FINAL REPORT

URBAN PLANNING STRATEGY FOR THE LOGISTICS INDUSTRY IN HONG KONG

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# TABLE OF CONTENTS

**Executive Summary**

**Abbreviation List**

1. **Introduction** ......................................................................................................................1  
   1.1 Overview .....................................................................................................................1  
   1.2 Study Background ........................................................................................................2  
   1.3 Study Goal and Objectives ..........................................................................................2  
   1.4 Study Process and Methodology ..................................................................................3  
   1.5 Study Structure ...........................................................................................................6  

2. **Current Situation and Emerging Changes in Hong Kong’s Logistics Industry** ......7  
   2.1 Concepts of Logistics ...................................................................................................7  
   2.2 Current Development of Hong Kong Logistics Industry ..............................................8  
   2.3 Roles of Hong Kong Logistics Industry .....................................................................10  
      2.3.1 The Global Position ..........................................................................................10  
      2.3.2 Regional Cooperation and Competition ..........................................................12  
      2.3.3 Local Role .........................................................................................................14  
   2.4 Four Global Trends ....................................................................................................17  
      2.4.1 E-commerce ......................................................................................................17  
      2.4.2 Shift of Trading Activities ................................................................................17  
      2.4.3 Sustainable Logistics ......................................................................................18  
      2.4.4 Smart Logistics ...............................................................................................18  
   2.5 Challenges and Opportunities ...................................................................................19  
      2.5.1 The framework diagram ..................................................................................19  
      2.5.2 Transport and Distribution ..............................................................................20  
      2.5.3 Warehousing and Operations ..........................................................................24  
      2.5.4 Supporting Services .........................................................................................29  
   2.6 Chapter Summary ......................................................................................................34  

3. **Policy Review** ..............................................................................................................36  
   3.1 Positioning of Logistics Related Policies ....................................................................36  
   3.2 Transport and Distribution ........................................................................................37  
      3.2.1 Aspect I- Cargo Handling ..............................................................................37  
      3.2.2 Aspect II- Supporting Infrastructures ..............................................................38  
      3.2.3 Policy Gap .........................................................................................................40  

Aspect III- Human Capital ........................................................................................................ 88
Aspect IV- Regional Cooperation .......................................................................................... 89
Aspect V- Road Network and Mass Transit .......................................................................... 91
5.5. Priority Actions for HKSAR Government ................................................................. 94
5.6. Evaluation of Recommendations .................................................................................. 96

6. Conclusion ....................................................................................................................... 98
6.1. Overview ....................................................................................................................... 98
6.2. Key Notes .................................................................................................................... 98
6.3. Further Studies ............................................................................................................ 100
6.4. Conclusion .................................................................................................................. 100

7. References ................................................................................................................... 101

LIST OF FIGURES
Figure 1.1 Study Process ....................................................................................................... 6
Figure 2.1 Share of Values of Hong Kong's External Merchandise Trade by Mode of Transport ......................................................................................................................... 15
Figure 2.2 Employment in the Four Key Industries .............................................................. 15
Figure 2.3 Hong Kong Major Commodities by air (Imports) .............................................. 16
Figure 2.4 Hong Kong Major Commodities by Sea (Imports) .............................................. 16
Figure 2.5 Distribution of Inward Cargoes by Major Control Point Commodity Group .......... 17
Figure 2.6 Overview of Challenges and Opportunities ....................................................... 19
Figure 2.7 Type of Land uses in HSK NDA ........................................................................ 28
Figure 4.1 Concept of Urban Consolidation Centre ............................................................. 49
Figure 5.1 Overview of Vision and Recommendations ....................................................... 61
Figure 5.2 Strategic Spatial Layout ..................................................................................... 64
Figure 5.3 Spatial Layout of Logistics Corridor .................................................................... 66
Figure 5.4 Spatial Layout of Tuen Mun- Lantau Logistics Cluster ........................................ 73
Figure 5.5 Spatial Layout of Kwai Tsing Logistics Cluster .................................................. 78
Figure 5.6 Action Plan for HKSAR Government .................................................................. 95

LIST OF TABLES
Table 2.1 Overview of Stakeholders of Logistics Industry in Hong Kong ......................... 9
Table 2.2 Overview of Common and Specific Challenges and Opportunities Regarding Cargo Handling in Three Modes of Logistics ........................................................ .......... 20
Table 2.3  Overview of Common and Specific Challenges and Opportunities Regarding Supporting Infrastructure in Three Modes of Logistics ................................................. 23

Table 2.4  Overview of Common and Specific Challenges and Opportunities Regarding Land Supply in Three Modes of Logistics ........................................................................ 25

Table 2.5  List of Potential Area of Brownfield Sites Conversion and its Corresponding Site Area in Three Modes of Logistics ........................................................................ 28

Table 2.6  Overview of Common and Specific Challenges and Opportunities Regarding Land Management and Control in Three Modes of Logistics.............................................. 29

Table 2.7  Overview of Common and Specific Challenges and Opportunities Regarding Human Capital in Three Modes of Logistics Industry ............................................... 30

Table 2.8  Overview of Common and Specific Challenges and Opportunities Regarding Technology in Three Modes of Logistics Industry ...................................................... 32

Table 3.1  Overview of Policies Regarding Cargo Handling in Three Modes of Logistics .......... 37

Table 3.2  Overview of Policies Regarding Supporting Infrastructure in Three Modes of Logistics .............................................................................................................................. 38

Table 3.3  Overview of Policies Regarding Logistics Land Supply in Three Modes of Logistics .............................................................................................................................. 41

Table 3.4  Overview of Policies Regarding Logistics Land Management and Control ............. 43

Table 3.5  Overview of Policies Regarding Human Capital ......................................................... 45

Table 3.6  Overview of Policies Regarding Technology in Three Modes of Logistics ............. 45

Table 5.1  Overview of Strategies, Action Plans and Action Areas ........................................ 61-63

Table 5.2  Terms under STT of Different Types of Uses ............................................................. 82

Table 5.3  Proposed Responsibilities of Different Stakeholders ................................................ 88

LIST OF APPENDICES

Appendix A - Summary of major stakeholders’ concerns and benefits from action plans

Appendix B - Review of Policy Address from 2006-17

Appendix C - Interview Notes (Record of Questions and Summary)
  Appendix C1: Interview Notes I
  Appendix C2: Interview Notes II
  Appendix C3: Interview Notes III
  Appendix C4: Interview Notes IV
  Appendix C5: Interview Notes V
  Appendix C6: Interview Notes VI
  Appendix C7: Interview Notes VII
Executive Summary

The Hong Kong’s logistics industry has been a pillar industry acting an essential role in the economic development of Hong Kong. Yet, it has faced several challenges which threaten its prominent roles as an international aviation and port hub. Looking ahead, it is identified that there are opportunities to support the Hong Kong from gaining the momentum to reach a greater height. In sum, the key challenges and opportunities are explored and elaborated under 6 key topics, which are:

- Cargo and Handling,
- Supporting Infrastructure,
- Logistics Land Supply,
- Logistics Land Management & Control,
- Human Capital,
- Technology

The challenges and opportunities under the 6 topics revealed the needs of a comprehensive planning strategy to provide solutions to tackle challenges and capture the opportunities to raise the competitiveness of the industry. To provide the foundations in establishing a holistic strategy, Policy Review and International Review are examined to:

- Recognize the policy gaps that requires more Institutional support to facilitate the industry to overcome the challenges and capture the opportunities; and
- Provide the lessons for Hong Kong’s logistics industry to critically pinpoint the actions that Hong Kong should take in order to generate the capacity for sustainable development.

Vision and Recommendation

After the carefully examining the challenges and opportunities, and analysing the Policy Review and International Review, the study team proposes “Shaping Hong Kong into a Global Centre of High-Value Logistics Services” as a vision statement for planning Hong Kong as a sustainable, efficient and competitive logistics hub. The vision is supported by 4 planning strategies: (i) providing supporting Infrastructure to facilitate seamless operation, (ii) developing a logistics-based comprehensive planning, (iii) strengthening human capital and technology, and (iv) enhancing intra-and inter-city collaboration. Corresponding action plans are developed under the 4 planning strategies. They are explained in the 3 action areas and 5 supporting policies.

Action Area 1- Logistics Corridor

The logistics corridor is in the North-West of Hong Kong, with well-connected sites along the axis. The actions adopted in this area could:

- Provide alternative site available for SMEs to operate with high degree of involvement
from the Government;

- Improve the efficiency of cross-boundary freight movement and free up valuable land in Lok Ma Chau; and
- Provide a setting for technology-based companies to develop related technologies and for logistics technology transfer and training.

**Action Area 2- Tuen Mun-Lantau Logistics Cluster**
Tuen Mun-Lantau Logistics Cluster is proposed to provide spatial planning strategies to accommodate the future expansion of HKIA and rising demand for high value-added logistics services. The actions adopted in this area could:

- Increase the overall handling capacity of HKIA for expanding into the high value-added logistics business;
- Allows efficient and prompt cargo screening procedure for freight forwarders of all scale; and
- Attract professional third party logistics and regional distribution services to the area.

**Action Area 3- Kwai Tsing Logistics Cluster**
Kwai Tsing Logistics Cluster is proposed to provide spatial planning strategies to strengthen the port as the regional logistics hub and accommodate the future development of KTCT. The actions adopted in this area could:

- Benefit the logistics industry by capturing the opportunities and overcoming the challenges brought by e-commerce;
- Allow seamless connection between the port, river boats and barges transportation;
- Provide a better allocation of port back-up land uses to support the efficient operation of Kwai Tsing Container Terminals; and
- Enable a smooth transformation from heavy reliance on transhipment into marine service-oriented operation.

**5 Supporting Policies**

- Institutionally, establishing a leading authority to facilitate collaboration between institutions and stakeholders and provide economic incentives for logistics development;
- Technologically, developing an integrated policy for industry collaboration and technology upgrade could increase the competitiveness of the SME’s in providing specialized logistics services;
- Regionally, adopting a collaborative approach to logistics planning with other neighbouring cities could clarify and strengthen our logistics industry’s position in the PRD region;
- In term of transportation, constructing major transport infrastructure is proposed to link
up the proposed logistics to allow the seamless flow of workforce and cargoes; and

- In term of human capital, provision of funding for SMEs to employ automation in operation is proposed to facilitate upgrade of systems and facilities in response to the labour shortage.

**Priority Actions for HKSAR Government**

The introduction of longer term tenancy for land lease around the port, constructing specialised cargo facilities and security screening facilities in HKIA and HKBCF island and building accessible urban consolidation centres are targeted to be the top-list actions which take less than 5 years with a high priority to be implemented. The actions are ordered in priority to facilitate the Government to cope with availability of resources and the political climate in implementing the action plans.

**Evaluation of Recommendations**

As the action plans are developed under the consideration of enhancing the growth of logistics industry, they may compromise the benefits of other stakeholders in the reality. Uncertainties brought by these external factors could increase the costs of implementation. The Government should conduct further studies and consultation before carrying out action plans to reduce the barriers among stakeholders.
## Abbreviation List

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>3RS</td>
<td>Three-Runway System</td>
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<tr>
<td>AAT</td>
<td>Asia Airfreight Terminal Ltd</td>
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<tr>
<td>ACCS</td>
<td>Air Cargo Clearance System</td>
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<tr>
<td>AEO</td>
<td>Authorised Economic Operator Programme</td>
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<tr>
<td>ATIDS</td>
<td>Automated Truck Identification System</td>
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<tr>
<td>BCF</td>
<td>Boundary Crossing Facilities</td>
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<tr>
<td>CEIV</td>
<td>Center of Excellence for Independent Validators</td>
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<tr>
<td>CPSL</td>
<td>Cathay Pacific Services Ltd</td>
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<tr>
<td>CAD</td>
<td>Civil Aviation Department</td>
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<tr>
<td>DTTN</td>
<td>Digital Trade and Transportation Network</td>
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<tr>
<td>EDB</td>
<td>Economic Development Board</td>
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<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
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<tr>
<td>GDFTZ</td>
<td>Guangdong Pilot Free Trade Zone</td>
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<tr>
<td>Hactl</td>
<td>Hong Kong Air Cargo Terminals Limited</td>
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<tr>
<td>HK2030+</td>
<td>Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030</td>
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<tr>
<td>HKBCF</td>
<td>Hong Kong Boundary Crossing Facilities</td>
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<tr>
<td>HKIA</td>
<td>Hong Kong International Airport</td>
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<tr>
<td>HKP</td>
<td>Hong Kong Port</td>
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<tr>
<td>HKSARG</td>
<td>Hong Kong Special Administrative Region Government</td>
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<tr>
<td>HKSTP</td>
<td>Hong Kong Science and Technology Park</td>
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<tr>
<td>HKSTPC</td>
<td>Hong Kong Science and Technology Parks Corporation</td>
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<tr>
<td>HSK</td>
<td>Hung Shui Kiu</td>
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<tr>
<td>HZMB</td>
<td>Hong Kong-Zhuhai-Macau Bridge</td>
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<tr>
<td>KTN/FLN NDA</td>
<td>Kwu Tung North and Fanling North New Development Area</td>
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<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
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<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<tr>
<td>IMC</td>
<td>International Maritime Center</td>
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<td>IMD</td>
<td>In-mall Distribution</td>
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<td>IMO</td>
<td>In-mall Operators</td>
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<tr>
<td>IoT</td>
<td>Internet-of-Things</td>
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<tr>
<td>JIC</td>
<td>Joint-Inspection Centre</td>
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<td>JTC</td>
<td>Jurong Town Corporation</td>
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<td>KTCT</td>
<td>Kwai Tsing Container Terminals</td>
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<td>LEAP</td>
<td>Leading Enterprises Acceleration Program</td>
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<td>LITR</td>
<td>Logistics Industry Transformation Roadmap</td>
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<td>LSCM R&amp;D Centre</td>
<td>The Hong Kong R&amp;D Centre for Logistics and Supply Chain Management</td>
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<tr>
<td>MDC</td>
<td>In-Mall Distribution Centre</td>
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<td>NDA</td>
<td>New Development Area</td>
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<td>NDRC</td>
<td>National Development and Reform Commission</td>
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<td>OCC</td>
<td>Offsite Consolidation Centre</td>
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<tr>
<td>PC/TKL</td>
<td>Ping Che/Ta Kwu Ling</td>
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<td>PRD</td>
<td>Pearl River Delta</td>
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<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
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<tr>
<td>RFID</td>
<td>Radio Frequency Identification</td>
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<tr>
<td>RTT</td>
<td>River Trade Terminal</td>
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<tr>
<td>SMEs</td>
<td>Small and medium-sized enterprises</td>
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<tr>
<td>SSGC</td>
<td>Schiphol SmartGate Cargo</td>
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<tr>
<td>STT</td>
<td>Short Term Tenancy</td>
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<tr>
<td>TLI-AP</td>
<td>The Logistics Institute – Asia Pacific</td>
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<tr>
<td>TM - CLKL</td>
<td>Tuen Mun - Chek Lap Kok Link</td>
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<tr>
<td>TPP</td>
<td>TechnoPreneur Partnership Program</td>
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<tr>
<td>UCC</td>
<td>Urban Consolidation Centre</td>
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<tr>
<td>YRD</td>
<td>Yangtze River Delta</td>
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1. Introduction

1.1 Overview

1.1.1. The logistics industry remains to be the vital lifeblood of Hong Kong’s economy. Among the four pillar industries, trading and logistics were the largest contributing sector to the city’s Gross Domestic Product (GDP) in 2014, accounting for 23.4 percent where 3.4 percent are attributed to the logistics industry (Census and Statistics Department, 2016). In the same year, the largest share in employment was also credited to trading and logistics with 20.4 percent where 5 percent belonged to the logistics industry (Census and Statistics Department, 2016). Throughout the years, the industry has aided Hong Kong in positioning itself as a regional distribution centre, serving as the threshold to the greater Pearl River Delta (PRD) Region. Hong Kong also relishes its status as the preferred gateway to China, owing to its strategic location, excellent multi-modal connectivity, free port status, and the high services efficiency provided by Hong Kong International Airport (HKIA) as a global aviation hub and Hong Kong Port (HKP) as a renowned catch-up port. Moreover, the industry assumes an important role in sustaining Hong Kong’s daily operation and providing quality life to its people. Logistics is undoubtedly a key driver of Hong Kong, propelling the economy to reach greater heights.

1.1.2. However, in the recent years, it has continually encountered varying degrees of roadblocks that threaten and hinder its sustainable upward momentum. Owing to several factors including fierce competition from neighbouring cities, and scarcity of port back-up land, the HKP has suffered from a substantial decline from being the busiest port regarding cargo throughput in the early 2000s to the 5th busiest port in 2016. The HKIA has also experienced a weakened impetus due to the growing capacity constraint, and is at risk of further slowing down due to an imminent tightening of airport security requirements. Meanwhile, land logistics is beset with issues including growing traffic congestion in urban core and boundary control points, inefficient use of brownfield sites and technological imbalance between different logistics operators. Furthermore, the pervasively increasing shortages of land supply and human capital in the three modes of logistics continue to mar the comprehensive development of logistics industry in Hong Kong.

1.1.3. Given the above, The Mavericks Ltd. was commissioned to conduct a three-part study to identify and outline the key issues of the logistics industry in Hong Kong. As well as the current and anticipated challenges impeding its development, the study team has employed a sound and rational methodology to gain a holistic understanding of the matter at hand and present it in a succinct and comprehensive way with the aid of presentations and reports. Capturing the necessary findings, the study team endeavour to develop a vision statement to convey an imagined future for the industry. As one of the primary objectives of the project, the study team
shall formulate a set of specific planning strategies in support of both the study team’s vision statement and the vision laid out in the strategic planning study "Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030" ("HK2030+").

1.2. Study Background

Rationale of Study

1.2.1. Logistics industry in Hong Kong is currently beset with several challenges that hinder its sustainable development. This study aims to identify these challenges, as well as recognise the present and prospective opportunities that could be utilised to address the identified challenges. With the support of existing policies and lessons from international experiences, the study hopes to provide a comprehensive spatial planning strategy and propel the holistic sustainable development of logistics industry in Hong Kong. This study could also be a useful reference to the HKSAR government and urban planners in formulating actual planning strategies in the future.

Objectives of Final Report

1.2.2. The final report is the third and last phase of this study. It is the outcome of the study that contains spatial planning recommendations, precise action areas with detailed action plans and proposed supporting policies, responding to the findings in the previous phases. The final report also serves as an application of different planning principles, which can be used as an academic and professional reference.

1.3 Study Goal and Objectives

1.3.1. The Mavericks Ltd. was commissioned to conduct a three-part study with Aceline Ltd. and Anchor Consulting Group on the regional and territorial planning strategies regarding the logistics industry development of Hong Kong. This study aims to deliver a comprehensive spatial planning strategy which enables logistics industry in Hong Kong to have a continuous and sustainable growth. Vision statement is developed in this final paper conveying an imagined future for the industry. The findings and recommended specific planning strategies of this study are proposed to contribute to the "HK2030+". Precisely, the study will:

- Review and identify key issues and direction of logistics industry;
- Examine relevant government policies and planning initiatives concerning logistics development of Hong Kong;
- Identify diverse stakeholders’ views on opportunities and challenges;
- Analyse the appropriateness of international experiences in the context of Hong Kong;
- Envision a sustainable logistic hub of Hong Kong through consolidating the research findings; and
- Recommend set of territorial planning strategies and relevant implications on stakeholders.
1.4. Study Process and Methodology

1.4.1. Phase 1- Baseline Study

Study Process

1.4.1.1. The Baseline Study started with the introduction of different conceptual definitions of logistics and the emerging trends associated with it. In this part, four key issues and directions of the industry at present are identified (i.e. e-commerce, shift of trading activities, sustainable logistics and smart logistics). It was then followed by an in-depth exploration of the current development and ecology of logistics in Hong Kong and its role in the PRD region. This part outlined the key government strategies, as well as existing and proposed infrastructure, pertinent to the development of logistics in Hong Kong. The last part examined a set of relevant international experiences with the aim of drawing inspiration which can form part in the recommendations in this phase. Cities for the international experiences were selected due to contextual similarities with and degree of applicability to Hong Kong.

Methodology-Desktop Research

1.4.1.2. Desktop research was primarily employed in the baseline study to gather and analyse data. Key policy documents, logistics papers, reports and studies, as well as planning studies commissioned by HKSAR government were thoroughly studied to develop a comprehensive understanding of logistics industry and its current development in Hong Kong.

1.4.2. Phase 2- Sectoral Study on Land Logistics

Study Process

1.4.2.1. The purpose of the Sectoral Study was to expand the findings in the Baseline Study by looking into the role, scope and importance of land logistics in Hong Kong. The study began by providing a working definition for land logistics and was followed by a brief discussion on the roles that land logistics in Hong Kong assumes. In structuring the Sectoral Study, a framework illustrating the three key aspects of logistics (transport and distribution, warehousing and operation, and supporting services) was developed to explain the challenges and opportunities of the relevant stakeholders. Furthermore, international experiences were once again evaluated for each key aspect elicit possible strategies for Hong Kong in the last phase.

Methodology- Desktop Research

1.4.2.2. Literature review and policy review were used to analyse the strengths, weaknesses, challenges and opportunities of the existing and proposed physical infrastructures, land-use and development plans, and supporting services about the land logistics development in Hong Kong.
Methodology- Interviews

1.4.2.3. To understand the insights and perspectives of different stakeholders, semi-formal and formal interviews were conducted. By this means, the team was able to elicit expert opinions on specific and technical topics including e-commerce, warehouse operation and land supply and management. To develop a comprehensive and layered understanding, professionals and experts from the industry, institution and academia were interviewed.

Methodology- Field Study

1.4.2.4. On 5th March to 9th March 2017, the study team visited a few relevant authorities and institutions in Singapore to gather first-hand information on the development of logistics industry in Singapore particularly on policy implementation, logistics operations and planning strategies. Under the auspices of the Department of Urban Planning and Design of HKU, the study team was able to visit the Maritime and Port Authority of Singapore, Urban Redevelopment Authority, Port of Singapore Authority, Changi Airport, and the Airport Logistics Park of Singapore.

1.4.3. Phase 3- Strategy Formulation and Recommendation

Study Process

1.4.3.1. The culmination and ultimate product of these study processes are the strategy formulation and recommendation. This phase shall begin by providing a comprehensive overview of logistics development in Hong Kong, giving emphasis to the key trends, challenges and opportunities, as per the consolidated findings in the Baseline Study and Sectoral Studies, respectively. This shall be supplemented by an in-depth policy review that aims to evaluate the HKSAR government has done or has not done in response to these key trends, challenges and opportunities. Lastly, international experiences will be presented as a reference to possible strategies in the recommendation. Comprehending the analysis of the previous stages, the team shall formulate a vision for the logistics development in Hong Kong. This vision will act as the guiding direction in the subsequent formulation of the planning strategies, action areas, action plans and supporting policies.

1.4.3.2. In preparing the planning strategies, the study team shall take into account the following considerations:

HK2030+

One of the goals of the study is to underpin the policies outlined in the “HK2030+” by providing planning strategies in line with the relevant building blocks to achieve the “HK2030+” vision. As such, recommendations for physical infrastructure, provision of land and supporting services are so to support the Building Block 2 of “HK2030+: Embracing New Economic Challenges and Opportunities”.

4
Comprehensive Logistics Industry

As the study is part of a shared undertaking between The Mavericks, Anchor and Aceline, recommendations outlined in this report shall be formulated based on the findings of the three respective consulting teams. This is to ensure that the proposal is succinct, cohesive and comprehensive.

Methodology - Evaluation and Consolidation of Phase I and Phase II

1.4.3.3. Most of the external data gathering and presentation have been completed in the first two phases, the Baseline Study and the Sectoral Study, and the results of which are published in the Inception Report and Working Paper, respectively. Before strategy formulation and recommendations, it is essential to thoroughly examine and synthesise the data presented in these reports to obtain a holistic understanding of the logistics development in Hong Kong. In particular, there are three Sectoral Studies simultaneously conducted by separate study teams. Land logistics was studied by The Mavericks, sea logistics was handled by Anchor, and air logistics was researched by Aceline. Thus, the study team shall analyse and understand Anchor’s and Aceline’s respective working papers, focusing on the identified challenges and opportunities on their particular modes of logistics. Following this will be the consolidation of the said challenges and opportunities to evaluate if there are overlapping items and if some items have a higher degree of urgency than others.

Methodology - In-depth Policy Review

1.4.3.4. To address the challenges and opportunities identified from the Baseline Study and the Sectoral Study on sea, air and land logistics, respectively, it is crucial to understand what policies are in place, what policies are ineffective and inadequate and what policies and not in place. For this purpose, relevant key policies, including “HK2030+” and 2017 Policy Address, shall be extensively reviewed concerning the three modes and three aspects of logistics. Identifying and filling these policy gaps will greatly impact the formulation of a comprehensive planning strategy. For the detailed structure of the study process and methodology, refer to Figure 1.
1.5 Study Structure

1.5.1. This report is well structured into six chapters, as listed below:

Chapter 1  Introduction:
Brief the study background and methodology

Chapter 2  Understanding Current Situation of and Emerging Changes to Hong Kong’s Logistics:
Analyse logistics trends on both local and global scale

Chapter 3  Policy Review:
Review policies proposal and implementation with analysis

Chapter 4  International Review:
Conduct international case studies with applicability study

Chapter 5  Visions and Recommendations:
Propose feasible actions under the core vision for the future

Chapter 6  Conclusion
Restate the key recommendations and envision for the future development
2. **Current Situation and Emerging Changes in Hong Kong’s Logistics Industry**

2.1. **Concepts of Logistics**

**Three Logistics Models**

2.1.1. Logistics, one of the prominent pillar industries of the economy, is a complex concept which is analysed with three different approaches - 1. Integrated Process; 2. Interface of Functions; and 3. Network of Components. The first approach emphasises on the smooth flow of logistics from inbound to conversion operations to outbound while the second approach recognises how logistics connect different business sectors by integral functions (Enarsson, 2006; Kasilingam, 1989). The third approach provides a generic picture of the logistics system. Recognising six key elements in the logistics network model, transportation accounts for the highest logistics costs (Kasilingam, 1989). Strategic planning of transportation modes is therefore essential.

**Three Modes of Logistics**

2.1.2. Three primary transportation modes are air, sea and land. Having individual merits and shortcomings, these three modes are what make up intermodal logistics operation (Enarsson, 2006). Air logistics provides the most efficient delivery of the high-sensitivity goods and involves activities of different stakeholders (e.g. airport operator, airlines, terminal operators, etc.) For sea logistics, vessels move goods around ports and barges help delivery in narrower channels (i.e. river). The shipping line is decided by freight forwarder to meet intense schedule, and terminal provides support with its gate, container yard, barge and quayside operation (Transporteca, 2017). For land logistics, it goes beyond cargo freight transport to the provision of land for warehouses and operations. By providing a full range of services, it supplements the other two logistics modes and helps to sustain the logistics development.

**Logistics and Supply Chain Management**

2.1.3. Supply Chain Management (SCM) is often discussed in the subject of logistics. Larson and Halldorsooon (2004) have described four circumstances of relationships between these two concepts: 1. SCM is a subset of logistics; 2. Logistics is a subset of SCM; 3. SCM and Logistics are interchangeable; and 4. SCM and Logistics are mutually inclusive. Despite the different views on their relationships, it is understood that: 1. Logistics stresses on cost reduction while SCM emphasises on long term profit; and 2. SCM are more on the steps to deliver a product / services while logistics ensures an efficient, high-quality and value-added delivery services (Inside Careers, 2003; Bloomberg et al., 2002).
2.2. Current Development of Hong Kong Logistics Industry

Intermodal Logistics

2.2.1. Regarding the three primary logistics modes – air, sea and land (including both rail and motor carriers), intermodal logistics refers to the utilisation of two or more transportation means in moving goods. According to Hult, Closs and Frayer (2014), taking the concept of economy of scales into account, sea logistics is the least expensive, followed by land logistics (i.e. rail is less expensive than motor carriers) and air logistics. Among the three modes of logistics, competition does exist. However, although the competition is not highly obvious in reality owing to the individual merits, it segmented their roles (Enarsson, 2006). On the other hand, intermodal logistics can alleviate the intense competition through taking the advantages of each logistics mode’s merits as well as optimising the efficiency of moving goods. By maximising both routing and transit times flexibility, intermodal logistics can result in lower costs of moving goods around (Kerry Logistics, n.d.).

2.2.2. In Hong Kong, intermodal logistics which involves all three modes of logistics is not common. Sea Logistics is rather separated from other modes of logistics due to high inland trucking cost. If goods arrived at container terminals requires double handling (i.e. both sea and land logistics modes), the transportation cost will become much higher (BMT Asia Pacific, 2014a). Also, since container ports and airports serve distinct markets with dissimilar types of goods, their interaction is rather limited. Supported by an enhanced road connection, expansion of land-to-air intermodal capabilities is of greater importance to air logistics industry, therefore its relationship with land logistics is much tighter than that with sea logistics. Stakeholders of each mode of logistics are listed in Table 2.1 to give a clearer picture of logistics industry in Hong Kong.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Air</th>
<th>Sea</th>
<th>Land</th>
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<tbody>
<tr>
<td>The Government of the People’s Republic of China</td>
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<tr>
<td>The Government of the Hong Kong Special Administrative Region</td>
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<td>o Lands Department</td>
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<td>o Customs and Excise Department</td>
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<td>o Hong Kong Logistics Development Council</td>
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<td>o Hong Kong Trade Development Council</td>
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<tr>
<td>The Chamber of Hong Kong Logistics Industry</td>
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<tr>
<td>Hong Kong Association of Freight Forwarding and Logistics Limited</td>
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</table>
Table 2.1 Overview of Stakeholders of Logistics Industry in Hong Kong

Support to Intermodal Logistics

2.2.3. The interconnectivity of the intermodal logistics operation of Hong Kong’s logistics industry catalyses the efficient and seamless movement of goods and cargos. The efficient logistics services in Hong Kong provide an outstanding operational efficiency to service users, facilitating them to connect with local, regional and international markets seamlessly. The success of intermodal logistics operations depends on:
The foundation

2.2.4. The foundation for being a regional logistics hub is rooted from the free port status and strategic location to the Mainland and ASEAN countries. The independent judiciary system secured by Basic Law further provides a competitive edge to Hong Kong in attracting business through professional legal arbitral services (Lau et al., 2012). In term of finance and insurance, Hong Kong offers logistics operators a reliable business environment with a well-established finance market and a wide range of insurance services (CUHK, SD Advocates and BMT Asia Pacific, 2015).

Physically connectivity

2.2.5. The well-established infrastructures determine the success of intermodal logistics operation in Hong Kong. HKIA, with the status of global aviation hub, is connected to more than 190 destinations worldwide (HKIA, 2011a). As one of the busiest port in the world, HKP has direct shipping routes to about 550 destinations (BMT Asia Pacific, 2014a). The extensive transport infrastructures and boundary control points further enhance the regional linkage to Mainland China.

Virtual connectivity:

2.2.6. Apart from physical connectivity, Hong Kong has an excellent communication infrastructure to support the 24/7 operations of logistics industry. For instance, the use of Automated Truck Identification System (ATIDS), Radio Frequency Identification (RFID) and Air Cargo Clearance System (ACCS) enhance efficiency of cargo delivery in the airport and ports (AAT, 2017). These technological inputs ensure the smooth flow of products, services and data, and therefore improve information visibility to operators and efficiency of physical transportation.

2.3. Roles of Hong Kong Logistics Industry

2.3.1. The Global Position

Hong Kong International Airport

2.3.1.1. Hong Kong is well-positioned as an international aviation hub. Notably, HKIA has long been regarded as a global and regional logistics hub. Since 2010, it has been consistently ranked as the busiest airport in the world concerning air cargo handling (HKSARG, 2017b). Much of its competitive success can be attributed to its strategic location, excellent connectivity, efficiency in security and cargo handling, state-of-the-art facilities and free port status (Kwok, 2017).

2.3.1.2. HKIA plays a pivotal role in the global trading scene and supply chain network. HKIA is a major contributor to the leading performance of the Asia Pacific region in air logistics. In 2015, the Asia
Pacific Region constituted 39% of the total air cargo volume, followed by North America with 28% (ACI, 2016). Considered as the "preferred gateway" to China, its strategic location makes it a suitable transhipment hub between Mainland China and the international market. Moreover, HKIA positions itself as a regional distribution centre due to its excellent connectivity (HKTDC, 2013).

2.3.1.3. With its strategic location in the Asia Pacific Region, HKIA's performance and reputation have steadily grown over the years. In 2015, HKIA handled 4.38 tonnes of air cargo and is expected to still rise in the coming years (Census and Statistics Department, 2016). HKIA is continuously seeking to enhance its connectivity and to increase its efficiency and speed to reinforce its competitiveness as an international air cargo hub.

2.3.1.4. Moving forward, the HKIA is gearing up to capture the three fastest-growing market segments: e-commerce, transhipment and specialised cargo handling. Focusing on the opportunities of these market segments, HKIA hopes to shift from 'volume-focus' to a 'value-focus' air freight operation. Ultimately, HKIA aims to maintain and enhance its reputation of efficiency and reliability (HKIA, 2016a).

*Ports in Hong Kong*

2.3.1.5. The global position of Hong Kong’s logistics industry is grounded by the historical factor. The shipping industry brought Hong Kong to the stage of the world. From the ruling of the colonial government, trading and logistics industry has been the pillar industry development.

