies and Recommendations

Taking into account key trends of logistics, challenges and opportunities in Hong Kong, this section depicts the vision, strategic directions and actions for logistics development in Hong Kong.

7.1. Vision

The logistics industry will continue to transform rapidly so continuous endeavours have to be made to achieve a sustainable and competitive edge in the global market. A vision acts as a road map to the development of the sector, and strategies and actions help transform aspirations into reality. Corresponding spatial plans will be proposed and incorporated in the study of Hong Kong 2030+. Addressing the key trends of logistics, challenges and opportunities in Hong Kong in Chapter 4 and Chapter 5, a long-term vision for maintaining Hong Kong’s position in logistics is developed as

‘To reinforce Hong Kong’s status as an international world-class logistics hub through improving the efficiency of intermodal freight transshipment and enhancing intermediary services.’

7.2. Strategic Directions

7.2.1. Upgrade and Connect Existing Logistics Facilities and Infrastructure

Strategic directions 01 to 03 depict the strategic approach in upgrading and connecting existing logistics facilities and infrastructure. **Strategic Direction 01: Enhancing logistics facilities** refers to the optimisation of use of land for high value-added logistics service, reservation of land for modern logistics development, as well as enhancement of development of cargo terminals. This is to sustain the Hong Kong as an aviation hub. **Strategic Direction 02: Improve Freight Circulation** refers to construction of new transport linkage and
expansion of existing infrastructure to relieve the transportation burden and connect major logistics facilities in the western part of Hong Kong. **Strategic Direction 03: Leverage Intermodal Logistics** refers to development of RTT and adjoining areas for intermodal transshipment. These three strategic directions are vital approaches to upgrade and expand existing infrastructure, in order to sustain Hong Kong position as an international world class logistics hub.

### 7.2.2. Enhance Flow of Funds and Information

Upon upgrading and connecting the physical flow of goods in the city, **Strategic Direction 04: Develop Intermediary Service** emphasises the development of intermediary services of logistics. As discussed in Section 3.1, supply chain does not only consist of the flow of physical goods, but also information and funds. The previous three approaches strengthen the flow of physical goods and this approach enhances the flow of information and funds for logistics. It capitalises the entire supply chain, to further sustain Hong Kong’s status in global logistics market.

### 7.2.3. Position Hong Kong in Regional Development

**Strategic Direction 05: Utilise Hong Kong’s Competitive Advantages in PRD** refers to the approaches to position Hong Kong’s logistics development in the PRD region, develop market potentials of West PRD and maintain a better connection with PRD cities. The PRD has been a gateway of the market in mainland China. Through a right positioning in the market and efficient connection, business sectors in Hong Kong can enjoy greater potential in the market of mainland China.

### 7.2.4. Summary of Challenges, Opportunities and Strategic Directions

Figure 24 summarises the challenges and opportunities identified in Chapter 5 in related to the strategic directions developed in this section. Details of each strategic direction will be illustrated in the following section.

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**Figure 24. Strategic Directions in Relation to Challenges and Opportunities**
Figure 25. Spatial Plan of Strategic Directions
7.2.5. Spatial Plan
When incorporating the strategies into spatial context, three major logistics-focused areas are identified, namely HKIA, KTCT and boundary area. Connecting the three major areas, a conceptual triangle is formed for logistics development. In order to connect the major areas for efficient freight movement, three major routes are identified as illustrated (Figure 25).

7.3. Strategies and Actions
In the following section, further elaboration on each of the strategies and actions would be presented. The strategic directions would be firstly described with their corresponding opportunities and challenges discussed in the previous section. Then, each of the strategies would be introduced in detail, responding to the relevant government initiatives. Under each strategy, various key actions are generated and potential constraints are identified.

7.3.1. Enhance Logistics Facilities
With reference to Section 5.1.2., Hong Kong is now facing the insufficient and unaffordable land supply for warehouses, as well as the under-utilization of the brownfields and port back-up land. At the same time, there has been an inconsistency regarding the comprehensive planning of the air cargo terminals in catering for the needs of specialised cargo as well as the land logistics facilities.

However, Section 5.2.2. has discussed the opportunities brought by the expansion of air logistics facilities, the growth of e-commerce, high valued and specialised cargoes as well as the government provision of planned and potential land supply in Tuen Mun, Tsing Yi, Airport Islands and New Town developments. The construction of the 3RS has also catalysed the connectivity-related infrastructure. In particular, the TM-CLK and HZMB are major infrastructure that could improve the connection to HKIA.

Strategy 1: Optimising the Use of Land for High Value-added Logistics Hub in NTN
The first strategy is intended to provide the best use of land for logistics activities with optimal location through innovation and technology. The NTN serves as potential development town for new communities and employment nodes. It is suggested that there are great opportunities for high valued-added logistics activities to be developed there in order to position as a regional logistics hub. In this regard, the advantage of strategic location in NTN with proximity to mainland China and the presence of abundant undeveloped land resources have potentials in fostering the high value-added logistics hub for Hong Kong’s long term logistics growth.

Government Initiatives
Referring to the Preliminary Concepts for the New Territories North Development in the government proposal of 2030+ (DB & PlanD, 2016b), NTN serves as one of the strategic growth
areas to provide land for future communities and modern industries which preferring a boundary locations. Regarding to the conceptual spatial framework, the Eastern Knowledge and Technology Corridor and Northern Economic Belt shape the proposed development pattern which enhances the connections in NTN (PlanD, 2016a). In order to collaborate with the Eastern Knowledge and Technology Corridor, the government suggested that possible science park or industrial estate development could be considered to be built near the future Liantang/Heung Yuen Wai Boundary Control Point (BCP) within the NTN (PlanD, 2016a). The development of R&D institutes or facilities could also be considered to be built in Lok Ma Chau Loop (PlanD, 2016c). In collaborating with the Northern Economic Belt, the government sees the potentials in Northern boundaries for R&D, warehousing and modern logistics to capitalise on the strategic location for being close to Shenzhen (PlanD, 2016c).

Key Actions
As an important strategic direction, there are three key actions proposed under this strategy: 1) to develop a possible Hi-Tech Logistics Park near Liantang/Heung Yuen Wai CP, 2) to provide specialised logistics facilities in San Tin/Lok Ma Chau Node and 3) to increase land capacity for warehousing and storages near the six BCPs.
It is proposed that the Hi-Tech Logistics Park could be developed in the framed logistics zone (Figure 26) initiated by the government instead of developing a Science Park or Industrial Estate. The Hi-Tech Logistics Park accounts for around 10 ha, where strategically located close to the Liantang/Heung Yuen Wai Boundary Control Point (LT/HYW BCP). The major objective of establishing the Hi-Tech Logistics Park is to create a master planned environment to promote technology in logistics and high-value added services. The rationale is based on the lack of similar logistics facilities in Hong Kong. The Hi-Tech Logistics Park would mainly focus in innovation and R&D with value-added services rather than labour-intensive or land-intensive activities such as the traditional logistics parks. It is suggested that the institutional collaboration should be taken out between Development Bureau and Innovation and Technology Bureau. With proximity to LT/HYW BCP, regional cooperation is also encouraged and more talents could be attracted to serve in the Hi-Tech Logistics Park. This action could help enhance the anchor uses of the Northern Economic Belt and the Eastern Knowledge and Technology Corridor.

Figure 27. Specialised Logistics Facilities in San Tin/Lok Ma Chau Node

Another action is to provide around 5 ha of area for specialised logistics facilities in San Tin/Lok Ma Chau Node (Figure 27). Located at the western part of the NTN, the selected site has
extensive brownfield operations and available land resources. The presence of Lok Ma Chau and Lok Ma Chau Spur Line BCP serves as an important gateway for future flow of cross-boundary passengers and freight activities (PlanD, 2016). Therefore, it is proposed that the selected site could adopt the role of specialised logistics centre with various consolidation and certification area for livestock and perishable goods storage and temperature-sensitive goods testing as well as other modern logistics activities.

With increasing future demand for logistics activities in the NTN, the third key action under the strategy is to increase land capacity for warehousing and storages near the six BCPs, roughly provides 6 ha of area in total. The NTN strategically abuts Shenzhen boundary and there are four existing BCPs nearby, including Lok Ma Chau CP, Lok Ma Chau Spur Line CP, Lo Wu CP and Man Kam To CP. Together with the completion of Liantang/Heung Yuen Wai BCP, the whole NTN forms an integrated connection with mainland China. In regard to this, it is proposed that more land resources could be allocated for warehousing and storages in order to further facilitate the modern logistics activities and high value-added services near the BCPs with regional cooperation.

**Potential Constraints**
With such massive development of logistics activities in the NTN, a few potential development constraints are found. As the NTN are scattered with various indigenous and non-indigenous villages, it might be costly to negotiate and to compensate with the existing neighbourhoods. Moreover, since the existing use of land in the NTN is mixed with burial grounds, under the planning of a large-scale columbarium, North East New Territories Landfill and military sites, more time would be required for changing and relocating the use of land. Apart from the constraints of land development, it is important to consider the historic buildings, active agricultural land and archaeological areas for conservation and rehabilitation in a holistic manner with the new development plan.

**Strategy 2: Reserving Land for Modern Logistics Development in the NDAs**
Under the direction of enhancing logistics facilities, this strategy is intended to provide sufficient suitable land for modern logistics in the NDAs, including Hung Shui Kiu NDA, Kwu Tung North NDA and Fanling North NDA. In sustaining the long-term growth, the NDAs are envisioned for creating a sustainable, balanced and people oriented communities with comprehensive planning and integrated development to provide employment opportunities (PlanD, 2016). To seize the economic opportunities, it is proposed to reserve sufficient land for modern logistics development to meet the future need.

**Government Initiatives**
Based on the *North East New Territories New Development Areas - Planning and Engineering Study* conducted in 2013, the NDAs are primarily proposed for special industries, low and
medium density residential development, as well as to enhance the regional cooperation between Hong Kong and Shenzhen and to boost the long term economic growth. The government proposes to establish “Logistics, Enterprise and Technology Quarter” in the Hung Shui Kiu NDA which acts as the economic and employment node for the whole Northern West New Territories with special industries (PlanD, 2013). In supporting Lok Ma Chau Loop Development, the government also suggests that 10 ha of land in the Kwu Tung North would be provided for R&D and high-tech industries and about 14 ha of land would be used for office spaces for special industries with clear advantages (PlanD, 2013).

**Key Actions**

In responding to the government’s proposals and future economic growth, two key actions are initiated under this strategy: 1) to establish the regional distribution centres in Hung Shui Kiu and Yuen Long South and, 2) to capitalise possible land for infrastructures and facilities for innovation and technology industries in Kwu Tung North and Fanling North.

In terms of setting up regional distribution centres in Hung Shui Kiu and Yuen Long South, it could create employment opportunities for future communities. As it is foreseeable that large proportion of residential and commercial activities would be created, it would be more community friendly not to provide too much heavy logistics activities. At the same time, we see the opportunities for establishing regional distribution centres since Hong Kong currently does not have a standardised head of distribution centre for e-commerce. Furthermore, due to the proximity to BCPs, it would be more efficient to set up regional distribution centres in Hung Shui Kiu and Yuen Long South without disturbing the future communities.
Another action is to capitalise possible land for infrastructures and facilities for innovation and technology industries, knowledge-based industries and tertiary institutions in Kwu Tung North and Fanling North, in total providing about 12 ha of land. In view of the lower land premium in NDAs, Kwu Tung North and Fanling North have a great opportunity to be developed into a large scale Hi-Tech base for innovation and technologies industries so as to maintain Hong Kong’s competitive edge and to strengthen the future Eastern Knowledge and Technology Corridor.

Potential Constraints
Various development constraints are identified in the massive plan, especially the land use conflicts and technical and infrastructural limitations. The NDAs are subject to the development constraints of the existing villages and communities, the negotiation and communication might increase the transaction costs in developing the proposed land use. In terms of technical and infrastructural limitations, the selected sites for NDAs are found with some potential hazardous installations, which require further exploration in removing those development constraints for unleashing the potential sites (PlanD, 2016a).

**Strategy 3: Sustaining a Global Aviation Hub and Focusing on High Value-added Logistics Services**

This strategy is intended to strengthen Hong Kong’s position through the promotion of value focus operation (Figure 28). Since the air logistics industry contributes the largest trade value, its capacity in dealing with emerging trends has to be addressed to ensure its competitiveness. It provides an opportunity to improve the provisions of air cargo handling facilities given the expansion of 3RS system, the reclamation of the Lantau Islands and the potential land supply in the urban areas. Its ultimate aim is to build a network of specialised cargo handling facilities with considerations of their respective spatial requirements.

**Government Initiatives**
This strategy is proposed as an extension from the existing government initiatives in providing integrated logistics services through HKBCF Island and Tsing Yi, so as to increase the capabilities in the handling of temperature-sensitive specialised cargoes. At the moment, there are no official plans for the housing of additional logistics facilities in catering specialised cargoes within the Airport Island and the 3RS system. But the HKBCF island and three sites in Tsing Yi are expected to provide storages and warehouses space for high value-added logistics services (CEDD & PlanD, 2015).

**Key Actions**
In view of the situation, two key actions are proposed. The first is to provide integrated logistics facilities for high security and special handling on the Airport Island (Figure 29). Three vacant lands, accounted for about 17 ha, on the Airport Island were identified and reserved
for future cargo support in the Hong Kong International Airport Master Plan 2030 (HKIA, 2011). Together with the Western and Eastern Support Area under the 3RS expansion, these sites are ideal for the building of a new integrated specialised cargo terminal. Based on the size, the area available is significantly larger than the Hong Kong Air Cargo Terminal (11 ha) (Table 12).

This integrated cargo terminal is necessary as existing cargo terminals only provide a portion of facilities for specialised cargoes. Given the increase in e-commerce and demand for high-value specialised cargoes, their capacity is considered as hindrance. The proximity of a specialised cargo terminals with comprehensive cold chain solutions could provide a seamless transition between the cargoes and the specially designed entity. Apart from this, as the existing cargo terminals are not complied to the global security standards. There is a demand for more space catering the pallets rebuilding and large quantities screening. A centralised facility for joint inspection that could tackle the 100% screening for unknown consignors is also expected to be housed on the proposed land supply above on the Airport Island.

Figure 29. Potential Locations for the Integrated Logistics Facilities
The second key action is to provide warehouses for developing high value-added 3PL services in HKBCF Island and Tsing Yi. Given the proximity of Tsing Yi and HKBCF island to the airport, high value-added facilities and warehouses related to air logistics are considered to be implemented under the proposed strategy. This key action supports the existing government initiatives with an additional proposed site of utilizing port back-up land that originally planned for CT10 as third-party logistics and warehouses. The topside development of HKBCF island, about 130 ha of land, is identified as potential logistics usage for “special handling and high security produces such as antiques, wine and pharmaceuticals” (cited in CEDD and PlanD, 2015). In addition, the 50 ha of land in Tuen Mun Area 40 and 46 are also designated for modern logistics facilities for distribution and inventory management (Legislative Council Secretariat, 2015). There are three planned logistics sites in Tsing Yi and shall together supply nearly 280,000 sq. m on logistics operations (HKSARG, 2017).
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Figure 30. 3-Zone Concept in Air Cargo Handling

As shown in Figure 30, a 3-zone concept is proposed under this strategy in accommodating the trend for high-valued added logistics services. All the potential logistics land supply that falls within the 3-zone is to follow the designated classifications. The provision and the locations of the facilities are dependent on its time sensitivity and security requirement. High security and time sensitive specialised cargo handling are to be put within the Airport Island and HKBCF island and less sensitive air cargoes would be handled in Tsing Yi, even with Tuen Mun as a future intermodal sea and air logistics hub. This could help facilitate the security screening procedures given that the clearance facilities are within the airport boundary and other air cargoes maintain close proximity to the Airport thanks to the improved and proposed connectivity routes which would be mentioned in the next section.

