# CITI INTERNATIONAL CASE COMPETITION 2011

Sustainability of Hong Kong as a Regional Container Hub

Hongkong International Terminals

# Sustainability of Hong Kong as a Regional Container Hub: The Hongkong International Terminals Story[1]

Eric Ip stood in the meeting room looking out over a sprawling container terminal with boxes stacked in precise rows, quay cranes shifting cargo from vessels and a procession of trucks moving through to claim their goods. As he watched this image of efficiency he reflected on 18 years of change as Hongkong International Terminals Limited (HIT) rose to be one of the world's busiest independent container terminal operators[2]. When he joined the firm in 1993 market shares in Hong Kong's Kwai Tsing container port were stable. Yet as the 1990s progressed that all changed. Ports in mainland China that had recently been opened to world shipping began attracting cargo previously handled by Hong Kong, where container operations came to be seen as a sunset industry. It seemed that the waterfront in Kwai Tsing might be more useful as a residential development.

HIT management's first crucial decision in combating this situation was to steer the firm toward higher volume, lower tariff cargoes that had been previously overlooked. The firm then began to more aggressively court customers, breaking the old operations mindset by more readily meeting customer needs in terms of pricing and service quality and establishing an industry-leading level of service excellence. Even so, by the early 2000s it was obvious that Hong Kong had lost much cargo to ports in nearby Shenzhen. As Eric rose to Managing Director, he and the management team pushed for a new change of direction, this time toward transshipment[3]. By reorienting HIT's throughput, the amount of cargo it handled annually, [4]to include a far higher percentage of cargo coming into the Hong Kong hub usually from the United States and Europe to be sent out along spokes to other destinations, the firm extended its share of intra-Asia trade. By 2010, HIT and its joint venture COSCO-HIT[5] held the majority of market share in Kwai Tsing by throughput. Far from being part of a sunset industry, HIT seemed to be basking in the midday sun. Yet in his latest position as Executive Director of Hutchison Port Holdings Management Pte. Ltd. (the Trustee-Manager of Hutchison Port Holdings Trust), with oversight of operations in South China including HIT, Eric faced the challenge of maintaining the firm's growth with the change to a hub and spoke system of cargo handling.

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[1] *Prepared by Mike Poole under the supervision of Professors Roger King and Winnie Peng solely for use at the Citi International Case Competition 2011. This case is not intended to serve as an illustration of effective or ineffective management.*


[2] *Hutchison Port Holdings (HPH) Trust (2011), HPH Trust Prospectus, Author: Singapore, p.245.*

[3] *A broad definition of transshipment is the movement of a cargo from one ship to another at some point of its journey. This can involve ship-to-ship transfers, but more commonly involves quayside loading and unloading, and short-term storage; HPH Trust (2011), Prospectus, p.221.*

[4] *Throughput is divided into import, export and transshipment. HPH Trust, Prospectus, p.221.*

[5] *HIT formed COSCO-HIT Terminals with COSCO Pacific Limited, China's leading shipping line and among the largest container terminal operators in the world; HPH website: **http://www.hphtrust.com/portfolio_cosco.html** (accessed 17 September 2011); COSCO Pacific website; **http://www.coscopac.com.hk/eng/aboutus/company_profile.php** (accessed 18 September 2011).*

# Industry Background

Even more so than HIT, the worldwide shipping industry changed profoundly in the second half of the 20th century. The two key factors were the advent of containers with the accompanying expansion of throughput and the rise of transshipment as a viable shipping arrangement.