2.3.1.6. HKP is well-positioned as the preferred gateway to the South China and the transhipment hub. With the competitive advantages of strategic location, good sealing connectivity, quality of service, Freeport status and unique status on handling China-related cargo, Kwai Tsing Container Terminals (KTCT) is playing a key in the global position and ranks as one of the busiest port in the world. There are over 300 container liners served per week connecting Hong Kong and the South China with 470 destinations worldwide (HKTDC, 2016). From the management perspective, HKP is well-known of its service efficiency and cargo handling reliability. It is recognised as the "Catch Up Port" within the shipping industry.

2.3.1.7. However, with the relaxation of cabotage rule of China, there is an emergence of multiple gateway ports available for containerised trade in South China, such as Yantian and Shekou. Moreover, these ports are comparatively economical regarding low terminal handling fee and cheaper inland transport costs (Wang and Slack, 2000). This is a severe challenge for Hong Kong to be the base of South China Cargos handling. International transhipment has become the primary market that HKP served. Facing the fierce competition with the world ranked ports
and rising numbers and size of mega vessels, the market of transhipment in HKP is facing an undesirable outcome as well. The continuous significant drop in container throughput from 28 million Twenty-foot Equivalent Units (TEUs) in 2010 to 20 million TEUs in 2016 (Census and Statistics Department, 2016) indicates the essence of government actions in assisting the sustainable development of HKP and maintaining its global position.

2.3.1.8. Moving forward, it is challenging for HKP to maintain its competitiveness as an international transhipment hub. Future regional cooperation with the PRD and enhancement of the port facility and function are essential to position HKP as an international port hub and global forerunner in the maritime service centre.

2.3.2. Regional Cooperation and Competition

Regional Policy
2.3.2.1. The National 13th Five-Year Plan emphasised Hong Kong’s position as “super-connector”. This is in direct relation to China’s two-way opening up i.e. “going global” and “attracting foreign investment” echoing the Belt and Road Initiative (Central Policy Unit HKSAR, 2015). The Policy Address 2017, in response to the place, stated that Hong Kong shall enhance and consolidate its status as an international financial, transportation and trade centre and take forward the comprehensive cooperation with the PRD region in supporting the Belt and Road Initiative (Office of the Chief Executive HKSAR, 2017).

Regional Cooperation
2.3.2.2. Historically, ever since the opening up of China in the opening years of the 1980’s, the flow of goods through Hong Kong has been characterised by manufacturing bases in the PRD transporting goods to Hong Kong for further exporting to the rest of the world. Over time, changes have been made to the regional environment. As Chinese cities have become more prosperous, the role of Hong Kong within the PRD has changed from that of a gateway and major exporter to a value added and professional service role. From being a “catch up port” to developing high end goods packaging and services, the territory is beginning to reinvent itself in regards to its relationship with the rest of the region.

2.3.2.3. Cooperation has increased over the years between Hong Kong and the PRD. Energy wise, regional governments have begun to cooperate on energy storage and usage e.g. sulphur fuels and onshore power emission control areas (Turnkey Consulting Limited & M Power Associates [TCL & MPA], 2010). The pattern of ownership of ports throughout the region means that there will be increased cooperation through market division amongst the areas. This is made possible by a small group of owners operating large numbers of ports (Brandenburger & Nalebuff, 1996).
The development of the CEPA and Guangdong regional pilot free trade zone can help create tariff zones benefitting all in the area by lowering shipping costs.

2.3.2.4. Regarding airspace cooperation, the liberalisation of the air service market has helped improve cargo services and airport management services by allowing local service providers from the private sector to participate. Alongside private and public cooperation, regional governments have also cooperated in the aerospace arena through framework agreements allowing for better flight handling capacities and cargo handling capabilities.

2.3.2.5. Cross boundary development in Hong Kong has in recent years sped up. New developments such as the HZMB and Liantang/Heung Yuen Wai Border Crossing Point will help cross border traffic on a land logistics basis, successfully delivering packaged and processed goods up to Mainland China. This is an example of regional planning cooperation to meet the needs of both Shenzhen and Hong Kong.

Regional Competition

2.3.2.6. Hong Kong’s logistics industry once played a vital and monopolistic role in facilitating the seamless movement and in completing the supply chain management of the export of manufacturing goods from PRD from their site of production to different parts of the world. However, the relative position of Hong Kong within the logistics supply chain management in the PRD is gradually shifting from the exporting gateway of the region to a transhipment hub. This results in the industrial and manufacturing industries to slowly relocate away from the PRD, due to external pressure as well as the rise of the ports in the PRD Region (Chinese Manufacturing Association of Hong Kong, 2014). Consequently, the interaction of the logistics supply chain management and the ecosystem of the logistics sectors became more dynamic within the PRD region.

2.3.2.7. Apart from external pressure of the relocation of manufacturing industries, the emergence and maturity of multiple gateways also redefine the logistics landscape at the regional level. While the HKIA remains its competitive advantages amongst other regional airports and maintains its role as the regional distribution hub, the dominant role of our sea and land logistics sector used to embrace in the past have been diminishing. Since the first direct international call made in the Ports of Shenzhen in 1994, the performance of the Ports of Shenzhen, regarding efficiency, transport and operation costs, has been gradually increasing throughout the past two decades. Besides, the inland transportation and time costs of transporting goods to the ports of Hong Kong are much higher than those of transporting goods to the ports of Shenzhen (HKTDC, 2016). As the tremendously shrunken margin of competitive advantage amongst the logistics sector of Hong Kong and cities in the PRD, level of competition amongst the logistics sector of
Hong Kong and PRD region has been magnified, thus changing and redefining the relative position of the logistics industry in Hong Kong at the regional level. Consequently, the monopolistic status of Hong Kong as an exporting gateway in the PRD region has ended.

2.3.2.8. Not only do the volume of exporting goods handled by land and sea logistics sector and cross-boundary land logistics freight movement have seen a steady decline, more importantly, these external pressures and the rise of multiple gateways in the region has changed the landscape of Hong Kong’s logistics operation. Under the new regionalism shaped by those aforementioned external factors, the division of labour is formed in logistics operation among different cities in the region (Wang & Slack, 2000). Rather than playing a monopolistic and dominant role in the logistics ecosystem in the region, Hong Kong adopts a different role amongst different cities of the PRD Region in coping with the new regionalism, for example, the ports of Hong Kong now focuses on transhipment activities while ports of Shenzhen and Guangzhou focus on exporting activities (Transport and Housing Bureau, 2015).

2.3.3. Local Role

Economic Contribution

2.3.3.1. The economy of Hong Kong is driven by four traditional pillar industries, including financial services, tourism, trading and logistics, and professional services and other producer services, providing the impetus for the growth of other industries in Hong Kong. By comparing the share of value added¹ among the four pillar industries (Figure 2.1), trading and logistics industry has the largest share of economic contribution in the four industries throughout the years, which accounts for about 28 percent of the total value added in 2014 (Census and Statistics Department, 2016). Although trading and logistics industry has been taking the leading role regarding economic contribution, its share of value added is facing a declining trend.

¹ Value Added takes into account the net output of economic activity, for instance, the value of goods and services produced less the value of goods and services used in production. Gross Domestic Product (GDP) is the sum of value added of all economic activities in the economy.
Employment Contribution

2.3.3.2. Apart from its global position and regional cooperation and competition, logistic industry also supports the living of Hong Kong citizens by providing employment opportunities. In particular, logistics industry contributes 10.5 percent of total employment in the four key industries, providing 186100 job opportunities in 2016 (Census and Statistics Department, 2016). Figure 2.2 reveals that the percentage share of logistics industry in 2004, 2009, 2013 and 2014 all exceed 10 percent, indicating a continuous significant employment contribution of the industry to local operations.

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2 The four key industries are subdivided into eight categories as follow- Financial Services: Banking, Insurance and other financial services; Tourism: Inbound tourism, Outbound tourism; Trading and Logistics: Trading, Logistics; Professional services: Professional services, Other producer services.
Supply of goods

2.3.3.3. Different modes of logistics industry play different roles in supporting city functioning. Major commodities carried by air logistics are mostly high-valued goods in a smaller size, with 61 percent of the total imports by air cargoes are thermionic parts, 12 percent are telecommunications equipment and 9 percent being pearl, precious and semi-precious stones (Hong Kong Logistics Association, 2017a).

2.3.3.4. Sea logistics, in contrast, carry less time sensitive bulky goods, with 30 percent of the total imports by sea logistics are petroleum oils, 15 percent are fruits and nuts, and 12 percent being telecommunications equipment (Hong Kong Logistics Association, 2017b).
2.3.3.5. Land logistics supply daily goods to sustain Hong Kong’s operation. According to Census and Statistics Department (2009), 36 percent of the inward road cargo carry machinery and transport equipment, 30 percent carry manufactured goods classified chiefly by material whereas 23 percent carry articles of apparel and clothing accessories. Specialisation of different logistics modes completes the role of logistics industry as a whole as a supporter of city functioning of Hong Kong.

![Distribution of Inward Road Cargoes by Major Control Point Commodity Group](Source: Census and Statistics Department, 2009)

2.4. Four Global Trends

**E-commerce**

2.4.1. E-commerce refers to the new trading and retailing pattern with the utilisation of Information and Communication Technology (ICT) (Coppel, 2000; Kalakota and Whinston, 1997). There has been a remarkably three-forth of retail sales growth happening through internet channels since 2000 (PWC, 2015). Responding to the changing consumer behaviour, there are many changes being evoked to accommodate this trend. For land logistics, there is a rising need for last mile delivery and an introduction of responsive distribution centre. Particularly for air logistics industry, a new business opportunity is expected for high value-added products with the development of specialised cargo facilities (HKIA, 2016a).

**Shift of Trading Activities**

2.4.2. Global shift of trading activities refers to the increasing influential of Asia in global trading, implying the enormous economic opportunities from Asia and particularly China (International Monetary Fund, 2014). To seize this opportunity, Hong Kong has changed its strategy in seeking
more regional cooperation and development with the PRD. For instance, the HKSAR government and other cities in the PRD are working closely to discuss the future spatial planning framework for the Guangdong-Hong Kong-Macao Big Bay Area (HKGOV, 2017). However, at the mean time, there is an increasing competition with the cities in China after its introduction of favourable economic policy and openness of market to the world. It challenges the sustainable growth of sea and air logistics of Hong Kong. Facing the uncertainties of relaxing cabotage rule, security issue of the air transport and improving efficiency with low-cost operation from our competitors, the gain from this enormous economic opportunities towards Hong Kong is questioned without the appropriate responding territorial strategy.

Sustainable Logistics

2.4.3. Sustainability refers to an interplay of environmental protection and socio-economic performance under the political influence and ethical imperative (Fitria, 2011). With the introduction of sustainable logistics, there are some changes being evoked. To embrace this global trend, a new concept of reverse logistics is introduced, which is different from the conventional logistics pattern (i.e. the unilateral relation between supply chain and distribution chain). Also, sea logistics industry has taken up many innovative green practices to embrace the concept of sustainable logistics.

Smart Logistics

2.4.4. Smart logistics refers to an integrated interrelation among 3P+I (i.e. Planning and Scheduling, People, Policy and ICT Infrastructure) (van Woensel, 2012). With the introduction of smart logistics, the efficiency of logistics activities can be enhanced, which may change the logistics patterns. For instance, automation has been introduced to different supply chain stages of air logistics industry to maintain productivity and handling capacity of air cargo terminals (HKIA, 2016a), and has been commonly used in sea logistics industry to enhance the efficiency of container terminals and create a better working environment. Also, technological advancement results in the rise in the mega vessel, which is supported by 1200 percent growth of vessel size (Allianz Global Corporate and Specialty, 2014). For land logistics, with the aid of ICT infrastructure, it is possible to avoid empty running or low load rate of last mile delivery (Ruske et al., 2010).
2.5. Challenges and Opportunities

2.5.1. The framework diagram

2.5.1.1. Supplemented by desktop research, this Section is an attempt to summarise the major stakeholders’ concerns (see Appendix A) for understanding the challenges and opportunities in the logistics industry. As illustrated in Figure 2.6, the analysis of the challenges and opportunities is illustrated under three dimensions (i.e. transportation and distribution, warehouse and operations and supporting services), which are backed by the conceptual model "Logistics as a Network" discussed in Section 2.1. The three dimensions of logistics industry are interconnected. If an issue is found in one of the dimensions, it will affect the function of the network as a whole. Under the three dimensions, six aspects (i.e. cargo handling, supporting infrastructure, logistics land supply, logistics land management and control, Human Capital and Technology) are categorised for a more focused analysis.
2.5.2. **Transport and Distribution**

*Introduction*

2.5.2.1. In this Section, specific challenges and opportunities related to transport and distribution in all the three modes of logistics are identified and categorised into two aspects - 1. Cargo Handling; and 2. Supporting Infrastructure (Table 2.2 and 2.3 respectively). In the following, specific challenges are examined by different logistics modes and followed by specific opportunities in each of the aspect. Common challenges and opportunities are not the main analytical focus as each of the three modes possess specific opportunities and challenges rather than sharing commonalities.

**Aspect I- Cargo Handling**

<table>
<thead>
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<th>Air</th>
<th>Sea</th>
<th>Land</th>
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</thead>
<tbody>
<tr>
<td><strong>Challenges</strong></td>
<td>• Lack of specialized cargo handling provision</td>
<td>• Insufficient river berths and yard areas in KTCT for expansion with increase in river load</td>
<td>• Changing delivery and handling pattern</td>
</tr>
<tr>
<td></td>
<td>• Decrease in cargo handling efficiency due to new regulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opportunities</strong></td>
<td></td>
<td>• Use of technology for efficiency enhancement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Airspace expansion</td>
<td>• Growing river to ocean transshipment</td>
<td>• E-commerce</td>
</tr>
<tr>
<td></td>
<td>• Rise of Specialized Cargo Handling</td>
<td>• Preferable for sea logistics-related services due to tax exemption</td>
<td>(Reverse logistics, last mile delivery)</td>
</tr>
</tbody>
</table>

*Table 2.2 Overview of Common and Specific Challenges and Opportunities Regarding Cargo Handling in Three Modes of Logistics*

**Air-Specific Challenges**

2.5.2.2. As identified by the air cargo terminal operators, infrastructural capacity for growth is adequately met, there is a lack of provision in developing specialised cargo handling facilities to cope with rising trends such as e-commerce and cold chain storage regarding HKIA's strategic planning
perspective.

2.5.2.3. There has been a growing concern about the potential drop in cargo handling efficiency caused by increasing security concern and demand owing to International Civil Aviation Organization (ICAO) new policy direction. The capacity and resources of existing cargo handling facilities are expected to have a shortfall in fulfilling the new demand while maintaining its current efficiency.

Sea-Specific Challenge

2.5.2.4. Due to the high inland trucking costs, river barges have become a more popular means for transporting goods to Hong Kong for re-export. However, with the increase in river loads, the river loads handling capacity at KTCT has begun to reach its operational capacity, and there are insufficient river berths and yard areas for expansion to cope with the increasing river loads (HKCTOA, 2014).

Land-Specific Challenge

2.5.2.5. How to cope and prepare themselves with the rising trends of logistics such as e-commerce and the sustainable logistics remains a salient challenge to the land logistics operators as these trends imply new and evolving means of operations regarding delivery and distribution pattern and cargo handling means. (Harrington, 2015)

Common Opportunity

2.5.2.6. Technology such as automation in air, land and maritime logistics is utilised in improving the efficiency for the logistics industry. For example, the international experience of adopting SmartGate Cargo Program was reviewed at the previous stage. The smart logistics means, proposing remote scanning and joint inspection facilities, may be helpful in meeting the rising demand of security screening for the future air logistics operation.

Air-Specific Opportunities

2.5.2.7. With the closer cooperation between Hong Kong and neighbouring cities, the collaboration of airspace management stimulates the growth of air logistics sector in Hong Kong. Regional policies including Framework Agreement on Hong Kong/Guangdong Co-operation creates a larger handling capacity of HKIA with better airspace management (HKSARG, 2017).

2.5.2.8. A rising global trend for temperature-sensitive cargo is of utmost importance for air logistics (OTEL, 2016). As air logistics has the merit of time-critical handling, it would be the best transportation mode to capture the opportunities arising from this new trend. And these specialised cargoes are often high-value goods which fit the air logistics’ development direction- "Value- Focus".
Sea-Specific Opportunities

2.5.2.9. As cross-boundary trucking is much more costly than barges, it is more economical to transport cargo using river than road. Being a cheaper logistics choice, maritime transhipment has recorded a significant increase over the past decade (BMT Asia Pacific, 2014b). This new trend would surge in the coming years and create demand for barges related facilities to support the growth.

2.5.2.10. KTCT remains a popular port for regional transshipment and sea logistics related services due to the numerous tax exemptions, including Double Tax Relief agreements with various countries. Hong Kong is also a preferable place for ship registration because Hong Kong-registered ships enjoy exemption from carriage income.

Land-Specific Opportunity

2.5.2.11. With the upsurge of e-commerce, the delivery pattern of land logistics is evolving with a greater emphasis of last mile delivery and reverse logistics. These changes have brought new business opportunities to the logistic industry (i.e. new last mile delivery demand and the return of goods to manufacturers due to substantial online orders). With the collaboration of different logistics operators and appropriate land support, the industry would be able to capture the opportunities brought by e-commerce. (Harrington, 2015; Robinson, 2017)

Aspect II- Supporting Infrastructures

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Air</th>
<th>Sea</th>
<th>Land</th>
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<tbody>
<tr>
<td></td>
<td>Late provision of the third runway system</td>
<td>/</td>
<td>Long dwell time around the boundary region due to inefficient boundary control point</td>
</tr>
<tr>
<td>Opportunities</td>
<td>Regional cooperation with the PRD</td>
<td></td>
<td>Insufficient Road Network</td>
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<td></td>
<td>Improved inner city connectivity</td>
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</table>
Table 2.3 Overview of Common and Specific Challenges and Opportunities Regarding Supporting Infrastructure in Three Modes of Logistics

Air-Specific Challenge
2.5.2.12. As the Third Runway System of the HKIA is expected to increase the cargo handling capacity to meet the increasing demand, the delayed infrastructural provision, however, might lead to diversion of the amount of air cargo to nearby airports in the PRD region.

Land-Specific Challenges
2.5.2.13. From the point of views of the land logistics operators, extra amount of time spent on road implies additional operation costs incurred. Currently, saturated capacity at existing boundary control points caused long dwell time for trucks pass through the custom and immigration control. Together with the traffic congestion at Luohu and Futian boundary control points have been a major hindrance for operators to optimize their efficiency.

2.5.2.14. As identified by relevant land logistics operators, the capacity of the current road infrastructure network linking to boundary control points is often saturated during peak hours, which subsequently hinders the efficiency of and imposes extra costs to their operations.

Common Opportunity
2.5.2.15. Commencement of physical infrastructure facilitates regional cooperation with the PRD region through improving connectivity and accessibility. More importantly, it guides Hong Kong and the nearby PRD cities in defining their position and developing a co-opetition relationship regarding management and coordination of sea, air and land logistics.

2.5.2.16. The construction of HZMB facilitates the connectivity between Hong Kong and the Western Part of PRD region. The inner city connectivity has seized this opportunity and improved with the construction of Tuen Mun-Chek Lap Kok Link, which connects the cross-boundary infrastructure and the airport. With improved inner-city connectivity, it enhances the operational performance of intermodal logistics.
Air-Specific Opportunities

2.5.2.17. Cargo handling and passenger volume in HKIA have both recorded continuous growth over the years, and a saturation of its infrastructural capacity is foreseeable. To meet the future passenger and cargo growth, the 3RS project kicked off in 2016. The new runway is expected to handle additional 8.9 million tonnes of cargo by 2030 (HKIA, 2017a), which enables HKIA to better maintain its role as an international logistics hub.

Land-Specific Opportunities

2.5.2.18. The new boundary control point establishes the "East in East out, West in West out" model which expands logistics catchment area beyond the Guangdong Province to coastal provinces (Development Bureau HKSAR, 2014). It could trigger new development in Heung Yuen Wai and the Northern Economic Belt proposed in the Hong Kong 2030+.

2.5.2.19. The new infrastructure provides alternative ways to deliver goods with enhanced time-utility (Zhou, Xia Wen and Yun, 2015). It expands catchment area to the western PRD region which would potentially become a strong production base. By connecting Hong Kong to ancillary logistics facilities, perishable goods can be carried to even further areas (ResearchHKTDC, 2015).

Conclusion

2.5.2.20. In this Section, challenges and opportunities on transport and distribution are examined in two aspects, cargo handling and supporting infrastructure. In each aspect, discussions have been made on investigating the different challenges that air, sea and land logistics faced, which are usually mode-specific. For example, specialised cargo for air, increase in river load for sea and last mile delivery for land. Despite the varying nature of the challenges, most of them can be resolved or alleviated by providing sufficient and efficient infrastructure (i.e. cold chain facilities, barges terminal and UCC) with the support of non-spatial policies (i.e. labour and technology). These challenges could remain a threat for logistics development, yet opportunities could be captured if suitable infrastructure and other supporting policies are made timely.

2.5.3. Warehousing and Operations

2.5.3.1. Introduction

Both common and specific challenges and opportunities related to warehousing and operation in the three modes of logistics are identified and categorised into two aspects - 1. Logistics Land Supply; and 2. Logistics Land Management and Control (Table 2.4 and 2.6 respectively). In the following, a detailed explanation will be given – common and specific challenges will be examined first, followed by common opportunities.
### Aspect I- Logistics Land Supply

<table>
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<th>Challenges</th>
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<th>Sea</th>
<th>Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Shortage of strategic logistics land supply</td>
<td>• Confined spatial planning on Lantau Island</td>
<td>/</td>
<td>• Lack of modern logistics facilities</td>
</tr>
<tr>
<td>• Confined spatial planning on Lantau Island</td>
<td>• Lack of advanced cool chain infrastructure</td>
<td></td>
<td>• Unaffordable warehousing market</td>
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<table>
<thead>
<tr>
<th>Opportunities</th>
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</thead>
<tbody>
<tr>
<td>• Potential nearby land supply for expansion</td>
<td></td>
<td></td>
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<tr>
<td>• Potential strategic land supply for comprehensive development</td>
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*Table 2.4 Overview of Common and Specific Challenges and Opportunities Regarding Land Supply in Three Modes of Logistics*

2.5.3.2. For Logistics Land Supply, despite the existing shortfall of land supply, it is observed that there is a potential logistics land supply for expansion and future development. Both common and specific challenges, as well as common opportunities will be discussed below.

**Common Challenge**

2.5.3.3. Regarding warehousing and operation, the common challenge of the three modes of logistics industries is the lack of strategic logistics land supply. For air logistics industry, the maximum aircraft movement per hour is expected to reach 102 flights after the completion of the third runway and the cargo handling capacity will reach 8.9 million tonnes by 2030 (HKIA, 2017b). However, no proposed plans have been published to support the market expansion and guiding trends. Besides providing additional logistics facilities, a strategic land for high value-added services proximates to the airport is preferred. It allows flexibility to the market for the construction of specific facilities. Moreover, competition for land uses is identified among firms at the port for sea logistics industries. The major operators strive to expand and take up the surrounding land, resulting in congestion of other facilities and the SMEs areas (HKCTOA, 2013). To balance the interest and minimise the conflicts among different operators, a comprehensive planning is required to allow overall improvements and development. The same concept applies to land logistics in land provision to maintain the ecosystem of the industry. For land logistics does not constrain to one particular strategic location but scattered sites around Hong Kong. Land parcels proximate to Shenzhen, HKIA and Kwai Tsing port area are beneficial
to industry development. To develop potential sites and optimise the use of land for the whole logistics industry, a strategical planning on land use is crucial.

Air-Specific Challenges

2.5.3.4. Firstly, in general, there is a lack of comprehensive planning for air logistics industry development in Hong Kong. From "Hong Kong International Airport Master Plan 2030", it is observed that the recommendations mentioned are mainly based on the airport and confined the spatial planning to airport island (i.e. Lantau Island) (Hong Kong International Airport, 2011a). The government also puts less emphasis on the integrated connection of airport and adjacent available lands to allow expansion of air logistics sector and confines the study to Lantau Island only.

2.5.3.5. Secondly, more and more goods (e.g. perishables, pharmaceuticals, etc.) are handled by airport cargo terminals which require cold chain transportation (Baxter and Kourousis, 2015). However, related-infrastructure is not well-prepared to embrace the rising global trend in air logistics industry.

Land-Specific Challenges

2.5.3.6. Firstly, facilities for land logistics operations in Hong Kong are not purposely-built generally. According to a retired town planner B from a government institution, logistics facilities are speculatively-built without knowing the actual needs of the industry, resulting in a lack of modern logistics facilities and eventually lowering the productivity and efficiency.

2.5.3.7. Secondly, there is an imbalance in demand for and supply of logistic land in Hong Kong, which leads to the unaffordable logistics land market. Revealed by a small-scale logistics operator, the land rent of a modern logistics facility is too high for some medium-scale operators, let alone small-scale operators. As a result, they can only cluster in traditional or newly built speculative industrial buildings which tend to lower the efficiency and their competitiveness. On the other hand, the large-scale operators can maintain their footprints in modern logistics facilities which tend to allow them to outcompete other operators and eventually may interrupt the logistics ecosystem.

Common Opportunities

2.5.3.8. To tackle the challenges, potential land supply nearby existing or future facilities and potential strategic land supply are identified for future warehousing and operations development.

2.5.3.9. Agreed by interviewed operators, sizable sites with proximity and well connection to seaports, the international airport and Shenzhen are most preferred. With the proposed Tuen Mun Western
Bypass, proposed Tuen Mun - Chek Lap Kok Link and the existing North Lantau Highway, more land in the western New Territories and northern Lantau Island are found available to supplement the existing and future facilities. The Civil Engineering Development Department (2013) had identified six potential strategic sites for logistics development, providing up to 688 ha of land supply with geographical advantages. In particular to air logistics industry, Midfield Phase 2 Development is expected to provide extra 216 parking stands by 2020 to meet the passenger and cargo growth (AAHK, 2017). Besides, logistics development is also one of the potential uses of the Topside Development at Hong Kong Boundary Crossing Facilities Island, ensuring the accommodation of logistic facilities near the Hong Kong International Airport (HKIA, 2017b). Given the land supply potential, there will be a high possibility of business expansion and operation enhancement.

2.5.3.10. To allow higher business efficiency and effectiveness, a strategic land supply is likewise critical. As 80% of the port back-up (PBU) land are already located in New Territories (Town Planning Board, 2008) and many of the interviewed local warehousing operators prefer relocating to New Territories due to proximity to Shenzhen and lower rental cost, brownfield sites is considered as one of the solutions to shortage of strategic land supply. As mentioned in the "Hong Kong 2030: Planning Vision and Strategy", 540 ha of brownfield sites are available for comprehensive planning to develop New Development Areas (NDAs) and Potential Development Area (Table 2.5), an enormous potential is identified regardless of its evolution issues. Regarding the appropriateness of brownfield sites for logistics operations, the current usage of brownfield may provide evidence (Figure 2.7). Taking Hung Shui Kiu (HSK) NDA as an example, 26%, 23% and 15% of the site are dedicated for container storage, warehouses and logistics operations respectively. The diversified land use and potential comprehensive planning practice in brownfield is no doubt an opportunity to support the logistics industry’s future development.

<table>
<thead>
<tr>
<th>Potential Area of Brownfield Sites Conversion</th>
<th>Site Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas</td>
<td>50 ha</td>
</tr>
<tr>
<td>Yuen Long South (YLS) Potential Development Area</td>
<td>100 ha</td>
</tr>
<tr>
<td>Hung Shui Kiu (HSK) New Development Area</td>
<td>190 ha</td>
</tr>
<tr>
<td>New Territories North Area</td>
<td>540 ha</td>
</tr>
<tr>
<td>Total</td>
<td>540 ha</td>
</tr>
</tbody>
</table>

*Table 2.5 List of Potential Area of Brownfield sites conversion and its corresponding site area*

(Source: Kun, 2017)
Aspect II- Logistics Land Management and Control

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Air</th>
<th>Sea</th>
<th>Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of logistics land management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>control</td>
<td></td>
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<td></td>
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<tr>
<td>/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Term Tenancy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(up to seven years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leading to an unbalanced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>development of port back-up land</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.6 Overview of Common and Specific Challenges and Opportunities Regarding Land Management and Control in Three Modes of Logistics

2.5.3.11. For logistics land management and control, the lack of management authority is observed for all warehousing and operation sites. A common challenge and a specific challenge for sea logistics...
are discussed below.

Common Challenge

2.5.3.12. Owing to the speculative industrial property market, landlords usually offer short term lease (i.e. less than three years) to the logistics operators, which will undoubtedly constrain their incentives to expand and invest (CUHK, SD Advocates and BMT Asia Pacific, 2015). Supported by two logistics operators, they prefer buying a land premise to renting the facilities to secure their long-term investments and allow them to have a higher expansion capability. The lack of logistics land management and control is observed for most of the warehousing and operations.

Sea-Specific Challenge

2.5.3.13. Short Term Tenancy leading to an unbalanced development of port back-up land. In general, within KTCT, there are about 100ha land allocated for port back-up land which are let out through short term tenancy (up to seven years) (Transport and Housing Bureau, 2015a). It is believed that short term tenancy discourages tenants from carrying out long-term investment and develop diversified port back-up land uses, and eventually leads to an imbalance in the allocation of port back-up lands to different uses (Transport and Housing Bureau, 2015a). With a short duration of term tenancies, tenants tend to develop uses which allow them to earn more money than the costs spent (e.g. vehicle parking). As a result, more and more port back-up lands are developed as vehicle parking, leading to an unbalanced land uses allocation of port back-up, which cannot fully support the operation of container terminals in Hong Kong.

Conclusion

2.5.3.14. In this Section, challenges of logistics land supply and logistics land management and control are identified. The lack of strategic logistics land supply that has proximity to HKIA, Kwai Tsing Area or boundary control points is a common challenge to the industry. Meanwhile, potential land supply nearby existing or future facilities and potential strategic land supply are identified for future warehousing and operations development. With a comprehensive planning, the potential sites could serve as a solution for overall industry improvements and development. To encourage operation expansion and investment, land management and control is a critical factor. However, the government does not play a proactive role at the moment and has resulted to an unbalanced industry ecosystem.

2.5.4. Supporting Services

Introduction

2.5.4.1. Three modes of logistics industry are facing common and specific challenges and opportunities regarding supporting services, which can be categorised as human capital and technology.
Aspect I- Human Capital

2.5.4.2. Human capital supports the daily operation of the logistics industry, yet the logistics industry has been experiencing labour shortage as the main challenge. Table 2.7 summarises both the common challenge and also specific challenges of the three logistics modes regarding human capital. Corresponding opportunities of the logistics industry are also listed in Table 2.7.

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Air</th>
<th>Sea</th>
<th>Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrinking labor force and productivity</td>
<td></td>
<td></td>
<td>Insufficient qualified education programs</td>
</tr>
<tr>
<td>Shortfall of skilled and semi-skilled labor</td>
<td></td>
<td>Spatial mismatch between workplace and workforce</td>
<td>Negative perceptions of the industry</td>
</tr>
<tr>
<td>Spatial mismatch between workplace and workforce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spatial mismatch between workplace and workforce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative perceptions of career outlook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative perceptions of the industry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing a comprehensive logistics training programs to capture adequate labor supply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehensive spatial planning to attract labor nearby</td>
<td></td>
<td>Involving different professional through institutional collaboration</td>
<td></td>
</tr>
<tr>
<td>Involving different professional through institutional collaboration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shifting to higher-skilled jobs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitating collaborations between different institutions for training development</td>
<td></td>
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</tbody>
</table>

Table 2.7 Summary of Common and Specific Challenges and Opportunities in Human Capital for Three Modes of Logistics Industry

Common Challenge

2.5.4.3. In the aspect of human capital, shrinking labour force and productivity is commonly faced by the logistics industry due to the aging workforce, lack of comprehensive education and training schemes, and insufficient institutional support on employment. It is projected that local manpower supply aged 55 or over will increase at an average annual rate of 4.3%, and expected
to reach about 300,000 persons by 2022 (Labour and Welfare Bureau, 2013). Although some education and training programs are available, public perceptions on career prospects are still yet to be improved to attract younger working population.

Air-Specific Challenges

2.5.4.4. For air logistics industry, labour shortage of skilled and semi-skilled labour is the foremost concern as these two types of manpower are much needed for ground service for aircraft and cargo operations. Spatial mismatch of the current workforce, together with high commuting costs and limited transportation choices to the airport, has also been a challenge in attracting new manpower.

Sea-Specific Challenges

2.5.4.5. Spatial mismatch of workplace and workforce is a challenge to sea logistics industry, as only 15% of the working population in Kwai Tsing District work and live in the same district (Census and Statistics Department, 2012). Also, social perceptions on career prospects of sea logistics industry are conservative, which hinders supply of younger manpower to the industry.

Land-Specific Challenges

2.5.4.6. The land logistics industry is perceived as low-skilled jobs with negative career outlook, which makes the industry difficult to recruit younger working population. Also, Maritime & Aviation Training Fund, which is allocated to promote courses and degrees in logistics and supply chain management, excludes landside logistics skills and training support.

Common Opportunity

2.5.4.7. Despite the aforementioned challenges, developing a comprehensive training program could help to capture adequate labour supply to meet the continuous growth of logistics industry. As three logistics modes all face challenges of labour shortage and ageing workforce, evaluation and consolidation of current education and training programmes are important to attract younger manpower to join the industry.

Air-Specific Opportunity

2.5.4.8. Utilising the potential pool of labour, comprehensive spatial planning of air logistics industry may capture working population in Tung Chung and Tuen Mun, with the proposed transport linkage of Tuen Mun – Chek Lap Kok Link (TM-CLKL) to shorten commuting time.