Potential Constraints
Given the late infrastructural provision and the lack of institutional capacity, it presents many uncertainties regarding the provision of facilities. The provision of advanced cargo handling facilities relies heavily on the willingness of individual companies. In addition, there is a need to improve the freight circulation in supplement with the proposed strategy in order to strengthen the transfer of cargoes to the Airport Island. However, it remains difficult to estimate the connectivity needs at the moment.
7.3.2. Improve Freight Circulation

The following strategy and key actions are created in response to challenges and opportunities that were identified in Section 5.1 and Section 5.2. The main challenge being addressed is the concern of road capacity linking with Route 9 after the introduction of Liantang/Heung Yuen Wai BCP. In regard to opportunities, the provision of new land supply will be crucial in continuing the development of the logistics industry. However, the new land areas are scattered, and therefore improvement in road linkages will be necessary to ensure freight movement is optimal. Furthermore, improving freight movement will enhance regional and international cooperation by linking prominent new logistics development areas to Hong Kong’s regional and international gateways. Regional gateways include HKZMB, BCPs and RTT, whilst international gateways consist of HKIA and KTCT.

In regard to the freight movement network, there are three main zones that are addressed in the following strategies (Figure 30). They are appropriately named as Western Relief, NTN Crosstown, and ELM Interchange and each will have its own respective strategy to address the challenges and opportunities.

![Figure 31. Overview of Freight Movement Strategies](image-url)
**Strategy 1: Western Relief – Relieving the Anticipated Western Corridor Capacity Concerns in Tuen Mun**

This strategy is intended to alleviate capacity concerns on the stretch of Route 9 in Tuen Mun. This particular stretch of Route 9 is important because it is the main conduit that connects NTNS and NDAs in the north with RTT and HKIA. Since a portion of NTNs and NDAs is intended to accommodate future logistics facilities development, concerns about road capacity must be addressed beforehand to ensure a smooth flow of freight by relieving the burden on the existing road network. This strategy also provides the opportunity for RTT to become an intermodal cargo hub because the mega-infrastructures facilitate freight from land, air, and sea to converge toward the terminal.

![Map of the Western Relief Strategy](image)

**Figure 32. Western Relief Strategy**

**Government Initiatives**

At present, there are a number of government projects that are under construction and under review to address road capacity concerns due to future development of NTNs and NDAs. The most prominent one is TM-CLKL, which is intended to provide a direct link between Northwest New Territories (NWNT), HKZMB, HKIA, and North Lantau (PlanD, 2016c).

Furthermore, the proposed TMWB and Route 11 are under review, which is intended to divert traffic from the NWNT and NTN by acting as the western and east bypasses for the portion of Route 9 that goes through Tuen Mun. In particular, TMWB is a direct continuation of TM-CLKL.
where the extension begins at the RTT. This is to ensure that cargo movement will not be impeded by Route 9 at Tuen Mun, and therefore improving the linkage between NWNT and other districts in Hong Kong (PlanD, 2016c).

**Key Actions**

The first action is to recommend the government to materialize the proposed initiatives of TMWB and Route 11. These two bypasses are particularly important in improving the connectivity between NWNT and the regional and international gateways (PlanD, 2016c). The continuation of these proposals also ensures the western transport corridor outlined in Hong Kong 2030+ will be able to be achieved (PlanD, 2016a). The second action is to extend the proposed Route 11. Instead of terminating at the interchange with Route 8 that runs along North Lantau Island, Route 11 should continue and converge into ELM.

**Potential Constraints**

The impact of the 3RS and HZMB after completion is still uncertain. Furthermore, the scale of development of NTN is still under consideration in Hong Kong 2030+ (PlanD, 2016). Therefore, it is hard to gauge the necessary amount of infrastructure required to be built to accommodate the extra traffic.

**Strategy 2: NTN Crosstown – Supporting New Logistics Development in the NTNs**

As mentioned in Hong Kong 2030+, NTN is one of the two strategic areas slated for development in order to fulfil the social and economic needs of the future (PlanD, 2016c). Due to the proximity of NTN to BCPs, the logistics use is appropriate in the NTN in order to facilitate cross-boundary related logistics uses (PlanD, 2016c). However, NTN is far from other regional and international gateways such as HZMB, RTT, HKIA, and KTCT. Strategy 2 intends to resolve this issue in order to unlock the potential logistics uses in the NTN.
Figure 33. NTN Crosstown Strategy

**Government Initiatives**

Hong Kong 2030+ have identified a North-South Transport Corridor linking NTN with KTCT (PlanD, 2016c). However, there are no concrete proposals to conceive this corridor as of yet. Furthermore, a connector road from the new LT/HYW BCP to Fanling Highway portion of Route 9 is currently under construction in order to facilitate better trucking movement coming from Shenzhen by directly linking the BCP to Route 9 (CEDD, 2017). The new connector road will serve as a bypass of the existing towns such as Fanling by connecting the traffic from the BCP to Route 9.

**Key Actions**

The main action recommended is to ensure the existing road network is able to accommodate the new traffic source from LT/HYW BCP. Through analysing the existing road network, a possible connection may be to extend the BCP connector road that is under construction and converge towards the existing Route 3 interchange on Pat Heung Road. This will require an increase in capacity of roads that the connection will run through, which will include Lam Kam Road, Kam Sheung Road, and Pat Heung Road.
Potential Constraints
Proposals for expanding the size of existing roads will be highly critiqued due to the severity of social and environmental impacts. The proposed connection will run on existing roads that are already utilised, therefore the concerns of nearby owners and other stakeholders must be taken into full consideration when deciding the route. Additionally, due to being in the New Territories, any proposed routes will run through environmentally sensitive areas, such as the being in close proximity to Upper Shing Mun Reservoir. The final decision on the route will need to ensure that it does not have a negative impact on the environment and jeopardise its ecological integrity.

Strategy 3: ELM Interchange – Establishing ELM as a Major Interchange
Hong Kong 2030+ has identified ELM as a strategic growth area beyond 2030 in order to accommodate the forecasted population and economic growth of Hong Kong (PlanD, 2016a). Due to its strategic location, ELM has the potential to become the interchange between Lantau Island, Hong Kong Island, and Kowloon, hence the name of the strategy “ELM Interchange”. In regard to logistics development, ELM can become an alternative route between HKIA and the rest of Hong Kong. It will also integrate NWNT, Lantau Island, and the Metro Area by contributing to the existing road infrastructure to make the network more robust and resilient. Regional and international gateways in the western portion of Hong Kong such as HZMB, RTT, and HKIA will have better connection to the Metro Area and KTCT with the development of the ELM Interchange and will in turn improve the circulation of cargo movement. The ELM will also be pivotal in realizing 2030+’s NWNT-Lantau-Metro Area Transport Corridor (PlanD, 2016b).
Government Initiatives

Similar to the North-South Transport Corridor, the possible road arrangements are still in the conceptual stage in the Hong Kong 2030+ as well as the Transport Infrastructure and Traffic Review (PlanD, 2016a). Hong Kong 2030+ has defined a possible road and rail link where it originates from HKIA, passes through Mui Wo, links the ELM islands, and finally linking with Hong Kong Island (PlanD, 2016a).

Key Actions

The first action is to analyse how to integrate ELM into the existing and under construction mega-infrastructure projects. This ensures that ELM Interchange can harness the full potential of the existing network, as well as ensuring that there would be no unnecessary roads being constructed. Materialization of roads identified in Transport Infrastructure and Traffic Review Report should be done. This includes an extension of Route 11 to ELM as well as the new road connection from HKIA to Mui Wo, ELM and Hong Kong Island.

Potential Constraints

ELM will fully depend on the mega-infrastructure projects in order to link it with the rest of Hong Kong. This will require a high level of capital spending as well as ensuring environmental and social impacts are kept at a minimum.
7.3.3. Leverage Intermodal Logistics
At present, there is a lack of coordination and planning of operational facilities in sea logistics, as mentioned in Section 5.1.1. This leads to competition among port facilities (i.e. Kwai Tsing Container Terminal (KTCT), River Trade Terminal (RTT) and Public Cargo Working Areas (PCWAs), diminishing the overall cargo handling efficiency of the Port of Hong Kong. While KTCT experiences increasing congestion, the utilisation of RTT is low and declining. Therefore, to secure continuous growth of Hong Kong’s sea logistics sector, it is necessary to re-identify the distinctive roles and functions of KTCT and RTT, as well as their relations with air logistics. Surely the provision of new land for logistics development would allow further improvement in the capacity and hence efficiency of port facilities in Hong Kong.

**Strategy 1: Developing RTT and Its Adjoining Areas into an Intermodal Transshipment Hub**
Capturing the advantages of both sea and air logistics, the sea-air intermodal transport service has become increasingly popular in recent decades (Raguraman & Chan, 1994). By moving cargos by sea for the first leg of a journey and air for the second, this service saves up to one-third of the airfreight cost and at least half of the time needed for sea transportation (Atlas Cargo, 2017). Today, the sea-air intermodal transport service is regarded as the most optimal solution for efficient delivery of bulky shipments, ranging from high-end electronic goods to designer apparel (Atlas Cargo, 2017).

In this regard, Strategy 1 is proposed to take full advantage of the strategic location of RTT and its adjoining areas (i.e. within ten-minute trucking distance from Hong Kong International Airport), re-positioning the site as an intermodal transshipment hub. This would not only bring new business opportunities to the sea and air logistics sectors, but also strengthen the competitive edge of Hong Kong’s logistics industry as a whole.

**Government Initiatives**
In its Planning and Engineering Study for Tuen Mun Areas 40 and 46 and the Adjoining Areas, the government outlined the vision for transforming Tuen Mun Areas 40 and 46 into a major economic activity zone in Northwest New Territories (PlanD & CEDD, 2015). Four Potential Development Areas (PDAs) were identified for modern logistics uses (e.g. warehouse facilities) and/or green industry uses (e.g. recycling facilities). PDA-C, with the availability of sea frontage, was particularly recommended for marine-related uses (PlanD & CEDD, 2015).

Situated next to RTT, Tuen Mun Areas 49 and 38 were also designated as logistics development sites (i.e. LD1 and LD2) (THB, 2015a). According to the development plan, LD1 and LD2 are expected to operate by 2019 and 2023 respectively (THB, 2015a).

**Key Actions**
Under this strategy, five key actions are proposed (Figure 35), coinciding with the
government’s plans. The first action is to facilitate the upgrading of automation technology in RTT. This would enhance the operational efficiency of RTT, thus attracting more intermodal cargo transshipment. The second action is to expand RTT to the adjacent PDA-C. This can increase RTT’s sea frontage by up to 825 m for additional river berths, as well as provide extra space for efficient cargo handling and stacking.

The third key action is to designate PDA-A for the development of intermodal freight stations. PDA-A is potentially the centre of this intermodal transshipment hub due to its immediate access to Tuen Mun-Chek Lap Kok Link (TM-CLKL) and the proposed TMWB. These stations would be used mainly for consolidating and transloading freight. The fourth action is to promote the establishment of high-value added logistics facilities in PDA-D, LD1 and LD2. Services such as testing and certification services would be provided by these facilities. The close proximity of these sites to RTT would eliminate the cost of moving containers to and from inland depots, improving supply chain efficiency. The fifth and last key action is to reserve PDA-B for warehousing operation. Located close to the toll plaza of TMWB, PDA-B would be linked directly to major distribution centres in Northwest New Territories.

Figure 35. Five Key Actions of Strategy 1

Potential Constraints
Two potential constraints are acknowledged in the formulation of Strategy 1. Firstly, a thorough traffic impact assessment is required for further examination of its feasibility.
Currently, the traffic condition of Lung Mun Road is reaching its capacity (PlanD & CEDD, 2015). Therefore, to accommodate the increased road traffic brought by cargo transloading, improvement works are essential. Moreover, the success of this strategy depends largely on the investment made by the private sector. For instance, the technology enhancement of RTT indeed relies on the initiative of private terminal operators.

**Strategy 2: Increasing KTCT’s Capacity for Sustainable Growth of River-to-Ocean Transshipment**

As discussed in Section 4.1, river barges have increasingly outcompeted trucks in terms of costs and energy efficiency. In response to the progressive growth of river-to-ocean transshipment, Strategy 2 is proposed to enhance KTCT’s capacity for river-cargo handling through the expansion of terminals as well as efficient use of berths and crane systems. This would reinforce the position of the Port of Hong Kong as the world’s leading catch-up port for freight transshipment.

**Government Initiatives**

While the plan of constructing Container Terminal 10 in Kwai Tsing was set aside due to financial infeasibility, the government has suggested releasing 17.6% (i.e. 120 m) of the sea frontage of the nearby Stonecutters Island PCWA (SIPCWA) for supporting KTCTs’ operation (MD & THB, 2016). Nevertheless, no similar initiatives are taken in Rambler Channel PCWA (RCPCWA), which is also located next to KTCT. Instead, the government has proposed reserving an extra 140 m of its quayside for waste paper berths (MD & THB, 2016).

**Key Action**

Under this strategy, one key action is presented (Figure 35) — to release the entire SIPCWA and RCPCWA for supporting KTCT’s river trade operations. This can potentially increase the total quay length of KTCT by approximately 20%, which is equivalent to two Container Terminal 9 (North). The existing 39 small berths in SIPCWA and RCPCWA would be upgraded and equipped with river crane systems, freeing up the ocean berths in the inner terminals for mega-vessels that require deeper sea frontage and longer loading and unloading time. By doing so, the overall container handling efficiency and capacity of KTCT would be enhanced, relieving its congestion.
Possible Constraints

Given that the PCWAs are already working at their full capacity (i.e. SIPCWA — 100%; RCPCWA — 83%) (MD & THB, 2016), Strategy 2 would further boost their cargo throughput via upgrading the berths and cargo yard facilities. However, this would inevitably affect the survival of the current SME terminal operators in the PCWAs, as well as their users. Therefore, further study is required to identify suitable sites for relocation, especially for the existing waste paper berths in RCPCWA.
7.3.4. Develop Intermediary Services

As mentioned in Section 5.2.5, ELM will be positioned as the third central business district, which is located close to the traditional CBD and also the major existing and planned logistics infrastructures. This presents extensive opportunities for ELM to support the logistics industry. In addition, it has been identified in Section 5.1.4 that there has been limited executive power within the existing LOGSCOUNCIL to implement proactive logistics-related policy.

**Strategy 1: Capitalise the Potential of ELM for a Leading Logistics Intermediary Centre**

Modern logistics services involved not only the transport, warehousing and distribution but also the logistics intermediary services that relies on information flows, innovations and technology for the provision of value-added services. These supporting services, such as financing, management, legal and arbitration and Insurances are not dependent fully on the location of the logistics infrastructure, but more on the cluster of international organisations. This is supported by the review of maritime services in London, where the physical port does not play a huge influence on its establishment. Currently, Hong Kong lagged behind in positioning itself as a successful international maritime centre as compared to the London and Singapore as well as a lack of proactive organisational leadership by the government. In this regard, Strategy 1 is proposed to take full locational advantage of the ELM that located within 4-minute distance from the central business district, in driving Hong Kong to become a modern logistics cluster with the boost in intermediary services.