## The Impact of Containerization

The velocity of world trade increased dramatically with the operationalization of the cargo container by American trucking magnate Malcom McLean in 1956.[6] With standardized units to shift, cargoes could be handled as commodities themselves rather than collections of assorted goods, which meant that shipping lines became more efficient and productive, and sea haulage became more cost effective. By the 1970s containers were carried on all routes, which necessitated new ship designs and revamped cargo-handling facilities in ports. The increase in shipping volumes also led to the formation of strategic alliances[7] and the creation of large, industry dominant firms such as Maersk that grew through acquisitions.[8] Shipping concerns became increasingly global and container trade growth consistently outperformed global GDP growth. From 1980 to 2010, world container port throughput expanded at a compound annual growth rate of 9.2%, which was almost three times the rate of global GDP growth. By 2010 China alone accounted for almost 24% of world container traffic, with a majority of that flowing into and out of the manufacturing powerhouse of the Pearl River Delta, on the southeastern edge of which Hong Kong was located.[9]

## The Rise of Transshipment Hubs

As ship size and the overall volume of trade carried in shipping containers increased, so did the importance of transshipment. Shifting cargo from long-haul vessels coming into a hub to smaller sub-contracted vessels plying regional routes originally ensured that shipping lines could reach smaller ports that their own large ships could not enter. Yet in the 1990s, lines began to use transshipping to increase service options and cut overall network costs, with larger ships only ever travelling between hubs and smaller ships restricted to mainly regional spokes. In the twenty years from 1990 to 2010, transshipment moved from 17.6% of global throughput to an estimated 28.5%, an overall increase of 61%. The method allowed quicker turnaround, but it did have a major drawback for terminal operators. Transshipped containers earned lower revenue per move than import and export

[6] *HIT formed COSCO-HIT Terminals with COSCO Pacific Limited, China's leading shipping line and among the largest container terminal operators in the world; HPH website:* ***http://www.hphtrust.com/portfolio_cosco.html*** *(accessed 17 September 2011);*
*COSCO Pacific website;* ***http://www.coscopac.com.hk/eng/aboutus/company_profile.php*** *(accessed 18 September 2011).*
*Pacella, Rena Marie (2011), "The System of the World", Popular Science 279(32), p.58; Levinson, Marc (2006), The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger, Princeton University Press: New Jersey, pp.48, 51-52.*

[7] *Lun, Venus Y. H., Pang, K. W. Panayides, Photis M. (2010), "Organizational Growth and Firm Performance in the International Container Shipping Industry", International Journal of Shipping and Transport Logistics 2(2), p.207.*

[8] *From 1995 to 2005 Maersk purchased Safmarine Container Lines, Sealand (Malcom McLean's industry-changing line), TORM Lines and Royal P&O Nedlloyd, itself a merger of P&O Container Lines and the Nedlloyd Line; Maersk Line website:* ***http://www.maerskline.com/link/?page=brochure&path=/about_us/milestones*** *(accessed 8 August 2011)*

[9] *HPH Trust (2011), Prospectus, pp.217-219.*



containers, because they were moved off one ship and onto another for the same price as a single move off a ship for import cargo or onto a ship for export cargo. Transshipping business was also less stable than import and export business, which involved ports attracting shipping lines with goods intended for sale or use in their immediate hinterlands and sending out export cargo from those hinterlands to other ports for sale or use nearby. In contrast, transshipment hubs were not necessarily close to the final destinations of the cargo handled and could be substituted for other regional hubs if shipping lines so desired.[10]

# HIT Background

## Establishment and Control

Following the Hong Kong government's decision to earmark Rambler Channel off Kwai Tsing as the site for a large-scale container port in the 1960s, the Hongkong and Whampoa Dock Company (HWD) moved into container cargo operations. In 1969 the former ship construction and repair firm spun off those operations as HIT, which began developing a terminal at Kwai Tsing in the mid-1970s. With the merger of HWD and Hutchison International in 1977, HIT came under the control of Hutchison Whampoa Limited (HWL).[11] After a period of rapid development, HWL established Hutchison Port Holdings (HPH) in 1994 to control HIT, its other operations in Hong Kong and those in other ports around the world,[12] including Yantian International Container Terminals (YICT) in the east of nearby Shenzhen. In early 2011, HWL spun off some of its assets in southern China as Hutchison Port Holdings Trust (HPH Trust).