Sea-Specific Opportunities

2.5.4.9. The shift from low-skilled to higher-skilled jobs offers an attractive term to the younger working population for the sea logistics industry.
Land-Specific Opportunities

2.5.4.10. Facilitating institutional collaboration would enhance the comprehensiveness of the education and training programs, and better cater the needs of the logistics operators regarding manpower requirements.

Aspect II- Technology

<table>
<thead>
<tr>
<th>Air</th>
<th>Sea</th>
<th>Land</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Challenges</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of technological sophistication</td>
<td>Lack of Government Support on R&amp;D</td>
<td>Large technological discrepancy between logistics operators</td>
</tr>
<tr>
<td><strong>Opportunities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgrading technological facilities to improve competitive edge</td>
<td>Utilizing logistics facilities in HKBCF</td>
<td>Involving different professional through institutional collaboration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infusing technology in land logistics industry through institutional collaboration</td>
</tr>
</tbody>
</table>

Table 2.8 Summary of Common and Specific Challenges and Opportunities in Technology for Three Modes of Logistics Industry

Common Challenges

2.5.4.11. Based on the findings from Phase I & II, the common challenge concerning logistics technology is the overall lack of technological sophistication. Turning to technology is often seen as a viable solution to address key issues such as labour shortage and security. However, Hong Kong’s logistics industry has not fully utilised technology to favour its competitive edge. In this report, lack of technological sophistication is further broken down into two sub-challenges, namely: (1) lack of government support for R&D and (2) large technological discrepancy between the logistics operators.

2.5.4.12. According to a professor specialising in e-commerce, the Hong Kong government does provide policies and platforms and technological R&D is primarily driven by the business sector. Even with the establishment of the R&D centres found in Cyberport and Hong Kong Science Park, the government still lacks the leadership to reach a more technologically sophisticated logistics industry and further attract the business sector to invest in the same (HKIS, 2012). In the strategic level, there is a shortfall of policy connection between pertinent bureaus to integrate
technology and logistics to drive its holistic development. Moreover, there is a lack of institutional collaboration between the Technology and Innovation Bureau, other institutions and technology-based companies to develop and adopt the latest technologies.

2.5.4.13. As the HKIA and KTCT provide very competitive environment, the privately-owned air cargo terminals and port operators are incentivized to enhance their efficiency by employing high-technology in their operations. Consequently, this situation has created a large technological discrepancy between different scales of logistics operators (McKinnon, 2011). Large-scale companies have the capacity to invest in technology while most of the SMEs, especially those involved in land logistics, lack the financial means to do so. Moreover, there is also a technological discrepancy between the KTCT and other ports, i.e. RTT. RTT’s poor technology has reduced its competitiveness over the years has made it unreliable to aid KCTC’s congestion problem. These technological discrepancies contribute to an uneven playing field for the operators. Many smaller operators frequently cannot compete with the large-scale operators and are unable to satisfy the clients’ demands.

Common Opportunity
2.5.4.14. Utilisation and upgrading of technology are seen as a common opportunity in the different modes of logistics to address some of its issues and challenges and to improve Hong Kong’s overall competitive edge.

Air-Specific Opportunity
2.5.4.15. For air logistics, upgrading technology for screening and scanning can offer possible solutions that can respond to the changing aviation security requirements. According to a representative of a freight forwarding association, remote scanning technology may aid in screening the cargos off-site, particularly benefitting the SME’s, before they enter the HKIA premises, releasing some pressure in the airport security facilities.

Sea-Specific Opportunity
2.5.4.16. For sea logistics, opportunity lies in the upgrading and expansion of existing R&D facilities to support and enhance port operations. By supporting the development of Internet-of-Things (IoT) and making use of smart logistics applications, port traffic, fleet management and information management can be improved, and response time in decision-making can be expedited (Yu, 2015).

Land-Specific Opportunities
2.5.4.17. For land logistics, there is an opportunity to address some present issues with the adoption of
technology. Firstly, adopting warehouse automation can economise limited warehouse space and increase speed and accuracy in goods movement. Secondly, employing smart traffic management applications can help in increasing efficiency of truck movements in the existing land transport networks.

Conclusion

2.5.4.18. In this Section, challenges and opportunities for supporting services, namely human capital and technology were identified. Shrinking labour productivity remains to be a major challenge in logistics, as it is by nature is a labor intensive industry. It is further aggravated by challenges such as spatial mismatch for both sea and air logistics and lack of training and education for land logistics. In general, developing a comprehensive logistics training programs is seen as an opportunity waiting to be tapped by the government to address such challenges. For technology, it is observed that the logistics industry lacks technological sophistication, by which a huge factor comes from the lack of government support on logistics-related R&D. Furthermore, there is an apparent large technological discrepancy among different logistics operators impeding the prospect of enhanced industry collaboration. The industry should leverage on a holistic technological upgrade to address the current challenges to gear towards a comprehensive development.

2.6 Chapter Summary

2.6.1. Backed by conceptual model “Logistics as a Network” discussed, the three dimensions of logistics (i.e. Transportation & Distribution, Warehouse & Operations and Supporting Services) are adopted to form a framework to explore the challenges and opportunities of Hong Kong’s logistics industry. Based on stakeholders’ views and desk-top research, key challenges and opportunities are explored and elaborated under the 6 key aspects. As the framework reveals the interconnectedness of the logistics industry, the challenges of a key aspect could reduce the overall efficiency of the industry as a whole. For instance, the lack of modern logistics facilities not only limits the expansion of the warehousing companies but also restrains the handling capacity of freight forwarders. In sum, the complexity of the challenges and opportunities of the logistics industry requires a comprehensive planning strategy to provide solutions to tackle the challenges and strengthen the position of our logistics industry.

2.6.2. Therefore, the 6 key aspects will be adopted in the following 2 chapters, Policy Review and International Review, to concentrate our analysis for realizing a long-term vision and relevant recommendations. The following two chapters serve to recognize the policy gaps that requires more actions to be taken by the Government and provide the lessons for Hong Kong’s logistics industry in order to find out the key actions that the Government should consider.
3. **Policy Review**

3.1 **Positioning of Logistics Related Policies**

3.1.1. The logistics development in the region has been rapidly growing in the past decade. Hong Kong has encountered competitions brought by traditional and new competitors such as Singapore, Shenzhen, Guangzhou and Shanghai. Therefore, the government has to redefine the role of Hong Kong’s logistics industry to maintain and enhance its competitiveness in the market. Based on the review of Policy Address in the last decade, the policy focus, objectives and actions on the logistics industry are examined (see Appendix B). Positioning of policies can be classified into two periods, i.e., 2006-2010 and 2011-2017 and summarised as follows.

**Period of 2006-2010**

*Reaching regional agreements with governments in the PRD region*

3.1.2. The cooperation between governments in the PRD region identified a clearer specialisation of the logistics development. For instance, the Outline of the Plan for the Reform and Development of the Pearl River Delta (the Outline) promulgated in January 2009 stressed the importance of a clear division of work, a reasonable layout and complementarities in respect of the facilities in Hong Kong and in the Mainland of China (Office of the Chief Executive, 2010). Hong Kong’s logistics industry started to re-position itself in the region.

*Initiating the transport infrastructure in supporting logistics development*

3.1.3. Given the future needs of logistics development and regional cooperation, major infrastructure projects were initiated and undergone preliminary study. As the commencement of infrastructure projects requires a careful study, physical infrastructural support to the logistics industry during this period was limited (CUHK, SD Advocates and BMT Asia Pacific, 2015).

**Period of 2010-2017**

*Positioning Hong Kong as an international aviation and maritime Centre*

3.1.4. Since 2010, the government began to put emphasis on capturing high value-added services in the logistics industry. Since then, the government positioned Hong Kong's logistics industry as an international aviation hub and the international maritime centre to move towards high value-added developments. For instance, Hong Kong Maritime and Port Board was established in 2016 to foster the development of high value-added maritime and port services (Office of the Chief Executive, 2016). Due to the limited supply of land, a few suitable sites close to Tsing Yi were deployed for back-up uses and warehousing services in order to support the growing logistics industry. Therefore, comprehensive studies on long-term land provision including sites for logistics development have been carried out, which are some of the attributes to “Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030” (“Hong Kong 2030+”)
3.2 Transport and Distribution

3.2.1. Aspect I- Cargo Handling

<table>
<thead>
<tr>
<th>Policies</th>
<th>Air</th>
<th>Sea</th>
<th>Land</th>
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<tbody>
<tr>
<td>• Hong Kong Authorized Economic Operator Program (AEO)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Digital Trade and Transportation Network (DTTN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Air Transhipment Cargo Exemption Scheme for Specified Strategic Commodities</td>
<td>• Free Trade Agreement Transshipment Facilitation Scheme</td>
<td>• Road Cargo System and Electronic Inter-Terminal Transfer</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.1. Overview of Policies Related to Cargo Handling (Source: Customs and Excise Department, 2015; HKTDC, 2008; TID, 2016a; TID, 2016b; Customs and Excise Department, 2017; HKIA, 2016a; Customs and Excise Department, 2016)

3.2.1.1. There are currently two notable policies that may contribute towards mitigating the changes in distribution patterns. The first is the adaptation of certification schemes and electronic information systems (i.e. Road Cargo System and Electronic Inter-Terminal Transfer, Hong Kong Authorised Economic Operator Programme (AEO) and the Digital Trade and Transportation Network (DTTN)). These measures together reduce the amount of inspections and paperwork needed for goods being shipped through or into Hong Kong while also reducing clearance procedures. Goods transfers can be made more efficiently this way.

3.2.1.2. The second policy is the Air Transhipment Cargo Exemption Scheme for Specified Strategic Commodities and the Free Trade Agreement Transhipment Facilitation Scheme. Together, these schemes reduce the licensing cost for trans-shippers and also quarantines strategic commodities in secured areas (in the case of Air-to-Air) before they are transshipped out of Hong Kong. These incentives together induce greater transshipments to Hong Kong.

3.2.1.3. Although these policies address some of the issues, some problems remain. For example, the issue of airport security is not fully addressed, and there does not seem to be any advancement in actual cargo handling and security measures. The issues regarding last mile delivery and reverse logistics largely remain unsolved, and most of the new policies are heavily weighted on
air logistics, while land and sea logistics are largely untouched.

3.2.2. Aspect II- Supporting Infrastructures

<table>
<thead>
<tr>
<th>Policies</th>
<th>Air</th>
<th>Sea</th>
<th>Land</th>
</tr>
</thead>
</table>
|          | • Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030  
|          | o Adequate and Timely Provision of Supporting Infrastructure  
|          | ➢ Proposed Cross Boundary Facilities and Infrastructures  
|          |   - HZMB  
|          |   - Liantang Heung Yuen Wai Boundary Control Point  
|          | ➢ Proposed/Road Projects under Construction  
|          |   - TMCL  
|          |   - TM Western Bypass  
|          |   - Lung Shan Tunnel Viaduct  
|          | ➢ Proposed/Railway Projects under Construction  
|          |   - Tuen Mun South Extension  
|          |   - Tung Chung West Extension  
|          |   - Shatin to Central Link  
|          |   - Northern Link  
|          | Guangzhou Shenzhen Hong Kong Express Rail Link  
|          | ➢ Feasibility Study on Road Network Enhancement  
|          |   - Feasibility Study on Route 11 |

Table 3.2: Overview of Policies Related to Supporting Infrastructures (Development Bureau, 2016)

3.2.2.1. To better facilitate regional cooperation, a series of policies and measures have been deployed and proposed by the government with the objective of enhancing efficiency of cross-boundary logistics activities and their connection with our existing logistics facilities (i.e. HKIA and the Ports of Hong Kong) through aspects of urban planning, road network, transportation infrastructure, and cross-boundary facilities.

**Liantang/Heung Yuen Wai Cross Boundary Control Points and Lung Shan Tunnel Viaduct project**

3.2.2.2. As the sixth HK-SZ boundary control point, the Liantang/Heung Yuen Wai Cross Boundary Control Points was proposed and envisaged to provide an alternate route to rationalize the traffic volume in the eastern boundary region and to form, and to establish the "East in East out West in West out" movement network between Hong Kong and Shenzhen to improve the efficiency
3.2.2.3. Upon its completion and commencement in 2018, the Liantang/Heung Yuen Wai Boundary Control Point is expected to handle a major share of the existing vehicle traffic currently served by the Lok Ma Chau Boundary Control Point. However, the capacity of existing roadways linking the proposed control point to Route 9 in handling the increasing volume of goods vehicle remains questionable, and the study of major road network (Lung Shan Tunnel Viaduct Project) proposal has just been completed in 2016 and the project is not expected to be completed by 2020 at the earliest (Legislative Council Secretariat, 2015a).

_Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass_

3.2.2.4. In response to an existing concern of the lack of alternate route connecting the airport to the boundary region in the New Territories by the air and land logistics sector, the scheme comprising Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass is proposed to provide an alternate route to connect the New Territories with the HKIA.

3.2.2.5. Upon its completion and commencement, the scheme comprising Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass will not only act as an alternative route for connecting the HKIA to the New Territories but also an important and the major connector of the HZMB Topside Development, North Lantau Island, the New Territories and our boundary region. From a strategic point of view, it will become an important transportation spine facilitating vehicle movement thus linking up the HKIA and Hong Kong Boundary Crossing Facilities (HKBCF) with the Western Economic Corridor proposed in the HK2030+ (Legislative Council Secretariat, 2015a).

_Feasibility Study of Route 11_

3.2.2.6. The feasibility study of Route 11 has been commenced in 2018 by the Hong Kong Government. As one of the proposed strategic highways for the government's long-term strategic transportation planning, it is envisioned that the Route 11 can provide a direct linkage between North Lantau and Yuen Long, further alleviating the traffic volume during peak hours on the Tuen Mun Road (Legislative Council Secretariat, 2015a).

3.2.2.7. In view of the future development in the New Territories, especially along the Western Economic Belt and Northern Economic Corridor proposed in the 2030+, including New Development Areas such as Hung Shui Kiu, and the commencement of HZMB, it is expected that major roads connecting NT and the urban area would be congested during peak hours, Route 11 will be important in rationalizing the traffic flow in the region. However, the projected commencement of the project still remains unknown.
3.2.3. **Policy Gap**

3.2.3.1. Regarding transport and distribution, the government has a strong focus on the provision of infrastructure on the internal and external city connectivity enhancement while there is limited assistance provided for distribution and operation. The logistics specific development will interfere at a minimal level. Remaining Hong Kong's character of market-oriented and open economy model, the solution remains open for the operation of the industry.

3.2.3.2. Reviewing policies responding to the challenge of changing distribution pattern and cargo, the government has the plan for the maritime industry but in small scale and absence of concrete action and strategic proposal. For the rising demand of efficient last mile delivery, the establishment of consolidation centre is mainly operated by the large-scale freight forwarders such as Kerry Logistics and DHL at Tai Po Industrial Estate and Airport. To support the sustainable development of logistics industry, although part of the Hung Shui Kiu NDA is proposed for related usage, there is no comprehensive and concrete plan raised by the government. Last but not least, relevant solutions for air logistics industry such as insufficient special handling facilities and space for improvement for the security are not addressed by the government's agenda.

3.2.3.3. Reviewing policies responding to the challenge of requiring sufficient and efficient infrastructure, the government has shown effort on the provision of the better network as territorial connectivity backbone. However, Hong Kong is suffering from the delay of infrastructure completion, which may lead to the missing economic opportunities in the development of logistics industry.

3.2.3.4. From assessing the current policy gap, the adjustment of the government's role with more supportive policies and direct involvement is suggested to overcome the challenge facing in transport and distribution.

3.3 **Warehouse and Operation**

3.3.1. **Aspect I- Logistics Land Supply**

| Air | Sea | Land |
Policies

- Hong Kong 2030+: Towards a Planning Vision and Strategy
  - Transcending 2030
    - Creating New Space for Logistics Development
      - Industries³
        - Potential Industrial Sites in Fanling / Fotan / Kwai Chung / Tsuen Wan
        - Hung Shui Kiu New Development Area (also included in Special Industries)
        - Potential Industrial Sites on Stonecutters Island
        - Yuen Long South
        - Lam Tei Quarry Sites and Cavern Areas (also included in Special Industries)
        - New Territories North (also included in Special Industries)
      - Special Industries⁴
        - TMCL
        - TM Western Bypass
        - Lung Shan Tunnel Viaduct
    - Expanding Existing Capacity for Logistics Development
      - Industries³
        - Sale Site in Kwai Chung
        - On Lok Tsuen Industrial Area (Intensification)
      - Special Industries⁴
        - Sale Site in Tsing Yi
        - Airport Island and North Lantau Development (e.g. Siu Ho Wan – Logistics Park)

Table 3.3 Overview of Policies Related to Logistics Land Supply (Source: Development Bureau, 2016; Hong Kong International Airport, 2011; Economic Development and Labour Bureau, 2006)

3.3.1.1. To cope with the shortage of logistics land supply, there are some strategic policies developed by the government (Table 3.3). Regarding the overall development of logistics industry, "Hong

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³ According to Planning Department (2016), industries refer to general logistics / warehousing, manufacturing and other industrial (other than "Special Industries") activities.

⁴ According to Planning Department (2016), special industries refer to those with unique locational or operational requirements, and as a result, require purposely-built premises. Modern logistics will be one of the examples.
Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030 (HK2030+) is developed to create new spaces for and expand existing capacity for both conventional and modern logistics development. In addition, the conceptual spatial framework of “HK2030+” outlines the spatial locations of logistics land supply, which are the 2 Key Strategic Growth Areas (i.e. East Lantau Metropolis and New Territories North) and the 3 Emerging Development Axes (i.e. Western Economic Corridor, Northern Economic Belt, and Eastern Knowledge and Technology Corridor) (Development Bureau, 2016). Regarding specific development of particular modes of logistics, "Hong Kong International Airport Master Plan 2030" and "Hong Kong Port – Master Plan 2020" are developed as the blueprint for air and sea logistics developments respectively. Among all these, several significant policies/studies are examined in the following:

Creating New Space for Logistics Development – Developing Brownfield Sites

3.3.1.2. For the sake of provision of long-term logistics land supply, the government is actively reviewing the underutilised brownfield sites in the New Territories and hoping to release logistics development potential through comprehensive planning and provision of infrastructure (Development Bureau, 2016). For example, the introduction of modern logistics facilities is included in both Hung Shui Kiu New Development Area and Yuen Long South Potential Development Areas. As these areas are proximate to the boundary control points, the land parcels are of high development potential.

Creating New Space for Logistics Development – Developing Tuen Mun

3.3.1.3. To identify appropriate sites for logistics operations other than Kwai Tsing District, Tuen Mun West (i.e. consists of a 6.5ha site in Tuen Mun Area 38 and a 3.5ha site in Tuen Mun Area 49) is found to be a potential site for modern logistics development (Transport and Housing Bureau, 2015). With the River Trade Terminal located nearby, the proposed logistics development is possible to create synergy with the current river cargo-handling operation. Also, the completion of Tuen Mun – Chek Lap Kok Link and Hong Kong – Zhuhai – Macau Bridge is anticipated to shorten the travelling time between Tuen Mun and the airport by 20 minutes (i.e. from 30 to 10 minutes). It is believed that Tuen Mun is a strategic location to boost the comprehensive logistics development in the territory.

Expanding Existing Capacity for Logistics Development – Developing Tsing Yi

3.3.1.4. About the long-term development of logistics industry in the territory, three sites with a total area of 6.9ha are identified in Tsing Yi by the government to meet the demand resulted from rising container and cargo throughput (Legislative Council Secretariat, 2015). Among them, two sites (i.e. 4.8ha in total) were released for the development of modern logistics hubs through open tender in 2010 and 2012 respectively (Legislative Council Secretariat, 2015). Equipped with
automated facilities and more stringent security system to handle the cargo movement in and out, modern logistics hubs could attract a diversity of warehousing services, high value-added services and third party logistics services.

Others

3.3.1.5. In addition, after conducting the policy review, it is found that there is no policies or studies discussed on the provision of purposely-built logistics facilities in detail, apart from identifying the potential sites for modern logistics development (which is examined in the aforementioned part) and revising the facilities provision in the Industrial Estates (which will be discussed in the next Section).

3.3.2. Aspect II- Logistics Land Management and Control

<table>
<thead>
<tr>
<th>Policies</th>
<th>Air</th>
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<th>Land</th>
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<tbody>
<tr>
<td>• Industrial Estate Policy</td>
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<tr>
<td>• Establishment of Hong Kong Industrial Estates Corporation Ordinance (Cap. 209) (Repealed in 2001)</td>
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<td></td>
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<tr>
<td>• Establishment of Hong Kong Industrial Technology Center Corporation Ordinance (Cap. 431) (Repealed in 2001)</td>
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<tr>
<td>• Establishment of Hong Kong Science and Technology Parks Corporation Ordinance (Cap. 565)</td>
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<tr>
<td>• Revised Industrial Estate Policy</td>
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</table>

Table 3.4 Overview of Policies Related to Logistics Land Management and Control (Office of the Chief Executive, 2016; HKSTPC, 2017; Development Bureau, 2016)

3.3.2.1. The aforementioned policies aim to ensure sufficient strategic land supply for warehousing and operations, yet not a key solution to the imbalance of industry ecosystem. Since property trade in Hong Kong is mainly market-driven, the imbalanced negotiation power between owners and users is intensified and result in a loss of control in rental price and duration of the lease. To allow a sustainable development of logistics as a whole, the Hong Kong Government has started to take initiatives in managing and controlling land uses.

Introduction of Hong Kong Science and Technology Parks Corporation

3.3.2.2. The Hong Kong Government started its regulatory exercise on land provision and site management since the introduction of three industrial estates in the 1950s. To catch up with the rising trends, the government has reviewed and made amendment on the industrial estate (IE) policy these years. The establishment of Hong Kong Science and Technology Parks Corporation Ordinance (Cap. 565) in 2001 is an advancement from the Hong Kong Industrial Estates Corporation Ordinance (Cap. 209) and the Hong Kong Industrial Technology Center Corporation
Ordinance (Cap. 431). The ordinance grants power to the Hong Kong Science and Technology Parks Corporation (HKSTPC) and defines its purposes and functions. Given that the HKSTPC is a government wholly-owned statutory body, it manages the three industrial estates in Hong Kong. It offers subsidised office space and provides assistance in business management, marketing and technology enhancement to high value-added manufacturing and services operators, especially SMEs and start-ups. With the concept of "re-industrialization" as a new contribution to Hong Kong's economic growth introduced in the 2016 Policy Address, the government and HKSTPC have been revising the industrial estate policy (Office of the Chief Executive, 2016). In additional to multi-stories building construction in an industrial estate, the HKSTPC would also build high-efficiency specialised buildings and recover the underutilised buildings, to optimise land use and attract high value-added services establishments.

3.3.2.3. Although logistics operators are one of the tenant targets to HKSTPC, logistics-related occupancy was found a small portion in the IEs. Only a few cold chain management, international freight handling and modern warehousing companies are under operation (HKSTPC, 2017). Moreover, the rental charges in IEs remain competitive except special rental arrangements for new start-ups applying through the incubation programs. The introduction of HKSTPC is a milestone of government involvement in land management, yet not a comprehensive business model dedicated to the development of logistics industry. An introduction of the specified model is expected to balance the ecosystem in the logistics industry.

3.3.3. Policy Gap

3.3.3.1. By reviewing the “HK2030+” that outlines the spatial locations of logistics land supply (i.e. 2 Key Strategic Growth Areas and 3 Emerging Development Axes), the government’s effort in identifying and developing land for logistics industry is recognised (Development Bureau, 2016). Regarding specific development of particular modes of logistics, “Hong Kong International Airport Master Plan 2030” and “Hong Kong Port – Master Plan 2020” provide blueprint for air and sea logistics developments respectively. The total coverage of potential sites is expected to satisfy the industry requirement on 70ha of considerable land for logistics use (Huang & Wong, 2014). However, “HK2030+” does not provide detailed land development plan nor exact planning schedule, especially for brownfield development. To ensure strategic land supply, further investigation on site conditions and site potentials are required.

3.3.3.2. To facilitate industrial growth, the government has established industrial estates in the 1950s yet no logistics-based business model has been introduced. Given the introduction of HKSTP and Science Park, a similar business model can be applied as a land management and control system for the industry's sustainable growth.
3.4. Supporting Services

3.4.1 Aspect I- Human Capital

Overview of Policies Responding Human Capital Challenges

3.4.1.1. In response to the major challenge of shrinking labour supply and productivity faced by logistics industry regarding human capital identified in Part 2, the government has already proposed or implemented corresponding policies as summarised in Table 3.5.

<table>
<thead>
<tr>
<th>Air</th>
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<tr>
<td><strong>Policies</strong></td>
<td><strong>Policies</strong></td>
<td><strong>Policies</strong></td>
</tr>
<tr>
<td>Admission Scheme for Mainland Talents and Professionals</td>
<td>Provision of training programs in technology application and value-added services through Sea-going Training Scheme</td>
<td>Maritime and Aviation Training Fund for air and sea logistics sector</td>
</tr>
<tr>
<td>Quality Migrant Admission Scheme</td>
<td>Maritime and Aviation Training Fund for air and sea logistics sector</td>
<td>Civil Aviation Academy by HKIA</td>
</tr>
<tr>
<td>Supplementary Labor Scheme</td>
<td>Maritime and Aviation Training Fund for air and sea logistics sector</td>
<td>Sea-going Training Incentive Scheme</td>
</tr>
<tr>
<td>Training program for freight forwarding sector</td>
<td>Sea-going Training Incentive Scheme</td>
<td></td>
</tr>
<tr>
<td>Immigration arrangements for non-local graduates</td>
<td></td>
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</tr>
<tr>
<td>Reserving appropriate land for development of broader range of education and training facilities</td>
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<td></td>
</tr>
<tr>
<td>Designated more employment-related land uses outside traditional central business district</td>
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Table 3.5 Overview of Policies Related to Human Capital (Sources: Hong Kong Logistics Development Council, 2007; Development Bureau, 2016; Office of the Chief Executive, 2007; Office of the Chief Executive, 2014; Office of the Chief Executive, 2016)

Increasing High-skilled Labour Supply – Talent Admission

3.4.1.2. To maintain adequate labour supply and enhance the productivity of the logistics industry, the
government has deployed a series of policies aiming for talent admission. Different talent admission schemes have been implemented to provide attractive terms for educated foreign labour in solving both labour shortage and descending productivity problems in Hong Kong since 2003, for example, the Admission Scheme for Mainland Talents and Professionals, Quality Migrant Admission Scheme and immigration arrangements for non-local graduates. Training programmes for freight-forwarding sector were proposed specifically for sustaining manpower supply to the logistics sector (Office of the Chief Executive, 2016).

Providing Institutional Support – Injection of Resources

3.4.1.3. To nurture suitable labour for the logistics industry, the government has identified spatial strategies and software support in achieving this direction. In spatial terms, the government has reserved appropriate land for future education and training facilities (Development Bureau, 2016). Maritime and Aviation Training Fund was set up in 2014 to build up a competitive pool of young talents in maritime and aviation sectors, as part of the financial support by the government. For maritime and air logistics sector, Sea-going Training Incentive Scheme and Civil Aviation Academy provide incentives and training to young entrants respectively.

Creating Employment Opportunities – Diversification of Employment Spatially

3.4.1.4. Responding to the spatial mismatch between workforce and workplace, the government proposed to allocate more employment-related land uses outside the traditional central business district (CBD), so as to minimise travelling distance of majority working population in the New Territories.

3.4.2. Aspect II- Technology

3.4.2.1. Since the late 90’s, the Hong Kong Government has been keen in developing Hong Kong into a technologically-advanced economy. In 1999, the Innovation and Technology Fund was set-up to support and encourage projects that would contribute to innovation and technology upgrading of different industries, including the logistics industry. However, the range of projects sponsored by the fund varies from medicine, financial technology, etc. and the amount of funding dedicated to logistics remains uncertain. The Hong Kong R&D Centre for LSCM was established in 2006 with the goal of fostering the development of logistics and supply chain related technologies and to promote the adoption of these technologies by industries in Hong Kong and Mainland China (LSCM, 2017). Since its inception, it has developed innovative technologies such as RFID baggage handling and e-lock based technologies (LSCM, 2017). Furthermore, there are several technology training schemes at present designed to introduce and train the SMEs on the newly developed technologies under the auspices of different bureaus. However, these training schemes once again encompass several fields. Table 3.6 shows a detailed outline of technology-related relevant policies implemented since 1999.
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<th>Air</th>
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<tr>
<td><strong>Policies</strong></td>
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<tr>
<td>• Technology Funds &amp; Bodies</td>
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<tr>
<td>o 1999-Innovation and Technology Fund to support projects of innovation and technology to upgrade industries</td>
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<tr>
<td>o 2000-Innovation and Technology Commission was established to transform Hong Kong into a world-class, knowledge-based economy.</td>
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<tr>
<td>o 2004-Guangdong-Hong Kong Technology Cooperation Funding Scheme (TCFS)-to encourage research and industry collaboration between the two places.</td>
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<tr>
<td>• Research &amp; Development</td>
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<tr>
<td>o 2006-Hong Kong R&amp;D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM R&amp;D Centre) was founded</td>
<td></td>
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<tr>
<td>o 2013-Internet-of-Things Center was established to support the development and competitiveness in different industries through IoT</td>
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<tr>
<td>o 2017-Announcement of Hong Kong/Shenzhen Innovation and Technology Park in the Lok Ma Chau Loop</td>
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<tr>
<td>• E-Platform</td>
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<tr>
<td>o 2006-DTTN started operations- to provide an e-platform facilitating information exchange in logistics and supply chain</td>
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<tr>
<td>• E-Commerce</td>
<td></td>
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<tr>
<td>o 2012-Government introduced two concessionary measures with the aim of convert industrial bldgs. To data centers to be used for industries including e-commerce</td>
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<tr>
<td>o 2016-Cyberport Macro Fund to invest in start-ups and establish new clusters such as FinTech and e-commerce</td>
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<td></td>
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<tr>
<td>• SME Training</td>
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<tr>
<td>o New Technology Training Scheme to provides assistance in training SME's in a new technology</td>
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<td></td>
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<tr>
<td>o SME Development Fund- to implement projects which aim to enhance the competitiveness of SME’s</td>
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Table 3.6 Overview of Policies Regarding Technology in Three Modes of Logistics (Sources: InvestHK, 2012; ITC, 2016; LSCM, 2016; IoT Centre, 2017; Office of the Chief Executive, 2017; LegCo, 2017)

3.4.3. **Policy Gap**

3.4.3.1. The government has a strong focus on talent importation, and education and training support in responding to the challenge of shrinking labour and productivity. Current talent admissions schemes are designated for tackling labour shortage generally, without a strong emphasis on the challenges faced by the logistics industry. Regarding provision of education and training for
the logistics industry, it is recognised that there is the lack of institutional support to land logistics industry since the current policies cover maritime and aviation sectors in providing both financial and training support. More sophisticated support and policies are needed to facilitate the logistics industry to overcome the identified challenges, particularly in spatial terms.

3.4.3.2. While some reliable policies and schemes are in place concerning logistics technology development in logistics, certain policy gaps still exist. For one, there is no dedicated fund nor a comprehensive scheme for logistics technology transfer and training for the SMEs. The relative inaccessibility of the SMEs to new technology thwarts the holistic upgrading of the industry. Currently, only the large logistics operators have the financial means and resources to learn, co-develop and invest in these technologies. The marginal profit of SMEs and their limited business space hamper their capabilities to learn and acquire these new technologies, may it be hardware (i.e. automation) or software (i.e. ERP).

3.4.3.3. Another policy gap concerns the R&D for logistics. While LSCM has had technological breakthroughs in RFID-based, supply chain security and location-based technologies, the centre lacks research on large-scale automation and transport modelling technologies which are considered to be next generation technologies. Developing these next generation technologies is necessary to keep the competitive edge of Hong Kong and to prepare for the anticipated increase in air, sea, and land cargo throughput. Moreover, in the planning perspective, the current location of the R&D centre shares a weak synergy between HKIA, HKP and other important logistics facilities.
4. International Review

4.1 Transport and Distribution

4.1.1. Aspect I- Cargo Handling

4.1.1.1. In view of the change in distribution pattern and cargo handling means, the following international experiences are reviewed in response to: 1. rise of reverse logistics; 2. change in last mile delivery pattern; and 3. rise of specialised cargo.

Venlo, the Netherlands - Establishment of Modern Integrated Logistics Centres

4.1.1.2. Reverse logistics is becoming more important as new trends (e.g. e-commerce) begin to emerge. The main issues of reverse logistics are: 1. the restructuring of warehousing operations to fit the needs of reverse logistics; 2. the unpacking and repacking process; 3. the fluctuating demand and volume of returned goods; and 4. the redistribution of repacked goods to their new destinations.

4.1.1.3. A good case study is Venlo in the Netherlands where a complete restructuring of their facilities has taken place. Realising the changing needs of the industry, Venlo has decided to allow private firms to construct new mega-sized warehouses, designed and equipped especially for the purpose or reverse logistics. This allows for greater flexibility in design and also provides an opportunity to purchase job specific machinery, which is applicable in Hong Kong with the support of appropriate policy.

Singapore - Development of Collaborative Urban Logistics

4.1.1.4. Similar to Hong Kong, Singapore is adversely influenced by the change in last mile delivery. In face of traffic and environmental issues, Singapore has been adopted the approach of Collaborative Urban Logistics. It comprises of Offsite Consolidation Centre (OCC) and In-Mall Distribution Centre (IMD) (Figure 4.1).