**Government Initiative**

Due to the limited developable land in Hong Kong, the government is in need to increase the land supply to meet the population growth and economic development (DB and PlanD, 2016a). The concept is to create artificial islands by reclamation near Kau Yi Chau, Hei Ling Chau and better utilise land in Mui Wo (DB and PlanD, 2016a). The ELM, that could nearly provide 1000ha of land, is positioned as the long-term strategic growth area to facilitate “smart, liveable and low-carbon development cluster” (DB and PlanD, 2016a) with the formation of strategic transport infrastructure between HKIA, Lantau Islands and Hong Kong Island.

**Key Actions**

Under this strategy, two key actions are presented. One is to provide land to develop aviation and maritime intermediary services. As mentioned, the presence of a financial centre plays a huge role to help facilitate the access of capital. With sizeable reclamation, ELM could be a future financial and produce services hub to provide synergy with the traditional CBD as well as the commercial developments at the North Lantau Corridor (DB and PlanD, 2016). The position as an intermediary service centre is therefore proposed on the ELM. Part of the central waters in the Kau Yi Chau, is annotated as Other Specified Uses (OU) for Container Back-up land or Container Terminal. As container terminal expansion is no longer considered feasible, this port back-up land could be well transferred to logistics intermediary services hub.
The under-utilised sites at Hei Ling Chau as well as Mui Wo are also feasible locations due to its proximity to the HKBCF island as well as the HKIA.

The second key action is to upgrade the existing LOGSCOUNCIL as an institutional board for logistics strategic planning. In order to facilitate ELM positioned as a future intermediary centre, it would provide positive synergy if the new institutional body is located in the ELM. The new body would be responsible to strengthen the logistics cluster in Hong Kong, launch programmes to provide manpower and training, as well as maintain strong communication between the local and international communities. The new body could be a statutory body, similar to the Airport Authority that receives financial support from the government and could participate proactively in activities related to policy making.

Figure 37. The Locations of ELM and its Proximity Logistics Facilities

Potential Constraints
Setting up a new statutory body and the strategic planning of the ELM requires long period of time because of the legislation procedures required. As an interim arrangement, it is recommended that the government shall introduce policy incentives for the development of intermediary services within the existing central business districts. At the same time, the government should also devote more resources in supporting and listening the opinions of the industry.
7.3.5. Utilise Hong Kong’s Competitive Advantages in PRD

In addition to the previous four strategic directions, it is also proposed to utilise Hong Kong’s competitive advantages in the PRD region. As analysed in the previous chapter, there are numerous challenges and opportunities, and some of them have strong connections to this direction. First of all, the enhancement in the competitiveness of neighbouring cities challenges the position of Hong Kong in the region. The relocation of factories westward within, and even outside PRD also shifts the market from the original places. Also, the current improvements in the linkage with the Mainland with road infrastructure projects is a great opportunity as to develop a more strategic network with neighbouring cities. Hence, three strategies are proposed in order to make the best use of Hong Kong’s given advantages, namely positioning Hong Kong’s logistics industry, developing marketing potential in the West PRD, as well as enhancing the connectivity with PRD cities.

**Strategy 1: Positioning Hong Kong’s Logistics Industry**

The first strategy is positioning Hong Kong’s logistics industry in the context of the PRD region. This is to strategically distinguish the roles of the three modes, namely air, sea and land logistics of Hong Kong in the area.

**Government Initiatives**

In fact, the Working Meeting of the Hong Kong/Guangdong Co-operation Joint Conference plans for the future mode of cooperation between Hong Kong and the Guangdong Government. The 22nd meeting facilitated the formulation of the 2017 Work Plan of the Framework Agreement. It included 77 items complying with the directions established in the National 13th Five-Year Plan (Legislative Council, 2017). Cooperation in key regions and cross-boundary infrastructure are two of the eight focus areas highlighted in the plan, which strategically stimulates Hong Kong’s participation in economic activities in the PRD region. Nevertheless, although the above initiatives could act as milestones for more active regional cooperation, the official meetings have been held for several years and the pace of the progress should be enhanced.

**Key Actions**

Clearer positioning of the existing logistics industry should be prioritised now before the completion of the infrastructure projects, in order to attract investment and facilitate the sustainable development of different modes of logistics. Firstly, the leading role of the HKIA is to be enforced after the construction of the Three Runway System (3RS) as an adaptable global aviation hub specialising in high value-added and specialised cargoes, while it is agreed that an immediate construction of the second airport is not cost-effective and thus not required at this stage yet (HKIA, 2011).
Hence, the second action would be to formulate more concrete actions in the coming A5 Meeting to enhance cooperation with the other four major airports in the Greater PRD, respectively the Guangzhou Baiyun International Airport, Macao International Airport, Shenzhen Bao’an International Airport and Zhuhai Airport, for example continue to negotiate for relaxation in airspace to help HKIA utilise its potential and open up markets in the Greater PRD.

The third move is to promote the other modes of logistics. For sea logistics, the focus should be on the world-class maritime services centre, and for land logistics, it could function as the regional distribution centre in the Asia-Pacific region with the new road infrastructure and could be a support to the air transshipment.

**Strategy 2: Developing Market Potentials of Western PRD**

The second strategy is to capture the developing market potentials with the opportunity brought by the HZMB, that could contribute to opening up overseas market in Southeast Asia which is connected to the Western PRD.
Government Initiatives
As mentioned previously, the Guangdong Pilot Free Trade Zone was established in three areas of Qianhai, Nansha and Hengqin in 2015 while the business is still blooming with high development potential. The Hong Kong government will, on the principle of achieving mutual benefits through active participation and joint planning, actively participate in pushing forward development of the "Guangdong-Hong Kong In-depth Co-operation Zone" in Nansha. As for Hengqin, the government urges for further expansion of liberalisation measures for Hong Kong and Macao services sectors, and the stepping up of efforts by Hengqin to open up its market to the Hong Kong and Macao services sector (Hong Kong Trade Development Council, 2015). However, due to the growing exports and imports along the Western PRD, partly driven by the external factor of the manufacturing plants moving into the area, the Hengqin area should be identified as a booming cradle for Hong Kong to expand the logistics business strategically.

Key Actions
In regard to the availability of land as cooperative zones and a westward shift of manufacturing activities, the first action is to cooperate with Zhuhai to reserve land for Hong Kong’s logistics firms. This is a strategic location as the proposed Zhuhai-Hong Kong-Macao Cooperative Logistics Park at Zhuhai Hongwan port area is located next to the route connecting to the HZMB, while the labour and land costs are lower than that in Hong Kong.

To capture high-tech product transshipment is the second action. Through the utilisation of cooperation with Zhuhai, a link could be further extended into the Western PRD. The growing exports of high-tech products in Zhongshan and Jiangmen (Hong Kong Trade Development Council, 2015) requires timely transportation to the airport. Moreover, the opening up of the Western PRD is also a strategic move to explore overseas market in Southeast Asia. Thus, it is urged that Hong Kong should participate more on the planning of the Hengqin area as a strategic base facilitating transshipment business.
Strategy 3: Enhancing the Connectivity with PRD Cities

In addition to the HZMB linking to the Western PRD, other infrastructure projects such as Liantang/Heung Yuen Wai Boundary Control Point (LT/HYW BCP) help reduce travel time and improve connections with neighbouring cities in the Eastern PRD.

Government Initiatives

With the commencement of Liantang/Heung Yuen Wai Boundary Control Point, the government is anticipating not only capacity relief to alleviate the traffic congestion and the subsequent impacts to the nearby urban areas but also the key connection with eastern Guangdong (DB & PlanD, 2016b). Upon its completion, Liantang/Heung Yuen Wai Boundary Control Point, together with our existing boundary control points, would form and establish the “East in east out, west in west out” movement pattern network. Then vehicles will then be able to reach the major industrial neighbourhoods of Shenzhen in less than 45 minutes (InvestHK, 2014).

Key Actions

Hong Kong should continue to adopt the “east-in-east-out, west-in-west-out” approach to connect with Eastern PRD. While the reduction in congestion in Shenzhen could be relieved, the government should further extend the road connection to other cities with provision of employment-related land to enhance the labour mobility within the 1-hour intercity traffic circle.
Figure 40. Connection Between the Boundary Control Points and PRD Cities (Source: DB & PlanD, 2016b)

Figure 41. One-hour Intercity Traffic Circle (Source: DB & PlanD, 2016b)
Potential Constraints
It is foreseen that the difference in systems between Hong Kong, Macao and the Mainland cities would continue to be one of the greatest hindering factors from deepening the regional cooperation. Even though steps have been taken to include Hong Kong and Macao into a more macro-level of planning and PRD cities have formed committees to discuss possible items for cooperation, numerous issues such as airspace, laws and customs, would limit the potential of the development of the handling capacity of infrastructure and facilities in Hong Kong and are to be resolved. More importantly, the possible relaxation of cabotage rule and shift of emerging markets may intensify the competitions among cities unless they are assigned more distinguished roles according to their competitive advantages respectively. Moreover, negative feedback from the general public may be received when it comes to increased interactions with the Mainland.
7.4. Priority Action Plan for Government
In order to strengthen the position of world class logistics centre, HKSAR Government plays a key leading role in providing a strong basis and incentives for logistic development. With a recap of the strategic directions (Figure 23), the government should take progressive actions mentioned to achieve the aforementioned goals. The actions should be in cope with the previously planned and those under processing to arrange a holistic schedule to ensure the success of achieving those goals.

7.4.1. Government Initiatives
The table 13 shows the estimated completion year of the major drafted or planned projects of infrastructure by HKSAR government.

Table 13. Estimated Completion Year for Government Initiatives

<table>
<thead>
<tr>
<th>Estimated Completion Year*</th>
<th>Before 2020</th>
<th>Before 2030</th>
<th>After 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 2020</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong Kong Link Road</td>
<td></td>
<td>Hung Shui Kiu NDA</td>
<td>East Lantau Metropolis (Preliminary Concepts)</td>
</tr>
<tr>
<td>Hong Kong-Zhuhai-Macao Bridge</td>
<td></td>
<td>Kam Tin South New Town</td>
<td>Fanling North and Kwu Tung NDA</td>
</tr>
<tr>
<td>Liantang/ Heung Yuen Wai Boundary Control Point</td>
<td>Three-runway System</td>
<td>NTN New Town (Ping Che, Ta Kwu Ling, Heung Yuen Wai, Hung Lung Hang and Queen’s Hill)</td>
<td></td>
</tr>
<tr>
<td>Lok Ma Chau Loop</td>
<td></td>
<td>Tuen Mun Area 40,46,49</td>
<td>San Tin/ Lok Ma Chau Development Node</td>
</tr>
<tr>
<td>Topside Development at HKBCF Island of HZMB</td>
<td></td>
<td>Tuen Mun Western Bypass</td>
<td></td>
</tr>
<tr>
<td>Tuen Mun Area 38</td>
<td></td>
<td>Tung Chung New Town Extension</td>
<td></td>
</tr>
<tr>
<td>Tuen Mun-Chek Lap Kok Link</td>
<td></td>
<td>Yuen Long South New Town</td>
<td></td>
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</tbody>
</table>

*Year may be changed due to various circumstances

From Table 13, a series of infrastructure has been planned with a completion year before 2020. This first phrase of infrastructural facilities is concentrated in the western part of Hong Kong and the major one is HZMB, which is an unprecedented route over Lingdingyang and connects...
Hong Kong to Western PRD to improve regional connectivity. HKLR and HKBCF will be constructed to support the further increasing demand of cross-boundary activities including logistics and commuting. Internally TM-CLKL will be essential for Hong Kong logistic development as its function of linking northwest New Territories with airport as well as HZMB will significantly shorten the transport distance and time, compared with the original route.

However, TMWB is still under preview and not supposed to open before 2026 (DC, 2015). It becomes a huge problem for the existing transport network as its current capacity may not be able to handle the future demand after the completion of TM-CLKL which supposedly will divert vehicle flow from Route 6 and 8 to the northern route. Without TMWB, vehicles would have to pass through the town centre of Tuen Mun if the drivers want to reach the northern part of the New Territories such as NDAs and CPs.

Moreover, few NDAs or new towns will be completed for employment and other uses before 2030. Meanwhile, TMWB completed will provide effective alternatives of routes to vehicles from HZMB and airport which 3Rs also will raise the demand. Furthermore, the preliminary concepts or plans under study like ELM and other NTNs will not be completed before 2030.

### 7.4.2. Action Plan

From government estimated completion year of those projects, proposed actions should be started in the same time. Apart from aforementioned projects, there should be 3 phrases for implementing those proposed. The first phrase is to upgrade and enhance existing logistic facilities and governmental structural body for building up a strong basis for further actions. For instance, for the institutional aspect, government ought to upgrade LOGSCOUNCIL as a key role in logistic development in Hong Kong. Additionally, facilities in RTT and KTCT should be prepared and upgraded for further development. Spatially to cater for future demand, land should be developed in airport and areas surrounding KTCT such as SIPCWA for logistic use.

In the second phrase with more transport network construction completed, area in NDAs should be further planned and developed for logistic park, distribution centres and warehousing facilities. Once TMWB can be passed, the focus should be shifted into northern part of the New Territories as more land supply are newly utilised with a higher flexibility. In addition, the northern part can capitalise the advantage of being in proximity to BCPs and boundary areas to further construct the corridor in northwestern side of Hong Kong. The first and second phrases should combine to create a supportive and incentive environment with a well-prepared foundation for the next phrase.

The third phrase is mainly to develop intermediary services in Hong Kong logistics. Apart from other improvement of facilities, intermediary services will be crucial in future logistic
development especially in maritime logistics. The position of a world-class logistic hub will be strengthened if the three phrase can be done progressively.

**Chapter Summary**

With the vision of reinforcing Hong Kong’s position as an international world-class logistics hub, six strategic directions are formulated in Chapter 7. Under which, sets of key actions are proposed with a view to upgrading and connecting existing logistics facilities and infrastructure, improving information and funds flow, and strengthening Hong Kong’s position in regional development. It is worth noting that potential constraints of each strategy are identified, some of which require further study. Finally, an action plan is proposed to align these strategies with previously planned ones. The implications of these strategies will be analysed in Chapter 8.
8. Implications of Recommendations

The previous sections depict the strategic directions and recommend key actions with regard to the key trends, opportunities and challenges of Hong Kong logistics. Through presenting the policy implications in this section, it stimulates future discussion, consideration and implementation of policies, with the aim to reinforce Hong Kong as an international world-class logistics hub.

8.1. Implications on Stakeholders

Carrying high-level strategic directions for logistics, the government may face challenges and constraints to implement and coordinate between stakeholders. This section highlights the implications that key stakeholders may encounter based on the aforementioned strategies and actions for Hong Kong logistics. Table 14 lists out the major stakeholders in logistics development in Hong Kong, which are divided into four categories, namely government, business sector, workers and the general public.