## Group Organizational Structure

Operating under HWL, HPH had eight divisions around the world. These were grouped primarily according to geographical coverage and the expertise of the executives in control. [**Exhibit 1** provides an overview of the organizational structure into which HIT fitted in 2011.] HPH was responsible for its own internal affairs spread across six functions, the regions below it and their various divisions. HPH Trust took direct control of the former South China Division in 2011, grouping together operations of YICT in Shenzhen and five firms in Hong Kong as well as the economic benefits of three river ports in the PRD. These included HIT, COSCO-HIT, Asia Port Services with its 'midstream' barge service to and from ships and between ships in Victoria Harbour,[13] and Hutchison Logistics. Eric Ip played four roles in this structure. As Executive Director of HPH he helped in guiding the Group's operations and strategy. He was also Executive Director of Hutchison Port Holdings Management Pte. Limited, the Trustee-Manager of HPH Trust. These two roles combined with his position as HPH's Head of Commercial meant that he provided strategic directions for the regions. Eric was also Chairman of YICT [see his biography in **Exhibit 2** for more information].

[10] *Information provided by HIT.*

[11] *Hongkong International Terminals Limited website:* ***http://www.hit.com.hk/1abo/history.asp*** *(accessed 7 August 2011)*

[12] *Hutchison Whampoa Limited Website:* ***http://www.hutchison-whampoa.com/eng/ports/overview.htm*** *(accessed 8 August 2011)*

[13] *Midstream firms such as Asia Port Services operate from 12 sites throughout the port district. Their barges, with crane towers raising and lowering containers, are a common sight on Victoria Harbour despite safety concerns; Sea Trade Communications (2010), Port of Hong Kong Handbook, Author: Hong Kong, p.39.*

## Operations Overview

HIT took full advantage of the limited space available at Kwai Tsing. As a starting point, the 15.5 meter water depth directly off the quays meant that the operator could simultaneously handle multiple 'mega vessels' with capacities of over 10,000 TEU[14] without costly and disruptive dredging. The overall operations, including those of COSCO-HIT, spread across 111 hectares to cover terminals 4, 6, 7, 8 East and 9 [see **Exhibit 3** for the port's multi-terminal layout]. These included 14 berths, nine barge berths, a total quay length of 5,080 meters, 56 quay cranes and 158 rubber-tired gantry cranes[15] [see **Exhibit 4** for the facilities in operation]. From 2005, the entire scope of operations was controlled and monitored by the Next Generation Terminal Management System (nGen), which determined how ships were received, loaded and unloaded, how trucks[16] moved into and through the terminals, and the ways in which the terminal space and its equipment were put to use. By allowing shipping lines to integrate nGen into their own systems, HIT further enhanced efficiency. As a result of this streamlining, each quay crane could consistently move 30 or more containers onto or off ships each hour, placing the operations among the most productive and efficient in the world.[17] HIT coupled this with intense efforts in staff training and the use of environmentally friendly technologies in as many parts of its operations as possible [for a list of related awards and certification, see **Exhibit 5**].

## Business Performance

With Hong Kong operating as a free port at the nexus of major shipping routes, HIT's business grew steadily. In 1978 the terminal operator achieved an annual throughput of just under 500,000 twenty-foot equivalent units (TEU), or loads averaged out to the capacity of an industry standard 20-foot container.[18] By 1989, annual throughput had tripled to 1.5 million TEU, and by 2010 with the world's top 30 shipping lines[19] as customers HIT had increased throughput to just over 11 million TEU. From 2008 to 2010, when the world economy suffered the global financial crisis and its after-effects, combined throughput for HIT and COSCO-HIT rose by 21.42%.[20] In 2010, the two operators had a total throughput capacity of 12.6 million TEU, which set them apart as the largest operation in Hong Kong handling import, export and transshipment containers[21] [see **Exhibit 6** for an overview of HIT's performance from 1993 to 2010].