![Figure 4.1 Concept of Urban Consolidation Centre](image-url)
4.1.1.5. Situated outside the urban area, inbound goods are delivered to Urban Consolidation Centre (UCC) and re-consolidated according to their destinations and delivery time. By sharing resources, it can enhance efficiency and alleviate traffic congestion in the urban area. MDC serves both traditional retail stores and online customers. Acting as a warehouse, it handles goods for the retailers and manages out-bound logistics to deliver goods to online purchasers (Infocomm Media Development Authority, 2016). For online customers, goods are delivered more efficiently since stocks from the MDC directly go to their places with shorter delivery distance.

4.1.1.6. In Hong Kong, the existing consolidation centres are mostly operated by mega logistics operators. The needs of small to medium size operators are not yet catered. And In-mall IMO can also be incorporated in the planning of new malls where appropriate. This Singapore case is highly applicable to Hong Kong since shopping malls could be found in every district to provide space for UCC. It is noted that geographically favourable and spacious sites are basic spatial requirements.

*Pudong, Shanghai - Introduction of PACTL Cool Centre*

4.1.1.7. Currently, HKIA houses specialised cargo handling facilities, yet they are mostly within the terminal. The handling capacity is therefore limited by spatial constraints. To cater the growing amount of specialised cargo, establishing a specialised cargo handling plant is a feasible strategy. Concerning Shanghai, PACTL Cool Centre in Pudong Airport is a facility independent of the terminal. It possesses advanced, eco-friendly cold chain technology and management including designing climate zones and real-time temperature monitor (Air Cargo Week, 2015). In the long run, Hong Kong should establish a cool centre similar to that of Pudong Airport so as to facilitate logistics development. Comprehensive planning can be done in the topside development at HKBCF Island.

4.1.2  Aspect II- Supporting Infrastructures

4.1.2.1. In view of the demand for sufficient and efficient infrastructure, the following international experiences are reviewed to gain insight into: 1. regional logistics development; and 2. the establishment of leading authority.

*Shanghai and Yangtze River Delta - Regional Economies*

4.1.2.2. To facilitate the logistics development of Shanghai, other than the effort of Shanghai city government, the comprehensive regional planning is crucial for its achievement. The National Congress of the Communist Party of China has highlighted the priority of cooperation between cities along the Yangtze River since 1992 (Beijing Review, 2011). The national government in the form of The State Council of the People's Republic of China has conducted the 5-Year Plan blueprinting the detail government policy targets. Regarding the 5-Year Plan, the National
Development and Reform Commission (NDRC) announced the urban agglomeration development plan for Yangtze River Delta (YRD) with detail illustration of the implementation of its designated spatial layout plan (NDRC, 2016). Cities along the Yangtze River are well-cooperated with assigned roles and well-connected infrastructure in line with the plan. The success of Shanghai and YRD is highly depended on the emphasis of regional economies and development. However, due to the nature of the strong market economy in Hong Kong and constraint from the framework of One Country Two Systems, the influence of regionalism applied in the YRD towards Hong Kong and PRD may be comparatively weak.

Singapore - Establishment of Economic Development Board

4.1.2.3. Providing a better communication with the industry and addressing responsive policies, Economic Development Board (EDB) is established as the key government department to support the strategic infrastructure plan in Singapore. As a communication platform with the industry, the board serves as a (single window and one-stop solution for logistics firms). Different government departments are well-coordinated with the industry and implement relevant policies responding to the needs and concerns of the industry (CUHK, SD Advocates and BMT Asia Pacific, 2015). From this case study, the gap in the current institutional framework is identified with the limited influence of Hong Kong Logistics Development Council (LOGSCOUNCIL) in Hong Kong to offer an efficient and effective response as the EDB in Singapore.

4.1.3 Lessons to Hong Kong

4.1.3.1. Regarding the change in distribution pattern and cargo handling means along with the issue of cargo handling, the international experiences of Venlo and Singapore are relevant here. Modern Integrated Logistics Centres, as provided in the case study for Venlo, will provide warehousing solutions more suitable to specific purposes. The ability to handle different operations within the same warehouse adds a greater feel of flexibility to the operators. Through studies in Singapore, we found that UCC can help reduce time and costs for suppliers and forwarders by efficiently pooling goods together. Another benefit is the more efficient use of road space. In response to the rising demand in specialised cargo, the Shanghai case study gave us a good insight into the construction of cool centres, able to keep perishable items for longer periods of time.

4.1.3.2. Regarding the demand for sufficient and efficient infrastructure along with the issue of supporting infrastructure, the international experiences of Shanghai and Singapore are reviewed here. The case studies mentioned in response to the identified challenge show the importance of increasing degree of involvement and effort from the HKSAR government to facilitate the cross-boundary cooperation concerning creating regional planning and developing strong government body responding to the needs of the industry. In recent years, construction of cross-boundary infrastructure strengthened Hong Kong to have further physical connections with the PRD. It is believed the practice model of Shanghai and YRD will be useful as a reference for developing
recent emphasis on Guangdong-Hong Kong-Macao Big Bay Area planning.

4.2. Warehousing and Operation

4.2.1. Aspect I- Logistics Land Supply

4.2.1.1. Facing the lack of logistics land supply, the HKSAR government has endeavoured to identify possible land supply for logistics development. As illustrated in aforementioned Section 3.3.1., it is observed that HKSAR government is trying to identify potential logistics land supply and propose development plans for identified sites (e.g. NDAs, HKBCF, etc.). For instance, making use of brownfield is one of the most observable measures to increase the logistics land supply in Hong Kong (Development Bureau, 2016a). In the Working Paper, our study team has endeavoured to review on cases from Singapore, Japan, the UK and the US. It is understood that the issues attributed to land supply vary with different local contexts, the applicability of international experiences is limited. In view of the unique and complicated local situation of Hong Kong, it is difficult to find applicable international experiences.

4.2.1.2. Apart from logistics land supply issue, in response to the modern logistics facilities, the overseas experiences will also be reviewed to provide insights into potential strategies to cope with: 1. Lack of advanced cold chain infrastructure for air logistics development; and 2. Lack of modern logistics facilities for overall logistics development and particularly for land logistics development.

   Kansai, Japan – Introduction of Temperature-Sensitive Goods Handling Facility

4.2.1.3. Developed into the only Japanese airport handling storage and transportation of pharmaceuticals, Kansai International Airport has developed temperature controlled equipment, namely Keep Cool Dolly, to control the shipments’ quality and temperature in the delivery process (Kansai International Airport, 2017). Being able to work in a limited period, Keep Cool Dolly can only act as a supplementary measure to the identified challenge. However, there is no additional spatial requirement for this equipment; it is with high flexibility to control the temperature of ground handling and transportation of temperature-sensitive goods.

   Pudong, Shanghai – Establishment of Specialised Cargo Handling Facility

4.2.1.4. Providing a diversity of climatic zones and real-time temperature management, the PACTL Cool Centre at Pudong Airport can handle many temperature-sensitive goods and renowned for a first class tailored cold chain infrastructure (Air Cargo Week, 2015). Illustrating the potential of housing technological advancement in the new facility, the PACTL Cool Centre is a comprehensive solution to enhance the handling capacity of new specialised cargo. However, its applicability highly depends on the availability of suitable land.
Suzhou, China – Introduction of Modern Logistics Facilities

4.2.1.5. China is currently striving to develop modern logistics to cope with the rising development of logistics industry, supported by a figure of over 0.8 million square metres to be completed in the half second year of 2015 (Luo, 2015). In Suzhou, being the largest single modern warehouse in China, this 60,000 square metres built-to-suit warehouse, namely China Distribution Centre of Adidas, is with improved logistics efficiency and customer service standard (GLP, 2017). Given the client's requirements (e.g. huge number of vendors and stores, high volume throughput, accelerated sorting and picking, etc.), there are several corresponding measures tailored made for the project. Take the China Distribution Centre of Adidas as a typical example; the single warehousing is large and with numerous big columns and huge headroom to provide layout flexibility (GLP, 2017). The spacious tailor-made modern logistics warehouse also allows convenient loading and unloading. The concept of modern logistics facilities, built-to-suit warehousing services, applies to Hong Kong only with suitable land management and control policies.

4.2.2. Aspect II- Logistics Land Management and Control

4.2.2.1. In view of the logistics land management and control, the following international experiences are reviewed:

**Singapore: JTC as a management body**

4.2.2.2. In Singapore, Jurong Town Corporation, also known as JTC Corporation (JTC), is the main developer and manager of most of the industrial estates and related facilities (Yu, 2003). As a statutory body, JTC Corporation develops and manage industrial land and facilities; release land for private development via public tenders through Industrial Government Land Sales Programme (IGLS), and control prices and rentals of industrial space by monitoring and adjusting the land supply.

**Singapore: Airport Logistics Park operation**

4.2.2.3. The establishment of Airport Logistics Park requires departmental cooperations of the Singapore Government. The Economic Development Board (EDB), a communication platform providing single window and one-off solutions to the logistics company, helps coordinate for policy implementation. The 26-hectare Airport Logistics Park of Singapore (APLS) was opened in 2003 with top-quality park management, customer service and world class specialised infrastructures in the free-trade zone (JTC, 2017). APLS is a venture between Civil Aviation Authority of Singapore, airport operators and JTC Corporation that aim to enhance the business competitiveness of Singapore by providing sizable developed land to operators.

**Singapore: Short Lease Term at Government-owned land**

4.2.2.4. The modification of land leasing term in 2012 was one of the measures adopted to promptly
respond to the escalation of rental and price. An alternative 30-year leasehold was introduced in land tenure system. The tenure reduction was designed to provide a more affordable industrial property market for industrialists and raise flexibility of JTC for monitoring industrial land development (MTI, 2012).

4.2.3. Lessons to Hong Kong

4.2.3.1. From the Kansai International Airport's and Pudong Airport's experiences, they provide an important insight into how Hong Kong can make enhancements to modern logistics facilities in responding to the higher value added services provision of air logistics sector. They are highly applicable to Hong Kong when there is sufficient land provision. While for the Suzhou's experience of providing modern logistics facilities and warehouses, it gives Hong Kong a lesson on how important built-to-suit modern logistics facilities are to enhance efficiency and competitiveness. With appropriate land management and control policy, the built-to-suit model applies to Hong Kong to make a contribution to the efficiency of future logistics sector. An authority like JTPC could be introduced to allow a higher degree of government involvement in some of the government-owned logistics area. Hong Kong can also take reference to the operation mode and short lease term in APLS that facilitates the overall development of logistics industry.

4.3. Supporting Services

4.3.1. Aspect I- Human Capital

4.3.1.1. In view of the shrinking human capital in Hong Kong, the following international experiences are reviewed:

Singapore – Institutional Support on Labour Productivity

4.3.1.2. Singapore provides a wide range of institutional support in drawing and nurturing talents for the supply chain and logistics industry. Singapore EDB, a government agency for strategies planning and execution, puts emphasis on education programs and knowledge transfer in the logistics industry to secure its position as a global logistics hub (Economic Development Board, 2016). The Logistics Institute – Asia Pacific (TLI-AP) is an institution supported by EDB to provide training programs for manufacturing and logistics service industry to upgrade human resources and attract young entrants as professionals of this field. As TLI-AP is a collaboration between the National University of Singapore and the Georgia Institute of Technology, the programs offered by this institute have a wide range of expertise, including global logistics, information technology, industrial engineering and supply chain management. To facilitate knowledge exchange within the supply chain management and logistics industries and consolidate expertise from different professionals, TLI-AP’s THINK Forum offers a platform for industry leaders, practitioners and academia to address issues, build a network and discover
opportunities in the logistics industry, which is transferrable to Hong Kong.

4.3.2. Aspect II- Technology

4.3.2.1. In view of the lack of technological sophistication, the following international experiences are reviewed:

_Singapore – Development of Logistics Industry Transformation Roadmap_

4.3.2.2. Earlier this year, the Singaporean government launched the Logistics Industry Transformation Roadmap (LiTR), aimed at maintaining their global position as the leading logistics hub (EDB, 2016). Part of their strategy is to leverage technology and adopt best-in-class supply chain practices to enhance the industry’s overall competitiveness (EDB, 2016). Several R&D institutes and technology-based companies have been extensively developing automation technologies in trucking and warehousing and traffic management applications and nation-wide trace-and-track platform. In January this year, the SG Ministry of Transport has greenlighted the full-scale trial of truck platooning in the hopes of alleviating their manpower shortage and as preparation for the future port operations in Tuas (Business Times, 2017). Moreover, the LiTR aims to help the SME’s by investing in next generation facilities that promote co-location of SME companies. SME’s will benefit from the shared utilisation of the advanced technologies and will foster industry collaboration while maximising profit and savings (EDB, 2016). LiTR undoubtedly gives an insight in Hong Kong’s technological development to aid SMEs.

_Hamburg, Germany - Implementation of SmartPORT Logistics_

4.3.2.3. The Port of Hamburg has successfully implemented the SmartPORT, an application that utilises Internet-of-Things (IoT) in port traffic management (Hamburg Port Authority, 2017). Features of the SmartPORT will aid the logistics operators and users to access real-time traffic information from the port. Information such as available parking slots, traffic jams and travel time will help users deduce the fastest and most efficient route and mode of transport to deliver the cargos to their assigned destination (Hamburg Port Authority, 2017). The experiences from Hamburg is therefore with high applicability to Hong Kong.

_Amsterdam, the Netherlands - Development of Schiphol SmartGate Cargo_

4.3.2.4. The Schiphol SmartGate Cargo (SSGC) is an international collaborative project in the aviation security pioneered in Amsterdam. Involved in the project are the airport authority, customs office and different cargo airlines (SSGC, 2016). One of its schemes to address security issues is off-site remote sensing wherein cargos are screened in the premises of the freight forwarders before departing for the airport. Scanned images are then sent to the Customs office for analysis. Another scheme is the establishment of a Joint-Inspection Centre (JIC) within airport facility to serve the SMEs that do not have the capital means to invest in screening equipment for remote sensing (DailyCargo, 2015). This international experience is applicable to create an even playing
field in Hong Kong.

4.3.3. Lessons to Hong Kong

4.3.3.1. Positioning itself as a global logistics hub, Singapore sets a good reference for Hong Kong regarding institutional support on education programs for supply chain and logistics industry, to maintain quality labour supply and draw young entrants as professionals. Although there are various education programmes provided, Hong Kong lacks a leading institution or government agency to consolidate and set out a comprehensive education programs in the logistics industry.

4.3.3.2. The international cases underpin the importance of using technology to maximise operational efficiency and address current and future challenges. Similar to the LITR of Singapore, Hong Kong government should increase its support in developing next-generation technologies for logistics industry. For KTCT, it would be beneficial to make use of a real-time traffic application that is accessible to all port stakeholders, like the SmartPORT. This will minimise traffic congestion and maximise space efficiency around the port. For HKIA, adopting a dual screening approach (off-site remote sensing and JIC) will also improve the efficiency of air cargo movement without compromising security. Lastly, implementing these technologies will require collaboration between different stakeholders. To realise such collaboration, an integrated policy, a more proactive government and a more willing private sector is necessary.
5. Making It happen: Vision and Recommendations

5.1. Vision

5.1.1. The study team proposes “Shaping Hong Kong into a Global Centre of High-Value Logistics Services” as the vision statement for planning Hong Kong as a sustainable, efficient and competitive logistics hub.

5.1.2. We decided to concentrate on high value services due to the trends and demands from various branches of logistics. In air logistics, goods are characterised by high value, time sensitive and in some cases environmentally (temperature) sensitive. As Hong Kong has a strong airport, concentrating on high value will help maintain its edge. From the sea logistics point of view, providing professional maritime services and other value adding services will help counter the dwindling volume levels of maritime cargo. As nearby ports grow, one of the key niches Hong Kong can exploit is its many years of experience and professional expertise. Hong Kong is position to give advice and ideas to shippers and others in the industry. As for land logistics, we have the opportunity to further develop reverse logistics and urban consolidation centres, further improving the efficiency of goods handling across the territory and cater the needs of up-surge of e-commerce.

5.1.3. After deliberating on the studies and interviews, we have found that the issues arising, concern four major areas of policy making. As a result, these four areas were determined to cover these issues and the strategies involved to counter them - 1. Supporting Infrastructure; 2. Comprehensive Planning; 3. Human Capital and Technology; and 4. Inter-/Intra-City Collaboration.

5.1.4. Supporting Infrastructure refers to the linkages and ancillary facilities needed to support the overall logistics industry. Comprehensive Planning refers to the territorial strategic plans made to improve the logistics industry. Human Capital and Technology covers the labour supply and technological abilities of the economy to sustain the industry. Finally, Inter-/Intra-City Collaboration refers to the coordination between various governmental bodies to streamline their strategic plans.

5.1.5. These strategies came together to form the current vision regarding the HKSAR government's plan “HK2030+”. Building Block 2 in the plan refers to “Embracing New Economic Challenges and Opportunities”. Our Vision was designed specifically with current government plans in mind to ensure our strategies were in line with current trends and relevant to Hong Kong’s developmental direction.
5.1.6. The vision “Shaping Hong Kong into a Global Centre of High-Value Logistics Services” refers to the key challenges of Hong Kong and the study team’s proposed response to the changing environment. With an industry under threat from competition and the limitations of supply in manpower and land, Hong Kong has to turn to a different market niche. The study team believes that a better way forward for Hong Kong is for it to pursue the target of higher efficiency and to be able to provide better services to its competitors, saving time and cost to clients across the globe. The study team has also decided to make good use of Hong Kong’s lead in air logistics and to expand on its success. With its focus on high-value goods, Hong Kong can complement the growing demand for more efficient logistics services.

5.2. Planning Strategies

5.2.1. Provide Supporting Infrastructure to Facilitate Seamless Operation

5.2.1.1. Infrastructural support is not only vital to the daily operations but also the overall development of logistics industry. In view of one of the five proposed planning aspects - “adequate and timely provision of supporting infrastructure” from “HK2030+”’s “Building Block 2 – Embracing New Economic Challenges and Opportunities” (Development Bureau, 2016a), the strategy of providing supporting infrastructure to facilitate seamless operation of the logistics activities is proposed.

5.2.1.2. The proposed strategy involves developing a comprehensive physical transportation network by constructing adequate highways and major trunks road and improving our mass transit system to rationalise existing and potential traffic movement. Besides that, the proposed strategy also involves constructing and developing necessary and specialised logistics supporting facilities to provision a comprehensive foundation to accommodate the specific needs of the logistics industry for it to operate, to develop, and to thrive. Details of the proposed action plans will be discussed in detail in Section 5.3 and 5.4.

- Constructing highways and major trunk roads linking our logistics facilities with important infrastructures and the urban core
- Developing mass transit system along the future logistics clusters
- Constructing accessible Urban Consolidation Center (UCC) for relevant stakeholders
- Constructing specialised cargo facilities near airport (cold chain and e-commerce cargo centre)
- Constructing auxiliary facilities near newly planned boundary control point
- Building security screening facilities on the HKIA Island and the BCF Island
- Constructing Modern Integrated Logistics Centres
5.2.2. **Develop a Logistics-Based Comprehensive Planning**

5.2.2.1. Taking "Building Block 2 – Embracing New Economic Challenges and Opportunities" from "HK2030+" into account, the mentioned planning strategy is developed to echo one of the five proposed planning aspects - “adequate supply of land and space for addressing existing shortfalls and future demand of economic land use” (Development Bureau, 2016). Being the major driving force of and one of the four pillar industries in the Hong Kong’s economy, logistics industry faces the challenge of a decreasing vacancy rate (i.e. vacancy rates of private flatted factories, private industrial or office, and private storage decrease from 10.6 percent to 5 percent, 14.8 percent to 6.8 percent, and 5.9 percent to 4.2 percent during the period of 2003-2015 respectively) (Development Bureau, 2016). To support the re-industrialisation initiative proposed by the government, it is of utmost importance to identify and provide potential logistics land and space to address the shortfalls and meet the future demand for modern logistics and warehousing. With the following action plans, it is expected that upgrade of current logistics operation could be facilitated and sustainable growth of logistics development could be ensured. Details of the proposed action plans will be discussed in detail in Section 5.3 and 5.4.

- Developing a Logistics Park
- Introducing monger term tenancy for land lease around the port
- Shaping an International Maritime Centre

5.2.3 **Strengthen Human Capital and Technology**

5.2.3.1. Echoing three of the planning aspects in Building Block 2 of "HK2030+" (Development Bureau, 2016a), "a diversity of economic sectors and quality jobs of a range of skills", "innovation, technology and collaboration" and "sufficient and suitable human capital", strengthening human capital and technology is proposed as one of the strategies to embrace challenges and opportunities in the logistics industry. In facing the constant decline in labour supply and rising trend of technological adoption and automation, the following action plans are expected to equip logistics operators with better technologies in operation and cargo handling, as well as to improve current training programs and supporting facilities to provide a supply of quality human capital to the industry. Details of the proposed action plans will be discussed in detail in Section 5.3 and 5.4.

- Expanding Logistics and SCM R&D Centre
- Providing funding for SMEs to employ automation in operation
- Upgrading the cargo handling facilities in the PCWA

5.2.4. **Enhance Intra- and Inter-City Collaboration**

5.2.4.1. The strategy to improve intra- and inter-city collaboration involves several supporting policies
and physical infrastructure to strengthen cooperation between different stakeholders in Hong Kong and the PRD region. The study team recognises that both physical connectivity and diplomatic relations and soft infrastructures such as agreements and joint-policies are important to ensure the holistic development of the industry. Additionally, this was not saliently discussed in the HK2030+ and thus, is a value-added proposal from the study team.

5.2.4.2. Intra-city collaboration mainly involves the establishment of a leading authority with executive powers for logistics in Hong Kong. Among its main duties would include formulating policies to address demands from the three modes of logistics and providing a single window of communication to benefit the different stakeholders.

5.2.4.3. Inter-city collaboration aims to foster meaningful interactions between Hong Kong and PRD cities such as Shenzhen and Macau. This can be achieved by means such as encouraging proactive participation in the Guangdong Pilot Free Trade Zone (GDFTZ) and smoothening cargo movements in cross-boundary points. Details of the proposed action plans will be discussed in detail in Section 5.3. and 5.4.

- Adopting a collaborative approach to logistics planning with other neighbouring cities
- Developing an integrated policy for holistic technology upgrade of logistics operators
- Establishing a leading authority with executive power to sustain the industry growth
### 5.2.5 Overview of Vision and Recommendations

![Figure 5.1 Overview of Vision and Recommendations](image)

5.2.5.1. Guided by the overarching vision, four planning strategies are laid out to develop an integrated logistics planning (Figure 5.1). The 16 action plans encapsulated within the strategies are incorporated into Action Areas and Supporting Policies (Table 5.1). Details regarding the action plans will then be explained in Section 5.3 Action Areas and Section 5.4 Support Policies.

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Action Plans</th>
<th>Action Areas / Others</th>
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<tbody>
<tr>
<td>1. Provide Supporting Infrastructure to Facilitate Seamless Operation</td>
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<td>Supporting Policies</td>
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<td>• Developing mass transit system along the proposed logistics corridor and clusters</td>
<td>Supporting Policies</td>
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<td>• Providing longer-term tenancy for land lease around the port</td>
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<td></td>
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<td></td>
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<td></td>
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<td>• Constructing specialised cargo facilities on HKIA and HKSPC Island</td>
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<td></td>
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Table 5.1: Strategies and Action Plans
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<th>2. Develop a Logistics-Based Comprehensive Planning</th>
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<tr>
<td>• Developing a Logistics Park</td>
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<td>Logistics Corridor</td>
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<td>• Introducing longer term tenancy for land lease around the port</td>
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<tr>
<td>Kwai Tsing Logistics Cluster</td>
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<tr>
<td>• Shaping an International Maritime Centre</td>
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<td>Kwai Tsing Logistics Corridor</td>
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<td>Kwai Tsing Logistics</td>
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<tr>
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<td>-----------------------------------------------</td>
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<td>• Establishing a leading authority with executive power to sustain the industry growth</td>
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*Table 5.1 Overview of Strategies, Action Plans and Action Areas*
5.3. **Action Areas**

5.3.1. **Strategic Spatial Layout**

5.3.1.1. In order to actualise the aforementioned planning strategies, a strategic spatial layout with one Logistics Corridor and two Logistics Clusters (i.e. Tuen Mun-Lantau Logistics Cluster and Kwai Tsing Logistics Cluster) is formulated (Figure 5.2), which echoes the conceptual spatial framework of "HK2030+".

5.3.1.2. In respect of "Northern Economic Belt" and "Western Economic Corridor", one Logistics Corridor is recommended to capture the advantages of strategic locations for being in close proximity to Shenzhen, potential high technology zone and future strategic infrastructures. In addition, one of the key strategic growth areas (i.e. New Territories North) is incorporated into the Logistics Corridor to provide a significant number of employment opportunities to support continuous and sustainable logistics as well as economic growth of Hong Kong. Detailed discussion will be given in Section 5.3.2.

5.3.1.3. In regard to "Western Economic Corridor", Tuen Mun-Lantau Logistics Cluster is introduced to take advantage of being an international and regional gateway to the world supported by the future strategic transport linkages and infrastructures. For instances, the expected Hong Kong International Airport Third-runway System, North Commercial District on Airport Island, Hong Kong...
Kong-Zhuhai-Macao Bridge, topside commercial development at the Hong Kong Boundary Crossing Facilities Island, Tung Chung New Town Extension and the planned logistics developments in Tuen Mun West provide great potential for high-valued logistics services development in Hong Kong (Development Bureau, 2016a). With the close proximity to and support of these strategic network and infrastructures, the proposed Tuen Mun-Lantau Logistics Cluster is compatible with the surrounding land uses with minimal environmental and traffic impacts to residential areas. Detailed explanations will be given in Section 5.3.3.

5.3.1.4. In response to “One Metropolitan Business Core” and existing logistics facilities (i.e. Hong Kong International Airport and Kwai Tsing Container Terminals), Kwai Tsing Logistics Cluster is suggested to gain the existing and potential advantage of strategic locations for being in close proximity to urban core and existing logistics facilities. Detailed examination will be given in Section 5.3.4.

5.3.1.5. The proposed strategic spatial layout aims to cope with the imbalance in spatial distribution of population and employment opportunities and ultimately to promote the sustainable socio-economic development of Hong Kong. At present, the non-metro area shares 41.2 percent of total population in Hong Kong, but there is only 23.8 percent of total employment opportunities, resulting in a spatial mismatch between working population and job opportunities (Development Bureau, 2016). With the introduction of the strategic spatial layout, it is anticipated more job opportunities will be created to connect the part of the working population back to the employment opportunities, and eventually to internalise the externalities resulted from imbalance in spatial distribution of working population and employment opportunities, promoting sustainable development not just in logistics industry but also in the overall Hong Kong.
5.3.2. **Logistics Corridor**

![Figure 5.3 Spatial Layout of Logistics Corridor](image)

5.3.2.1. The logistics corridor is located in the North-West of Hong Kong, with well-connected sites along the axis. The corridor is identified for its potential to embrace issues brought by the global shift of trading activities and industry development.

**Global Shift of Trading Activities - Emergence of China**

5.3.2.2. Acknowledging the shift of global activities and economic momentum to Asia, China has amended policy terms to favour investments and trades in particular. Export-oriented industries are the major economic mode in the PRD region (Sit, 1991). As Hong Kong imports goods from China meanwhile re-export goods to international cities, there is an increasing cross-boundary movements using existing and proposed control points. The shortage of developed land near the boundary in supporting the rapid activities also pushes forward the investigation of potential sites in North-West Hong Kong.

**Industry Development**

5.3.2.3. To allow sustainable growth of the logistics industry, a balanced ecosystem among different scales of operators is important. In particular, the government has started to adopt more proactive approach in recent years to support the SMEs as they contribute 98% of the total...
establishment (Census and Statistics Department, 2015). Sites across Logistics Corridor could potentially provide potential developed land for industry growth to facilitate operation expansion.

**Action One – Developing a logistics park**

**Background**

5.3.2.4. Noted that there is a rise in rental and selling price for flatted factories due to less vacant industrial buildings available in the market (Rating and Value Department, 2017), the government’s involvement to allow health industry development is necessary. The scarce land supply and high rental price have become obstacles in business expansion especially for the SMEs which possess less capital and investment flexibility.

5.3.2.5. Moreover, a small-scale local value-added company stated that they “prefer buying instead of renting a premise to secure the long-term investments”. The short period lease contract limited the spatial function, efficiency of operation and expansion potential. To allow higher degree of the government involvement, developing a Logistics Park in Hung Hsui Kiu NDA is one of the possible solutions. A management authority could be established in the Logistics Park to handle both unit/floor and land applications.

**The proposal**

5.3.2.6. Hung Shui Kiu (HSK) NDA is selected for the construction of logistics park with reference to the government planning and engineering study. A 37ha site in the Logistics, Enterprise and Technology Quarter was already reserved for logistics facilities development where 24ha is dedicated for modern logistics facilities, and port back-up, storage and workshop uses (Planning Department and Civil Engineering and Development Department, 2016). The site area is capable to tackle the warehousing and operations challenges mentioned in Section 2.5.2, especially for the development of modern logistics facilities, provision of affordable warehouses and Government contribution in land management and controls.

5.3.2.7. With the completion of Hong Kong-Zhuhai-Macau Bridge, Tuen Mun - Chek Lap Kok Link, and the proposed Tuen Mun western Bypass and Kong Sham Western Highway, HSK NDA will become a strategic location in Northwest New Territories (Planning Department and Civil Engineering and Development Department, 2016). Its close proximity to Shenzhen, Lantau and Greater Pearl River Delta particularly attracts operators specialised in providing cross-boundary services or reverse logistics.

5.3.2.8. Despite the existing population in HSK, the residents population is expected to grow with the comprehensive planning of NDA. Noted that 176,000 new population, 218,000 residents in total, are expected to move in the new town upon full development, the logistics sectors will contribute
to the 150,000 new overall employment of the NDA. Jobs opportunities is not limited to residents in HSK but also Tin Shui Wai, Tuen Mun and Yuen Long (Planning Department and Civil Engineering and Development Department, 2016).

5.3.2.9. Given the planned logistics-use land supply, local labor supply and well-developed connection, HKS NDA is identified as a potential site to construct a Logistics Park to support all modes of logistics.

5.3.2.10. The Logistics Park is proposed to be government-owned site that provides two types of space: (1) Government Facilities and (2) Developed sizable land operate under application mode. Government facilities will be constructed and released to operators for unit or floor rental. Short lease term will be adopted in developed land application cases to provide more affordable land to operators and allow management flexibility.

Establishment of a Management Authority

5.3.2.11. With reference to the introduction of Hong Kong Science and Technology Parks Corporation (HKSTPC), an authority for Logistics Park would be established to serve as a manager, developer and landlord. Since the two types of space are both leased under application mode, the authority has to screen the application and make leasing decision based on the overall industry performance in Hong Kong. The authority would also consider the applicants’ operation nature, role in the industry and development potential. This application-driven model was adopted in the Science Park to ensure applicant’s contribution to the industry development.

5.3.2.12. As part of the Logistics Park also provides developed facilities for unit or floor rental, the authority has development right to build facilities according to market needs and manage the operations after completion. Taking HKSTPC and Jurong Town Corporation (JTC) of Singapore as examples, the authority develops and manages part of the land in Logistics Park and lease the unit or floor through public tenders. Similar to the Science Park, the rental price is set to market price but subsidies will be given to targeted groups that are believed to benefit the development of logistics industry. In this case, the authority is responsible to establish subsidy programs and assess applications. After all, the authority reviews the operation of Logistics Park and revises the policy on yearly basis.

Type 1- Lease of Government Facilities

5.3.2.13. As many of the interviewed SMEs found the rising rental price of industrial buildings unaffordable, the government-built facilities could serve as an alternative with subsidies given to tenants through different programs like the Incubation Program, TechnoPreneur Partnership Program (TPP) and Leading Enterprises Acceleration Program (LEAP) in Science Park.
The admission requirements will be assessed with a list of criteria that allow maximum benefits to both the applicants and the industry.

Type 2- Lease of Developed Land

5.3.2.14. Similarly, application mode is also adopted in the lease of developed land for specific facilities construction like the operation in Industrial Estate. SMEs that aim to expand or in the progress of expansion are the targets of developed land lease program. With the provision of sizable site, around 3.5 to 6 ha each, operators with specific spatial requirement can be constructed and operated in optimal efficiency. Referencing to the 30-year lease term adopted in some of the Government owned land in Singapore, the developed land in Logistics Park will also consider the 30-year leasehold term to allow affordable investment and flexibility for the Authority to revise applications.

Implication of Action Plan

5.3.2.15. Throughout the development and operation of Logistics Park, freight forwarder and SMEs will be highly benefited from the alternative site available whereas more job opportunities will be created in the HSK NDA. Higher degree of involvement by the government could promote a more sustainable growth of the industry.

**Action Two – Constructing Auxiliary Facilities near Liantang/Heung Yuen Wai**

**Background**

5.3.2.16. Upon the completion and the commencement of Liantang/Heung Yuen Wai Boundary Control Point, the “East in East Out, West in West Out” movement network between Hong Kong and Shenzhen will be formed and established. The Liantang/Heung Yuen Wai Boundary Control Point will become the main boundary control point that serves the cross-boundary freight transport between Hong Kong, Shenzhen and even the eastern coastal PRD Region. As a result, the volume of cross-boundary traffic and freight movement that are currently taking place at the Lok Ma Chau Boundary Control Point are expected to shift further east to the Liantang/Heung Yuen Wai Boundary Control Point in accordance to proposed “East In East Out, West In West Out” movement network.