Table 14. Categories of Stakeholders in Logistics

<table>
<thead>
<tr>
<th>Categories</th>
<th>Stakeholders</th>
</tr>
</thead>
</table>
| **Government Bodies**| ● Transport and Housing Bureau (THB)  
 ● Civil Aviation Department (CAD)  
 ● Hong Kong Customs and Excise Department (C&ED)  
 ● Hong Kong Marine Department (HKMD)  
 ● Lands Department (LandsD)  
 ● Planning Department (PlanD)  
 ● The Hong Kong Trade Development Council (HKTDC)  
 ● Hong Kong Logistics Development Council (LOGSCOUNCIL)  
 ● Hong Kong Maritime and Port Board (HKMPB)  
 ● Airport Authority (AA)                                                                 |
| Business             | **Representative Institution**  
 ● The Chamber of Hong Kong Logistics Industry  
 ● Hong Kong Association of Freight Forwarding and Logistics Lt. (HAFFA)  
 ● The Hong Kong Shippers’ Council (HK Shippers)  
 ● Hong Kong Container Terminal Operator Association Limited (HKCTOA)                                                                 |
|                      | **Business Sector**  
 ● Kwai Tsing Container Terminal Operator  
 ● River Trade Terminal Operator  
 ● Shipping Lines  
 ● Freight Forwarder  
 ● Shipper  
 ● Supporting Industries Operator  
 ● Brownfield land owner/operator |
8.1.1. The Government

In order to deal with a changing business environment, a long term comprehensive planning with a proactive institution to implement is required to promote a competitive and sustainable industry. The government has to consider to remain the existing LOGSCOUNCIL and upgrade it, in order to empower it for more proactive actions. The upgraded institution should act as a platform between stakeholders, consolidating opinions and ideas of logistics, in order to envision the future development of the industry. Apart from the institution, the government should also develop a visionary plan of sustainable growth of logistics, incorporating other developments plans and the future trends of the industry. For instance, the government should review the master plan of NDA and ELM, in order to put logistics to the agenda of development of the new areas. Supporting policies have to be implemented, in order to support a sustainable growth. The plan should also be updated periodically, as the business environment changes over time. The logistics plan should be actively adapted to the global and regional economic development and incorporate with the local context.

Moreover, the government needs to enable supply of land for logistics facilities construction and support for infrastructure expansion. In order to provide space for warehouse, value-added services, research and development, as well as distribution centre, the government should not only allocate land, but also evaluate the impact of logistics development over expansion in the neighbourhoods. Logistics may create transportation burdens on the existing network and circulation. A careful planning and impact assessments should be carried, in order to safeguard the living environment nearby. The land use compatibility in the area should also be considered, in order to facilitate the benefits of economic clustering and reduce land use conflicts. When the government improve the freight circulation, the capacity of road network should be under careful planning, so an efficient and safe transportation network can be achieved.

Besides, coordination between government departments, between public and private sector should be considered. Coordination of different government departments can help facilitate effective governance for logistics. The government has the authoritative power to bring different stakeholders together and to consolidate views of different stakeholders, so as to understand the needs of different sectors and act correspondingly. The government may also
need to deal with potential criticism and opposition from the general public and business sectors regarding particular development or land use allocation.

In order to further strengthen logistics intermediary services, the government should maintain the liberal and quality business environment. Hong Kong has been a well-known world class international financial centre, maintaining quality professional service and the city branding can attract investments through incentivising foreign intermediary service firms to establish and/or expand business. Corresponding policies, tax policy and administration can be implemented, in order to provide incentives for the business sectors to invest and establish business in Hong Kong.

8.1.2. The Business Sector
To the existing large-scale business operators and management firm, the aforementioned strategies create opportunities for them to further expand their business. This strategic plan implies that the business sectors have to invest in developing a more advanced level of technology, such as the Hi-Tech Logistics Park, specialised logistics facilities, intermodal freight facilities, high security and special cargo handling. With much provision of land for logistics use, more business opportunities are created. The level of investment of the business operators depends on incentives provided by the government, perception of the future growth of the sector, as well as the availability of talents and capitals. The business sector is an important catalyst of the growth of logistics development.

Compared to large-scale business firms, SMEs have little capacity and availability of capital in investing high level of automation in operations. As their business scale is smaller, they need government’s extra support in order to maintain their competitiveness in the market. However, SMEs may possess more innovative ideas regarding operations, and also flexibility to adapt to different business models. Exchange of ideas and innovations among those companies can catalyse innovations and new business models. Expansion and development of logistics hence create opportunities for the SMEs to take part in the market.

8.1.3. Workers
With the advancement of technology and development of specialised cargo handling, workers need to pursue high standard of knowledge and skills for operation. They have to be adaptive to the development of technology, in order to be competitive in the job market. With the improved and higher capacity of road network, workers, especially to the truck driver can enjoy a smooth journey when transport goods. With the growth of e-commerce, last mile delivery becomes an important part in the entire supply chain. Consumers would expect a higher efficiency so higher standard would be set to the courier worker.
Similar to the business sectors, with the further development and expansion of logistics, workers can have more opportunities in the job market. Expanding intermediary services and logistics infrastructure increase the demand of workers in the field, so workers with competitiveness are presented with more choices in the job market, and hence the career prospect would be enhanced. It is therefore important for the workers to be well equipped with skills and knowledge on the prevailing development.

8.1.4. General Public
With the growth in logistics, the general public as consumers can enjoy faster delivery of goods ordered online. Before the development of online shops, consumers usually purchase in shops, hence the choices of consumption are limited to the availability of shops in the community. However, prevailing e-commerce changes the consumption pattern and provide diversified choices for consumers. Consumers can purchase ranges of goods online, and consumption no longer has geographical constraint. With the growth of the market, consumers can enjoy cheap or even free delivery to their homes directly. Through establishing distribution centres in the district and enhancing last mile delivery, they can receive the orders efficiently and enjoy a more convenient collection of goods.

Besides, with the emerging logistics services and expansion of existing infrastructure, job opportunities are created. In Hong Kong, being an international world-class logistics hub, more jobs would be available in aviation management, maritime services, warehousing management. As one of the pillar industries, trading and logistics would continue to attract talents and labour to the field. Through promoting the professionalism in logistics, instead of traditional perception logistics as couriers, young people may have stronger interests to the field. Moreover, development of logistic facilities in the NDA would create job opportunities, so residents there can work in the same or nearby district, to reduce transportation cost and time.

8.2. Strategic and District Planning
Based on previous sections, spatial planning and application can be summarised into several areas for smoothening the adoption of those initiatives. Major areas including the airport island, outlying islands, Tuen Mun, northern part of the New Territories and existing ports will be discussed according to the implications.

8.2.1. Airport Island
As the Chek Lap Kok Island has limited land supply, the reserved supply should serve high value-added logistics use. Meanwhile, land should be provided to handle cargoes according to their time-sensitivity. Warehousing and consolidation centre should occupy a major part of the surrounding land with technological advancement to handle specialised cargo. As 3RS is going to be completed soon, the labour and transport demand will increase, which will require
review of transportation network capacity including HKBCF, HZMB, Tuen Mun and Tung Chung. In addition, facilities and services provided to workers of the Airport Island will be other challenges as the demand for workforce will increase.

8.2.2. Tuen Mun
With a geographical location advantage, Tuen Mun can capitalise the improved connectivity and benefits from newly built regional infrastructure directly after the construction of TM-CLKL. To support an intermodal logistic development, Tuen Mun should be well-prepared for both road and sea transportation. An upgrade of RTT should be well-prepared for further increased demand of river barges and other logistic uses. Apart from locational advantages, there are additional land supply from Area 38, 40, 46 and 49 which have been planned or are possible for logistic use. The land provision should be well-utilised for RTT and logistic facilities to cater for increasing demand in the future.

8.2.3. Northern Part of the New Territories
With several potential new town and boundary development, the northern part of the New Territories acts as an indispensable role in future logistic development. With other support to Route 9, the vast of land can be further developed. The relatively abundant land supply from the north can be planned for logistic use in the proximity of boundary between Mainland China and the city. The projected population and land provision are required to have further analysis before the comprehensive plan.

It is supposed that warehousing facilities, distributions centre and other modern logistic facilities can be constructed in the north. Logistic park can be established for SMEs with further considerations of incentives and policy reviews. With the advantage of being near to BCFs, the land can be prepared for more cross-boundary logistic uses. In addition, existing brownfield and port back-up have been planned in the Outline Zoning Plans of those new towns. Hence, the policies for allocating the land source and relocating the existing activities on brownfield will be a big challenge for government to deal with.

8.2.4. Existing Ports
Despite the decline of sea logistics, the transshipment is still a vital part of Hong Kong logistics. The existing KTCT should make good use of surrounding land and PWCA for further expansion and support. To improve the spatial arrangement, the operators can also improve the technological use in the terminals. More linkage between workforce and terminals should be established to attract new source of workforce to solve the succession problem. The work allocation between RTT and KTCT will be a concern for further development. Another consideration is the growing size of vessels and whether further dredging is necessary.
8.2.5. Outlying Islands
Apart from the construction of the Airport Island, research on developing other islands especially under the preliminary concepts of ELM like Kau Yi Chau and Hei Ling Chau is required. Since a large-scale of reclamation is required, social and environmental impact assessments are important to evaluate those developments. The population estimation and other transport assessment are also required as the existing transportation network in Lantau Island has not been well-developed. The existing activities on those islands have to be considered in the planning process, and this huge project is still at an initial stage.

Chapter Summary
Besides exploring the implications of recommendations for key stakeholders, Chapter 8 places equal emphasis on examining the impacts on the strategic and district planning of specific locations (i.e. Airport Island, Tuen Mun, Northern Port of the New Territories, existing ports, and outlying islands). Thus, this chapter supplements the previous one and that the two chapters shall be studied together. In Chapter 9, some potential topics for future study will be introduced.
9. Further Study

There are some concepts that would affect the development of logistics industry in Hong Kong in the future. Therefore, these concepts are worth further investigation.

9.1. Guangdong-Hong Kong-Macao Greater Bay Area

As mentioned in Section 5.2.6, cooperation between Hong Kong, Macao and Guangdong province would be further enhanced, and different cities would have different roles. As an international financial centre, Hong Kong could “lead the city cluster to integrate with the global network” and offer maritime services such as insurance and legal services to serve the ports in the region (Cheung, 2017; Ming Pao, 2017; HKTDC, 2015a). So, instead of focusing on the development of the port and competing in the business of container terminals, Hong Kong could focus more on enhancing maritime services (Cheung, 2017; Ming Pao, 2017; Ng, 2017). The role of Hong Kong in the Greater Bay Area is subject to further study.

9.2. ‘Belt and Road’ Initiative

As discussed in Section 5.2.6, Hong Kong could become a major platform facilitating logistics and trade under the Initiative (Commission on Strategic Development, 2016). There would be an increasing new demand to support the growing shipping industry created by the 21st Century Maritime Silk Road that connects China to Europe by passing through South China Sea and Indian Ocean (HKTDC, 2016b).

Regarding sea logistics, taking advantage of the huge pool of talents in maritime-related services in Hong Kong, overseas maritime companies considered Hong Kong as an ideal location to set up regional offices with a view to entering the market in Mainland China (HKTDC, 2016b). At the same time, Hong Kong, acting as a “super connector”, could link Chinese maritime companies to other parts of the world, including Europe and other countries in Asia (HKTDC, 2016b). Hong Kong, as an international maritime centre and the largest offshore Renminbi (RMB) market in the world, is poised to offer expertise, connections and more comprehensive high value-added maritime services, for instance fundraising and other kinds of financial services, legal services, arbitration, shipping insurance, ship management and ship broking, to maritime companies (HKTDC, 2016b; HKTDC, 2017b).

Regarding air logistics, it has been suggested that Hong Kong, serving as a vital transportation centre in Asia-Pacific, could build ‘Aerial Silk Road’ (Commission on Strategic Development, 2016). In order to achieve this, the Hong Kong International Airport (HKIA) has to expand its airport network, and the government has to expand the existing aviation arrangements and conclude new Air Services Agreements with other countries that are involved in the Initiative (Commission on Strategic Development, 2016). In this way, Hong Kong could strengthen its position as international aviation hub (Commission on Strategic Development, 2016). The role of Hong Kong in the Initiative is subject to further investigation.
9.3. Relocation of Port

The Hong Kong government announced that Container Terminal 10 would not be constructed in southwest Tsing Yi since the government regarded this project as technically viable, but not financially (Sung, 216). It was estimated that the investment cost could not be recovered by the financial returns brought by the project within the evaluation period of 50 years (Panel on Economic Development, 2015).

Regarding relocation of port, currently, the Hong Kong government has no plan to do so (Sung, 216). It is true that relocation of the Kwai Tsing Container Terminal (KTCT) would bring advantages, for example the reduction of air pollution in urban areas (Wang, 2016). Moreover, after the relocation of the container terminal, the land in Kwai Tsing could be released for residential development that could accommodate at least 200,000 residents and could be used to fulfil housing needs (Wang, 2016). The site is at the centre of urban areas and the traffic network there is well-established (Our Hong Kong Foundation, 2017). So, the land is considered to be suitable for residential development.

However, relocating the port would mean abandoning the existing well-developed system and taking risks (Tong & Yan, 2014). Also, relocation of port would require huge investment (Tong & Yan, 2014). The suggestion of relocation of port and the search for a suitable location for the new port would require further study.

Chapter Summary

Chapter 9 gives an explanation of three concepts, namely Guangdong-Hong Kong-Macao Greater Bay Area, 'Belt and Road' initiative, and relocation of ports, suggesting their potential influences on the long-term development of Hong Kong's logistics industry. These topics go beyond the scope of this study but worth further investigation in the coming future.
10. Conclusion

In this report, the analyses of the three transport modes of logistics have been consolidated in order to identify the necessary next steps to make Hong Kong’s logistics industry more resilient to future challenges. As explained in Chapter 3 of this report, logistics is integrated in every stage of the supply chain. Therefore, challenges, trends and opportunities of each transport mode must be identified due to its importance within the overall supply chain.

In response to the identified trends, challenges and opportunities, five strategic directions are formulated. They are:

1. Enhancing logistics facilities
   This strategy uses new land supply for modern logistics development and accommodates the increased demand for specialised cargo facilities. It also intends to enhance the existing land, sea and air logistics facilities.

2. Improving freight circulation
   This strategy takes into consideration the proposed, under construction and existing road infrastructure in order to link new land supply and existing facilities to ensure freight movement is at its optimal.

3. Leveraging intermodal logistics opportunities
   This strategy realises the potential of RTT to become an intermodal logistics transshipment hub where air, land, and sea cargoes converge. KTCT is also taken into consideration in order to improve its efficiency through the use of PCWA.

4. Developing intermediary services
   Logistics supply chain does not only consist of the physical flow of goods. This strategy intends to improve the flow of funds and information.

5. Utilizing Hong Kong’s competitive advantages in the PRD
   Hong Kong has traditionally been a major regional gateway of the PRD region due to its inherent advantages. However, in recent years, the increased competition from other neighbouring cities has been weakening Hong Kong’s position. This strategy intends to re-strengthen Hong Kong’s position in the PRD.

There are some concepts that are not within the scope of this report, but have a large influence on Hong Kong’s ability in strengthening its logistics industry. First is the increasing trend of regional cooperation. The ‘Belt and Road Initiative’ and Guangdong-Hong Kong-Macao Greater Bay Area are opportunities for Hong Kong to position itself as a major logistics
hub on the international stage. Hong Kong can become the main conduit to connect the region to the rest of the world. Secondly, taking reference from London, Shanghai and Singapore, Hong Kong can consider relocating the port. Although the government have not expressed any intention to do so, it is still worthwhile to further explore this direction to improve preparedness.