*[14] The concept of a mega-vessel is widely used in the shipping industry but not rigidly defined. It rose from a ship with a capacity of around 4,300 TEU in the 1980s to 10,000 TEU in 2010. Essentially, a mega vessel has a capacity in the upper range of what is currently available. See Redline website:* ***http://redlinenewsletters.wordpress.com/2010/12/08/mega-container-vessels-to-reduce-ocean-freight-rates/*** *(accessed 21 September 2011); Rod Vulovic (n.d.) "Changing Ship Technology and Port Infrastructure Implications", available at* ***http://oceanservice.noaa.gov/websites/retiredsites/natdia_pdf/9vulovic.pdf*** *(accessed 21 September 2011)*

*[15] Sea Trade Communications, Handbook, p.26; HPH Trust, Prospectus, pp.188.*

*[16] The Hong Kong port is not connected to a rail system.*

*[17] HPH Trust, Prospectus, pp.177, 190, 201.*

*[18] Standard shipping containers include 20- and 40-foot versions, with some other sizes in use. A TEU is based on the dimensions of the 20-foot container: 20 feet long, 8 feet wide, 8 feet 6 inches high, with maximum load capacity of 24 tons. HPH Trust, Prospectus, p.xi. "New Dawn for the Delta", Sphere 29 (June 2011), p.14.*

*[19] "New Dawn for the Delta", Sphere 29 (June 2011), p.13.*

*[20] HPH Trust, Prospectus, pp.7, 174, 244-245.*

*[21] A terminal's capacity is the theoretical amount of throughput that it can handle in a year, based on its stacking area and quay capacity. HPH Trust, Prospectus, pp.xi, 245.*



By 2011 HIT's revenue streams were stable with import and export cargo generating approximately 40% of revenue and transshipment generating approximately 60%. Both streams included long-haul and intra-Asia cargo, but transshipment containers generated lower revenue through their two moves rather than one per voyage. Ancillary services such as storage, dockage, and container maintenance and repair comprised around 10% each of the two revenue streams [See **Exhibit 7** for further information, including index pricing].

## Competition

By 2010 HIT and COSCO-HIT had captured 64.6% of Kwai Tsing's annual throughput.[22] To put this figure into a broader perspective, Hong Kong was ranked the third busiest port in the word during the same year [see Exhibit 8 for world port rankings]. HIT's chief competitor in Kwai Tsing was Modern Terminals Limited (MTL), which held a 31.6% percent market share. The two firms had competed heavily in pricing during the latter part of the 1990s until MTL used heavy discounting to temporarily capture the single customer of a third operator, and then win the business of an Asian shipping line in 2000. In the fallout from the three-cornered confrontation the third operator lost around 30% of its annual revenue. In the following years the relative market share between HIT and MTL stabilized, although by 2010 MTL's annual throughput measured only half of what HIT and COSCO-HIT achieved[23] [**Exhibit 9** provides an overview of the competitive landscape in Hong Kong]. On a regional level MTL became involved in the operations of the Chiwan Container Terminal, the Shekou Container Terminal and the Da Chan Bay Terminal in Shenzhen,[24] all of which competed with HIT for import and export cargo. Another competitor in Shenzhen was YICT, HIT's sister firm in the HPH Group. Further afield, HIT competed with operators in Singapore and Busan, South Korea in its efforts to develop a transshipment hub.[25]

# Development of a Transshipment Strategy

## The Shift to Lower Tariff Cargoes

When Eric Ip joined HIT as General Manager Commercial in 1993, the firm did not need a transshipment strategy and the circumstances that pushed it in that direction were only just beginning to emerge. HIT ran a 'deep-sea' terminal catering to long-haul import and export cargo primarily from Europe and the United States that attracted high tariffs, or charges covering services related to docking, container handling and storage, and administration. Lower tariff cargo, such as that involved in the barge-based midstream business and intra-Asia trade, was kept to a minimum. The firm was set in its ways and there was no urgency about its business decisions. Although not inspired by the circumstances, Eric refused to think of the Kwai Tsing port as entering its sunset years, a view widely held by the general public and even the Hong Kong government. His commercial instincts led him to consider the situation as one full of potential. Given that HIT had much spare capacity, it could easily take on lower tariff cargo without harming its usual higher tariff business. Each time a ship arrived with a lower tariff cargo, HIT would put