5.3.2.17. As Heung Yuen Wai will become the major boundary crossing for freight transport vehicles in the Eastern New Territories, an increasing demand for logistics auxiliary facilities is foreseeable in order to accommodate and serve the land-based logistics operations that will be using the Boundary Control Point. In view of that, the action plan of locating the auxiliary facilities in the proposed Ping Che/Ta Kwu Ling NDA that is adjacent to the proposed LT/HYW Boundary Control Point is, therefore, proposed with the objective of accommodating and supporting the expected shift of cross-boundary freight transport from Lok Ma Chau Boundary Control Point to
LT/HYW Boundary Control Point and facilitating it into an efficient and attractive Control Point for logistics operations.

The Proposal

5.3.2.18. The action plan of constructing auxiliary facilities in the Ping Che/Ta Kwu Ling NDA is proposed for several strategic reasons. First, potential sites for logistics related use are available in the Ping Che/Ta Kwu Ling NDA. Although the PC/TKL NDA is currently proposed in the HK 2030+ to site science and technology park and facilities, the PC/TKL NDA indeed lacks the strategic locational advantage of hosting such developments. As Liantang/Heung Yuen Wai is sought to become the busiest boundary control point mainly for freights movement, upon its completion, locating science and technology park and facilities in close proximity to such busy control point might potentially cause adverse traffic, social impacts, and even conflicts in usage. Besides that, PC/TKL, despite locating adjacent to the boundary, is indeed located far away from the Nanshan District which is the future technology hub of Shenzhen. Therefore, synergy and agglomeration effects of locating the science and technology facilities in PC/TKL NDA remains enormously uncertain.

5.3.2.19. The PC/TKL NDA was, indeed, originally identified and proposed to provide potential “reception area” for the existing open storage rural industrial land uses located in KT/TN/FLN NDAs (Town Planning Board, 2003). Moreover, the PC/TKL NDA, according to the Development Bureau, will also provide land to meet the territorial demand for open storage and rural industrial uses. According to the existing PC/TKL Outline Zoning Plan, there are currently a total of 124 ha of land are zoned “open storage” while 14.6 hectares are zoned “Industrial (Group D)” to provide sites for industrial uses with special requirements and encourage the redevelopment of existing open storage and informal industrial developments into properly-designed industrial buildings in the Ping Che/Ta Kwu Ling Planning Area (Town Planning Board, 2003). There is potential to develop modern logistics auxiliary facilities in the PC/TKL NDA.

5.3.2.20. Secondly, the NDA embraces the strategic locational advantage of being located proximate to the proposed Liantang/Heung Yuen Wai Boundary Control Point. The NDA will be connected by road system, for example Sha Tau Kok Road and Route 9, making it accessible to goods vehicles from other parts of the urban area. Besides the Ping Che Road, an existing major transport corridor, another connecting road will be constructed from the NDA to the proposed Liantang/Heung Yuen Wai Boundary Control Point, which will provide convenient connection from the NDA to the proposed boundary control point.

5.3.2.21. The auxiliary facilities, such a consolidating center, storage warehousing and car-repairing
facilities, as currently seen in Lok Ma Chau is proposed to be shift and relocate to Heung Yuen Wai in support of the expected increase in cross-boundary freight activities using the proposed control points. The purpose of these auxiliary facilitate is mainly to support the land logistics cross boundary movement, for example, the trucks using the proposed control point. To limit the potential environmental, social, and traffic impacts to the nearby residents and to the future NDA uses, the proposed consolidating center and short term storage for exporting and importing purposes, container storage, and car repairing facilities in a more efficient in terms of land and spatial usage, building structure and operational means. The aforementioned activities shall take place in higher density permanent structures in order to maximize efficiency and minimize adverse impacts to surroundings and residents.

Implication of the action plan

5.3.2.22. With the proposed action plan being implemented, it is expected that the needs of the land based SMEs logistics operators, especially the cross-boundary freight transport and trucking operations, will be satisfied in a proximal location to the proposed boundary control point, which in turn improves the efficiency of cross-boundary freight movement. From the strategic planning perspective, these auxiliary facilities shall also generate ample of employment opportunities for not only the PC/TKL NDA but the entire New Territories as well. Moreover, the proposed action of relocating the auxiliary facilities in Lok Ma Chau to the PC/TKL NDA shall free up valuable land in Lok Ma Chau to allow more efficient and high value land use to accommodate the development of the R&D uses and the development of the Lok Ma Chau Loop.

Action Plan 3 - Expanding the Facility of LSCM R&D Center

Background

5.3.2.23. As previously mentioned in Section 4.4, the existing R&D center has developed quite a few technologies, mainly concerning RFID-based, supply chain security and location technologies. However, the center currently lacks development of next generation technology. In order to accommodate large-scale automation, robotics, IoT and transport modelling R&D and testing, facility expansion of the R&D center for logistics and supply chain management is necessary. Currently, the existing center is at the Telegraph Bay in Cyberport where possible expansion is constrained by the adjacent residential, hotel and park developments. Owing to these spatial constraints, it is important to identify a more suitable site for the expansion with two considerations.

The Proposal

5.3.2.24. The first consideration is that the site for expansion should be proximately located to the main logistics facilities and auxiliary facilities with high connectivity to major highways and infrastructure. The second consideration is that the site should have a sizable area to to meet
the requirements of the large-scale technological R&D and testing. There are two sites proposed by the government for logistics use that meet these two considerations, namely the Hong Kong/Shenzhen Innovation and Technology Park in the Lok Ma Chau Loop and the Enterprise and Technology Park in HSK-ND. However, the former has the advantage in both location and site area. The said park will have an approximate area of more than 80 Has, around 4 times more than the respective site areas of Cyberport and HKSTP.

Implication of the action plan

5.3.2.25. This large area will enable the development of autonomous vehicles, truck platooning and warehouse drones and other automated technologies. Furthermore, this area will increase the centre’s synergy to the nearby CBP’s, NDA’s, HKIA via the TM-CLKL and KTCT. Lastly, it has the advantage of being proximal to Shenzhen, which can foster future technological collaboration between the two cities. Ultimately, the goal of this expansion is to enhance the competitiveness of Hong Kong through technological advancement. The completion of this facility expansion shall strengthen the function of the logistics corridor in providing supporting facilities for the industry (Refer to Figure 5.3). Furthermore, this expansion may also provide a setting for technology-based companies to develop related technologies and for logistics technology transfer and training to the SMEs (Refer to Section 5.4.2).
5.3.3. Tuen Mun-Lantau Logistics Cluster

Figure 5.4 Spatial Layout of Tuen Mun-Lantau Logistics Cluster

5.3.3.1. HKIA has been regarded as the most efficient cargo handling airport in the world (HKIA, 2015). The high handling efficiency relies mainly on the provision of infrastructures such as air cargo terminals. Tuen Mun-Lantau Logistics Cluster is proposed to provide spatial planning strategies to accommodate the future expansion of HKIA and rising demand for high value-added logistics services.

5.3.3.2. The 3RS project was commenced in 2016 to provide a third runway system. The cargo handling capacity of HKIA is expected to reach 8.9 million tonnes of throughput by 2030 which is a double to the current figure (i.e. 4.38 million tonnes of throughput in 2015) (HKIA, 2017b). Currently, the four existing cargo terminals namely Hactl, CPCT, AAT and DHL Central Asia Hub have a total designed capacity of 7.4 million tonnes per annum (HKIA, 2011a). Therefore, additional logistics facilities are required to support the growing number of cargo throughput in the future.

5.3.3.3. Due to the fast growth in manufacturing of high-valued products and time-sensitive shipping, air freight has been regarded as the preferred mode of transport in providing high value-added logistics services as it offers fastest possible delivery time (HKIA, 2011a). The spatial
arrangement could minimize the travelling time between airport, logistics facilities and warehouses. The arrangement is believed to be a key factor to echo the government’s objective in promoting HKIA in capturing the high value-added services (Office of the Chief Executive Hong Kong, 2017).

With the increase in expected air cargo throughout and the increasing demand for high value-added logistics services, Tuen Mun-Lantau Logistics Cluster is identified as a strategic location to provide potential land supply to create capacity for high value-added logistics development. Details will be elaborated in the following Sections.

Action Plan 1 - Constructing specialised cargo facilities in HKIA and the HKBCF Island

Background

5.3.3.4. As mentioned in Section 2.5.2., there is a lack of provision of specialised cargo handling facilities in response to the growing high value-added service market. The government has also emphasised the importance of increasing the capacity of HKIA to support the growth of high value-added air cargo business to enhance the competitive edge of HKIA (Office of the Chief Executive, 2017). With the establishment of HZMB in the coming future, the cargo catchment area of Hong Kong will be expanded to attract companies in the inland or western part of China to choose Hong Kong as the gateway for export. As a result, suitable sites proximal to the HKIA should be identified to accommodate specialised cargo facilities to strengthen the logistics industry’s development in the area.

The Proposal

5.3.3.4. A cold chain facilities can provide different climate zones and real-time temperature monitoring to suit with different handling requirements of cargos such as pharmaceuticals and perishables (FedEx, 2017). It allows a seamless delivery of temperature-sensitive products. The achievement of awarding “IATA CEIV Pharma Recognised Airport” demonstrates that the airlines, handlers and forwarders in HKIA can adapt to global standard for transporting pharmaceuticals. This is essential for attracting international pharmaceutical companies to export their products via HKIA. The cold chain facilities are suggested to be built in the Southern Cargo Precinct of HKIA, where sizable vacant sites are reserved for additional development (HKIA, 2011a). Designated for temperature-sensitive cargoes, the facilities are required to provide professional 24-7 temperature, CO2 and humidity monitoring, consolidation, verification, as well as security checking for the products before delivering to their destinations. These functions could be effectively supported by the existing infrastructure and ancillary services such as cargo terminal area road network and ground support equipment maintenance services in HKIA. In case of unforeseen delays because of clearance, the temperature-sensitive cargoes could be temporarily stored and monitored in the facility.
5.3.3.5. High value-added products such as wine, artwork, antiques and e-commerce parcels require specialised logistics services. Related logistics facilities such as warehouses could be provided in the Topside Development at Hong Kong Boundary Crossing Facilities Island (HKBCF Island), which is identified as a strategic location for development of high value-added logistics markets (Civil Engineering and Development Department and Planning Department, 2015). Supported by the major transport infrastructure such as HZMB and HKIA, HKBCF Island enjoys regional and international connectivity which allows just-in-time delivery and rapid transhipment. A sizable area has been reserved for logistics operations, which is recommended to support the development of specialised logistics services near HKIA.

Implication of the action plan

5.3.3.6. The construction of specialised cargo facilities could increase the overall handling capacity of HKIA for expanding into the high value-added logistics business. For cargo terminal operators, high technology-related costs may be required to provide the special logistics services. For instance, temperature-control handling solutions are essential for operating a state-of-the-art cold chain facility. Generally, the specialised cargo facilities could allow terminal operators to expand their businesses into niche market, which enhances their regional competitiveness. For ground handlers and freight forwarders, more job and business opportunities could be generated. Locating adjacent to the existing terminals, these specialised cargo facilities could reinforce the clustering effect of cargo handling facilities, which raises the operational efficiency of freight forwarders and truck drivers (HKIA, 2011b).

Action Plan 2 - Building security screening facilities

Background

5.3.3.7. As mentioned in Part 2, air logistics faces the challenge of tightening security requirement set by ICAO in response to the threat of terrorism. Upon the enforcement of the new security requirement, full screening will be applied to all unknown consignors (i.e. Consignors who fail the validation carried out by Civil Aviation Department (CAD) (CAD, 2013a). Subsequently, extra handling and clearance procedures are imposed which reduce the overall efficiency. Noticeably, the new security standard will raise uncertainties to current efficient procedure of cargo clearance, hindering the effectiveness in capturing the expected increase in cargo throughput in the future. To minimize the impact of tightening screening regulations on cargo handling efficiency, an integrated security screening method should be adopted to cater for the needs of different logistics operators.

Constructing a centralised cargo screening facility in the Southern Cargo Precinct on HKIA

5.3.3.8. As mentioned in the Hong Kong International Airport Master Plan 2030, land in the Southern
Cargo Precinct has been reserved in response to “a market dynamics that might impact operating efficiency” (HKIA, 2011a:99). Physically, the land in the Southern Cargo Precinct is divided into sizable and rectangular shape, which is favourable for the construction of the centralised cargo screening facility. The existing cargo terminals in the Southern Cargo Precinct were not constructed to prepare for large numbers of full screening procedures, building a security screening facility adjacent to the existing cargo terminals could be important to ensure cargoes to be screened, palletized and delivered to flights immediately. Within the facility, enforcement and inspection officers from CAD will oversee the security checks. As the stringent security requirement will be implemented by 2021 (CAD, 2013b). The centralised cargo screening facility should be constructed in advance to minimize the possible impact on cargo clearance procedure.

Providing off-site screening to support the operation of the centralised facility

5.3.3.9. The completion of HZMB will expand the catchment area of HKIA to the PRD regions, which could draw in more possible freight forwarders to HKIA. A centralized screening facility might not have the enough capacity to cater all full screening to cargoes of all unknown consignors. As a result, adopting remote scanning technology in the warehouses of freight forwarders could allow cargoes to be scanned and inspected before entering HKIA. Also, an off-site screening facility could be considered be installed at the HKBCF Island in case of the handling capacity of the centralised screening facility reaching its maximum capacity. As the major function of the HKBCF Island is proposed for security clearance and customs control (Civil Engineering and Development Department and Planning Department, 2015), constructing a screening facility could make good use of its strategic location and is in line with the development direction of the HKBCF Island. However, the exact number of unknown consignors requires an in-depth estimation to understand the number of screening facilities required. Further studies on the impact of tightening security requirement could be conducted to understand the possible number of cargoes requiring full screening, thus facilitating the implementation of an integrated cargo screening scheme.

Implication of the action plan

5.3.3.10. The construction of security screening facilities allows efficient and prompt cargo screening procedure for freight forwarders of all scale. For instance, the installation of remote scanning technology in the warehouses can facilitate large-scale freight forwarders to internalise the operation costs of screening. Complemented by remote scanning technology, the centralized screening facility serves as a possible choice for SMEs that are without the capacity to adopt remote scanning in their warehouses. As a result, it provides a level playing field to ensure no freight forwarders should bear extra impact from the tightening screening regulation.
Action Plan 3 - Constructing Modern Integrated Logistics Centres

Background

5.3.3.11. With the changing market situation and the rising trends of e-commerce, there is a need to provide adequate space and modern facilities for the private sector to cope with and to operate. This includes facilities for freight forwarders to engage in efficient value added services. The use of these facilities will be for packaging, storage and inventory management.

The Proposal

5.3.3.12. It is proposed that the said logistics centres can be built in Tuen Mun West and Siu Ho Wan Area as both of the said areas enjoy the strategic geographical advantage of being close to the HKIA and Boundary Control Points in Shenzhen Bay and the HZMB. Their proximity will allow smooth freight transition from the airport to different parts of the PRD and vice versa.

5.3.3.13. Both areas are also well connected and supported by extensive road networks. Tuen Mun West is served by the Tuen Mun Road (part of Route 9). Siu Ho Wan Area is being served by the North Lantau Highway (Route 8). This makes the areas easily accessible from urban core to boundary regions. The Tuen Mun - Chek Lap Kok Link, upon completion, will provide a direct linkage to the HKIA and BCF Island for the logistics centres, positioning strategic location as the nodes of cargo delivery.

5.3.3.14. Moreover, potential land available in Tuen Mun West (60 Ha) implies that larger lots for lease or sale are available. These include Area 38 – 6.5 hectares, Area 49 – 3.5 hectares, Area 40, 46 and the vicinity about 50 hectares (Legislative Council Secretariat, 2015). In Siu Ho Wan, 72 hectares is available through reclamation (the government originally planned to acquire 100-150 hectares of land through reclamation, however, the scale of reclamation was dropped to 72 hectares to avoid causing adverse environmental impacts to the existing habitat, especially the Chinese White Dolphins.

5.3.3.15. As a result of the above, Tuen Mun West will be our priority development area. This is due to three reasons. The first is the adequate site available for development already, since the proposed modern integrated logistics centres do not require large amount of land. The second reason is a compatibility with the surrounding land use (the closest residential development in Tuen Mun West is about 2.5 KM away from the available sites). Third reasons is to avoid adverse impact to habitat in Siu Ho Wan.

5.3.3.16. One point to take note of is the development potential of the sites in Tuen Mun. The plot ratio for Area 38 and 49 is 2.5 while the plot ratio for Area 40 and 46 and the surrounding areas is proposed to be 4. There may also be a potential increase in the plot ratio.
Implication of the action plan

5.3.3.17. The outcome of this policy will be to attract professional third party logistics and regional distribution services to the area. This will be achieved by providing them with adequate space and modern facilities for operation. Providing more space can also increase the flexibility of business and allows them to make quick responses to the changing market situation.

5.3.4. Kwai Tsing Logistics Cluster

Figure 5.5 Spatial Layout of Kwai Tsing Logistics Cluster

5.3.4.1. Kwai Tsing Container Terminal has been regarded as one of the major sea transport hub in the world and ranked as the 5th busiest port. In spite of the decreasing annual cargo throughput and declining status indicated from the rank drop, it is believed that there could be still a promising future in developing a sustainable logistics industry for Hong Kong grounded by its advantage as a “catch up port” and further actions taken on the enhancement and flexibility of transformation. Kwai Tsing Logistics Cluster is proposed to provide spatial planning strategies to strengthen the port as the regional logistics hub and accommodate the future development of KTCT.
5.3.4.2. KTCT remains as a popular port for regional transhipment. For the cross-boundary transportation, there is increasing barge transportation of goods between the inner China and the ocean transhipment as the rising opportunity marked in the Transport and Distribution. However, the current provision of river berths and yard areas in KTCT is insufficient to catering this need. To strengthen Hong Kong as the regional logistics hub, it is essential to create closer cooperation between seaborne and river freight movement.

5.3.4.3. To ensure the sustainable development of KTCT under numbers of threats and challenges faced in the shipping industry, the government’s support on infrastructure and policy development are substantial. First, to increase Hong Kong’s competitiveness in the maritime logistics, rather than merely relying on current business of transhipment and operation, there is an urgency to redefine the future development goal and take action in gradual transformation. Second, noticing the difficulties facing by the SMEs in the logistics industry, this is remarked as an important target group in the suggestion made in the planning strategies for this cluster. Third, responding to the rising business opportunity from the e-commerce identified in the Section 2.4, there is a need in the provision of relevant last mile delivery and distribution centre to cater its operation in Hong Kong.

**Action Plan 1 - Constructing accessible urban consolidation centre facilities to relevant stakeholders**

**Background**

5.3.4.4. Construction of an urban consolidation centre is to cope with rising trends of e-commerce and cater for the needs of SMEs. As addressed in Section 2.4.1, e-commerce is one of the dominant global trends in logistics industry. It is predicted that there will be increasing orders for overseas goods through different online platform, ranging from clothes, snacks, cooking utilities to other daily necessities. Three of the most distinctive features that these online- purchased goods share are their small sizes, demand for efficient delivery and multiple destinations. The latter feature in fact leads to urban environmental issues because more trucks entering the urban core and the logistics operators have to bear higher logistics costs. Operating urban consolidation centres is not a new strategy in Hong Kong, yet most of the consolidation centres are owned by large logistics operators which could afford constructing and operating their own one. Vice versa, the SMEs could not afford to do so. Therefore, an urban consolidation centre for shared use is needed to facilitate the operation of the SMEs.

**The Proposal**

5.3.4.5. The suggested location of urban consolidation centre is in the south-western part of Tsing Yi Island. It enjoys high proximity to both Hong Kong International Airports and Kwai Tsing Container Terminal where the sources of goods come from. Tsing Yi Island is also farther away...
from the most crowded part of the urban core. It could minimize the traffic burden adding to the urban environment. The urban consolidation centre strategically situated with all these advantages. Besides, south-western part of Tsing Yi was the original proposed site of Terminal 10, which is later cancelled out (CEDD, 2014). It implies that there are available land in south-western part of Tsing Yi. And it can be potentially reserved for constructing urban consolidation centre.

5.3.4.6. The operation of urban consolidation centre does not solely rely on the physical infrastructure, but it requires technological support (i.e. cloud and synchronising services) so that the logistics operators, shippers, receivers, truck drivers and other relevant stakeholders can all be well-informed. Urban consolidation centre requires management by an independent agent or authority because it is a shared facilities among many SMEs. Besides, urban consolidation centres can best perform with in-mall distribution centre. In-mall distribution centres usually take up the basement of shopping mall and act as a warehouses in the urban cores. And it is operated by In-Mall Logistics Operators (IMO) so that the retailers enjoy comprehensive logistics services. Some pre-ordered goods can be delivered to there and further distributed to local dwellers when the online orders are placed. This is also known as urban collaborative logistics.

Implication of the action plan

5.3.4.7. To recall, urban consolidation centre could best address three major features of e-commerce. First feature is the diminishing size of goods. Not only can urban consolidation centre cater the storage of smaller goods, it can also alleviate the demand for modern logistics warehouses such that bulky and larger volume of goods can be handled by modern logistics facilities. The second feature is the demand for efficient delivery. The online customers usually expect a fast delivery of ordered items and their need can be well satisfied with the introduction of in-mall distribution centre. Delivery distance would be much shortened as some of the pre-order goods are already stored in in-mall distribution centre. The third feature is multiple destinations. Urban consolidation centre facilitates the delivery process because goods with similar destinations are grouped together and delivered by sharing trucks. It also contributes to creation of high quality urban environment with less traffic burden. In short, urban consolidation centre benefits the logistics industry by capturing the opportunities and overcoming the challenges brought by e-commerce.

Action Plan 2 - Upgrading the cargo handling facilities in the Stonecutters PCWA

Background

5.3.4.8. As mentioned in the Section 2.5.1, KTCT is facing the challenge of insufficient river berths and yard areas to handle the riverbourne transported cargos. In the Strategic Development Plan for Hong Kong Port 2030 (2014), it suggests there will be growing containerised cargo of 1.5% in
KTCT has long been unable to provide an international standard of container yard to manage the river loads cargos. Understanding that the crane systems available in the terminal berth are not suitable for the loading and unloading of the barges and small vessels. Barges occupying these berths might cause inefficient use of sea berth capacity in handling river cargoes (HKCTOA, 2014). This further surges the port congestion problems under the inefficient handling operations and the growing containerised cargo.

The Proposal

5.3.4.9. The PCWA at Stonecutters Island situated at the side of Terminal 8 is proposed for the integrated operation with the KTCT due to its proximity to the container terminal, providing existing 35,449 square metre of land, including 672m Berth length and 50m Berth width. For land transport, it is well-connected with Ngong Wan Road. Making better use of the existing infrastructure at the Stonecutters Island PCWA is suggested due to the land availability and expansion possibility with the KTCT.

5.3.4.10. The PCWA at Stonecutters Island is recommended to be upgraded with the provision of modern container handling facilities, with supporting facilities and technology easing loading and unloading of containers. Smaller and non-containerised cargoes are targeted to be managed within this area.

Implication of the action plan

5.3.4.11. Through introducing the modern container handling facility to the PCWA at Stonecutters Island, it gives well-functioned handling equipment and efficient storage space. Moreover, 24 hours daily operation is allowed which further increases its capacity and efficiency in handling of river barges of KTCT. By providing barge berths, container yards, supporting facilities and technologies, the area can be utilised for handling smaller and non-containerised cargoes (BMT Asia Pacific, 2014a). Upgrading the technology of the port supporting facilities will ultimately increase their operational reliability and enhance the cooperation with the KTCT to cope with the growth of the sea cargo throughput. SMEs will not be excluded in the management and usage of this upgraded PCWA. With the increasing efficiency, the upgraded PCWA with the support of government could provide better utilisation of facilities and increase profitability for the SME’s operation.

5.3.4.12. In addition, the ultimate goal of the upgrading PCWA will allow seamless connection between the port, river boats and barges transportation. Therefore, the seaborn and river freight movement is facilitated as a less costly alternative choice for land transport. This action will not create competition with the RTT in Tuen Mun while it focuses on handling cargoes for city function and air transhipment. This action is an immediate and efficient move to contribute
towards sustainable development of Hong Kong port.

**Action Plan 3 - Introducing longer term tenancy for land lease around the port**

**Background**

5.3.4.13. In Kwai Tsing district, there is about 100ha of port back-up land which are mostly located near Kwai Tsing Container Terminals and let out under short term tenancy (STT) by the Lands Department. By June 2014, the 49 STTs could be categorised into four major types of uses (Table 5.2) (Transport and Housing Bureau, 2015a). According to the long-established practices, a fixed term of a STT is usually 3 or 5 years followed by a periodic tenancy (usually on a quarterly basis) for land which is compatible with the zoned uses (Transport and Housing Bureau, 2015a).

<table>
<thead>
<tr>
<th>Types of Uses</th>
<th>Terms under STT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fee-paying vehicle park</td>
<td>Fixed term of usually 1 years</td>
</tr>
<tr>
<td>2. Container storage; Cargo handling/ consolidation</td>
<td>Fixed term of usually 3 or 5 years</td>
</tr>
<tr>
<td>3. Multiple uses (e.g. Combination of 1 and 2)</td>
<td>Fixed term of usually 3 years</td>
</tr>
<tr>
<td>4. Ancillary uses (e.g. weighbridge, vehicle repairing, fumigation treatment of container cargoes, trade of receipt and dispatch of delivery orders related to containers transportation, etc.)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Table 5.2 Terms under STT of Different Types of Uses (Source: Transport and Housing Bureau, 2015)*

5.3.4.14. Aside from STT, multiple uses are allowed for some of the port back-up land to provide tenants with greater flexibility in view of the rapid changing market needs. Together with the short duration of term of tenancies, the permitted multiple uses results in unbalanced distribution of port back-up land uses. With regard to the time required for the recovery of investment and operation cost, several types of operations (e.g. vehicle parking) which require the least amount of investment and will give a greater amount of return are largely developed by the tenants. In response to the current situation, refining the land management and control of port back-up land let by STT or with multiple uses permissions is suggested.

**The Proposal**

5.3.4.15. Being in close proximity to the physical port, the 100ha of port back-up land located in Kwai Tsing district are selected to be the pilot area of the suggested longer term tenancy and single use permission to achieve a better utilisation of strategic land and support the efficient operation
of Kwai Tsing Container Terminals.

5.3.4.16. In order to allow adequate time for recovery of investment, a longer term of tenancy from the existing 3 or 5 years to 7 or 10 years where appropriate is suggested to provide more incentives to tenants to develop operations which require higher initial investments and operation costs. Since site formation works are with high monetary and time costs (i.e. the cost of site formation works is up to HKD 2000-HKD 2500 per square meter according to the current operators, and may take numerous months for completion), there will be no revenue generation during that period (Transport and Housing Bureau, 2015a). In some occasions, another heavy amount of capital investment is required for the acquisition of equipment and construction of electricity generator rooms (Transport and Housing Bureau, 2015a). Therefore, a longer term tenancy is recommended to provide tenants with more incentives by making it possible for them to have a better capital investment return with an adequate time for recovery.

5.3.4.17. In addition to the introduction of longer term tenancy, single use permission is suggested to be granted instead of multiple uses in order to cope with the unbalanced allocation of port back-up land uses. Under multiple uses permission, the same site (i.e. under one tenancy) is allowed to have a diversity of uses (i.e. uses listed in Table 5.2, or a combination of these uses) (Transport and Housing Bureau, 2015). In spite of the original planning initiative - allowing flexibility of the sites in response to dynamic market needs, most of these sites ended up being operated as vehicle parking (i.e. with a lower initial investment and operation cost, but a higher profit margin and a relatively quicker investment return) in reality. Therefore, a more explicit and clearer specification of single use permission should be introduced to achieve an optimised usage of limited these land resources with strategic location and a more balanced allocation of port back-up land in Kwai Tsing district to support specific port back-up activities as well as a more efficient operation of Kwai Tsing Container Terminals.

Implication of the action plan

5.3.4.18. With the introduction of longer term tenancy and more explicit specification of single use permission, adequate time of recovery for investment return could be achieved and ultimately a better allocation of port back-up land uses to support the efficient operation of Kwai Tsing Container Terminals is anticipated.

5.3.4.19. The longer duration of term of tenancies could allow potential STT operators to have adequate time of recovery for investment and provide them incentives to operate other uses apart from vehicle parking. On the other hand, cancellation of multiple uses permission may discourage those STT operators who want to make a quick profit return only.
**Action Plan 4 - Shaping an International Maritime Centre**

**Background**

5.3.4.20. Creating an international maritime centre is to correspond the future transformation of sea logistics into service-oriented operations. As explored in Section 2.3.1.7, it is predicted that sea logistics would experience decline in handling volume despite the transhipment is still a profit-making business these days. For long-term strategic development, it is vital to put emphasis on service-oriented operations which Hong Kong is highly competent with. Under “One Country, Two Systems”, Hong Kong enjoys the status of free port and comprehensive judiciary system, making Hong Kong unique and appealing for overseas investment. All these build a good foundation for establishing a strong International Maritime Centre. A large cluster of offices providing services of ship broking, insurance, finance and law will be offered in the Centre (HKTDC, 2016).

**The Proposal**

5.3.4.21. Potential location of the International Maritime Centre is in Kwai Chung as the location is where Kwai Chung Container Terminal situates and the high proximity encourages spillover effect. Some subsector are location-dependent, such as consulting, ship-repairing and engineering services

5.3.4.22. Secondly, potential sites for Grade A offices are also available in Kwai Chung where many land parcels are zoned as OU(B). These years, many industrial buildings situated in the OU(B) are acquired and redeveloped into Grade A offices. Industrial area in Kwai Chung is silently undergoing an upgrade. It is therefore a win-win situation if Kwai Chung is designated as the International Maritime Centre such that economy revitalization in Kwai Chung can also speed up.

5.3.4.23. Policies would demonstrate its strong intention in creating International Maritime Centre. However, its success relies on the support of non-spatial policies. Taking establishment of maritime services-oriented offices in the designated site as an example, favourable investment incentives should be provided so as to attract more investment. Secondly, maritime services is knowledge-based sector. More professional institutions are therefore needed to train more specialists in this industry (Refer to Section 5.4.1 for further discussion of leading authority).

**Implication of the action plan**

5.3.4.24. To conclude, international maritime centre is vital for maintaining the logistics development, particularly for sea logistics which faces huge challenge ahead. IMC together with relevant supporting policies enable the sea logistics operators to undergo a smooth transformation from heavy reliance on transhipment into maritime service-oriented operation.
5.4. **Supporting Policies**

5.4.1. In Section 5.3, the study team proposed 10 action plans to be implemented in 3 Action Areas. These actions focus on developing spatial strategies to cater for the land and space requirements for Hong Kong’s logistics industry to develop high value-added logistics services. To ensure sustainable growth of the industry, supporting policies in the aspects of - 1. Institution; 2. Technology; 3. Human Capital; 4. Regional Cooperation; and 5. Road Network and Mass Transit are essential. Building on the foundation of the 3 Action Areas, 5 supporting policies are proposed to provide a conducive environment to facilitate and nurture the sustainable growth of logistics industry in Hong Kong.

**Aspect I - Institution**

5.4.2. In the aforementioned, the establishment of a leading authority with executive power could lead to an integrated development of the logistics industry in Hong Kong. The study team proposes the establishment of a leading authority to facilitate collaboration between institutions and stakeholders, and provide economic incentives for logistics development. There are two major directions that the study team recommends the leading authority could develop into.

*Proposal - Establishing a leading authority with executive power to sustain the industry growth*

5.4.3. First, the leading authority could take a the role of allocating a single window of communication to facilitate collaboration between institutions and stakeholders:

5.4.4. In the current government structure, policy formulation, land use planning and consultation are the duties of various departments. The establishment of a leading authority provides a single communication platform for the logistics operators to approach for facilitation. For instance, the authority could coordinate different stakeholders to involve in discussions to capture and respond to the needs the industry. The direct bilateral communication cut down the needs of an advisory process from different organizations, thus achieving a more effective communication between institution and industry. It could also coordinate with different departments to enhance the efficiency in implementing policies and increase the effectiveness of policy support for the industry (CUHK, SD Advocates and BMT Asia Pacific, 2015). For example, coordinating with Commerce and Economic Development Bureau (CEDB) and Innovation and Technology Bureau (ITB) to promote e-commerce and develop R&D center for logistics and supply chain management is one of the possible ways. Active involvement of the leading authority with high administrative efficiency could promote a supportive and business-friendly environment for the growth of logistics industry.

5.4.5. Second, the leading authority could take up a role of formulating policies to capture demands
from the three modes of logistics:

5.4.6. Discussed in Section 3 Policy Review, it is observed there is a lack of comprehensive and concrete planning for sustainable development of the industry. The leading authority could introduce an integrated strategy in guiding the industry to overcome the challenges. With the vision to facilitate Hong Kong’s logistics industry to capture the opportunities in the high value-added logistics market, integrated development strategy in coordinating the development requirements from the three modes of logistics is required. Particularly, comprehensive education and training policies should be considered to alleviate the declining productivity due to aging workforce. Such development strategy also considers the development of adjacent districts which requires investigation on population growth, infrastructure capacity, transport connections and employment.

Challenges in Implementation

5.4.7. Establishing a leading authority could have two constraints in implementation. Firstly, the procedure of setting a top-level statutory body requires a long and thorough consideration. The change in the institutional framework would undergo legislative procedures and restructuring of functions and organizations of departments. Secondly, the financial implication also requires careful consideration. The additional staff costs brought by the establishment of an authority could be more than $30 million Hong Kong Dollar per annum (Legislative Council Secretariat, 2014). Detailed consideration on the use of public funds to support the establishment of authority is also one of the concerns.