Ultimately, this report recommends the government to carry out the above strategic directions and explore further the identified concepts that are not within the scope of this project.
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Appendix A - Supplementary Information for Section 2.1

Figure A1. Economic Performance and Employment Number of the Logistics Industry 2000-2015 (C&SD, 2016b)

Figure A2. External Merchandise Values by Modes of Transport (C&SD, 2016a)
Figure A3. Hong Kong Ports’ Cargo Throughput by Countries in 2014 (C&SD, 2015)

Figure A4. Hong Kong’s Inward Air Cargoes by Countries (C&SD, 2016a)
Table A1. Major Trading Partners by Modes of Transport (C&SD, 2016a)

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Appendix B - Logistics Infrastructure Proposed and Under Construction in Hong Kong

1. **Hong Kong International Airport with the Three-runway System (3RS)**
   Apart from the existing terminals mentioned in previous section, the Chief Executive-in-Council has granted the approval to authorise the reclamation of approximately 650 ha. of land for the expansion of HKIA into a 3RS in 2016. The construction also includes the Third Runway Concourse (TRC), expansion of existing Terminal 2 (T2) and other support operation systems and facilities. According to Airport Authority Hong Kong (AA), the new system can allow HKIA to handle future demand of 102 million passengers, 8.9 million tons of cargo and 607,000 aircraft movements each year by 2030.

2. **Hong Kong Link Road (HKLR)**
   HKLR is a proposed 12 km-long dual 3-lane carriage highway connecting HZMB and HKBCF. It is one of the strategic transport infrastructure linking Hong Kong with Macao and the Western PRD.

3. **Tuen Mun-Chek Lap Kok Link (TM-CLKL)**
   TM-CLKL is a 9 km-long dual 2-lane carriageway including a 5 km long sub-sea tunnel heading to HKBCF between North Lantau and Tuen Mun. Strategically it will be a key linkage between North West New Territories (NWNT) including Tuen Mun Area 46, North Lantau, HKBCF, HZMB and HKIA. This strategic connection linking with North Lantau Highway (NLH), HKBCF and Lung Mun Road will cater for anticipated traffic demand and provide a significant reduction in travel time between connected areas to HKIA to facilitate the flow of both passengers and goods. Further it will essentially help enhance the cross-boundary transportation to connect Hong Kong and PRD region with a regional transport network and synergy with HZMB.

4. **Tuen Mun Western Bypass (TMWB)**
   TMWB is an approximately 9 km-long dual two-lane highway connecting Shenzhen Bay Bridge, Hung Shui Kiu New Development Area via the Kong Sham Western Highway (KSWH), TM-CLKL and HZMB. It will be a part of strategic road network to provide alternative options and foster regional development.

5. **Tuen Mun Area 40 and 46 and Adjoining Areas**
   Tuen Mun Area 40 and 46 and adjoining areas consists of four land parcels of 50 ha which were classified as Potential Development Area (PDA). The areas will connect with HZMB HKBCF and North Lantau via the Tuen Mun-Chek Lap Kok Link (TM-CLKL) which will also link up with Tuen Mun Western Bypass (TMWB) to Northwest New
Territories. With its high connectivity and accessibility, the estimated 10 ha. developable land to the south of Lung Mun Road mainly was proposed with a theme of modern logistic hub to comprise logistics use. The proposal of site is catering for facilities and operational requirement of modern logistics such as distribution and packaging centres with modern warehouse facilities and related testing and certification services, to handle high value goods and to provide high-value added logistics service.

6. **Man Kam To Logistics Corridor**

Man Kam To (MKT) serves as a crucial gateway in the NTN with the presence of MKT CPs and Lo Wu. With its proximity to the MKT CBP and cross-boundary freight which is related to fresh food produce and livestock, the development area will adopt the role of a logistics centre to future development. A Logistics Corridor will be connected to the future LT/HYW CP and HYW of the New Town via MKT Road and Lin Ma Hang Road. In addition, an about 35 ha of agri-logistics consolidation and certification area for storage, testing and certification of food before distribution will be provided for modern logistics. The infrastructure will be developed for cross-boundary supporting and logistics uses to facilitate closer regional cooperation between mainland China and Hong Kong.

7. **Commercial/modern logistics development in Hung Shui Kiu New Development Area**

The northwestern part of Hung Shui Kiu NDA is planned as a “Logistics, Enterprise and Technology Quarter”. About 37 ha of land with large land parcels will be utilised for modern logistics facilities with enhanced operational efficiency to complement Hong Kong development as a Regional Distribution Centre and Logistics Hub. Another 24 ha of land at the northern fringe will be reserved for port back-up, storage and workshop uses, including proposed multi-storey buildings for accommodating affected brownfield operations. Other supporting facilities and industries will also occupy land for future development and providing job opportunities.

8. **Release back-up land on port facilities**

To alleviate the problem of port congestion in Kwai Chung caused by increasing cargo and container traffic, land adjoining has been proposed as back-up land on port facilities to improve port efficiency. 4 sites of 15.2 ha in total will be released as an extension to the adjacent container terminals to increase additional yard space for storage uses. Other 2 sites of 3.34 ha in total will provide additional space for barge berthing use to meet the increase in river-borne container traffic. With other means of tenancy and parking management, it is supposed to optimise 100 ha of land for port back-up uses as a port development strategy to strengthen HKP position of transshipment and logistics hub in regional scale.
9. **Container Terminal 10 in southwest Tsing Yi**

Container Terminal 10 (CT10) has long been proposed to be developed on a proposed reclamation site of 180 ha and a proposed land formation site of 130 ha at the southwestern part of Tsing Yi island. The site is currently used as oil terminals and other ancillary facilities. It will provide not less than eight 400 m long berths and supposedly be recognised as a future terminal expansion for port development.

10. **Liantang / Heung Yuen Wai Boundary Control Point (LT/HYW BCP)**

Apart from the existing six land crossing between Shenzhen and Hong Kong, LT/HYW BCP which will occupy 23 ha of land constructed with an approximately 11 km-long dual-two lane trunk road linked with Fanling Highway will be the seventh. It is expected to bring significant benefits to Hong Kong as it will connect with the expressway systems, Fanling Highway in Hong Kong and Shenzhen-Huizhou and Shenzhen-Shantou Expressways in Shenzhen. The new BCP is supposed to alleviate the busy local traffic in existing BCPs, Man Kam To and Sha Tau Kok, which are mainly used to access eastern Shenzhen and Guangdong. In addition, it will shorten the travel time between Hong Kong and eastern Guangdong and other southern parts of mainland China.

11. **Topside commercial development at the Hong Kong Boundary Crossing Facilities (HKBCF) Island**

HKBCF is a part of HZMB, located on 150-ha artificial island including about 20 ha for TMCLKL Southern Landfall, project under construction. HKBCF facilities will include cargo and passenger clearing and vehicle inspection facilities, roads, car parks and public transport interchange, etc. It will be part of the regional multi-modal transport hub in North Lantau including HKIA, MTR Airport Express and MTR Tung Chung Line that will be beneficial from the synergy effect and become an indispensable gateway of Hong Kong. With its well-planned transport infrastructure including TM-CLKL and HKIA, it was proposed to be a key logistics node where can capitalise the converge and increase of international and regional visitors and goods to potentially development bridgehead economy.
# Appendix C - Interview Notes

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<td>○ Agent (middlemen)/ service provider</td>
</tr>
<tr>
<td></td>
<td>○ Cargo Terminal</td>
</tr>
<tr>
<td></td>
<td>○ Transportation Company</td>
</tr>
<tr>
<td></td>
<td>○ Ground Handling Agent</td>
</tr>
<tr>
<td></td>
<td>○ (Airline Service are influenced by the needs (time, nature, cost, value added or not)</td>
</tr>
<tr>
<td></td>
<td>● Emerging trends of the air logistics industry</td>
</tr>
<tr>
<td></td>
<td>○ UPS, DHL, Fedex (growing stronger)</td>
</tr>
<tr>
<td></td>
<td>▪ Integrator: have their own agent, terminals and transportation company</td>
</tr>
<tr>
<td></td>
<td>▪ Provide services in one single entity</td>
</tr>
<tr>
<td></td>
<td>▪ Operation cost is higher than the general model</td>
</tr>
<tr>
<td></td>
<td>▪ But still not really place challenge to the industry</td>
</tr>
<tr>
<td></td>
<td>● Challenges the logistics industry</td>
</tr>
<tr>
<td></td>
<td>○ No secondary industry</td>
</tr>
<tr>
<td></td>
<td>○ Manufacturing industry moving out of the PRD region</td>
</tr>
<tr>
<td></td>
<td>○ PRD: high value added</td>
</tr>
<tr>
<td></td>
<td>○ Move to cargo catchment area</td>
</tr>
<tr>
<td></td>
<td>▪ No need to choose HK</td>
</tr>
<tr>
<td></td>
<td>○ Cannot solely rely on self-consumption</td>
</tr>
<tr>
<td></td>
<td>● Cargo handling capacity of HKIA</td>
</tr>
<tr>
<td></td>
<td>○ HKIA has enough enough cargo handling capacity</td>
</tr>
<tr>
<td></td>
<td>○ Total capacity: 7.4 million tonnes (still 3 million tonnes not yet used)</td>
</tr>
<tr>
<td></td>
<td>○ Increase is slower than other countries</td>
</tr>
<tr>
<td></td>
<td>▪ But is international cargo rather than domestic cargo</td>
</tr>
<tr>
<td></td>
<td>● Future direction of air logistics industry</td>
</tr>
<tr>
<td></td>
<td>● Three major trends/ directions for future growth:</td>
</tr>
<tr>
<td></td>
<td>○ E commerce as new trend: express cargo, mail cargo, parcel</td>
</tr>
<tr>
<td></td>
<td>○ Temperature sensitive cargo: temperature sensitive goods, i.e. pharmaceutical, perishable(high value foods)</td>
</tr>
<tr>
<td></td>
<td>○ High valued goods - automation, expensive high-tech products (iphones, computers)</td>
</tr>
<tr>
<td></td>
<td>○ Cooperate with home-based carrier</td>
</tr>
<tr>
<td></td>
<td>▪ give more incentive to attract them to use HK to deliver the goods as transit port</td>
</tr>
<tr>
<td></td>
<td>▪ provide higher information access and more efficient license control</td>
</tr>
<tr>
<td></td>
<td>▪ expand and increase catchment area, relax license restriction</td>
</tr>
</tbody>
</table>
Final Report: Urban Planning Strategy for the Hong Kong Logistics Industry

- re-attract goods to via HK rather than directly from production area to destination (transshipment)

  ○ How to strengthen Hong Kong as a better transit point,
    - HKIA
      - Efficiency
      - Custom clearance
      - License control could be simplified, exemption in transshipment**
      - Value-added activity
  - Policy Support
    - Improve Transshipment Ordinance
  - Infrastructure Support
    - HKZM bridge
    - Infrastructure is the key to cut cost and time, shortened distance to western china.

- Relationships between sea and air logistics
  ○ The nature of the goods and the needs (time, space, and quality of goods) of the transport mode is very different for port and airport.
  ○ Port
    - Time is not important in the maritime logistics,
    - No point to choose HK as a transshipment point.
    - Value of products carried by vessels are lower, it induces higher proportion of transportation costs.
  ○ Airport
    - High value products, transport costs takes lower %, more affordable for air transport; faster
Interview 2

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>A representative from an air cargo terminal operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>3/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>10:00-12:00</td>
</tr>
</tbody>
</table>

**Key Notes:**

- **Concerns**
  - Land shortage
  - How to minimise costs
  - Government could help reduce labour and land costs

- **Trends**
  - Increase in lithium battery in commodities for example in heat-retaining jackets
    - South China: lithium battery manufacturing base
    - Central Asia: garment
  - Pharmaceutical (time-sensitive) and high-value added goods
  - International security regulations adding more cost for security and safety
  - Rise of e-commerce
    - Larger diversity of goods
    - Not large effect on efficiency of packing
  - More efficient shipping lessening demand for time-sensitive air delivery

- **Comparison with Singapore**
  - Government has resources and less regulations

- **Points to be considered**
  - Construction of In-site (in airport) or off-site Central Facility for security screening to increase efficiency
    - Upstream-screening facility (off-site screening centre), but have to secure the warehouses and trucks
    - Downstream-screening facility, more efficient because cargoes are screened and packed onto pallets before shipping at the last point
    - Single location for mass screening
  - Economies of scale is one of the most efficient way to reduce cost and increase efficiency but government intend to issue more CTO license if demand for air cargo handling increases also the projected increase in demand might overlook
    - regional challenges
      - Factory relocation from PRD

- **Impacts of Hong Kong-Zhuhai-Macao Bridge**
  - Enhance connectivity
  - can promote business to West PRD
  - However Zhuhai and Macao are huge competitors if controls are relaxed

- **Hong Kong’s Air Logistics**
  - Advantages
    - Good customs clearance
### Efficient and high quality

- **Limitations**
  - Skilled labour, especially front-line and new staff
  - High turn-over of young employees (30-40%)
  - Potential doubling of labour demand after the completion of the Third Runway

### Relationships with other modes of logistics

- **Land**
  - Most export of HKIA are delivered from China by land transport
  - Intermodal logistics
  - Extending catchment area of air logistics with trucks
  - Cooperation of custom clearances of land and air
  - E.g. cargo custom cleared at HKIA then deliver directly to China without further screening at Border Control Points
  - Proximity of warehouses related to air logistics is essential for efficiency as it reduces time and resources on land logistics
  - The efficiency of land logistics is the key to the efficiency of the whole (air) supply chain

- **Sea**
  - Nature of goods are different: sea in much larger quantities, air is time-sensitive
  - E.g. Hanjin company bankruptcy is a big bonus

### Recommendations

- Digitalise administrative processes with single window system
- Deregulations such as for pharmaceutical cargoes
- Lessens labour and land costs
- Should work close with the industry
- Expansion of labour force to support the huge economy
Interview 3