Expected Outcome

5.4.8. The establishment of a leading authority could provide a dedicated high level leadership in developing Hong Kong’s logistics industry. The active engagement of the leading authority could provide effective bilateral collaboration between institutions and the industry. With the direction of formulating integrated policies focusing on fostering long-term development of high value-added logistics services, the proposed authority is expected to lead the logistics industry to stay ahead in the global competition.

Aspect II- Technology

5.4.9. In addressing the challenge of technological discrepancy between logistics operations and facilities, the study team proposes an integrated policy to facilitate technology transfer and training to the logistics operators, and to strengthen the existing of the e-sharing platform. Such policy will require amicable collaboration between the HKSAR government, R&D Centers for LSCM, technology-based companies and the different scales and modes of logistics operators, each with a particular task to fulfil.
**Proposal- Developing an integrated policy for industry collaboration and technology upgrade**

Roles of Stakeholders

5.4.10. To begin, the government’s role, via the aforementioned leading authority (Refer to Section 5.5.1.), is to lead the policy implementation and allocate a dedicated logistics technology-sharing fund. Aside from developing next generation technologies, R&D Centers for LSCM, together with the technology-based companies will endeavor to develop next-generation technologies. In partnership with the government, they would be responsible for implementing the technology transfer and training to the logistics operators. Meanwhile, the upgrading of the e-platform should be collectively led by the logistics players as they are in the best position to capture the emerging trends and have the most knowledge on best shared practices in logistics. In addition, the government should also encourage the participation of the logistics operators in by providing more incentives to promote the use of such shared e-platform. These integrations will provide a better playing field for logistics operators of different scales and modes. Table 5.3 is a simplified list of the proposed roles of the different stakeholders to strengthen industry collaboration.

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Roles under Action Plan 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proposed Leading Authority for Logistics</strong></td>
<td>• Lead the policy implementation</td>
</tr>
<tr>
<td></td>
<td>• Allocate dedicated funding</td>
</tr>
<tr>
<td></td>
<td>• Provide more incentives to promote the use of e-platform</td>
</tr>
<tr>
<td><strong>LCSM R&amp;D, Technology-based companies</strong></td>
<td>• Develop next-generation technologies</td>
</tr>
<tr>
<td></td>
<td>• Implement technology transfer and training to logistics operators</td>
</tr>
<tr>
<td><strong>Different Logistics Operators</strong></td>
<td>• Learn about new technology and receive technology transfer and training</td>
</tr>
<tr>
<td></td>
<td>• Upgrade of the e-platform to capture emerging trends</td>
</tr>
<tr>
<td></td>
<td>• Learn from best-shared practices</td>
</tr>
</tbody>
</table>

*Table 5.3 Proposed Responsibilities of Different Stakeholders*
Challenges in Implementation

5.4.11. In formulating the policy, below are some foreseen challenges in the integration of the stakeholders due to possible conflicts of interest. Even if the stakeholders come into terms with a shared vision and interest, it would still be difficult to finalize the level of integration and specific details of the policy. Thus, extensive dialogues and stakeholder consultations are necessary to be arduously undertaken. Doing so may require a considerable amount of time.

Expected Outcome

5.4.12. If successfully implemented, this policy would greatly increase the competitiveness of SMEs in providing specialized logistics services such as time-sensitive goods, cold-chain services and other customized client demands. In turn, this will increase the capabilities of SMEs to provide support to the main logistics facilities and warehouses in the port and airport to reallocate the demand of increasing cargo throughput.

Aspect III- Human Capital

5.4.13. As identified in previous Section, logistics industry is facing the challenge of manpower shortfall to support the growth of the industry. To alleviate the situation, the study team proposes to provide funding for SMEs to employ automation in operation to replace manual operation.

Proposal- Providing funding for SMEs to employ automation in operation

5.4.14. Acknowledging the emerging trend of automation, the employment of automation could possibly reduce the demand for low-skilled manpower. The increasing demand shift from low-skilled labour to skilled labour can relieve of labour shortage issue and change the social perception of logistics industry to attract educated working population. Logistics industry, particularly land logistics industry, is fragmented in terms of business structure with over 90% of the establishments are small and medium enterprises (SMEs) (Census and Statistics Department, 2016). Provision of funding is crucial for the SMEs to employ automation in their operation due to limited capital for upgrading of systems and automated facilities.

Challenges in Implementation

5.4.15. Provision of funding has to be approved by the Legislative Council according to the government procedures. Public funding is carefully considered by the Legislative Council members, which would make implementation of this proposal difficult if funding for SMEs is not considered of utmost importance in the policy agenda.

Expected Outcome

5.4.16. Funding to SMEs could facilitate upgrade of systems and facilities in response to the labour
shortage issue. Adopting higher intensity of automation could replace manual work and the needs of low-skilled labour. The shift of demand would help to rebrand the logistics industry from traditional perception to a high-skilled and advanced pillar industry of Hong Kong.

Aspect IV- Regional Cooperation

Proposal- Adopting a collaborative approach to logistics planning with other neighbouring cities

5.4.17. Regional competition in logistics development has been more intense in these years. In the PRD Region, there are a few airports competing for international routes and airspace. The neighbouring sea terminal, Yantian Port records a steady increase of cargo handling which even took over KTCT. It is therefore an urgent need to adopt a collaborative approach in logistics planning with other neighbouring cities and other authorities in Mainland China too. There are many potential actions to be taken under the framework of collaboration. In the following part, discussions of a few actions from all the three logistics modes are made.

5.4.18. From the perspective of sea logistics, the leading authority (discussed earlier in Section 5.4.1) in Hong Kong should consult the local maritime logistics operators for their views and make prompt response to their concern. The authority should also communicate with China officials, particularly in the issue of cabotage relaxation. Understanding that cabotage relaxation is a policy to facilitate the sea logistics development of other cities, conversations with China officials may not make substantial change to the policies. Yet, the least action Hong Kong should take is expressing views of local logistics operators and keep Hong Kong well updated of future policies made in mainland China.

5.4.19. From the perspective of air logistics, airspace management has become a critically important issue in regional collaboration as the airport operations in the Pearl River Region are getting more mature these days. Without a coordinative management, the airports could not best utilize their resources and demonstrate each of their own best performance. Meanwhile, key stakeholders of logistics industry can also benefit from the collaborative mode of management. For example airport operator enjoy extensive air service network and sufficient air space which can support the on-ground expansion (i.e. 3RS). Airlines can also take advantage of the enhanced punctuality as collaborative airspace management could avoid traffic control-induced delays. All these improvements contribute to high quality of logistics services in Hong Kong.

5.4.20. To achieve the above desirable outcome, related institutions or agents representing different cities in PRD should adopt collaborative approach and be initiative in the discussion of airspace
management. Similar discussions have been made in the Pearl River Delta Region Air Traffic Management Planning and Implementation Tripartite Working Group (HKSARG, 2016). Taking a step forward is to map out concrete air space management policies to avoid any conflicts in management and maximize the use of air space.

5.4.21. For land logistics, Hong Kong should expand the economic hinterland beyond the territory by establishing a new platform for business opportunities under the consideration of growing economic connection and interactions within the PRD region. The GDFTZ opens the Chinese trading market to the world through in-depth co-operation among Guangdong, Hong Kong and Macau. Many logistics service providers in Hong Kong have established a solid connection with foreign companies in physical trading. As the retailing market is expanding in under e-Commerce, participating in GDFTZ offers the business opportunities to the logistics service providers to capitalize on the cross-boundary e-Commerce platform to provide cross-boundary e-Commerce import services in the mainland.

5.4.22. It is recommended that the Consultative Committee on Economic and Trade Co-operation between Hong Kong and the Mainland (the Committee) can facilitate the logistics service providers, such as allowing them to form commercial contracts in the GDFTZ under Hong Kong laws and engaging related associations to design strategies for the industry responding to the business opportunities. Assuring the enterprises, a transparent and reliable business environment is essential for Governments between Guangdong and Hong Kong to encourage the logistics service providers to establish a presence in the GDFTZ.

Challenges in Implementation

5.4.23. Collaborative approach is seemingly a win-win situation for all the cities in Pearl River Delta region. However, it would be a sophisticated mission because of two reasons. Firstly, the fact of competition among the cities undeniably exist. Each of the cities are striving its best to brand itself as a prosperous city. The city will therefore put its own interest as the top priority in discussion of any collaborative policies (e.g. cabotage rules, airspace management, etc). It would take years to negotiate and reach consensus among the cities. Secondly, political issues remain uncertain. Degree of integration and cooperation has always trigger debates in the society, (i.e. juxtaposed border control). Therefore, it makes the collaboration between cities ending up in complexity.

Expected Outcome

5.4.24. The abovementioned actions are some of the recommended policies under the collaborative approach. The ultimate goal is to maximise the economic opportunities in the regional development and benefit the future logistics development in Hong Kong. Without frequent and
in-depth conversations among different cities, collaboration can remain a deadlock and unhealthy for the future growth, particularly in Hong Kong. Hong Kong should not be marginalized, instead it should clarify and strengthen its position in the PRD region such that the whole logistics industry benefits in long term.

Aspect V- Road Network and Mass Transit

Proposal One- Constructing Highways and Major Trunk Roads Linking our Logistics Developments with Important Infrastructures and the Urban Core

5.4.25. A comprehensive and developed road network comprises of well-connected and diverse choice of routes is vital in facilitating the movement of freights and vehicle movement thus facilitating the development of the logistics industry. Moreover, logistics development and operations are labour intensive activities that also involve the conveyance of workforce from one place to another. To facilitate Hong Kong’s logistics development, it is essentially important to support both the seamless movement of goods as well as ensure the proposed corridor and clusters are conveniently accessible by our workforce. To ensure that, comprehensive development of transport infrastructures is saliently important.

5.4.26. The proposed action item of constructing highways and major trunk roads shall involve Initial study of the demand and potential station identification and selection in consideration of the potential traffic and environmental impacts to the surrounding. Follow after shall be the development of connecting roads from the proposed logistics developments to the major highways to ensure direct linkages with adequate capacity are provided. Continuation of the trunk roads extending to the proposed NDAs in Northern New Territories and the proposed LT/HYW Boundary Control Point is recommended. The proposed Lung Shan Tunnel Viaduct is also recommended to develop an exit at the PC/TKL NDA to enhance the accessibility of the area. In view of the potential increase of traffic volume brought by the future workforce and transportation demand from the 3RS and the Topside Development, it is also recommended that a feasibility of an alternative Tuen Mun Road should be initiated by the Hong Kong Government.

Challenges in Implementation

5.4.27. The most foreseeable and common challenge in implementing of an action item related to transport infrastructure related projects is the potential demand that will be using the proposed infrastructural project. As most of the transport infrastructural project are demand oriented and driven, it is important and necessary to conduct careful evaluation of the demand generated from the proposed logistics developments.
Expected Outcome

5.4.28. If successfully implemented, the action item of constructing highways and major trunk roads shall provide a comprehensive road network with adequate capacity and diverse choices of route to facilitate the seamless connection of logistics operation by linking up the proposed logistics developments with important infrastructures such as the HZMB and LT/HYW Boundary Control Point, and our urban core. The efficiency of logistics operations will be tremendously enhanced as the travel time on road will be greatly reduced by the strengthened territorial connectivity.

Proposal Two- Developing mass transit along the corridor and Tuen Mun Lantau logistics cluster

5.4.29. The proposed action item of developing mass transit would first involve the Initial study of the demand and potential station identification and selection. Follow after shall be the development of extension lines based on the existing and proposed railway network. For the Air Logistics Cluster, extension lines shall be developed based on the existing Tung Chung Line, Airport Express Line, and the West Rail Line. A railway line connecting the HKBCF Island, Tuen Mun West and the HKIA Island shall be considered. For the Land Logistics Corridor, an east-west railway corridor link between the east rail line and the west rail line in the Northern New Territories. In view of the development of NDAs in the New Territories, there is also potential to develop extension to Kwu Tung, Ping Che and Ta Kwu Ling from the existing Lok Ma Chau Spur Line.

Challenges in Implementation

5.4.30. Similar to the proposal of constructing highways and roads, a foreseeable challenge in implementing of an action item of developing mass transit is the potential demand it will be serving. Same as transport infrastructural project, mass transit projects are also demand oriented and driven, it is important and necessary to conduct careful evaluation of the demand generated from the proposed logistics developments. Besides that, it will be up to the MTR Corporation and the Hong Kong Government to determine the financial viability of the proposed mass transit extension.

Expected Outcome

5.4.31. If successfully implemented, the action plan of developing mass transit would accommodate the commuting and transportation needs of the future workforce in our proposed logistics developments as well as provide relief to the present and potential congestion and traffic bottlenecks.

5.4.32. First, the proposed action plan provides relief to the present and potential traffic congestion or
bottlenecks. The proposal of developing mass transit along the corridor and cluster shall rationalize the traffic volume on the major highways for example, the Route 11, Tuen Mun Highway, and Yuen Long Highway during peak hours by providing an extra and alternative means of transportation mode to workers commuting to the proposed cluster from the urban core and the residential districts. Moreover, the reduced traffic congestion would also benefit the time sensitive land logistics operators entering and exiting our proposed logistics corridor and cluster.

5.4.33. Second, the proposed action plan accommodates the transportation needs of future labor in logistics clusters. The development of mass transit along the proposed logistics developments shall become means for providing convenient accessibility for our workforce to their workplace by reducing the traveling time and distance from their home. By improving accessibility to the proposed logistics developments, the proposed mass transit shall become means to retain the existing workforce and to attract potential talents to work in the proposed logistics developments.
Action Plan
An action plan for Hong Kong’s Logistics Industry in conjunction with HK2030+

5.5. Priority Actions for HKSAR Government

- Introducing longer term tenancy for land lease around the port
- Building security screening facilities on HKA and HKBGF
- Constructing specialised cargo facilities on HKA and BCP
- Constructing accessible urban consolidation centres to relevant stakeholders
- Establishing a leading authority with executive power to sustain the industry growth
- Providing funding for SMEs to employ automation in operation
- Upgrading cargo facilities in the PCWA
- Expanding Logistics and SCM R&D Centre
- Constructing auxiliary facilities on HKA and BCP
- Constructing modern integrated logistics centres
- Adopting a collaborative approach in logistics planning with other neighbouring cities
- Developing an integrated policy for holistic technology upgrade of logistics operators
- Developing a logistics park
- Constructing highways and major trunk roads
- Linking logistics facilities with strategic infrastructures and the urban core

DURATION
- < 5 YEARS
- 5 - 10 YEARS
- > 10 YEARS
5.5.1. According to the findings, these are the most pressing actions the HKSAR government will be required to take. We have separated the action plans mainly based on priorities for the HKSAR government. Higher priority actions are largely related to pressing issues such as land shortages, construction and also changes to the institutional framework within the current governance system. Medium priority actions are those relating to supporting services and ancillary facilities that will help strengthen the industry. Low priority actions are those that are deemed to be partially or currently already accomplished and require maintenance into the future.

5.5.2. Actions that take less than 5 years with a high priority are the introduction of longer term tenancy for land lease around the port, constructing specialised cargo facilities in HKIA and HKBCF, building security screening facilities on HKIA and HKBCP and constructing accessible urban consolidation centres to relevant stakeholders. Actions with an implementation duration of 5 - 10 years with high priority include developing mass transit systems to link logistics clusters and establishing a leading authority with executive power to sustain the industry growth. Long duration strategies that require over 10 years to implement but are of high priority include developing a logistics park and constructing highways and major trunk roads linking logistics facilities with strategic infrastructures and the urban core.

5.5.3. Medium priority actions with short duration include providing funding for SME’s to employ automation in operation and upgrading cargo facilities in the PCWA. Actions with a medium priority but a 5 - 10 year duration for implementation include expanding logistics and SCM R&D centre, constructing ancillary facilities on HKIA and HKBCP and constructing modern integrated logistics centres. Medium priority actions that require over 10 years for implementation include shaping an international maritime centre.

5.5.4. Finally, a low priority action with a short implementation duration is to adopt a collaborative approach in logistics planning with other neighbouring cities and a longer 5 - 10 year implementation duration strategy is to develop an integrated policy for holistic technology upgrade of logistics operators.

5.5.5. As shown in Figure 5.6, the actions are ordered from highest priority to lowest priority and from shortest duration to longest duration. The study team believe that the HKSAR government, coupled with the availability of resources and the right political climate should undergo these strategies in the above specified order or as close as possible to it.
5.6. **Evaluation of Recommendations**

5.6.1. It is hoped that these strategies will help Hong Kong further develop its logistics industry and hopefully propel Hong Kong towards the vision of being a “Global Centre of High Value Logistics Services”. Despite the proposals, there are limitations and it is advised for the HKSAR government to take note of these limitations when planning the implementation of the strategies.

5.6.2. The introduction of longer term tenancy for land lease around the port will undoubtedly receive positive feedback from developers but critics of the government may suggest collusion or seeing the HKSAR government as benefiting the rich. Constructing specialised cargo facilities in HKIA and HKBCF Island and constructing accessible urban consolidation centres to relevant stakeholders are both industry specific developments. As it currently stands, the provision of land for these two facilities should not be a great challenge as the resulting benefit lies on the general public.

5.6.3. Developing mass transit systems to link logistics clusters and building security screening facilities on HKIA and HKBCF Island are both infrastructure based projects. The HKSAR government must be ready for public scrutiny on the usage of funds for these projects. With the current political climate and setbacks for other government funded projects, it may be difficult to receive approval from the Legislative Council.

5.6.4. Establishing a leading authority with executive power to sustain the industry growth is also a key factor to the success of Hong Kong’s future. Currently, government departments function on a piecemeal basis and cooperation is not always as efficient as it can be. Establishing an overarching leading authority will enable a dedicated team of civil servants to coordinate the various departments in order to achieve a common goal. This has been met with success in Singapore. However, this will present a major change to the current institutional framework. Therefore rivalries and bureaucratic conflicts may arise within the HKSAR government.

5.6.5. Developing a logistics park and constructing highways and major trunk roads linking logistics facilities with strategic infrastructures and the urban core should not meet a great amount of resistance as most of the plans have already been approved are about to be approved. Again, the HKSAR government will be wise to keep the political climate in view.

5.6.6. Providing funding for SMEs to employ automation in operation and upgrading cargo facilities in the PCWA are both technology based strategies. It is expected that the efficiency of facilities will be improved but coordination with the private sector and the provision of supporting infrastructure is crucial to ensuring the technology can operate to its full potential.
5.6.7. Expanding logistics and SCM R&D centre will further enhance research and development in Hong Kong. However, as private firms are profit driven, it is not as easy for the HKSAR government to guide the technological advancement in a way that is in sync with its own plans. Constructing ancillary facilities on HKIA and HKBCF Island and constructing modern integrated logistics centres will undoubtedly facilitate greater links with the PRD. However, the current political climate dictates that this will be a controversial subject and the HKSAR government must be careful in its timing of implementation.

5.6.8. Developing an international maritime centre will require the support of the private sector and also the labour force available. If those with the required skill sets are in short supply or interest from the private sector is insufficient, it will be difficult to support this logistics centre.

5.6.9. Adopting a collaborative approach in logistics planning with other neighbouring cities is highly important as it places Hong Kong in a unique position of direct cooperation with the largest source of manufacturing in the world. However, the political will of the HKSAR government must be strong in able to do this as protests in the past have shown that integration with the mainland is highly unpopular within a segment of the general public in Hong Kong.

5.6.10. Developing an integrated policy for the holistic technology upgrade of logistics operators will again require private sector coordination and cooperation. One downside is that some private sector firms may demand greater rebates or incentives as it sees government being more and more anxious about reinvestment of their capital into technology upgrades.
6. Conclusion

6.1. Overview

6.1.1. This Final Report is conducted with the aspiration of delivering a comprehensive spatial planning strategies which empowers logistics industry in Hong Kong to have a continuous and sustainable growth. The government authority is considered as a crucial party to initiate the sustainable growth of this industry in this report. The study team visions Hong Kong as a Global Centre of High Value Logistics Services and outlines the strategies and action plans. In order to accomplish this goal, the study team proposes a directional proposal which could be incorporated into the "HK2030+", particularly supporting the “Building Block 2: Embracing New Economic Challenges and Opportunities”.

6.1.2. To provide a better picture of leading Hong Kong to the visionary future and outlined directional strategies, this Final Report has introduced the spatial planning framework in form of “1 Logistics Corridor and 2 Logistics clusters” and other supporting policies with detailed action plans. Noticing that approaching the vision of developing Hong Kong as a Global Centre of High Value Logistics Services requires a continuous and forward-looking progress and effort from the institutional and industry support. Section 5.6 has stated the priority actions for the government to direct Hong Kong to this imagined future in the long run. The key notes from this study are illustrated below.

6.2. Key Notes

Intermodal logistics - from theory to practice

6.2.1. Air, sea and land are the three primary logistics modes. Recognising the advantage of intermodal logistics from the theoretical perspectives, this final report stressed the importance for Hong Kong to enhance its interconnectivity between the three modes for the local, regional and international markets. Three major aspects are identified as the keys to achieve the intermodal logistics operations, namely the foundation of strategic location and policy support, physical connectivity and virtual connectivity.

Comprehensive framework established for analysis and discussion

6.2.2. Throughout the paper, three major aspects are being studied and discussed of their respective challenges and opportunities and relevant policy and international review, which are Transport and Distribution, Warehousing and Operation and Supporting Services. Recalling from the success of intermodal logistics operations, these three aspects are recognised as the core concerns to achieve sustainable development for logistics industry.

“Shaping Hong Kong into a Global Centre of High Value Logistics Services”
6.2.3. From the analysis consolidating findings from Phase I Inception report and Phase II Working Paper, Sections 2-5 present a summary of context. The study team endeavours to develop the vision statement to convey an imagined future for the industry. To achieve this vision, the implementation of the following strategies and action plans are crucial.

**Strategy 1: Provide Supporting Infrastructure to Facilitate Seamless Operation**
- Constructing highways and major trunk roads linking logistics facilities with strategic infrastructures and the urban core
- Developing mass transit system along the proposed logistics corridor and clusters
- Constructing accessible Urban Consolidation Centres to relevant stakeholders
- Constructing specialised cargo facilities on HKIA and HKBCF Island
- Constructing ancillary facilities near the proposed boundary control points
- Building security screening facilities
- Constructing Modern Integrated Logistics Centres

**Strategy 2: Develop a Logistics-Based Comprehensive Planning**
- Developing a Logistics Park
- Introducing longer term tenancy for land lease around the port
- Shaping an International Maritime Centre

**Strategy 3: Strengthen Human Capital and Technology**
- Expanding Logistics and SCM R&D Centre
- Providing funding for SMEs to employ automation in operation
- Upgrading cargo handling facilities in the PCWA

**Strategy 4: Enhance Intra-and Inter-City Collaboration**
- Adopting a collaborative approach in logistics planning with other neighbouring cities
- Developing an integrated policy for holistic technology upgrade of logistics operators
- Establishing a leading authority with executive power to sustain the industry growth

**Recommendations in line with the 2030+ Territorial Planning**
6.2.4. To ensure the feasibility of our recommendations in the context of Hong Kong consistent with the forward planning, the study team ensures the proposed planning strategies in line with the Building Block 2 of the “HK2030”: Embracing New Economic Challenges and Opportunities. Last but not least, the recommended actions are prioritised in the Section 5.5, suggesting a smooth progress towards our vision in a long run.
6.3.  Further Studies

Further feasibility studies of international practice

6.3.1. In the Final Report, the study team has visited several practices taken from various world cities, such as Singapore, Shanghai, Venlo, Kansai, Suzhou, Hamburg and Amsterdam. The selected international experiences might help their cities achieve their success in the logistics development. Further studies and consultation is required to understand the local context and the stakeholders’ expectation.

The challenges of implementing the proposed recommendation

6.3.2. From the list of recommendations, there are some external factors required to complete the task of intra- and inter-city collaboration. Uncertainty is one of the major concerns in the degree of effectiveness especially on the issue of regional cooperation. There may be difficulties facing in introducing new technology, new authority and reaching consensus with various parties in the local, regional and international development. Further studies and consultation is required.

6.4.  Conclusion

6.4.1. Logistics industry of Hong Kong is challenged by the world competition in the recent decades. Without the support of government in terms of infrastructure and supportive policies, it would be a difficult task to maintain its success in long term. The worst case scenario is foreseeable with an unbalanced ecosystem with a significant decline of SMEs, a losing position as a high-ranked international transhipment port hub and a global aviation hub.

6.4.2. As mentioned from the beginning of the paper, the logistics industry remains to be a vital lifeblood to Hong Kong’s economy, contributing large share of GDP, employment opportunities and daily city functioning. Envisioning logistics industry of Hong Kong as a Global Centre of High Value Logistics Services is suggested to provide not only a sustainable future for the industry, but also social and economic benefits of Hong Kong as a whole. It is important to take actions to uphold the sustained growth of our pillar industry before losing the competitive advantages of Hong Kong. With the directional vision, strategies and coherent action plans for the logistics development in line with the overall territorial planning, it is believed that Logistics industry could remain its role to support the sustainable future development of Hong Kong.
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## Appendix A - Summary of major stakeholders' concerns and benefits from action plans

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Major Concerns</th>
<th>Benefits from Action Plans</th>
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| **Air Cargo Terminal Operator**    | • Lack of capacity in developing specialised cargo handling facilities  
• Tightening security requirement  
• Connectivity between airside and landside operation in HKIA  
• Expands logistics catchment area  
• Shortage of low-skill and semi-skill labour | • More young entrants to the industry  
• Increase in efficiency of operation  
• Opportunity to expand business into niche market |
| **Ground Handler**                 | • Shortage of low-skill and semi-skill labour | • More young entrants to the industry  
• More business opportunities |
| **Freight Forwarder**              | • Meeting the rising demand of security screening  
• The return of goods to manufacturers due to substantial online orders  
• Expands logistics catchment area  
• More supply of sizeable sites with well connection | • Provision of Affordable land  
• Efficient cargo screen procedure  
• Availability of expansion potential  
• Availability of sizable modern logistics warehouses  
• Upgrade of the e-platform |
| **Trucking Company**               | • Competition from river barges  
• Saturated capacity at existing boundary control points  
• Shortage of cross-boundary drivers | • Availability of auxiliary facilities close to PC/TKL boundary control point  
• High efficiency in delivery  
• Alternative road linkages to the airport  
• Decreased potential traffic congestion |
| **Container Terminal Operator**    | • Insufficient river berths and yard areas for expansion  
• Expands logistics catchment area | • Increase in handling capacity of KTCT  
• More young entrants to the industry |
| **Shipping Lines**                 | • Congested port situation in KTCT | • Increase in efficiency of operation |
| **SMEs**                           | • Congestion in use on port back-up land next to the Port  
• High warehousing rental cost  
• Lack of fund for accessing automation | • Higher investment incentive in port back-up  
• Provision of Affordable land  
• Availability of modern logistics facilities  
• Logistics technology transfer and training |
| **Labour**                         | • Long dwell time for trucks pass through the custom and immigration control  
• Lack of training | • More job opportunities  
• Public transport support from mass transit |
| General Public | Traffic congestion in urban areas | Higher quality urban environment is created with alleviated urban congestion
Online purchasers could receive their goods more speedily |
### Appendix B - Review of Policy Address from 2006-17

<table>
<thead>
<tr>
<th>Year</th>
<th>Policy Focus (summarize the objectives)</th>
<th>Objectives</th>
<th>Actions/Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>Mostly about enhancing efficiency of the logistics flow of Hong Kong by improving its own facilities as well as through regional agreements</td>
<td>Enhancing efficiency to facilitate cargo shipment via river</td>
<td>- The government will amend the law to introduce multiple entry permits for river trade vessels, reduce permit fees, and streamline application and entry procedures</td>
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<td></td>
<td></td>
<td>Enhancing air cargo handling capacity of HKIA</td>
<td>- Increase the number of cargo freighter parking stands and to expand its air cargo terminal facilities</td>
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<td></td>
<td></td>
<td></td>
<td>- Expand Hong Kong’s air transport network, conclude bilateral air services agreements</td>
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<td></td>
<td></td>
<td>Enhancing efficiency of cross-boundary cargo flows and inspection</td>
<td>- Reached a consensus with Dongguan authorities to introduce an express clearance system at the Liaobu inland control point</td>
</tr>
<tr>
<td>2007-08</td>
<td>Introduced various infrastructure projects in support of logistics development and regional cooperation</td>
<td>Commencing the 10 major infrastructure projects for economic growth</td>
<td>Transport infrastructure</td>
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<tr>
<td></td>
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<td></td>
<td>- The Tuen Mun Western Bypass and Tuen Mun-Chek Lap Kok Link</td>
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<tr>
<td></td>
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<td></td>
<td>- Upon completion in 2016, there will be a direct access linking up Deep Bay in Shenzhen, the Northwest New Territories and the Hong Kong International Airport (HKIA)</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>- The logistics industries will stand to benefit from the direct access, which will also link up the Northwest New Territories and the HKIA, thereby alleviating the busy traffic along the North Lantau Highway in the future</td>
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<tr>
<td></td>
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<td></td>
<td>Cross-boundary infrastructure</td>
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<td></td>
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<td></td>
<td>- The Guangzhou-Shenzhen-Hong Kong Express Rail Link</td>
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<td></td>
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<td></td>
<td>- Running from West Kowloon to Shibi, Guangzhou</td>
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<td></td>
<td>- Target is to complete the planning and design processes within next year (2008), so that construction will commence in 2009</td>
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<tr>
<td>2008-09</td>
<td>Focused on more regional agreements and policies with Guangdong and Taiwan for better terms and labour supply</td>
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<tr>
<td>Facilitating co-operation with Guangdong</td>
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<tr>
<td>- Recently-signed Supplement V to the Mainland and Hong Kong Closer Economic Partnership Arrangement</td>
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<td>- Take forward priority joint ventures in the short to medium term</td>
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<tr>
<td>- Actively working with Guangdong to optimize and upgrade its industrial structure while assisting Hong Kong enterprises to respond to Mainland policy adjustments</td>
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<tr>
<td>- Development of Lok Ma Chau Loop</td>
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<tr>
<td>Promoting Hong Kong’s technological development and attract talents</td>
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<tr>
<td>- Shenzhen-Hong Kong Innovation Circle</td>
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<tr>
<td>- Introduce an internship program under the Innovation and Technology Fund (ITD) that aims to promise science and</td>
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<tr>
<td>Year</td>
<td>Description</td>
<td>Plan Details</td>
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<tr>
<td>2009-10</td>
<td>Emphasized the division of labour in the region, and start to explore the possibility for expanding sea and air logistics capacity</td>
<td>Achieving regional cooperation and division of labour - The Outline of the Plan for the Reform and Development of the Pearl River Delta (the Outline) promulgated in January 2009 stresses the importance of a clear division of work, a reasonable layout and complementarities in respect of the facilities in Hong Kong and in the Mainland - Explore with the Guangdong Provincial Government and Shenzhen Municipal Government, under the frameworks for Hong Kong-Guangdong and Hong Kong-Shenzhen co-operation, on how best to leverage Hong Kong’s advantages as an international financial, trade and shipping centre, and combine the strengths of both sides to promote the development of modern service industries in Qianhai</td>
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<td></td>
<td>Adapting to the change in logistics sector (to high-value goods and services)</td>
<td>Identified several permanent sites around the Kwai Tsing area to facilitate the development of logistics clusters - These sites will be made available to the market in phases from 2010 onwards</td>
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<tr>
<td></td>
<td>Enhancing handling capacity of HKIA</td>
<td>HKIA will carry out a midfield expansion project to provide additional aircraft stands and apron facilities and a new passenger concourse</td>
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<tr>
<td>2010-11</td>
<td>Continued the key points in 2009-10 on regional cooperation and expanding air and sea logistics capacity, and first time introducing policies for promoting SMEs in Hong Kong</td>
<td>Implementing regional cooperation plans - Qianhai development - Hong Kong-Taiwan Relations - HKZHMB, Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expanding sea and air logistics capacity</td>
<td>Sea logistics - Make available long-term sites to develop a logistics clusters - A site in Tsing Yi was put up for open tender as the start (in 2010) - Continue to provide suitable sites for port back-up uses to facilitate efficient port operations - Continue to consolidate Hong</td>
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<tr>
<td>Year</td>
<td>Description</td>
<td>Actions</td>
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<tr>
<td>2011-12</td>
<td>Made use of long-term sites for modern logistics facilities to cater high value services of logistics industry; continuing the policies for promoting SMEs in Hong Kong</td>
<td><strong>Expanding sea and air logistics capacity</strong>&lt;br&gt; - Sea logistics&lt;br&gt;  - The second site at Tsing Yi was put up for open tender by the end of 2012&lt;br&gt;  - Continue to provide suitable sites for port back-up uses to facilitate efficient port operations&lt;br&gt; - Air logistics&lt;br&gt;  - Complete of the public consultation on the air’s future development&lt;br&gt; <strong>Providing supports to SMEs</strong>&lt;br&gt; - Loan guarantee schemes&lt;br&gt;  - The SME Export Marketing Fund under the Trade and Industry Department subsidizes SME participation in export promotion activities&lt;br&gt;  - The Fund provides financial support for trade and logistics organizations, professional bodies, support organizations and research institutes to carry out projects to enhance the competitiveness of SMEs&lt;br&gt; <strong>Revitalising industrial Buildings</strong>&lt;br&gt; - 35 buildings were approved to be redeveloped, enabling the increase 380,000 square metres for non-industrial uses&lt;br&gt;</td>
<td></td>
</tr>
<tr>
<td>2012-13</td>
<td>Deepened the co-operation between Hong Kong and the Mainland and positioning HK as an international shipping centre</td>
<td><strong>Providing capacity for growth</strong>&lt;br&gt; - the northwest of Hong Kong will be the core part of development due to the commencement of HZMB&lt;br&gt;  - The location advantage of Lantau Island promotes logistics development (Tung Chung New Town Extension Study)&lt;br&gt; <strong>Implementing regional cooperation plans</strong>&lt;br&gt; - Hong Kong plays the role as a “node” to serve as an international financial centre and a business</td>
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<td>hub of China</td>
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<td></td>
<td>- Hong Kong is part of a network for the Mainland, which will take full advantage of the Mainland and HK CEPA</td>
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<td></td>
<td></td>
<td>- Setting up Economic and Trade Office (ETO) in Wuhan, after the existing 4 offices in Beijing, Guangdong, Shanghai and Chengdu</td>
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<td></td>
<td></td>
<td>- “Consultative Committee on Economic and Trade Co-operation between Hong Kong and the Mainland” which makes policy proposals and strategies for bilateral co-operation such as assisting HK enterprises in tapping the Mainland market</td>
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<thead>
<tr>
<th>Guangdong Province</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>- Comprehensive cooperation between HK and Guangdong, such as logistics, international shipping (Hong Kong/Guangdong Co-operation Framework Agreement)</td>
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<td></td>
<td></td>
<td>- Promoting better interface between the major transport infrastructure facilities</td>
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</tbody>
</table>

| Providing support for SMEs | | | “SME One” was set up by Productivity Council in 2012 to promote multi-level support programmes for SMEs |
| | | | - Assists SMEs to tap the Mainland market through the Dedicated Fund on Branding, Upgrading and Domestic Sales, and supporting HK business associations in establishing sale and promotion venues in the Mainland |

<table>
<thead>
<tr>
<th>Expanding the development capacity of International Shipping Centre</th>
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<th>Improving aviation, maritime and land transport facilities and their connectivity</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Developing international maritime services</td>
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<tr>
<td></td>
<td></td>
<td>- Identifying the development potential of maritime services from ship management, shipping agency, ship finance, marine insurance, ship registration and legal services</td>
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<tr>
<td></td>
<td></td>
<td>- Reinforcing the maritime service cluster and develop high value-added maritime services</td>
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</tbody>
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<table>
<thead>
<tr>
<th>2013-14</th>
<th>Positioned HK to promote high</th>
<th>Providing capacity for growth</th>
<th>10 hectares of land in Tuen Mun West dedicated for logistics use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>2014-15 Description</td>
<td>2015-16 Description</td>
<td></td>
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<td>-------------------------------</td>
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<tr>
<td><strong>value-add logistics services</strong></td>
<td>- Designating construction of modern logistics facilities in NDAs</td>
<td>- Development on HK Boundary Crossing Facilities (HKBCF)</td>
<td></td>
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<tr>
<td></td>
<td>- Construction of the third runway to maintain the position as an aviation hub</td>
<td>- Commencing the Preliminary Feasibility Study on Developing the NTN to integrate land use planning with infrastructural development</td>
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<td></td>
<td>- Lantau Island identified as the converging point of traffic from Guangdong, HK and Macao</td>
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<td></td>
<td>- Hong Kong should develop high value-added maritime services</td>
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<tr>
<td></td>
<td>- Commencing the Preliminary Feasibility Study on Developing the NTN to integrate land use planning with infrastructural development</td>
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</table>

**Continuing the Expansion the development capacity of International Shipping Centre and global aviation hub**

**Sea logistics**
- Completion of consultancy study on Enhancing HK’s Position as an International Maritime Centre
- HK should develop high value-added maritime services
- Initiation of investigation of Setting up a new statutory maritime body

**Air logistics**
- Enhancing manpower training by considering setting up a civil aviation training institute, which is supported by the Economic Development Commission, Working Group on Transportation

**2014-15** Positioned HK to promote high value-add logistics services

**2015-16** Continuing the Expansion the development capacity of International Shipping Centre and global aviation hub

**Sea logistics**
- A high standard of marine insurance products and services reaching the gross premiums of marine and cargo insurances business to $2.1 billion in 2013
- Enhancing the functions of HK Maritime Industry Council to foster the high-end professional maritime services
- Promotion of industry by TDC to attract high value-added maritime services companies to cluster in HK
- Setting up the Maritime and Aviation Training Fund in 2014

**Air logistics**
- Planning and development of the land reserved for cargo use at the South Cargo Precinct
<table>
<thead>
<tr>
<th>2015-16</th>
<th>Strengthened the competitive edge of the logistics industry</th>
<th>Providing capacity for growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Brownfield study was carried out to investigate the accommodation of users in multi-storey buildings</td>
<td></td>
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<tr>
<td></td>
<td>Consideration of the preliminary study of the East Lantau Metropolis</td>
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<tr>
<td></td>
<td>Brownfield study was carried out to investigate the accommodation of users in multi-storey buildings</td>
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<td></td>
<td>Consideration of the preliminary study of the East Lantau Metropolis</td>
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<tr>
<td></td>
<td>Air logistics</td>
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<tr>
<td></td>
<td>- A civil aviation academy will be established to nurture local and regional aviation management talent</td>
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<tr>
<td></td>
<td>Sea logistics</td>
<td></td>
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<tr>
<td></td>
<td>- Establishment of Hong Kong Maritime and Port Board (Merging the existing Maritime Industry Council and the Port Development Council)</td>
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<td></td>
<td>Implementing regional cooperation plans</td>
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<td></td>
<td>- Deepens regional co-operation in the Pan-Pearl River Delta Region, especially, the three regions namely Qianhai, Nansha and Hengqin</td>
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<td></td>
<td>- Under Belt and Road Initiative, logistics can complement the national strategies to go global and attract foreign investment</td>
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<td></td>
<td>Industrial buildings</td>
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<td></td>
<td>- Under the notion of “re-industrialisation”, the potential new area of economic growth, the industrial estate policy was revised to construct multi-storey buildings and recover idle factory premises</td>
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<td></td>
<td>- Revitalisation measures have led to the transformation of 1.06 million square metres of floor area of industrial buildings to commercial and other non-industrial uses</td>
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<tr>
<td>2016-17</td>
<td>Strengthens the competitive edge of the logistics industry and enhances transport infrastructure to support future logistics development</td>
<td>Regional development</td>
</tr>
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<td></td>
<td>In the National 13th Five-Year Plan, Hong Kong was acknowledged to move towards high-end and high value-added developments</td>
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<td></td>
<td>The planning of Guangdong-Hong Kong in-depth co-operation zone in Nansha</td>
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<td></td>
<td>Providing capacity to growth</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Major infrastructure Projects under construction and planning:</td>
<td></td>
</tr>
</tbody>
</table>
|         | Under construction:
- HZMB will increase business opportunities for the modern logistics sector
- Connecting Road from Fanling Highway to LT/HYW BCP
- HZMB HK BCF
- HKIA Three-Runway System
- TM-CLKL

Under planning:
- Tuen Mun Western Bypass
- Route 11

Related Railway projects under planning:
- Tuen Mun South Extension
- Hung Shui Kiu Station
- Northern Kink and Kwu Tung Station
- Tung Chung West Extension

Continuing the Expansion the development capacity of International Shipping Centre and global aviation hub

Air logistics
- A civil aviation academy signed an agreement with Ecole Nationale de l’Aviation Civile of France to nurture aviation professionals for HK and the region

Sea logistics
- The board will encourage the use of HK’s commercial and high value-added maritime services

Promoting innovation and technology
- Dedicating a sizable land (over 50 hectares) in Lok Ma Chau Loop and Possible Science Park/Industrial Estate near Liantang/ Heung Yuen Wai BCP for innovation, technology and emerging or traditional industries
Appendix C – Interview Notes (Record of Questions and Summary)

Appendix C1: Interview Notes I
Interviewee: Representative from local airline
Date: 1st March 2017

1. How does the supply chain management work for air logistics industry in Hong Kong?
   - There are five major stakeholders in the operation model, including airline, agent, cargo terminal, transportation company and ground handling agent.
   - Agent is like a middle man, which make deals with airlines and cargo owners. They also provide solutions regarding flights and other value-added services. Decisions are made base on the needs (e.g. time, nature of product, value added services, etc.)
   - Cargo Terminal is where consolidation takes place. It also involves preparatory work including checking, verification and packaging. All these steps of works fulfil the safety and security condition.
   - Transportation company offers delivery of goods from somewhere to the airport (i.e. airport terminals)
   - Ground handling agents help carry cargo from terminal onto the planes
   - There are two different airline services (i. Point to point ii. Stop in a certain point and transfer to another airline)

2. What are the Merging trends of the air logistics industry? Do you think HKIA has the ability to handle such trend?
   - Emergence of integrator (e.g. UPS, DHL, Fedex)
   - Integrators are neither the airline nor the agent. They do have their own agent, terminal and even transportation company. They provide all round services. Having all the resources, service charge is usually more expensive because of single contact window and high efficiency.
   - This does not pose challenges to the traditional logistics company because the market is huge which needs different kinds of services provisions, ranging from cheaper solution to more integrated one.

3. What are the challenges the logistics industry facing in Hong Kong?
   - The major challenge is the demand for logistics service within Hong Kong’s catchment is diminishing. This is attributed to moving out of manufactories from southern China region to the inland/ southeast developing countries.
   - Hong Kong does not have strong manufacturing industries.
   - Hong Kong has to attract more exporters/ importers to choose it as the gateway rather than relying on its little local consumption.
4. Do you agree that the cargo handling capacity of HKIA is sufficient to sustain the growth of air logistics industry?
   - Yes
     - 4 terminals in the HKIA
     - Total capacity is 7.4 million tonnes and thee throughput is 4.5 million tonnes last yet
   - However, it is noted that the growth rate of cargo handling per year is not as significant as other countries as Hong Kong relies much on the international cargo.

5. What are the spatial needs for further expansion of operation? (Air and Ground)
   - There are two major spatial needs for expansion.
     - Land supply on the ground (where the 3rd runway is serving this need)
     - Airspace (More negotiation and cooperation within the region has to be made so as to be aligned for the growing number of flights in the future)

6. What future direction do you think the air logistics industry of Hong Kong should head towards? (e.g. Specialisation/ e-commerce)
   - There are three major trends
     - E-commerce: rise of express cargo and mail cargo
     - Temperature sensitive cargo: pharmaceutical and perishable goods
     - High value goods: automation, high-tech products
   - Hong Kong should further improve its efficiency, simplify custom clearance and license control and focus on value-added activity
   - Potential actions: update the Transhipment Ordinance, take the advantage of HZMB. HZMB is an opportunity rather a threat. It expands Hong Kong’s catchment area to western China.

7. How would you describe the relationships between sea and air logistics? If the port declines, what are the implications to air logistics?
   - Relationship between sea and air logistics is not very close. Their nature of goods are very different.
   - For maritime logistics, time is less important. That is why shipper has no reason to go to Hong Kong’s port as the cost is higher and the goods do not demand for high efficiency.
   - For air logistics, products are usually high value and transportation costs takes a lower proportion of total cost. And the goods demand for high efficiency (e.g. pharmaceutical and perishable goods)
Appendix C2: Interview Notes II
Interviewee: Local air cargo terminal operator
Date: 3rd March 2017

Questions List
1. How does the supply chain management work for air logistics industry in Hong Kong? What are the services with highest demand?
2. Apart from the undergoing infrastructure projects, what supplementary spatial strategies and policies do you think will be beneficial to the development of air logistics industry in Hong Kong?
3. What are the pros and cons of Hactl as the only neutral terminal operator of HKIA?
4. Do you agree that the cargo handling capacity of HKIA is sufficient to sustain the growth of air logistics industry?
5. Hactl has recently received an internationally recognized standard for pharmaceutical handling (IATA CEIV Pharma Validation), in such context what are the prospects of developing more specialisation services in Hong Kong?
6. What are the spatial needs for further expansion of operation?
7. What are the key factors that facilitated the integration of Hacis and Hactl?
8. Do you consider the expansion of Hacis into the western PRD facilitated by HKZM an opportunity or threat to the air logistics of Hong Kong?
9. What are the key opportunities and challenges of Hong Kong being developed as an international air freight hub?
10. How do you perceive the role of airport and seaport in sustaining the growth of logistics development in Hong Kong?
11. What is your general view towards the strategies listed in 2030+? For instance do you think projects such as ELM and HSKNDA can benefit the development of air logistics industry in HK?
12. How do you compare the competencies of Hong Kong with other cities such as Singapore in air logistics?

Summary of Response
- Air cargo terminal operator: first to know the economy trend based on trading volumes and patterns and it has to locate very close to the runway. These days, the operating agent face a lack of land and cost-effective area for its operation.
- Trends:
  - Rise of goods containing lithium battery
  - Rise of pharmaceutical, time-sensitive and high-value added goods
  - Stricter international security regulations (leads to higher costs)
E-commerce (does not make huge difference except the goods are getting smaller in size and with multiple destinations)
Better timing of sea logistics (reduces the demand for air delivery)

Potential actions:
In-site or off-site central facility for security screening to increase efficiency (Upstream and downstream screening facility)
Fewer regulations like Singapore (especially for pharmaceutical)
Digitalize administrative process
Provide lower cost for labour and land
Increase supply of labour force

HZMB can be an opportunity as the improved connectivity is beneficial to the logistics industry. However, the advantage of HZMB is greatly reduced if the China government deregulates Zhuhai and Macau.

Air logistics in Hong Kong enjoys very high efficiency in custom clearance; Yet, it lacks skilled labour especially front-line labours and land for future growth

Air logistics shares a closer relationship with land than sea.
Land: Most goods to HKIA are delivered from the mainland China by land transport; Efficiency of land logistics also benefit air logistics
Sea: Nature of goods are different between air and sea logistics
Appendix C3: Interview Notes III (In Form of Email Reply)
Interviewee: Current town planner from the government
Date: 8th March 2017

Question List
Logistics Land Supply - Brownfield Sites
1. What are the government’s official definition and calculation method of Brownfield sites? And how many hectares of Brownfield sites are there in Hong Kong at present according to the Hong Kong government’s definition and calculation method?

2. What are the selection criteria (e.g. proximity to cross-boundary infrastructure, availability of road network, etc.) in transforming Brownfield sites to New Development Areas?

3. From the aerial photos provided by the Hong Kong government, it is observed that there are numerous container boxes stacking up in the Brownfield sites. From the government perspective, why is this situation happening and what are the implications behind?

4. According to the Hong Kong government’s anticipation, how many employees are currently relying on the logistics-related operation in Brownfield sites and what are the corresponding economic values?

5. Facing the Brownfield issue, the Hong Kong government is actively reorganising the land uses of Brownfield sites through comprehensive planning. What are the obstacles facing by the government in dealing with the Brownfield sites’ operators, and how does the Hong Kong government cope with these difficulties?

6. Some may argue that the transformation of Brownfield sites focuses too much on housing supply, neglecting the needs of existing operators there (especially logistics related, car repairing and recycling operators). From the government perspective, what are the feasible short-, medium-, and long-term strategies in responding to this argument?

7. Take Hung Shui Kiu New Development Area (HSK NDA) as an example, there are now 130 hectares of land serving the container storage, warehouses and logistics operation, but only 25 hectares of land reserved for open storage, storage and workshop uses in the
HSK NDA plan, and multi-storey buildings are introduced. Is 25 hectares of land enough for accommodating 130 hectares of logistics-related operations? And is it feasible to move all these operations which requires extensive land supply into multi-storey buildings?

Logistics infrastructure - airport connection
1. What will be the future role of Tung Chung in response to the increasing demand in commercial services and housing due to the completion of the 3rd runway system?

2. From the government’s perspective, are there any considerations regarding the location of the Hung Shui Kiu New Development Area (HSK NDA), in terms of how it can facilitate the logistics flow between the airport and the North-West New Territories, or even to the Mainland?

Response
Logistics Land Supply - Brownfield Sites
Background of New Development Areas, Yuen Long South Development and Brownfield Sites

- The New Development Areas (NDAs) and Potential Development Area were identified by different planning studies, and the “Hong Kong 2030: Planning Vision and Strategy” revisited the need for NDAs in the New Territories and recommended housing demand and provide employment opportunities. According to the 2007-08 Policy Address, the planning for the NDAs in Hung Shui Kiu (HSK) and the North East New Territories (NENT) is one of the ten major infrastructure projects for economic growth.

- The overall objective of the NENT NDAs Study is to establish a planning and development framework for Kwu Tung North (KTN) and Fanling North (FLN) NDAs to meet long-term housing, social, economic and environmental needs, and to formulate an implementation programme for first population intake to these NDAs by 2023. Specifically, it aims to develop NDAs into sustainable, environmental friendly, energy efficient, people oriented and obstacle free communities. There are about 50 ha of brownfield sites within the NDAs boundary. For the HSK NDA, the objective of the Study aims at formulating a feasible land use framework for the HSK NDA to meet the long-term housing and other land use needs of Hong Kong. There are about 190 ha of brownfield sites within the HSK NDA boundary.
• In the 2011-12 Policy Address, the review of agricultural land currently used mainly for industrial purposes or temporary storage uses, or even deserted in the North District and Yuen Long is one of the measures for increasing land supply for housing development since then. As such, Planning Department (PlanD) and Civil Engineering and Development Department (CEDD) commissioned the “Planning and Engineering Study for Housing Sites in Yuen Long South - Investigation” in November 2012 to examine and optimise the development potential of the degraded brownfield land in Yuen Long South (YLS) for housing purpose and other uses with supporting infrastructure and community facilities, and to improve the existing environment.

Current Situation of Brownfield Sites

• At present, the Government has no formal or standard definition for brownfield sites. The developments in HSK NDA, YLS and KTN/FLN NDAs currently underway cover about 340 hectares of brownfield sites, and most of which are under private ownership. The information on the amount and distribution of brownfield land and land ownership only serves as a reference for baseline review and formulation of planning proposals and may change over time. PlanD has no information on the numbers of employees currently relying on the logistics-related operation in brownfield sites.

• As stated in the 2015 and 2016 Policy Addresses, the Government is looking for feasible measures, including accommodating some brownfield operations into multi-storey buildings, for the proliferation of port back-up, open storage and rural industrial uses on abandoned agricultural land in the New Territories as a whole that arose largely as an unintended consequence of the Melhado court case. This has resulted in underutilisation of our valuable land resources and degraded the rural landscape and caused environmental nuisance. Meanwhile, in mid-2016, CEDD has commenced detailed feasibility studies on proposed multi-storey buildings for brownfield operations and the scope of the studies include conceptual design, planning, technical and financial assessments, and possible mode of operation and management of the proposed multi-storey buildings.

Brownfield issues in HSK NDA

• Within the NDA, it is estimated that some 190 ha brownfield sites will be affected. They refer to private lots in rural New Territories that have been converted to container storage, warehouse, construction materials/machinery storage, car repair workshops, recycling yards and rural workshops, and intermingled with some licenced structures, squatters and other temporary structures. The brownfield operations in the HSK NDA have been taken as a pilot scheme, with a view to taking forward the development of the
NDA. The major objective of the HSK NDA is to convert these brownfield sites to more suitable uses through comprehensive planning and enhanced infrastructure, while retaining suitable land to consolidate these operations to enhance efficient use of land resources and improve the environment. There is about 24 ha of land reserved for port back-up, storage and workshop uses with designation part of the “OU (Port Back-up, Storage & Workshop Uses)” (“OU (PBU & SWU)”) zone on the Revised Recommended Outline Development Plan (RODP) for open storage use of large construction machinery and materials which could not be accommodated in multi-storey buildings.

- Regarding the concerns of local brownfield operators of HSK NDA, they hope the Government could provide concrete proposals and explore the issues on relocation arrangement, compensation and subsidy approach and the mode of operation. Besides, regarding multi-storey buildings, they also concerned that the proposed 24 ha of land designated for PBU & SWU would not be sufficient in accommodating the existing affected brownfield sites in HSK, and that multi-storey buildings are not feasible to accommodate heavy machinery. There were also concerns associated with the relocation of brownfield operations to multi-storey buildings, such as reduced operational efficiency, increased transportation cost and time and reduced operational space. Besides, applications for relevant licenses, permits and to comply with relevant regulations in terms of safety and environmental aspects would require a long period of time, which may increase operation cost and time.

Ways to tackle Brownfield issues in HSK NDA

- With a view to facilitating Government’s formulation of appropriate policies and measures for tackling brownfield sites in a more holistic manner, a comprehensive examination of the overall distribution and uses of brownfield sites in the New Territories through site inspection, questionnaire surveys and stakeholder interviews, etc. would be carried out.

- From August to November in 2015, a questionnaire survey was carried out on existing brownfield operations in HSK NDA to seek better understanding on their modes of operation and conditions, during which more than 250 brownfield operators in the NDA had been interviewed successfully. The brownfield operations identified within the HSK NDA boundary could be broadly classified into nine main categories. In terms of area occupied, container storage occupied the largest area (26%), followed by warehouses (23%), logistics operations (15%) and open storage (14%). It is recognised that many of these operations are serving support functions for various economic sectors or industries such as port back-up, logistics, recycling, construction industry, vehicle repairing/body building, etc., which are considered still necessary in Hong Kong. There
is thus a need to consider how to provide space to accommodate such operations needed locally in a land efficient manner. The on-going feasibility studies will provide a comprehensive analysis of the survey findings as well as formulate recommendations.

- Details of the public comments received and responses for the HSK NDA Study are available in the Consultation Reports in different stages.

Logistics infrastructure - Airport Connection

- The Tung Chung New Town Extension Study (the Tung Chung Study) was jointly commissioned by CEDD and PlanD, with the overall objective to extend Tung Chung into a distinct community and propose a development plan which can meet housing, social, economic, environmental and local needs. When planning the commercial activities for Tung Chung New Town extension (TCNTE), we have taken into account other development projects on Lantau including Three Runway System (3RS) of the Hong Kong International Airport that would require reclamation of 650 hectares of land. According to estimates, upon commissioning of the 3RS, the number of direct job opportunities will increase to about 123,000 and indirect and induced job opportunities to 165,000. Initially, the proposed development theme is “The World Converging”, with three proposed development elements that include: (1) experiencing Hong Kong and the World: to provide facilities for showcase/ function events, retail, catering, leisure, entertainment, etc.; (2) creation of “Business Launchpad”: to provide offices and business hotels with conference and multi-functional facilities; and (3) logistics support: to focus on developing high-value-added logistics services for specific markets, with support for instant express delivery, e-commerce, etc. The TCNTE will include developing the metro core district of Tung Chung East into a smart commercial node with retail, dining and entertainment facilities. With an area of 235 hectares, the extension project will accommodate an additional population of some 140,000, providing 49,000 housing units, over 800,000 square metres of commercial floor space, and about 40,000 new job opportunities.

- Strategically located in the North West New Territories (NWNT) and well connected to Tuen Mun, Tin Shui Wai and Yuen Long, the HSK NDA will serve as a “Regional Economic and Civic Hub” for the NWNT. Moreover, the NDA is conveniently connected to the strategic transport infrastructure including the Kong Sham Western Highway, the proposed Tuen Mun Western Bypass, as well as the Tuen Mun – Chek Lap Kok Link and the Hong Kong-Zhuhai-Macao Bridge under construction. It is also close to Shenzhen, and efficiently linked with the new development nodes at Lantau and Greater Pearl River Delta Region. Given its strategic location, the NDA will provide
plenty of solution spaces in the NWNT to meet the surfing demand for various economic land uses, including land for offices, retail, hotels and spatial industrial uses, and positioned to become the “Regional Economic and Civic Hub” for the whole NWNT region.

- Some of your questions are about the government policy on tackling brownfield sites and situations of logistics industry. Please note that the former and latter are under the purview of the Development Bureau and the Transport and Housing Bureau respectively.

- You may refer to the relevant paragraphs of the Policy Address 2017 (paras. 121 to 123), recent blog of the Secretary for Development, relevant Legislative Council Paper, study websites and consultant reports and digests for HSK NDA Study and Tung Chung New Town Extension Study for more information.
Appendix C4: Interview Notes IV

Interviewee: Scholar(s) from logistics profession in Singapore

Date: 9th March 2017

1. How important is the integration of land, sea and air logistics to the sustainable growth of logistics industry?
   - The linkage between sea-to-air and air-to-sea has been greatly reduced in the past decade
   - Singapore positions itself as a transhipment hub with 10%-15% of value is contributed by import and export.

2. What are your views on the importance of location of freight facilities to improving efficiency of logistics operations? What is the best way to decide freight facility location?
   - Rising competition from Malaysia does share some of the business from Singapore
   - There is also more trading activities between Malaysia and Singapore because of cheaper land and labour costs in Malaysia (e.g. Relocation of Coca Cola’s factory to Malaysia)

3. What are the strategies adopted by Singapore to enhance its cross-boundary logistics?
   - Two major strategies
     - Bounded-area as a free zone in airport area
     - Relocation of port facilities to Tuas Port (high proximity to the industrial clusters in the future; distance between Tuas Port to Changi Air port is only 40 km and does not post any new challenges on efficiency)

4. Can you briefly explain how the e-market facilitate the whole operation (i.e. Supplier Clusters, Logistics Clusters and Demand Points)? Does it coordinate with existing private operators, such as transnational logistics corporates and SMEs?
   - Urban Consolidation Centre originated from Tokyo
   - Two malls in Singapore are under trials
   - Practically beneficial for alleviating urban congestions; also benefits to both retailers (synchronized into the system) and logistics companies.

5. As stated in one of you research papers published in 2014, Singapore is a living laboratory for the application of Collaborative Urban Logistics. Can you share the experience of Singapore with us?
   - The key of UCC is “Collaborative” where different stakeholders are included
   - Although Singapore and Hong Kong are facing similar issues (i.e. high labour costs, land shortage and transhipment business), the government mentalities are very different in the two cities. It is always easier for Singapore government to implement policies. For
example, Singapore carries out reclamation and create masterplan for the relocation of port.

6. How do you see the relationship between upsurge in e-commerce and logistics?
   - Under E-commerce, orders are made directly from end users. It increases the complexity of delivery process.
   - Challenges:
     - Reverse Logistics (Product return)
     - Who pay the custom tax? (Sellers or online purchasers)
     - Change in size of parcels
     - Demand for shorter delivery time
     - Encourage automation to cut manpower and higher efficiency
   - Besides, Singapore adopts a nation-wide locker system to cater the needs of e-commerce.
     - Singpost customers pick up the goods from the locker within 24 hours with a message
     - Lockers locate in public housing (400-500m catchment area and services 80% of the population)
Appendix C5: Interview Notes V
Interviewee: Retired town planning professional A from the government
Date: 10th March 2017

1. What is your opinion for the role for government to play in the future development of the logistics sector?
   - Hong Kong Logistics Development Council
     - Provide lots of information that we should take a look (e.g. competition of trade)
   - Government:
     - Play a role of land authority and building authority
     - Yet, its report on property is outdated and not comprehensive
     - Lands Department & Planning Department provides good quality and good quantity of land

2. What do you think are the major strengths and weaknesses of the land logistics, such as cross-boundary logistics and urban freight transport, in Hong Kong?
   - Strengths:
     - Hong Kong lies on One-belt-one road
   - Weakness:
     - High production costs in Hong Kong (including Container ports’ charges and Wages of drivers)
     - There are many new container ports develop along the coast of China. Comparing to 1990s, Hong Kong is no longer the only major port of China.

3. The term ‘modern logistics facilities’ was mentioned a number of times in your study. Could you explain the concept more specifically with regards to the air cargo and freight forwarding industry?
   - Industrial buildings for logistics SMEs:
     - Not efficient enough
       - Carrying capacity is limited
       - Wasted time on waiting lift
   - Modern facilities for modern logistics:
     - Examples
       - ATL Logistics Centre
         - Loading bay (convenient for loading and unloading that the whole truck can go up to each floor)
       - Goodman Interlink
         - Bigger floor area
• Relatively smaller loading bay
  
  o Requirements of modern facilities:
    ▪ Bigger in size
    ▪ Proximity to the airport / port
    ▪ Efficient
  
  o Recommendation:
    ▪ Industrial building:
      • 60% for storage / goods space
      • 40% for circulation space
      ○ Included in GFA calculation, which is a waste of GFA
      ○ The ramp and parking spaces should be exempted.
    ▪ E-commerce:
      • There’s always a problem that no one at home to pick up the parcels
      • A room (100-200 feet will be good enough) for collection (include them in the building design and GA)
      • E.g. 7-11, the G/F of your building, SF (consolidate and distribute)

4. Many industrial stocks have been reasoned or revitalised in large amounts to facilitate commercial developments, do you think it will further increase the operation costs for logistics operators, thus driving away more SMEs in the industry?

• Side-effect of revitalisation
  ○ When a building is being revitalised, all tenants have to move out. BUT! They will look for similar spaces in the same district, which drives up the land prices!
  When some cannot afford, they have to move to other districts

• preserve existing space: conversion of industrial buildings or cold spaces to offices are rejected

• Once converted to a higher-end use, the land owners are not willing to convert them back. Even they have to pay the premium for conversion, they are still willing to do so since there is huge profit

• Wholesale conversion:
  ○ In some situations, it is necessary for the survival of CCI since they cannot afford the high land rent in shopping malls or offices.

• V there is a need to have policy to ensure the G/F use of industrial buildings for vibration-free industry (e.g. mould manufacture)

5. What measures do you recommend to ensure adequate supply of modern logistics
facilities which responds to the needs of the industry?

- Government:
  - Subsidize the industrial development, not the property development
  - Invite TDC to do it in a non-profit generation mode

6. Viewing the plans for New Development Areas in the New Territories such as Hung Shui Kiu NDA, how would it affect the brownfield logistics operators from making a living?

- Over 1000 ha brownfield sites in Hong Kong:
  - Serve a function for Hong Kong
  - Not a vacant land
  - Have to think about how to re-provide spaces for these people

8. As industrial buildings are not purposely designed for logistic use, do you think industrial buildings can serve as a land supply solution to logistic industry?

- Avoid different uses from competing for the same site / industrial buildings
- Some industrial buildings’ owners are not willing to rent space to logistics companies because logistics operation always take up the lift.

9. What is your prospect of the Hong Kong-Zhuhai-Macau Bridge and LainTang/ Heung Yuen Wai Border Crossing Point in contributing the future cross-boundary transport network?

- It is important as it improves cross-boundary efficiency
- And Hong Kong needs the cross-boundary control points for supplying local goods (e.g. food)

10. As mentioned in your research, the logistics industry in HK has changed from export-oriented logistics to retail-oriented logistics driven by rising tourist volume, how will the upsurge of e-Commerce affect this logistic model?

- Growth of e-commerce is reported as not very significant in 2014-2015
- However, it is predicted to experience continuous growth in the future years
- SMEs: automation is not that significant
Appendix C6: Interview Notes VI
Interviewee: Government official with expertise in the transport and industry field
Date: 14th March 2017

1. What new technologies and new strategies can logistics operators learn to adapt to the future?
   - Radio-frequency identification (RFID) is expected to be adopted and became more common in shops. However, technology is not necessary for every type of logistics operation.
   - As start-ups will push for new technology research and advancement, SMEs are expected to exposed and start using and replying on shipment data extract analysis to improve efficiency.
   - App based delivery technology (e.g. lalamove) will become more common to users and operators.

2. How would your organization help local logistics SMEs to overcome the challenges?
   - Attract and Invite business operations to invest in Hong Kong.
   - To provide consulting services to help overseas companies come to Hong Kong.
   - Help them to communicate and lobby with relevant stakeholders.

3. What are the impacts of the gaining popularity of e-Commerce to logistics industry in Hong Kong? Is it particularly relevant to air/land logistics development in Hong Kong?
   If yes, how is it relevant?
   - Ecommerce as a quick turn around operation has tremendous potential in China.
   - However, operating in China is not ideal for e-Commerce businesses. It is inefficient to operate takes a lot of time (e.g. documents and checking) for customs if ship overseas.
   - Free port of Hong Kong gives us the competitive advantage. It is favorable for e-commerce businesses to set up regional warehouses in Hong Kong.

4. How would you evaluate the competition/cooperation with neighboring ports in PRD?
   - The proposed Liantang/Heung Yuen Wai Boundary Control Point connects Hong Kong to the eastern part of China and coastal provinces such as Fujian, yet the Port of Hong Kong still faces direct competition with Yantian Port.
   - HZMB could potentially attract investment from western part of China, and expand our economic hinterland.
5. How can the third runway in the airport facilitate the growth of air logistics in HK?