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>Scholars specialising in logistics development and planning in Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>9/3/17</td>
</tr>
<tr>
<td>Time:</td>
<td>10:00-12:00</td>
</tr>
<tr>
<td>Key Notes:</td>
<td></td>
</tr>
<tr>
<td>● The Relationship between land, sea and air logistics</td>
<td></td>
</tr>
<tr>
<td>○ Linkage between sea-to-air and air-to-sea has been reduced in the past 10 years.</td>
<td></td>
</tr>
<tr>
<td>○ Singapore has positioned itself as a transshipment hub (10-15% value contributed from import &amp; export only)</td>
<td></td>
</tr>
<tr>
<td>● Importance of location of freight facilities</td>
<td></td>
</tr>
<tr>
<td>○ A rising competition from Malaysia, which takes over some of the business from SG</td>
<td></td>
</tr>
<tr>
<td>○ More import trading activities from Malaysia to Singapore due to its relatively cheaper land rent and labour costs</td>
<td></td>
</tr>
<tr>
<td>▪ Coca Cola’s factory relocated to Malaysia a few years ago</td>
<td></td>
</tr>
<tr>
<td>● Strategies adopted by Singapore to enhance cross-boundary logistics</td>
<td></td>
</tr>
<tr>
<td>○ Bonded area such as free zone within airport area</td>
<td></td>
</tr>
<tr>
<td>○ Relocation of port facilities to Tuas Port</td>
<td></td>
</tr>
<tr>
<td>▪ Benefit of proximity to the industrial clusters</td>
<td></td>
</tr>
<tr>
<td>▪ Distance from Tuas Port to Changi Airport is just 40km</td>
<td></td>
</tr>
<tr>
<td>● Arise of E-market facilitating the whole operation</td>
<td></td>
</tr>
<tr>
<td>○ Collaborative Urban Logistics (Synchronizing the Last Mile)</td>
<td></td>
</tr>
<tr>
<td>○ UCC system originated from Tokyo</td>
<td></td>
</tr>
<tr>
<td>○ Singapore Two malls in Singapore under trials</td>
<td></td>
</tr>
<tr>
<td>○ Practically useful for congested city like Hong Kong</td>
<td></td>
</tr>
<tr>
<td>▪ Applications of UCC in little India</td>
<td></td>
</tr>
<tr>
<td>▪ Setting up a UCC in the district inside the big shopping malls</td>
<td></td>
</tr>
<tr>
<td>▪ Benefits to both retailers and logistic companies</td>
<td></td>
</tr>
<tr>
<td>● Impacts on retailers</td>
<td></td>
</tr>
<tr>
<td>○ Retailers synchronised into the system</td>
<td></td>
</tr>
<tr>
<td>○ Retailers as parts of the communication in the industry</td>
<td></td>
</tr>
<tr>
<td>● Introduction of urban consolidation centre (a stand-alone facility located at the fringe of CBD)</td>
<td></td>
</tr>
<tr>
<td>○ The key is “consolidation”</td>
<td></td>
</tr>
<tr>
<td>○ Different stakeholders included</td>
<td></td>
</tr>
<tr>
<td>● Similar issues of high labour cost and land shortage in Hong Kong and Singapore</td>
<td></td>
</tr>
<tr>
<td>○ Different government mentalities between two cities</td>
<td></td>
</tr>
<tr>
<td>○ Simpler process of reclamation and creating masterplan for the relocation for Port development in Singapore</td>
<td></td>
</tr>
<tr>
<td>● Relationship between upsurge in e-commerce and logistics</td>
<td></td>
</tr>
<tr>
<td>○ Orders from end-customers increase the complexity of delivery processes</td>
<td></td>
</tr>
<tr>
<td>○ Increasing demand of warehouses for temporary storages for</td>
<td></td>
</tr>
</tbody>
</table>
consolidation
- Features of e-commerce targeting new generation
- Influencing on planning of cities
- Reduction of transactions of retails
- Challenges including products return and customs tax

- Change in demand for sizes and needs of warehouses
  - Retails’ requirement (big boxes) vs customers’ requirement (small parcels)
  - No longer be warehouses needed for e-Commerce in the future
  - Delivery time matters
  - Labour shortage
    - More part time jobs for the household wifes
    - Encourage the use of automation
    - Singaporean are well-educated
    - Locker system
      - Message to customers to pick up the goods by 24hrs
      - Territorial-wide in public housing HDB
### Interview 4

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>A retired planner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>13/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>10:00-12:30</td>
</tr>
</tbody>
</table>

#### Key Notes:

- **Government’s role in logistics development**
  - Provision of appropriate site for logistics use
  - Size of the site is an important factor of seeking the right site
  - Different Users need different size of site: SME may actually need a small office; bigger scale companies need bigger site for modern logistics
  - PlanD, LandD and Building Department have to corporate for finding suitable sites
  - Logistics use need special spatial configuration, for instance, ATL Logistics Centre (1988-1994) developed very big, individual ramp for truck
  - Building Department: Useable Space + Circulation Space = Total Floor Area

- **One Belt One Road Initiative**
  - Railway does not really create lots opportunities for Hong Kong
  - Railway can carry staff, but cannot provide door to door services of goods
  - Weakness of the Port of Hong Kong: not container charges, but wages

- **Land supply for logistics use**
  - The government should think how to preserve land of particular use
  - Balanced use of development as every users are competing in Hong Kong
  - Government has to monitor the situation and make use of regulation & policy
  - In Hong Kong, most of the buildings are speculative building (not built for particular use) → difficult to make sure
  - Possible solution: subsidised land for particular (logistics) use
  - Rate and Value Department has to identify individual special use of building

- **Brownfield Development**
  - Cannot only select particular brownfield for development, but need to consider the whole community
  - Difficult to develop as they are not vacant site, which are used by different users
  - Multi-story structure in brownfield: need careful planning for the development model
## Interview 5

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>A local large-scale land-based logistics operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>14/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>14:00-16:00</td>
</tr>
</tbody>
</table>

### Key Notes:

- **Prospects of HKZMB/ Liantang/ Heung Yuen Wai Border Crossing Point**
  - HKZMB
    - Consolidate and use HKIA to channel out the air cargo
    - Save time wasted on traffic congestion
  - Liantang/Heung Yuen Wai Border Crossing Point
    - Can dilute people to different gateway
    - Positive impact but significance is still unknown
- **Key considerations in choosing a warehouse location**
  - Warehouse is not standalone consideration
    - Sourcing
    - Origin
    - Supply of volume
    - Destination where the product is going
    - Government support
  - Preferably Tsing Yi
  - Transportation is convenient
- **E-commerce and Warehouse**
  - Fast response time
  - Smaller pieces per order
  - Fluctuation of volume
  - No manual operation
  - How to arrange ratio owned labor and contract labor
  - Retail space and e-commerce grow together, not mutually exclusive
  - May trim down the store and inventories in store
- **Reverse Logistics and the spatial requirements**
  - Receive out-of-season products in store
  - Recondition the products that will be for sale again
  - Depends on the business model of the customers
  - Spatial requirements
    - Volume you are going to receive and go out before designing the warehouse
- **Land & Air Logistics**
  - Warehouses near the airport are mostly for temporary uses (e.g. sorting and routing)
  - Well-developed and sophisticated land transportation network can facilitate the use of warehouse
- **Sustainable Logistics**
  - Corporate Responsibility
  - Cost-saving in long term
  - Investment high in the beginning
### Government’s Role and Support
- lessened compared to before
- HK’s role in Pan-Asia and how to differentiate/cooperate with China,
- How to identify the role of HK and China?
- Policy is important
  - Custom declaration
  - Need to understand HK’s advantages

### Role of Land Logistics
- Avoid competition with China
- RDC → not only facilitate HK’s consumption, but as a hub for APEC with advantage of policy
- Fast-moving operation → utilise the land limitation and calculate how much you earn from per sq. ft of space
- Expand business scope with government’s support as e-commerce hub
Interview 6

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>A representative from a government department related to logistics industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>14/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>17:00-19:00</td>
</tr>
<tr>
<td>Key Notes:</td>
<td></td>
</tr>
</tbody>
</table>

- Major roles of InvestHK helping logistics industry is to provide consultancy and services to SMEs
  - Assisting logistics companies from overseas to set up branches in Hong Kong, i.e. lobbying, communication
  - Providing logistics development background for clients
  - Helping companies in logistics industry to succeed
  - All sizes of companies want to come to Hong Kong as we have good business environment for them
- Hong Kong has excellent logistics ranking
  - Both air and sea logistics ranked on top 5 in world ranking
  - Regional cooperation: Hong Kong should focus in high value-added goods, and Yantian should focus in low value products
  - Hong Kong has higher quality services than other neighboring ports
  - Port in Hong Kong does not decrease in volume, but only other ports are getting stronger and stronger
  - Serves high value-added goods, e.g. wine, art logistics, high end fashionable brands
- E-commerce development in Hong Kong
  - Hong Kong has quick turnover as close proximity to mainland China
  - Mainland takes a lot of time for customs to ship overseas
  - There is a need to set up regional warehouse in Hong Kong
- Technological advancement in logistics development
  - GPS tracking goods
  - RFID in shops
  - Logistics in smart city application
  - App based delivery technology
  - The startups should push more new technology, i.e. shipment data can be extracted for SMEs’ analysis
  - More funding should be given to startups as they have heavy financial burden
  - More environmental friendly to use big data to improve efficiency
- Capacity of land for logistics development
  - It depends on how the government balance the land
  - The cargo volume is stable so the land should be sufficient as this stage
  - If you want to push the volume, then there is a need to expand the port
- Government actions in long term growth
  - Government should have a better platform
○ Increase passages to mainland China
○ Liantang: eastern part of China, direct competition with Yantian
○ HK-ZH-MC Bridge: attract western part of China, expand the hinterland

● Cooperation with mainland China
○ PRD goods and people come from trucks and ships and leave through air logistics
○ Provide a service package and more comprehensive services
○ PRD is more likely to have cooperation then competition
## Interview 7

**Interviewee:** A scholar specialising in urban planning and design

**Date:** 15/3/2017

**Time:** 13:00-15:00

**Key Notes:**

- **Guangzhou as a Competitor**
  - Looking at the hinterland is important
  - The question is whether GZ can copy HK and become an international logistics hub

- **Role of Operator**
  - Cooperation between shipping companies + operators, not city to city

- **China can afford to have different hubs**
  - HK and Shanghai may not be competition
  - HK is not the only gateway to China

- **Outlook of HZMB**
  - Is there sufficient manufacturing in west PRD to maximise the use of the bridge?
  - Bridge makes sense 20 years ago, but not now

- **Cabotage Rule**
  - Cabotage is more about security, not just about economic considerations
  - Not every port is blessed with a good customs office strategy
  - China is unlikely to lift all the bans because they don’t want a  laissez-faire approach to port control

- **Belt and Road**
  - If there is no demand in the manufacturing industry, the 1B1R may rekindle the demand
  - Still very conceptual, but when is it going to be possible?

- **Regional Integration**
  - How would integration with SZ help enhance HK’s advantage?
  - HK lacks a hinterland, regional integration actually improve the city
## Interview 8

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>A scholar specialising in Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>15/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>16:00-18:00</td>
</tr>
</tbody>
</table>

### Key Notes:

- **Pros of Choosing the port of Hong Kong**
  - Free port status
  - High efficiency
  - Rule of law
  - Comprehensive services
  - High connectivity

- **Port Competition in PRD**
  - very last stage now
  - front-shop-back-factory
  - mid 1990
    - HK started to have their investment to import, eg. Hutchison Whampoa, Modern Terminal Ltd
    - we see port relocate from HK to mainland China
    - entrepreneurship started earlier to move before the port
    - Guangzhou port is doing for domestic industry in that time
    - only SZ and HK are doing international
    - it is not the cities they compete, but the companies expand into China cities
  - 1995-2005
    - HK labour more expensive, if you move into HK, you need HK truck driver license
    - 90% are HK driver, earn around 40000-50000 monthly income
    - shipping companies would choose SZ for cheaper cost, you do not have to use HK driver, you do not have to pay extra in getting into HK
  - In China, by regulation, you have to go through the customs, eg. your document failed to use or your cargo failed to get in → all the cargoes have to drop out from the port area and cannot stay here
    - but in HK, you do not have to do the customs, catch up the efficiency
  - only advantages: HK’s efficiency, flexibility, custom efficiency, connectivity, which companies feel worthwhile to pay extra USD100 dollars
- eg. Wallmart does not want to use HK, they have friendly relationship with Yantian, SZ will give them some privileges, big companies will not have problems get into China
  - 1st adv: HK does not check the cargo in custom
  - 2nd adv: higher efficiency, high technology, good operation in terminal level
  - 3rd adv: transshipments and re-export
    - re-export: some cargo ship to HK, they ship to somewhere else, doing some value-added things, HK physically not aim at this, we only do packaging, around 90% are re-export from or to China
    - transshipments: come to HK with one ship in Shanghai, they put here in HK, the container terminal move the cargo into other ships, nature of transshipment is that no box is opened,
- Cabotage rule
  - HK as a door to mainland China, route to HK as international route
  - threats: China has the free trade zone in Shanghai, FTZ allows the foreign ships to do transshipment, HK less affected by the policy as SH is the only port in china can do the transshipment, but what if Yantian and Guangzhou might do in future?
  - the only way is to improve transshipment efficiency, if you can do it better than neighboring ports, companies will not mind to pay extra dollars, speed up the vessel, catch up the schedule in HK, the HK port is not designed as the transshipment hub physically before, direct transshipment
  - regional specialization in different ports
- Factories move to SE Asian countries
  - some are just new factories
  - Hong Kong may loss the hub role
  - Some SEA companies may become partners with HK
- Air Logistics Hub in Hong Kong
  - airlines looking for regional hub after lots of negotiation, and they found it
  - the Role of HK Airport in entire Asia countries
  - connectivity
  - Hong Kong Post see CX as partner that using mail services
    - HKPost said CX almost cover all destinations that the post services needed
- Hong Kong-Zhuhai-Macao Bridge
  - 20 years after might get money back
- after 10 years people will see the importance of the bridge, no more people will claim it is useless infrastructure
- air cargo need this bridge, time-sensitive cargo should be truck directly go to airport,
- businessmen will eventually find the value of the bridge
- western may want to go to HK for their own purpose

- **E-commerce**
  - the E-commerce is responsible in IT bureau instead of Trade Bureau in Hong Kong government, which should make change in the institutional organisation
  - there is no bureau directly facilitate and promote the growth of E-commerce
  - OMNI channel: you make use online/offline to chase the consumers to buy, they have the new behaviour, the purchase in online is more complicated, multi channels research → compare → see availability → price → delivery

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Interview 9
<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>A representative from a global shipping company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>15/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>19:00 (email reply)</td>
</tr>
<tr>
<td><strong>Key Notes:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Land Resource and Port Capacity</strong></td>
<td></td>
</tr>
<tr>
<td>○ Support expanding KTCT’s capacity through the construction of Container Terminal 10</td>
<td></td>
</tr>
<tr>
<td>○ Inadequate space for container storage at present</td>
<td></td>
</tr>
<tr>
<td>○ Increasing need to find outside depots/warehouses</td>
<td></td>
</tr>
<tr>
<td>○ HKP being less preferable for shippers</td>
<td></td>
</tr>
<tr>
<td><strong>Port Operation and Labour</strong></td>
<td></td>
</tr>
<tr>
<td>○ HKP is well-known for its high operational efficiency (in terms of container/crane movement per hour, customs clearance etc.)</td>
<td></td>
</tr>
<tr>
<td>○ Critical factors to ensure efficient port operation:</td>
<td></td>
</tr>
<tr>
<td>▪ Storage planning in port area</td>
<td></td>
</tr>
<tr>
<td>▪ Good coordination between ship planners and terminals</td>
<td></td>
</tr>
<tr>
<td>▪ Efficient document processing</td>
<td></td>
</tr>
<tr>
<td>○ Cargo handling (load/discharge) being the costliest throughout the entire operation</td>
<td></td>
</tr>
<tr>
<td><strong>Policy and Institution</strong></td>
<td></td>
</tr>
<tr>
<td>○ Suggest reduction in cargo handling cost and port dues (usually decided by the government)</td>
<td></td>
</tr>
<tr>
<td>○ Lack of quick response regarding the HKP’s saturation and improvement</td>
<td></td>
</tr>
<tr>
<td><strong>Regional Development</strong></td>
<td></td>
</tr>
<tr>
<td>○ Smaller role of HKP as a relay hub for East Coast of China</td>
<td></td>
</tr>
<tr>
<td>▪ More cost effective to choose ports in Ningbo, Shanghai and Xiamen</td>
<td></td>
</tr>
<tr>
<td>○ Increased coopetition with the rest of South China/PRD</td>
<td></td>
</tr>
<tr>
<td>○ HKP acts as a transshipment hub for some SE Asian countries as well though it is less competitive than Singapore, Kelang and Colombo etc.</td>
<td></td>
</tr>
<tr>
<td>○ Service quality and efficiency are crucial in maintaining HKP’s competitiveness</td>
<td></td>
</tr>
<tr>
<td><strong>E-commerce</strong></td>
<td></td>
</tr>
<tr>
<td>○ No impact on the shipping industry due to the long transportation time needed</td>
<td></td>
</tr>
</tbody>
</table>
**Interview 10**

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>A local large-scale sea logistics operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>16/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>10:00-11:00 (phone interview)</td>
</tr>
</tbody>
</table>

**Key Notes:**

- **Port Operation and labour**
  - Container Terminal 10 (CT10) is financially not viable (from government report)
  - Hong Kong’s throughput is decreasing
  - Construction of CT10 depends on government investment, availability of land and whether private operators are willing to invest
  - People have to think about whether CT10 is necessary
  - Operation efficiency can be increased by improvement of technology. This can enhance competitiveness
  - Control system has to be upgraded
  - People work in an indoor remote control centre, which is a safer office working environment

- **Government policies**
  - There is communication between the government and the Hong Kong Container Terminal Operators Association Limited (HKCTOA) which represents the whole industry
  - The industry submitted a paper to the government in 2013, saying that there is not enough back-up land
  - So, in 2015, the government proposed to enhance back-up land
  - Hong Kong Maritime and Port Board could help Hong Kong enhance its status as an international shipping centre
  - The Board has government support, so the planning process could be speeded up
  - The government has to do more in talent training
  - Regarding terminal operation, the knowledge that students acquired from books could not be applied to the working environment
  - The company suggested that the courses provided by colleges would be related to terminal operation
  - The government has listened to the company’s opinions
  - It would be better if the Board is a statutory department and has representatives from the industry. However, this needs time

- **Relationship between air cargo and sea cargo**
  - Air cargo is responsible for time-sensitive, light and high value goods. Competition between air cargo and sea cargo does not exist as they are responsible for different products
  - E-commerce is a new mode that encourages flow of goods
  - There are three major components, namely raw material,
### Origin and Destination

- **Pearl River Delta (PRD)**
  - Competition exists in the PRD. Vessels could go to other ports, such as the one in Nansha. Vessels do not have to rely on Hong Kong.
  - Hong Kong functions as a catch-up port. There are more sailings each day. This can increase flexibility.
  - Catch-up port relies on connectivity and efficiency in customs.

### Cabotage Rule

- It is to protect national interest.
- It had been relaxed in Shanghai Free Trade Zone (SHFTZ).
- Hong Kong’s throughput would drop by 14%. There would be fewer shipping companies using the port of Hong Kong as there would not be so many sailings every day. This is like a domino effect. The decrease would not be limited to 14%.
- The company had expressed their concerns to the Central government.
Interview 11

**Interviewee:** A large-scale sea logistics operator in the PRD region

**Date:** 17/3/2017

**Time:** 13:45-17:00

**Key Notes:**

- 3 types of warehouses in Hong Kong
  - Kwai Tsing: most value-added and efficient, but expensive costs and lack of land
  - Tuen Mun: moderate efficiency, but expected to increase costs with the opening of the Hong Kong-Zhuhai-Macao Bridge (HZMB)
  - Yuen Long, Tsuen Wan, Lau Fau Shan: low costs and many involving brownfield

- Challenges
  - Costs (low-skilled labour)
  - Convenience (lack of technology application)
  - Bonded zones and free trade zones in the Mainland
  - Trading terms between China and other countries change

- Possibility of strategies
  - Consolidating PCWAs and back-up land for HIT is not feasible
    - Existing issues in PCWAs like congestion
    - Difference in terminal handling costs between HIT and PCWAs
  - Labour import should be considered but will generate conflicts of interests

- Regional cooperation in the PRD
  - HZMB will mainly benefits West PRD, and Shenzhen, due to the diverted traffic flow as warehouses can be relocated to Zhuhai
  - Distribution of roles of Hong Kong and other cities should be discussed

- External factors
  - E-commerce: has no big impact to warehouses
  - Potential relaxation of cabotage rule: Hong Kong still has her roles
  - Factory relocation from PRD: limited effect
## Interview 12

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>A member from the Rural Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>18/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>15:00-17:00</td>
</tr>
<tr>
<td>Key Notes:</td>
<td></td>
</tr>
</tbody>
</table>

- **Existing brownfield**
  - Not much for logistics use (Yuen Long South)
  - Type of business includes distribution centre for express delivery, container storage
  - Around 1000 operators, with the rent $2-3 per feet
  - Provision of more than 10,000 related employment

- **Socio-economic impacts of brownfield development**
  - Employment
  - Business (brownfield is a suitable for business which needs a big space at ground level → industrial buildings in urban area can favour this needs)

- **Transformation of existing brownfield and NDA development**
  - Government should conduct study on the existing condition of brownfield and development potential
  - Land resumption can relocate some existing users to other sites, but it is important to ensure their business can be sustained

- **Obstacles in brownfield development**
  - Suitable site and land provision of existing establishment
  - Land resumption is complicated

- **Yuen Long South Development**
  - Existing: 130ha for container storage, warehouses and logistics operation
  - Future Plan: 24ha and 12ha for open storage and workshop respectively
  - Multi-storey in that 24ha of land cannot fulfil the spatial requirement
  - At least 20-30ha of land should be reserved
  - Multi-storey can only be used for: express delivery, light parcel, packaging, with car-repairing workshop at G/F or 1/F

- **Benefits of Hong Kong-Zhuhai-Macao Bridge (HZMB) and the Liantang Boundary Control Point**
  - YLS become a strategic location for regional logistics distribution development
  - There are three connection to China

- **Capacity of Route 9**
  - Existing infrastructure provision is quite sophisticated
  - Government should also consider building connection within the region

- **Challenges and opportunities of brownfield site in facing the rapid growth of infrastructure**
  - Need new site of relocation of business
<table>
<thead>
<tr>
<th>Licence for existing brownfield development has to be renewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation &gt; total cost of relocation and development</td>
</tr>
<tr>
<td>Brownfield may be a solution for housing issues in Hong Kong</td>
</tr>
<tr>
<td>At the same time, the government should also consider the provision of land for existing brownfield land users, as they are important source of land for the existing users</td>
</tr>
</tbody>
</table>
### Interview 13

**Interviewee:** A former and retired town planning professional from the government  
**Date:** 20/3/2017  
**Time:** 16:00-18:20

| Key Notes: |  
| --- | --- |  
| ● Transportation |  
| ○ The relationship between Hong Kong and cities in Mainland China |  
| ○ Pearl River Delta (PRD): 9 cities (Zhaoqing, Guangzhou, Huizhou, Shenzhen, Dongguan, Zhongshan, Zhuhai, Foshan and Jiangmen) |  
| ○ Greater PRD: 9 cities, Hong Kong and Macao (9 cities+2) |  
| ○ Pan PRD: 9 provinces, Hong Kong and Macao (9 provinces+2) |  
| ○ In Greater PRD, Hong Kong’s role is to be a Central Business District (CBD) and is irreplaceable due to institutional advantage and availability of talents |  
| ○ Greater PRD: connection point for people and goods that would like to enter Mainland Chinese market |  
| ○ Hong Kong has to strengthen its advantages, talent training, retention and recruitment and physical transport infrastructure |  
| ○ Flow of people (physical), flow of goods (physical), flow of cars (physical), flow of capital (intangible, related to institution), flow of information (intangible) |  
| ● Hong Kong-Zhuhai-Macao-Bridge (HZMB) |  
| ○ This is an unavoidable investment in infrastructure which hopes to reduce money cost and time, increase comfortability, safety and reliability. If we do not invest, this cannot be achieved |  
| ● Liantang/Heung Yuen Wai Boundary Control Point |  
| ○ We should not look at the number of people using the new Point. Instead, we should look at the diversion and the number of people reduced at the old Point |  
| ○ Strategic infrastructure: if the maximum capacity of the infrastructure can be reached in a short period of time, that means it was too slow to be built |  
| ○ Necessary to invest in its construction |  
| ● Cooperation between Hong Kong and the Mainland |  
| ○ Importance of sea port would decrease, but would remain strong ∵ huge volume and huge local consumption |  
| ○ Compare the GDP and population of France, Taiwan and PRD |  
| ○ Gravity model: flows between cities depends on population, economy (positive relationship) and distance (negative relationship). As Hong Kong is near to Shenzhen, flow is increasing |  
| ○ Cooperation: superficial; Competition: cruel reality |
○ A city’s ability can be shown by competition
○ If Hong Kong does not focus on its development, Shenzhen and Guangzhou would overtake Hong Kong
○ Cooperation can be in all and every area
○ Air logistics in Hong Kong still has advantages. Hong Kong must increase efficiency and construct Three Runway System
○ Necessary to increase connectivity and construction of infrastructure

● Brownfield in Hong Kong
  ○ Ownership of land
  ○ Still actively being in use
  ○ High cost in land resumption
  ○ Serious soil contamination, so decontamination is necessary
  ○ Sustainable dev process (starting point: a town plan showing present and future land use)
  ○ Cost externalised, e.g. pollution
  ○ Social conflict ∴ interests of many people are damaged
  ○ The plan has to acknowledge uncertainty and allow flexibility
  ○ The new logistics building in Hung Shui Kiu is flexible, adaptable, stable, with large floor loading space, large span and headroom and can withstand vibration
### Appendix D - Site Visit Notes

#### Site Visit 1

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to Kerry Logistics</th>
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<tbody>
<tr>
<td>Date:</td>
<td>6/2/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>14:30-16:30</td>
</tr>
<tr>
<td>Key Notes:</td>
<td></td>
</tr>
</tbody>
</table>

- **Introduction of the business**
  - Original business: ordinary warehouse (started in 1951)
  - Business went down due to 1997 financial crisis
  - Change of business model: from warehouse to logistics in 2000
  - Enter in China Market in 2005
  - Development of Express service

- **Asset based logistics**
  - Focus investment in assets
  - Facilities: logistics centre (truck: high ceiling), port terminal, express centre (deal with small parcels), Neanderthal container depot, rail terminal and truck fleet

- **Integrated Logistics**
  - Transportation
  - International Freight Forwarding
  - Technology helps take away the unnecessary steps: process re-engineering

- **Value Added Service**
  - Shrink wrapping, data printing, GMP secondary packaging
  - sorting, scanning, labelling
  - Packaging, price tagging, firmware upgrade, stock take, etc.

- **Questions to explore:**
  - What is the competitive edge of Hong Kong?
### Site Visit 2

<table>
<thead>
<tr>
<th><strong>Site Visit:</strong></th>
<th>Site Visit to HIT</th>
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</thead>
<tbody>
<tr>
<td><strong>Date:</strong></td>
<td>23/1/2017</td>
</tr>
<tr>
<td><strong>Time:</strong></td>
<td>09:30 - 12:45</td>
</tr>
</tbody>
</table>

**Key Notes:**

- **Some views**
  - Low feasibility of port relocation
    - due to road link and perception issues
  - Port business is not sunset industry
    - Industries goes northward, ports move away
    - Trade has positive relationship with port business
    - Even reduce the price, still not effective economically in HK
  - Hong Kong not much required to dredge
  - Should plan for container in advance, cannot reach full capacity first
  - Need new incentive for ships to come from West PRD
  - Government should help maximise benefits

- **Significance of transshipment**
  - The core business in the last decade
  - HK as a hub for China and Asia, with free port and good legal basis
  - However, low value-added and lessened shipping lines which increases risk

- **Technology**
  - communication with truck drivers with mobile messages
  - applying wifi & 4G to reduce delay
  - ensure 99% reliability

- **Relationship with Yantian**
  - Also owned by Hutchison but different infrastructure and segmented market, so no keen competitions among South China

- **Provision of complimentary services**
  - Before: mainly shipping lines
  - Now mainly:
    - Real-time Information provision
      - Availability of space
      - delay
    - Flexible solution provision
      - Expediting legal procedures
      - Finding extra facilities to expedite shipment and save penalties

- **Comparison of models of operation**
## Final Report: Urban Planning Strategy for the Hong Kong Logistics Industry

### Anchor Consulting Group

### Table: HK vs US Landlord Model

<table>
<thead>
<tr>
<th></th>
<th>HK</th>
<th>US Landlord Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>Scarce</td>
<td>Abundant</td>
</tr>
<tr>
<td>Shipping lines</td>
<td>25</td>
<td>Lease to shipping lines</td>
</tr>
<tr>
<td>Support</td>
<td>24/7 operation and terminal is always in use</td>
<td>Lack infrastructure / facilities support</td>
</tr>
</tbody>
</table>

- **Europe adopts a mixed-model**
  - Shipping lines invest in terminals
  - Some form alliances and need to consolidate terminals

- **HIT business**
  - Award-winning catch-up port
    - 80% are late
    - 50% late for more than 6 hrs
    - Park at HIT for less than 24 hrs usually
  - Acquires overseas port, including along One-Belt-One-Road, strong at Middle East and Africa
  - Employment
    - 1000 people for operation
    - 3000 sub-contractors
  - Hutchison listed in Singapore
    - More flexible cash flow and better accounting rule, so can distribute cash to shareholders

- **Control tower visit**
  - "OMS" real-time modular system
  - Trunked radio system
  - Weight info of vessel transmitted to vessel immediately

- **Container yard**
  - Environmentally-friendly use of satellite yard
  - Electronic driver ID
Site Visit 3

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to HKIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>13/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>14:30-17:30</td>
</tr>
</tbody>
</table>
| Key Notes:        | - Passenger and cargo throughput is positively correlated  
|                   | - Air cargo in Hong Kong represents 2% of tonnage only, but 40% of value  
|                   | - The difference between HKIA and other airports in the PRD is that HKIA is more internationally connected  
|                   |   - Neighbouring ports only serve domestic flights  
|                   | - a high degree of consolidation allows freight forwarders in Hong Kong to be more competitive  
|                   | - All Cargo Terminal Operators (CTOs) must meet Key Performance Indicators (KPI)  
|                   | - Loading of ULDs can be more streamlined through decentralization  
|                   | - HKIA’s strategy is not to compete in things we don’t have advantage in  
|                   | - Experiencing a hard time producing e-commerce facilities  |
### Site Visit 4

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to Port of Yantian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>23/1/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>14:15-15:45</td>
</tr>
</tbody>
</table>

**Key Notes:**

- **Direction of the port development**
  - Smart, green and world-class port

- **Recent achievements**
  - Foreign trade 90% with vessels
  - Shenzhen is the third busiest Port in the world (24 million TEU), and 50% of the business is contributed by Yantian, comparing to the dropping business in Hong Kong (20 million TEU)
  - Has 35 shipping lines and as a good gateway
  - It was the first terminal that could have a throughput more than 10 million TEU (in 2007)

- **Key advantages**
  - Natural deep-water port (17.6m)
  - Can serve as a preferred port-of-all for mega vessels
  - Can handle 3 of them simultaneously, which consist of more than 15000 TEU, as a mega vessel could be as long as 400m