- Third runway can increase the cargo handling capacity
- However, comprehensive planning is needed
- As the trade volume is decreasing, HKIA should be expanded otherwise goods and economic opportunities will go to other places
- The third runway would help us to capture and cater for high value cargo such as pharmaceutical, perishable, ecommerce transshipment
Appendix C7: Interview Notes VII
Interviewee: Local large scale land based logistics operator A
Date: 14th March 2017

1. What’s your prospect of the Hong Kong-Zhuhai- Macau Bridge and Liantang/ Heung Yuen Wai Border Crossing Point in contributing the future cross-boundary transport network? Any foreign examples supporting your estimation?
   - The HZMB will no doubt bring us extra opportunities given the fact that it increases the overall connectivity of the Pan PRD Region as well as our logistics catchment area. However, the construction of the bridge is delayed and Hong Kong and the logistics sector could possibly miss the golden period of demand
   - Guangzhou airport developed in a rapid pace but their policy is limiting them
   - There is a need for Hong Kong to define its role and position in the region
   - HZMB can benefit HK as well as PRD: consolidate and use HKIA to channel out the air cargo
   - HZMB is very important to our land logistics sector, as it saves us the time wasted on traffic congestion
   - HZMB is critical to for to rationalize and share the air freight volume amongst the airports of Hong Kong, Shenzhen and Guangzhou
   - In terms of Liantang/Heung Yuen Wai Border Crossing Point it can rationalize the existing traffic volume at different boundary control points by diverting people to different gateway
   - However, it still depends on whether Hong Kong has sufficient infrastructural development to reach the boundary control point
   - There will be positive impact however, the level of significance is still uncertain

2. What are the key considerations in choosing a warehouse location? In addition, what is your take about revitalizing old industrial buildings in Hong Kong for warehousing/ value-added activities?
   - First, the location of warehouse is the number one consideration
   - Yet, warehouse is not standalone consideration
   - Factors like, sourcing, origin, supply of volume, destination of where the product is going to, determine the decision on warehouse location
   - The choice of location will be easy if the service is only serving Hong Kong alone, in that case, Yuen Long and Sheung Shui will be the ideal location because of the low cost
   - Besides that, government support is also important consideration
• Hong Kong needs more high-value and modernized warehouse with better facilities for example the racking system in Kerry Logistics Center
• Air conditioned and cold storage have the demand
• However, revitalization of old industrial buildings might not be efficient for logistics operations as they lack the loading bay which is necessary for efficient logistics operation, also the low ceiling height, making the utilization rate quite low which is unsuitable for handling large volume of freights

3. How is e-commerce changing the spatial requirements and activities within the warehouse? In addition, what do you think are the implications of e-commerce to the traditional retail space?
• The changes brought by e-commerce are logistics operators now need to operate in fast response time
• The pieces per order is smaller
• There will also be fluctuation in volume during different time of the year, for example, during seasonal promotions and peak seasons, the volume can increase by 10 times)
• E-commerce will decide how the warehouse inventory be set
• System support is essential for fast processing
• Manual operation cannot handle e-commerce driven logistics operations
• It is important to note that traditional retail and e-commerce can co-exist and grow together, they are not mutually exclusive
• The rise of omni-channel platform diminishes the difference between online and physical retailing
• The main reason for online shopping is the convenience and time saved
• However, traditional Chinese may do research online and would prefer to go check the product in store and in person
• E-commerce may trim down inventories in store, thus allowing more flexible allocation of store space

4. Can you elaborate on the process of reverse logistics and how your company handles it? In addition, what are the spatial requirements needed to facilitate this process (facilities, warehousing, commercial space requirements). Lastly, what are the challenges you are facing in this part of your business?
• In terms of reverse logistics, logistics service provider usually receive goods or products from the end users and recondition and process the products and redistribute it back to the market or the producers
• For the design of the warehouse in dealing with reverse logistics, it really depends on volume you are going to receive and go out before designing the warehouse

5. How do you think land and air logistics sector relate with one another? Do you expect any change in the future trend for land logistics in Hong Kong to have any implications on the air logistics industry?
• There is a strong cross relationship between land and air logistics. For example, trucking is needed to distribute the goods out once the plane landed
• Warehouses near the airport are mostly for temporary uses such as for sorting and routing purposes
• Well-developed and comprehensive transportation network can facilitate the use of warehouse

6. Do you think the government's current approach is supportive and comprehensive enough to the industry, or does it lack the coordination?
• The support from our government has lessened compared to before
• Our government has to understand HK’s advantages and redefine our position in the region

7. In our recent trip to Singapore, we found out that both private and public logistics sectors are developing automation technologies to facilitate their future operations (i.e. truck platooning, driverless vehicles etc.) Does your company have this sort of plan in the future as well? If so, what do you think will be its immediate effect in the labour force and land transport network?
• Is it necessary to invest in technologies as it only involves costs
• Currently, technology adopt in the logistics sector is mostly for mostly for sorting
• In Hong Kong, it is most often business first, technology second, however, there is a need to adopt new technology in respond to the e-commerce trend

8. From a business point of view, what role do you think will land logistics play in the future development of Hong Kong Logistics Industry?
• We will have to identify the role of Hong Kong in the PRD region to avoid direct competition with China
• Despite that china may have better facilities compared to HK, the policy of HK still put us at a better position at the moment
• The importance of land logistics will not diminish because of the demand
With adequate support from the government, the industry hope to expand its scope of business – e-commerce
Appendix C8: Interview Notes VIII
Interviewee: Scholar with expertise on logistics development in the Pearl River Delta Region
Date: 15th March 2017

1. What are your opinions on possible collaboration of HKIA with Shenzhen airport in handling air cargo? Will it bring more benefits or costs to HK airlines and air logistics industry? How can we equip HKIA such that it can better capture the opportunities arise from the increase in air logistics demand in nearby regions?
   - There is no direction cooperation between the two airports, since none of them wants to share the profits, and the Shenzhen Airport does not need money injection from Hong Kong, vice versa
   - Both of the airports are trying to attract cargo-network companies such DHL, Fedex to set up regional base in their precincts

The advantages of HKIA:
   - HKIA enjoys the highest connectivity in the region
   - More directly connected destinations
     - Cathay pacific, the partner for HK Post covers all the destinations Hong Kong needs to reach
     - SIR service agreement

2. Thirteen -five-year plan has initiated Guangzhou as an international logistics hub, do you think the strategic position will increase rivalry with Hong Kong’s logistics development?
   - There is and there will continue to be competition between ports in the PRD
   - In the 1980s, after China’s open door policy was announced, Hong Kong was the only port supporting the South China’s exporting and importing activities
   - In the 1980-1990s, HK’s port boomed in relation of production lines to the PRD
   - From 1994- onwards, HIT Port saw opportunities in PRD and invested in ports in PRD (Guangzhou Port (domestic shipment), Shenzhen vs HK (HIT as a terminal operator))
   - Late 1990s marks the rise of the Port of Shenzhen. Higher Inland transport costs and terminal charges of Ports of Hong Kong led to users to choose YanTian Port or Shekhuo instead of the Ports of Hong Kong to reduce the cost.
   - The advantages of the Ports of Hong Kong are its custom clearance procedure which doesn’t allow the boxes to be checked. Another advantage of the Ports of Hong Kong is the efficiency of operation, as well as closer to ocean-going route compared to Guangzhou and Nanshan
• In terms of policy, Hong Kong enjoys the advantages of Cabotage rule. The drop in cargo handling for HK port can be dropped by 50% if the Cabotage rule is abolished.

3. With regards to a public policy research project of the Central Policy Unit, how do you comment on the role of HKSAR government on attracting Cross-border e-retailing activities and connecting HK, Shenzhen and Guangzhou as a trading city-region?

• Interviewee believes that the Hong Kong Government should change the current mentality and take up a more aggressive role in supporting e-Commerce development
• The Government of Hong Kong should also set up policies to be more proactive to the industry in encouraging firms to come to Hong Kong
• The Government of Hong Kong should engage in restructuring the position of Hong Kong by promoting a change in its existing role to encourage the sector to be more engaged and penetrated in the international market
• Currently only the Technology Bureau is responsible for e-commerce related matters while ignoring the trading aspect of e-commerce. Interviewee believes that the government needs to interact and engage with the private sectors who involve in e-commerce activities to acquire more first hand knowledge in e-commerce (e.g. Government never does survey with Kerry Logistics)

4. What is your prospect of the Hong Kong-Zhuhai-Macau Bridge and LianTang/ Heung Yuen Wai Border Crossing Point in contributing the future cross-boundary transport network?

• HZMB will definitely play a role in supporting our land logistics industry
• HZMB involves huge investment and the interviewee believes the government should not think about getting back the investment through road tolls and charges, instead, the government should encourage the use of the bridge by lowering the relevant charges and to stimulate the flow of movement between cities
• The interviewee believes that container trucks serving sea cargos won’t use it as there will be less demand for river badge due to costs and there are not many cargos from Western PRD to HK
• The interviewee believes that air cargos (time-sensitive) will indeed be the targets (for example, Zhuhai Canon Cameras produced in Zhuhai will use HZMB and be deliver to HKIA for distribution)
• HZMB will also allow and encourage companies from the Western PRD to establish headquarters in Hong Kong
Appendix C9: Interview Notes IX
Interviewee: Scholar specializing in ecommerce and business development
Date: 15th March 2017

1. What do you think are the spatial requirements or implications of the value-added services in logistics industry, for example in terms of technology and operation?
   - Value-added services in logistics industry would require services providers to utilize space more wisely
   - As the scale of operations is getting larger and larger, logistics services providers are also involved in more diversified scope of logistics operations
   - There is a rise of companies that specialized in specific goods handling, for example, companies specialized in artwork trading
   - Modern logistics service providers also emphasize in spatial efficiency and better waste management and now these days while traditional logistics service providers tend to be dealing with big boxes with stuff in relatively smaller space with poor waste management
   - In terms of technology, it will satisfy and be based on customized needs, temperature-sensitive goods

2. Acknowledging that e-commerce is the emerging trend, how does it affect 3PL operation, particularly in value-added services? How can technology cater the shifting trend to e-commerce in logistics operation?
   - There is currently a huge demand for last mile delivery brought by the rising trend of e-commerce
   - In China, 3PL companies cannot keep up with client demands for e-commerce, on the other hand, clients are having trouble in identifying quality service provider for specialized service provider such as cold chain supply chain solution. China is far behind in terms of specialized services

3. What are the spatial implications of e-commerce in warehousing, transportation and conventional retail space?
   - Under the trend of e-commerce, the volume of freights is getting bigger and bigger, and the product types more diversified which requires much more operation and storage space than traditional logistics operations
   - Besides that, the design of the warehousing will be more complicated as they need to be customized to satisfy specific demands and needs of the clients
4. To what extent automated systems are more efficient compared to human staff in terms of value-added services? How will the advancement of technologies in logistics industry affect employment opportunities in the future?

- The focus of logistics operation is on the process, in terms of flow and relationship nowadays, not just on distribution
- There has been a shift of traditional logistics service providers to 3PLs
- The interviewee believes technology should be adopt in logistics companies’ operation
  - example 1: bar coding—>RFID
  - example 2: network type or information sharing
- In terms of technology and human capital, the interviewee believes it is necessary to give staff more training to upgrade their skills

5. How can technology increase efficiency in warehouse operation as well as transportation and distribution? Any foreign examples?

- The introduction of RFID into the processing procedure allows locating product more quickly
- New technology also increases efficiency in warehouse operation by improving traceability of goods
- The topic and discussion of technology development in HK is not well known.
- Technology development in HK is often driven by business sector while it is a government led effort in Singapore.
- Unlike companies in Singapore that are well supported by government policies, the technological companies of HK are more resilient since they must survive in the free market from all the competitions.
- The interviewee believes that our government is proactive enough.

6. To what extent e-platform can promote the growth of logistics industry?

- The interviewee believes that e-platform should be developed in the means of PPP (private public partnership)
- An e-platform example our interviewe gave was the e-link (1st)-share info for SME
- Another example would be maritime logistics platform- Alibaba x Maersk, CMG
- Our Interviewee believes that government’s role is to help SME enter the platform, but not to build the platform.

7. With rising transportation costs and growing uncertainties in mainland China, such as increasing labour costs and tightened environmental policies, do you foresee the opportunity of the development value-added logistics, especially reverse logistics in
Hong Kong?

- Yes, indeed reverse logistics would be a golden opportunity in these circumstances
- The driving forces would be the growing environmental awareness in our society
- The implication of reverse logistics would be that logistics service providers need to go through the process again, packing, transportation, moving
- Reverse logistics increases costs and its complex but will still be beneficial to companies

8. Should reverse logistics and repair operations be included within the consolidated distribution operations?

- The interviewee states that both normal logistics operation and reverse logistics take place in warehouses, putting them together would provide complete solution for clients.
- All logistics companies have potential to provide reverse logistics services.
Appendix C10: Interview Notes X
Interviewee: Scholar(s) from logistics profession in Singapore
Date: 15th March 2017

Questions List
1. Thirteen -five year plan has initiated Guangzhou as an international logistics hub, do you think the strategic position will increase rivalry with Hong Kong’s logistics development?

2. What do you think are the major strengths and weaknesses of the land logistics, such as cross-boundary logistics and urban freight transport, in Hong Kong?

3. How would you evaluate the competition/cooperation with neighbouring ports in PRD?

4. “There is a bigger role for Hong Kong as a gateway to South China but a smaller role as a relay hub for other parts of China.” Do you agree with this statement? How would you comment on it?

5. What are the implications of the completion of HZMB to the sea logistics industry in the PRD, particularly in land logistics?

6. How big of a role does river cargo from PRD play in Hong Kong’s port development?

8. As industrial buildings are not purposely designed for logistic use, do you think industrial buildings can serve as a land supply solution to logistic industry?

9. Do you agree that co-operative measures (e.g. joint ventures) have intensified and extended the competition between port operators from local competition to regional competition, while enhancing the co-operation between the port of Hong Kong and its counterparts in South China?

10. Do you think a national cabotage relaxation is likely to continue?

11. Factories in the PRD started to relocate to SE Asian countries. How does this affect China’s port and air cargo business?

10. How important is the cabotage rule to Hong Kong’s port industry?
11. How could Hong Kong benefit from the development of West PRD?

12. What’s your prospect of the Liantang/Heung Yuen Wai Border Crossing Point in contributing the future cross-boundary transport network?

Summary of Response

- Discussion is made on Guangzhou Port rather than Guangzhou province
- We should not just looking at throughput, but also look into our hinterland
  - See how these places play the role? Compatible with Hong Kong? (Zhu hai, Hang Kam, Shenzhen, Qianhai)
  - Just like financial centre, the country is big, therefore may not be necessarily competitive
  - Too naïve to say Hong Kong is the only gateway (Dalian- Korea, Japan, Los Angeles; Shanghai; Hong Kong- Taiwan) before they going to Pacific
  - It is true that Hong Kong faces competition from neighbouring cities
  - More like business behaviour, not competition among cities

- Logistics is a very wide spectrum; Operators are usually independent of place
- Biggest advantage of Hong Kong: Simple and efficient customs (Policy amendment usually takes time for the coastal cities to undertake)
- Situation in China:
  - Port to Port in China is cheaper than Port-Land
  - Rise of bounded zone (e.g. Simens) in Tianjin (without paying tax), break the barrier of taxation
    - Proximity to these bound zone generate demand for shipping there and creates competition with HK
    - A decreasing role to other part of China is explained by Bound zone
- Views on HZMB
  - Bridge is a new platform
  - Opens up in West PRD (manufacturing), go directly to Hong Kong
  - Uncertainty 1: There may not be sufficient manufactory in West PRD such that we can take the advantage?
  - Uncertainty 2: How can we attract them to use our port (There are ports in Shenzhen and Zhuhai)
  - Uncertainty 3: How much will be toll of HZMB?
  - Uncertainty 4: National security, custom office (you have to go through CIQ), unlikely to leave all the ban
- Views on River Cargo:
  - Division of labour between Kwai Chung and Tuen Mun
  - There must be some reasons why you allow TM to develop and later allow Kwai Chung to park barges simultaneously (super congested)

- Potential actions: (How can HK benefit from PRD?)
  - Good potential for produces services/ insurance
Appendix C11: Interview Notes XI
Interviewee: Member of a freight forwarding association
Date: 31st March 2017

1. What are the opportunities and threats for air freight forwarding industry in Hong Kong?

   a. Threat
      - Traditionally, B2B freights are usually in large quantities either in kg or tonnes, while e-commerce are generally smaller in quantities, usually measured in grams
      - In 4.5 years, HKIA will have to meet the new security screening requirement set by ICAO
      - Insufficient labor force, especially in the frontline
      - The cargo handling capacity of HKIA is soon to be saturated

   b. Opportunity
      - 3RS need to be completed as soon as possible, as our sea port is losing its competitive edge
      - The commodity that has the highest volume is the electronics

2. Apart from the undergoing infrastructure projects like Tuen Mun - Chek Lap Kok Link and HZM Bridge, what supplementary spatial strategies and policies do you think will be beneficial to the development of air logistics or air freight industry in Hong Kong?

   - Very beneficial to HK as it will extend the economic catchment area of Hong Kong, HKIA could be benefited from it as well as it can handle more high-value added exporting and importing

   - More high-value added facilities to be introduced to accommodate this. As a result, more e-commerce, and high value added products will be introduced and promoted to Hong Kong

3. The spatial implications of e-commerce and security requirement?
   - The new security requirement would require constructing extra screening facilities which implies extra costs. Some costs control measures would be allowing 3rd party to carry out screening to allow competition
• However, there will be extra costs if security screening facilities is being carried at off-site screening premises: Having secured trucks for off-site screening may also imply extra costs

4. Human resources and personals are indispensable parts of reverse logistics operation and supply chain management, do you think the human resources of Hong Kong are mature and skilled enough to manage and help develop the reverse logistics industry?

• No, labor shortage is expected to be especially severe for reverse logistics
• It will increase attractiveness if facilities are located in urban areas
• Training will not be a big problem
• The interviewee recommends to have funding to be provided by Logistic development council, and to guarantee trainees employment opportunities.

5. How will the increasing transshipments in both air and sea logistics operations affect the operation of land logistics?

• Since there is no manufacturing factories in HK, large goods will be coming from land then be exported through air and sea which implies double terminal fee

6. How can the government help to facilitate and support the growth of the industry?

• The interviewee believes that HSK development should cater high value added logistics facilities in order to fully utilize land resources
• In terms of preference on screening facility: the interviewee believe that all the following options are needed to be implemented:
  o Constructing security screening facilities at off-site locations e.g. Tsing Yi North and Stonecutters Island
  o The currently vacant precinct should be used for centralized security screening instead of high-value added cargo handling facilities
Appendix C12: Interview Notes XII

Interviewee: Local middle scale land based logistics operator
Date: 16th March 2017

Questions List
1. Are there any specific sectors or trend of logistics operation do you foresee will have a rising demand or potential to growth in Hong Kong?

2. With rising transportation costs and growing uncertainties in mainland China, such as increasing labour costs and tightened environmental policies, do you foresee the opportunity of the development of value added logistics, especially reverse logistics in Hong Kong?

3. Should reverse logistics and repair operations be included within the consolidated distribution operations?

4. Human resources and personals are indispensable parts of reverse logistics operation and supply chain management, do you think the human resources of Hong Kong are mature and skilled enough to manage and help develop the reverse logistics industry?

5. As a phenomenon which refers to the management of products when they are of no use to the consumers, reverse logistics involves supply not only warehousing and transportation but also accurate trace and track as well as customer interaction. That being said, it will not only require facilities such as loading and unloading sites but also actual office to provide services and management of the whole process, does the reverse logistics has an commercial spatial requirement?

6. Would it be beneficial to include the office aforementioned within the site of consolidated distribution operations?

7. Are there any spatial or infrastructure hindrances/obstacles that the sector of reverse logistics is concerned about?

8. With the ZHMB being built, do you see any opportunities for HK’s logistics industry in general?

9. How will you expect the future positioning of SMEs logistics industry to have an implication on the air logistics industry in HK? If yes, in what way and how big will be the impacts?
Summary of Response

• Background of the company:
  o It considered itself as a medium to large logistics company
    ▪ Possess around 30-40 trucks
    ▪ Public Storage (each floor is usually a mixed of different types of goods), storage time depends on the need of client (Logistics is kind of customer service)
    ▪ Each floor can cater the volumes of 50-60 containers
    ▪ Focus on local market with bits of transhipment (From ship/ airport to mainland and other rapidly developing countries i.e. India, Philippines)
    ▪ Diverse types of goods (ranging from snacks, plastic materials to audio instruments)
    ▪ Handles reverse logistics (e.g. some returned products from supermarkets)

• Difference between the company and Kerry:
  o The visited company
    ▪ Public Storage
    ▪ Does not use automation (barcode system is not difficult, yet there is no need for their clients. Useless to be too precise and they are serving many clients
  o Kerry
    ▪ Usually each floor space are for one/ few particular clients, with operational machine provided by clients
    ▪ Make good use of automation (i.e. barcode system), serving for big client

• View on Air logistics
  o Previously, the peak season are only Christmas and summer. These days, its business rely much more on e-commerce (e.g. Taobao, Amazon)
  o Goods become much smaller in size and clients demand for quick delivery
  o Storage in airport is the most expensive in Hong Kong. That’s why it runs 24 hours.

• Impact of ZHMB on the business
  o The company focuses much on local markets. It therefore is not affected by change in catchment base.

• Challenges the companies face:
  o Labour shortage (unlike Singapore, Hong Kong does not import labour.)
• Reason: Living costs in Hong Kong is too expensive, including accommodation and meals. It is not financially viable to employ an imported labour.
  o Man Sun can select clients. Only do business with those demand simpler operation procedures (Free market in Hong Kong)

• Future development of the company
  o Logistics is a risky industry. Therefore the company does not solely doing business on logistics.
  o The company wishes to expand, however, most land are already acquired by private developers (Even in Hung Shui Kiu). Government cannot do much.
  o Suggests government to relax the development control in New Territories (plot ratios of some industrial land use is only 2.5). The road network system is even more comprehensive than urban area (where roads are narrow and congested)
  o It is hard to solve the problem of urban congestions (width of roads are fixed, property owner would not be willing to do more setback and free up the land for road)
Appendix C13: Interview Notes XIII
Interviewee: Local large scale land based logistics operator
Date: 17th March 2017

Questions List

1. With the construction of the new mega bridges and other cross boundary infrastructure, will the change in logistics environment affect your business and in what way will it do so?

2. Land logistics is a key element on how goods brought into Hong Kong by ship and plane can be delivered to customers or transported to warehouse facilities for transport into mainland China. Could you describe to us the process in which the cargo is unloaded from the ships and then onto the trucks? Please also further elaborate on the stakeholders involved and also any problems that are generally encountered during the transfer process.

3. Are there any sea-to-air and air-to-land transhipments involved in your business? Could you share with us their characteristics (if any), likely origin and destination as well as the cargo handling procedures?

4. Our study found that increasing cost, labour shortage and land shortage are the major constraints to developing logistics industry in Hong Kong nowadays. What are your thoughts on this? Are they similar to the key challenges you face in operating a logistics firm in Hong Kong?

5. How would you rank the impact of location, cost and competition to your business?

6. Could you share with us the major challenges faced by your company/ the industry as a whole, and any support from the government is required? (e.g. average labour age, any shortages…)

7. How important is the cabotage rule to Hong Kong’s port industry? Do you think a national cabotage relaxation is likely to continue?

8. How would you evaluate the competition/cooperation with neighbouring ports in PRD?

9. Do you think a national cabotage relaxation is likely to continue?

10. Factories in the PRD started to relocate to SE Asian countries. How does this affect
China’s port and air cargo business?

11. What are the implications of the completion of HZMB to the sea logistics industry in the PRD, particularly in land logistics? What’s your prospect of the Liantang/ Heung Yuen Wai Border Crossing Point in contributing the future cross-boundary transport network?

Summary of Response

• Background of the company- Shipping company
  o Over 100 barges, 48 trucks and 80 subcontracted trucks
  o A bonded warehouses
    ▪ Serve for both export and imported goods, especially wine, alcohol and cigarette which need to pay tax in Hong Kong
    ▪ Strictly regulated by the Hong Kong Customs and Excise Department
  o Self-owned warehouse
    ▪ Locates near to River Trade Terminal
    ▪ High proximity to Tuen Mun Chek Lap Kok Link and the HZMB
    ▪ Storage for Haeco

• Warehouse development in Hong Kong
  o Kwai Tsing (Land cost is higher; Goods need to quick in & quick out) / Tsuen Wan
  o Near to the airport/ Lantau Island
  o Yuen Long (logistics operations in containers)
  o Tuen Mun (for storage, usually not for high value-added goods)

• Scope of logistics business in Hong Kong
  o Transhipment (particularly for sea)
  o Local demand (trading with the mainland China)
  o Reverse Logistics (particularly recycle materials)

• Ways to maintain Hong Kong’s logistics development
  o Trading policy (collaboration and revised regulations- more favourable)
  o Cost reduction (land and labour cost)

• Challenges to Hong Kong logistics development
  o Lack of high tech management
    ▪ E.g. robot automation, QR code to check the seal, wechat payment)
- The other ports development is more advanced than that of Hong Kong
- There is very little motivation for the logistics operators to upgrade themselves
  - Lack of young working population (average is 55 years old)
- Impact of moving out of factories to the south-east Asia
  - Not very much impact because goods in the PRD is with much higher quality.
  - Factories in the south-east Asia:
    - Poor performance (lower productivity)
    - Common for corruption
- Impact of HZMB on logistics in Hong Kong
  - Benefits overall logistics industry
    - Shortened travelling distance (particularly Express delivery)
      - 2 hour from Zhuhai to Hong Kong including customs clearance
    - Ease the congested cross-boundary traffic at the Shenzhen Bay
  - However, it does not affect the business of barges because the connectivity of river trade terminals in China is quite good now
- Impact of Cabotage rule
  - Unlikely to further relax in recent years
  - Hong Kong still play its vital role
Appendix C14: Interview Notes XIV
Interviewee: Member from the Rural Committee
Date: 18th March 2017

1. What are the current situation of logistics related operations in Brownfield sites (e.g. types of business, number of operators, employment situation, economic contribution, etc.)?
   - There are few logistic industries
   - Two major types of business:
     - Distribution hub for express delivery (mostly from air)
     - Cargo storage
   - Case of Yuen Long South brownfield
     - Total brownfield coverage: 200 ha
     - Rental: $2-3 per feet
     - There are approximately 1000 operators and more than 10,000 related employment

2. In your opinion, what will be the socio-economic impacts of developing Brownfield sites?
   - Perspective of Employment
     Proposal of relocating multi storey industrial to Northern part of Yuen Long South affect the local employment, especially those who used to work there.
   - Perspective of Businesses
     Existing operators need to seek new land for relocation of business because land designated for storage/workshops uses in the proposal is less than the existing one.

3. Recently, Hong Kong government is actively reorganising the land uses of Brownfield sites through comprehensive planning, and it is anticipated that the logistics related operations (e.g. port back-up facilities, logistics and warehousing, open storage, etc.) there will face keen transformation over time. In your opinions, what are the possible short-, medium- and long-term strategies that both the government and operators can carry out in responding to the transformation?
   - Short-term to Medium-term
     - Conduct a feasibility study on brownfield regarding its existing use and future development
   - Long-term
     - Develop brownfield
     - Consider relocation of affected tenants/ other users
4. With reference to logistics operations, what are the major obstacles (e.g. compensation, future land supply) in developing Brownfield sites? (b) What will be your possible role in coping with these obstacles?

- Two major obstacles in land supply
  - Ensure that the acquired site can fulfil the spatial requirement of future development
  - Ensure the compensation can meet the expectation of land owners, or else it may trigger to protest

(b) Role of the interviewee
  - Act as a communicator between the locals, operators and the Government
  - Provide suggestions to Government after consultation and research finding

5. Take Hung Shui Kiu and Yuen Long South New Development Areas as examples, there are now 130ha land serving the container storage, warehouses and logistics operation in HSK and 100ha affected Brownfield sites in YLS, but only 24ha and 12ha land reserved for open storage, storage and workshop uses in the HSK and YLS NDA plans. In your opinion, is it adequate for Brownfield operations? If not, how much land should be reserved for logistics operations in the NDA plans?

- No, it is not enough
- Brownfield operation has its own unique spatial requirement. It is therefore very difficult to be relocated to urban areas or inside multi-storey compound.
  - Logistics operations in multi-storey buildings are limited, depending on the spatial requirement
    - High ceiling, heavy weight capacity and spacious workshop area
  - Different types of logistics operations (e.g. light storage, packaging)
  - As least 20-30 ha are needed for the sustainable growth of these industries

6. With the Hong Kong-Zhuhai-Macao Bridge (HZMB) and the Liantang / Heung Yuen Wai Boundary Control Point being built, it is anticipated that an efficient and cost effective land linkage between the western and the eastern parts of the Pearl River Delta Region will be established. Do you see this as an opportunity for the logistics operators in the New Territories Brownfield sites? If so, in what way?

- Yes. Yuen Long South situates at a strategic location, which has a very strong connection to China
  - West: HZMB
  - Middle: To Qianhai Lake
  - East: To YanTian
8. Do you think that Route 9, as the major linkage between the North East New Territories and the HZMB, can handle the increasing traffic flow after the HZMB and Liantang / Heung Yuen Wai Boundary Control Point is completed? What will be the development impacts on the New Territories?

- Yes. Route 9 can handle the increasing traffic flow
  - Mature infrastructure provision in Hong Kong
  - Government should have carried out comprehensive study (with consideration of handling capacity) prior to decision making

9. What will be the challenges and opportunities to the logistics operators in Brownfield sites after the completion of the aforementioned infrastructures? Will this change in infrastructural landscape imply extra spatial demand of brownfield usage to cater those logistics activities?

- Challenges to operators in Brownfield:
  - Search for new site to continue with its operation
  - May need to re-apply for licence
  - Suffer from insufficient compensation

- Opportunities to Hong Kong:
  - The proposal to utilise land resources of brownfield provides opportunities to ease housing problem in Hong Kong
Appendix C15: Interview Notes XV
Interviewee: Retired town planning professional A from the government
Date: 20th March 2017

1. As transportation is creating a comprehensive network for more efficient flow of goods from place to place, developing cross boundary infrastructure by one side of government may not be able to do so. What level of collaboration do the Hong Kong government and nearby Chinese cities' governments?

   - In Greater PRD, Hong Kong embraces a role of being the Central Business District of in big Pearl River Delta Region and such role cannot be replaced or diminished due to institutional, and policy framework advantages of Hong Kong as well as the affluent pool of talents Hong Kong has.

   - In greater PRD, Hong Kong is also the connection point and gateway for people and things that want to enter the Mainland market.

   - If Hong Kong wish to maintain its competitive advantage, there is a need to strengthen the training in human resources, talents and our physical transport infrastructure.

   - Passenger flow (physical), vehicle flow (physical), goods flow (physical), capital flow (intangible, related to institution), information flow (intangible) all have stronger spatial implications.

   - The interviewee believes that only through maintaining the competitive edges of Hong Kong can regional cooperation be achieved for Hong Kong.

2. What's your prospect of the Hong Kong-Zhuhai- Macau Bridge and Liantang/ Heung Yuen Wai Boundary Crossing Point in contributing the future cross-boundary transport network?

   - The HZMB, and the Liantang/Heung Yuen Wai Boundary Crossing Point are the types of investment in infrastructure for the future which reduces operational and transportation costs as well as time, while improving comfortability, safety, reliability of cross boundary movements.
For boundary crossing points— it is not about how many people and vehicle will use it, but to examine the fact that how can it rationalize the existing movement and flow at the current control points

For strategic infrastructure: the interviewee believes that if the capacity of infrastructure can be reached very quickly, that means the provision of the proposed infrastructure is late.

Gravity Model

Locational advantage can be changed over time, as the connectivity to a site is the rule of thumb

3. Some may argue that the transformation of Brownfield sites focuses too much on housing supply, neglecting the needs of existing operators there (especially logistics related, car repairing and recycling operators). What are the short-, medium-, and long-term strategies you would think they are feasible in responding to this argument?

The brownfield issue of HK is a unique one which cannot be compared to other countries, in terms of activities in use, ownership pattern, and the spatial layout of Hong Kong’s brownfield sites.

Need to take social and public interests in account

4. Taking HSK NDA as an example, there are now 130 ha land serving the container storage, warehouses and logistics operation, but only 25 ha land reserved for open storage, storage and workshop uses. Do you think it is enough and feasible to move all these operations into the multi-story buildings?

The new logistics building in HSK is flexible, adaptable with large floor loading ability, large span and headroom, stable and can withstand vibration

“Creating certainty in uncertainties through planning”

5. What are the reasons for the inadequate supply for logistics land in the past decade?

There is a lack of comprehensive land formation projects for industrial sites
- The land bidding and purchasing ability of logistics users are relatively
Appendix C16: Interview Notes XVI
Interviewee: Local small scale land based logistics operator
Date: 31st March 2017

1. From your observation, how do you categorize the types of operators in the land logistics industry?

- In Hong Kong, there are currently 3 types of companies operating in which are:
  - large scale logistics operators like Kerry
  - express company like S.F. Express
  - while local firms can be separated into two tiers — medium and small:
    - medium: receive the sub-contracts from large scale logistics operators
    - small: receive clients from long-established business ties or reputations

2. What are the difference of type of clients that your company and the large-scale operators serve?

- Large scale logistics operators usually serves big cooperates such as Uniqlo and Godiva as they can provide total supply chain management solutions, for example Kerry Logistics
- While small logistics firms typically serve smaller companies (the interviewee has a client making medical appliances)
- Large scale logistics companies provide services in a more black-and-white way (e.g. if the location of delivery requires extra effort, then they need charge extra while SMEs tend to be more flexible and humane in a sense
- Smaller clients may not have enough budget to call for large scale logistics companies

3. Are there any preferences for different operators in selecting the location of warehousing space?
Location of warehouses

- Smaller operators prefer Yuen Long and Tuen Mun as they are cheaper but also a favorable location for trucks from mainland and products that can be stored for a period of time

- While larger scale operators prefer Kwun Tong, Kwai Tsing more expensive which are accessible to ports and airport / urban areas

4. Where is your company’s warehouse located? Why do you choose this location?

- Tsuen Wan as the location is close to their clients

- Although NT is cheaper, the transport costs from tunnel fee and time cost will increase contributing to a higher operation cost.

5. Does e-commerce bring any challenges to SMEs in the land logistics industry?

- Not to SMEs, as they don’t have the labor and financial resources to handle e-commerce logistics operations

- E-commerce market is not for them, as local SMEs usually handle goods delivery

6. How can SMEs make use of automation in their operations?

- SMEs may stick with labor to sort products as automation requires high capital costs in installing and labor training.