- **Trends**
  - **Green transportation**
    - The privately owned Pingyan Railway which was a strategic move to increase catchment area, as it could reduce the carbon dioxide in each TEU, for example, solar panel lighting and other non-polluting sources of electricity
  - **Smart port**
    - Different from unmanned/automation like Rotterdam
    - Altering the logistics from container yard to gate operation and to berth allocation
    - For example, the use of autogate introduced in 1/2016 allows input of all information required in advance, so that it can pass through the portal first and the flow of goods transportation will not be interrupted by the administration or the process of clearance. Advantages of this seamless communication are the enhancement in both internal productivity and external transportation
### Site Visit 5

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to Tuas Port in Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>5/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>10:00-13:00</td>
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</table>

**Key Notes:**

- **Introduction of Tuas Port**
  - Maritime of Port Authority of Singapore
  - 4 Construction Phrases (Phrase 3 under processing)
  - Current development of industry and operators
  - From 20 million TEUs to up to 65 million TEUs per annum
  - 21 Berths
  - Estimated completion in 2020
  - 2.42 billion Singaporean dollar invested

- **Scope of work in the construction**
  - Environmental compliance
  - Management of the excavated materials
  - Caisson wharf construction
  - Dredging of basins and Temasek Fairway
  - Reclamation filling
  - Soil improvement works
  - Proclamation and alienation

- **Reasons for relocation**
  - In proximity to Jurang Island which is an industrial cluster
  - A busy navigation route (1000 vessels per day)
  - Release the high-valued land in the urban centre
  - Consultant for environmental impact assessment
    - Southern shore for impact reduction
  - Sufficient materials from Land Authority

- **Challenges in the site**
  - Limited resources
  - Sea traffic
  - Size for catering future demand
  - Plan required for the phrases of work
  - Master planning
  - Finance
## Site Visit 6

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to Maritime and Port Authority (MPA) Singapore and Tuas Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>6/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>09:00-12:00</td>
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</tbody>
</table>

### Key Notes:

- **Tuas Terminal Phase 1**
  - Tuas terminal relocation
  - Move from existing ports in Pasir Panjang and Tanjong Pagar to Tuas
  - Tuas port can handle 65 million TEUs after completion
  - Four terminals in total, 21 berths expected to be completed in 2021

- **Project Scope of Tuas Port**
  - Fundamental compliance
  - Management of excavated materials
  - Caisson works construction
    - 10 types of caissons
  - Dredging of basins and fairway
    - -23m dredging depth
  - Reclamation fillings
    - Wastes of MRT tunnels recycled and turned into materials
  - Soil improvement works
  - Proclamation and alienation

- **Impact to environment**
  - The site was industrial site
  - Minimise the impact of sea traffic
  - Everyday thousands of vessels in and out
  - Minimise impact to marine environment
  - Contaminated materials cannot be dumped without restriction
  - Ensure the sea rise level will not affect the port terminal
  - Have to maintain the sea level

- **Site selection of Tuas**
  - Singapore has limited land
  - Western part has more industrial areas
  - Southern part has more residential areas and land restriction
  - Tuas becomes potential area for future development
  - Limited choices in site selection

- **Planning challenges faced in the project**
  - Competing land use
  - Prediction of future is a challenge
  - Master planning is strategic and key to affect the port development
  - Huge financial investment
  - Climate change challenge

- **Major differences of new and old ports**
<table>
<thead>
<tr>
<th></th>
<th>More knowledge-based logistics development in new port</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>More innovation and technology would be applied in new port</td>
</tr>
<tr>
<td></td>
<td>Limited footprint in new port</td>
</tr>
</tbody>
</table>
## Site Visit 7

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to Urban Redevelopment Authority, Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>7/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>09:30-11:00</td>
</tr>
</tbody>
</table>

### Key Notes:

- The formulation of concept plans and master plans in Singapore
- **Sea logistics: Tuas Terminal**
  - A capacity of 65 mil TEU (compared to Pasir Panjang Terminal’s 50 mil TEU)
  - Integrated planning approach -- align port development with the pace of city redevelopment
  - Basement development to increase usable space
  - Automation of port operation to cope with the ageing working population of the sector (e.g. driverless trucks and inter-estate goods mover system)
  - Coordination with other maritime services, especially marine finance
  - Position Singapore as an international maritime centre
- **Air logistics: Logistics Park near Changi Airport**
  - Allow 24-hour free trade
- **Land logistics: Parcel collection facilities**
  - Mostly involve last-mile delivery
  - Challenge: Reduce freight demand on road, especially near the city centre
  - Solution 1: Rely on in-mall logistics operators to do last-mile delivery → improve efficiency of truck drivers
  - Solution 2: Set up parcel lockers and collection points → minimise trips for last-mile delivery
    - p.s. most people are off to work during the day and therefore are not home
    - 140 parcel lockers across the city-stat at present
    - Create incentives for the private sector to deliver more economical and efficient solutions
  - Data-driven planning
    - Data collection (big data) → modelling and simulation → implementation
- **Q&A: What are the determinants of Tuas Terminal’s location?**
  - Distant waterfront area from the city centre → divert traffic away
  - Close proximity to the clusters of industrial production (i.e. western part of Singapore)
  - Adequate land for providing accommodation for port workers
## Site Visit 8

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to Port of Singapore Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>7/3/2017</td>
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<tr>
<td>Time:</td>
<td>15:00-16:15</td>
</tr>
</tbody>
</table>

### Key Notes:
- Cranes at the port are remotely controlled from the office
  - It is a living lab
  - Full auto-functionality technology is tested in order to be used at Tuas Port
- Throughput is 85,000 boxes per day, 365 days a year
- Port of Singapore is the largest transshipment port in the world
  - There is very minimal stuffing and unstuffing
  - The gateway to China’s ports
- Increasing size of vessels
  - Every 10 years, double in size
  - Tuas Port can grow at the same rate
  - Tuas planning take the increasing size of vessels into consideration
  - Requires deeper berths and higher cranes
### Site Visit 9

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to Changi Airfreight Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>8/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>09:30-11:00</td>
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</tbody>
</table>

#### Key Notes:

- **Introduction of Changi Airport**
  - Changi Development History
  - Aims: Efficiency, Service, Experience and Technology
  - Challenges
    - Budget Terminal
    - Manpower shortage
    - Technology
    - Bring nature into Airport
      - Automation
      - Fast check in
      - Changi 2.0
      - Gardens
      - Internet Connections
  - Project Jewel
    - Seamless integration
    - Rain Vortex (largest indoor waterfall)
    - Ferry Terminal
    - Sky Pier
    - Terminal 5

- **Cargo Business**
  - Free trade Zone
  - 1.97 million tonnes cargo (+6.3% growth)
  - Main: China, Australia and Hong Kong (Global Connectivity)
  - Logistics Performance Index
  - Key Cargo Segments
    - Pharmaceutical
    - Perishable
    - Aerospace
    - E-commerce

- **Singapore Freeport**
  - Secure hub for storage of high value cargo
  - SATS cool port + data cool chain
  - Sea-air transshipment
  - Streamlined procedures
  - Main consolidation hub
  - Underground tunnel

- **DHL South Asia Hub**
  - Automation

- **Importance of spatial configuration**

- **Air cargo security (express)**
  - 70% belly hold transport
<table>
<thead>
<tr>
<th>Anchor Consulting Group</th>
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<tbody>
<tr>
<td>30% freighter engine</td>
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<tr>
<td>Bringing community together</td>
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<td>Finance</td>
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<td>CAAS</td>
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<td>Sub-lease</td>
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<td>Build their own building</td>
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<td>CAG</td>
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<tr>
<td>Mixture of different models</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>supporter</td>
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<tr>
<td>Competitors complementary</td>
<td></td>
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<tr>
<td>Open up new trade flows</td>
<td></td>
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<tr>
<td>Profile the destination</td>
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<td></td>
<td></td>
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<tr>
<td>Airport is not for local consumption, 95% transshipment and 5% local</td>
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</table>
Site Visit 10

<table>
<thead>
<tr>
<th>Site Visit:</th>
<th>Site Visit to Air Logistics Park of Singapore (ALPS)</th>
</tr>
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<tbody>
<tr>
<td>Date:</td>
<td>8/3/2017</td>
</tr>
<tr>
<td>Time:</td>
<td>15:00-15:30</td>
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**Key Notes:**

- **Introduction of Logistics Park**
  - History of the logistics Park
  - Relationship between Airport and the Park
  - Free Trade Zone
- **Land supply mechanism**
  - Government allocation of land provision
  - Control the land rent instead of market rent
  - Relationship between tenants and government
  - Lease renew required
- **Development control**
  - Plot ratio
  - Industrial use
    - Encourage of investment
      - Asset: Trunk, fuel, labour
    - Productive industry
- **Obstacles for modern logistics**
  - Land price
  - Land supply
- **Future plan**
  - Expansion of industrial zone
  - Sustaining the system
  - Efficient way to control land price
  - Importance of Free Trade Zone
### Appendix E - Work Programme

#### Table E1. Work Programme

<table>
<thead>
<tr>
<th>Task</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 0: Study Brief</td>
<td>16-Jan-17</td>
<td>27-Jan-17</td>
<td>11</td>
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<tr>
<td>Understand the Brief</td>
<td>16-Jan-17</td>
<td>20-Jan-17</td>
<td>4</td>
</tr>
<tr>
<td>Formulate Study Goals and Objectives</td>
<td>20-Jan-17</td>
<td>27-Jan-17</td>
<td>7</td>
</tr>
<tr>
<td>Define study process and methodology</td>
<td>20-Jan-17</td>
<td>27-Jan-17</td>
<td>7</td>
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<tr>
<td>Phase 1: Baseline Study</td>
<td>20-Jan-17</td>
<td>20-Feb-17</td>
<td>14</td>
</tr>
<tr>
<td>Review future trends and development in modern logistics industry</td>
<td>20-Jan-17</td>
<td>03-Feb-17</td>
<td>14</td>
</tr>
<tr>
<td>Review the concepts and practices of logistics development</td>
<td>20-Jan-17</td>
<td>03-Feb-17</td>
<td>14</td>
</tr>
<tr>
<td>Review current Hong Kong logistics development</td>
<td>20-Jan-17</td>
<td>03-Feb-17</td>
<td>14</td>
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<tr>
<td>Identify the opportunities and challenges</td>
<td>20-Jan-17</td>
<td>03-Feb-17</td>
<td>12</td>
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<tr>
<td>Preparation of Inception Paper</td>
<td>20-Jan-17</td>
<td>16-Feb-17</td>
<td>12</td>
</tr>
<tr>
<td>Phase 2: International Review</td>
<td>16-Feb-17</td>
<td>10-Mar-17</td>
<td>22</td>
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<td>Review international experiences (Singapore, London, Shanghai)</td>
<td>16-Feb-17</td>
<td>01-Mar-17</td>
<td>5</td>
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<tr>
<td>Analysis of applicability to the context of Hong Kong</td>
<td>16-Feb-17</td>
<td>06-Mar-17</td>
<td>4</td>
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<td>Singapore Field Trip</td>
<td>10-Mar-17</td>
<td>06-Mar-17</td>
<td>15</td>
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<td>Stakeholder Interviews</td>
<td>06-Mar-17</td>
<td>25-Mar-17</td>
<td>15</td>
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<tr>
<td>Phase 3: Sectoral Studies</td>
<td>01-Mar-17</td>
<td>03-Apr-17</td>
<td>24</td>
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<tr>
<td>Stakeholder Interviews</td>
<td>10-Mar-17</td>
<td>03-Apr-17</td>
<td>24</td>
</tr>
<tr>
<td>Phase 4: Strategy Formulation &amp; Recommendation</td>
<td>01-Mar-17</td>
<td>04-May-17</td>
<td>31</td>
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<tr>
<td>Assessment of recommendations on Key Stakeholders</td>
<td>10-Mar-17</td>
<td>03-Apr-17</td>
<td>16</td>
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<tr>
<td>Formulation of Vision Statement</td>
<td>06-Mar-17</td>
<td>04-Apr-17</td>
<td>16</td>
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<tr>
<td>Recommendation for Long-Term Development Strategies in HK:2030+</td>
<td>25-Mar-17</td>
<td>04-May-17</td>
<td>14</td>
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</table>
Figure E1. Study Programme Gantt Chart
Appendix F - Staff Organisation

Ms. Ophelia WONG - Project Manager, Chief Planner
Ms. Wong is a member of the Hong Kong Institute of Planners and the Royal Town Planning Institute who has over 20 years of experience in the planning profession, both in the public sector and private sector. She particularly specialises in policy formulation on strategic planning as well as conducting planning studies on community planning and open space development. She is the project manager for this particular study and she guides the direction of the whole project.

Mr. Ivan CHEUNG - Deputy Project Manager, Transport & Logistics Engineer
Mr. Cheung has over 20 years of professional working experience in design, implementation, control and execution of logistics operations. He is now the Logistics Policy Committee Chairman of the Chartered Institute of Logistics and Transports. He is the deputy project manager for this study. He is responsible for coordinating logistics management, designing and evaluating logistics policies, as well as supervising the study process.

Mr. William CHUNG - Deputy Project Manager, Supply Chain Management Consultant
Mr. Chung is a chartered engineer and has 15 years of experience in the logistics industry. He has presented extensively in handling integrated logistics, international freight forwarding, express and supply chain solutions. He assisted a premier logistics service provider in ensuring reliable end-to-end supply chain from local to regional. In this study, he provides advice on logistics and planning aspects, as well as guiding the study direction.

Ms. Janice HO - Treasurer, Economic and Accounting Consultant
Ms. Ho is an economist and a qualified account recognised by the Hong Kong Institute of Certified Public Accountants. She has worked for over 10 years as a professional accountant in the consultancy firm. She has extensive experience in providing accountancy services, analysing and evaluating financial information. In this study, she mainly provides key support to economic and financial aspects.

Ms. Peggy TANG - Secretary, Legal Consultant
Ms. Tang has worked as a legal consultant for nearly 10 years, in both public and private practices. She specialises in real estates, planning and development law and guidance. She has extensive experience in providing expert and professional legal advice to clients and businesses. Throughout the study, she is responsible for providing legal consultancy services, as well as administrative works.
Ms. Alice YEUNG - Secretary, Transport and Infrastructural Policy Consultant
Ms. Yeung is a chartered urban planner with 15 years of experience in the traffic and transportation planning field, she is particularly interested in the sustainable transportation. She has presented extensively in supervising traffic impact assessment and related traffic policies in Transport Department and MTR Corporation Ltd. For this particular study, she provides key advice on transportation planning and infrastructure policies.

Ms. Claudia LEUNG - Secretary, Professor of International and Public Affairs
Ms. Leung is a professor of the School of International and Public Affairs, Columbia University. She has over 15 years of experience in producing policy-oriented research on regional and global economic governance, as well as assisting policymakers navigate the sustainability challenges. She is responsible for designing and evaluating regional governance and economic policies in this study.

Ms. Grace CHEUNG - Secretary, Planning and Development Surveyor
Ms. Cheung is a chartered planning and development surveyor and registered professional planner in Hong Kong, who has been working in private sector for nearly 10 years. She has extensive experiences in managing property development projects and coordinating large-scale development feasibility studies. She is responsible for providing effective land management strategies throughout the whole study.