*[22] HPH Trust, Prospectus, p.245.*

*[23] HPH Trust, Prospectus, pp.245-247.*

*[24] Modern Terminals website:* ***http://www.modernterminals.com/eng/theCompany/affiliates.html*** *(accessed 16 September 2011)*

*[25] HPH Trust, Prospectus, p.206.*

otherwise idle facilities to use and generate new revenue. Lower tariffs would reduce margins but higher volumes would compensate, meaning that the new tariffs would effectively be building business. This logic won the day, and the firm began to shift away from high-tariff cargo alone toward anything that could generate economic value.

Although a purely commercial decision, this move from long-haul import and export cargo led HIT into intra-Asia trade, a key step toward the creation of a transshipment hub. It also had two immediate consequences. First, it started a trend in which the Commercial team would make core business decisions for the firm. Second, it helped HIT to form the right corporate mindset to deal with a major change in the way the shipping lines did business. Previously, the lines had operated independently and only cooperated when they did not have enough ships. Yet only two months after HIT's change of commercial direction the lines began to form loose consortiums to build bigger ships and compete on frequency. Individual lines were being influenced by their new partners to shift to preferred operators, which now had to ensure that their tariffs were very competitive and their levels of service were more than just satisfactory.

## Gaining Market Dominance

Fortunately for HIT, the Commercial department already had the goal of focusing more on what customers wanted to improve sales. The team members reasoned that in time customer-focused operations would follow. With the emergence of shipping consortiums, that philosophy was put to the test. The Commercial team was given the difficult task of winning the business of an Asian shipping line (ABC), which had formed a consortium with fellow shipping line (XYZ) for a trans-Pacific service. XYZ was an existing customer of HIT, but ABC had used HIT's competitor MTL for 15 years and intended to continue doing so. As XYZ was the junior member of the consortium it failed to sway ABC's decision. When an HIT representative arrived at ABC's Hong Kong office to convince it that HIT would be a better alternative, ABC laid down a set of conditions. First, the operator had to offer flexible tariffs. Then it had to accept late cut-offs for cargo delivery to the terminal.[26] Finally, it would need to deploy at least three cranes per ABC ship rather than the default two. These seemed like relatively easy conditions to meet, but the Commercial team was told by senior management that no customer would dictate HIT's course of action.

Worried that this unwillingness to change would hamper the firm's momentum as it sought new and hopefully sustainable sources of revenue, Eric entered HIT's monthly management meeting in May 1993 with a plan. He told the assembled executives that without the ABC-XYZ business he expected HIT to lose 200,000 TEU in throughput for the year, which at that time would have been about 5% of the annual total. As HIT management received performance-based bonuses on top of their base salaries, this and some further discussion convinced them to accept ABC's conditions. The Commercial team then spent the next three weeks travelling to ABC's headquarters twice a week to convince ABC executives that they should make the switch to HIT. After multiple changes in the conditions ABC set down, HIT won the business and did again when the contract was up for renewal the next year. The following year ABC changed its partner from XYZ to the Asian shipping line XML, which again used MTL. The process

*26 Terminal operators imposed cut off times for the delivery of cargo to their facilities, usually expressed as a set number of hours before the estimated departure time of the targeted ship. This ensured that there was sufficient time for loading and other elements of processing. Longer cut-off times were generally more favorable to operators.*



repeated and HIT won XML's business. Most importantly, HIT and MTL were now in direct competition. The Commercial team was wary of the risks involved, with the possibility of deep discounts looming, but they knew that HIT had to act to maintain its strong position in the market. With the consortium deals behind it, the firm gained market share rapidly and soon occupied 55% of the annual throughput at the port.

## The Collapse of Import-Export Business

Even with its market dominance established through new business, HIT still relied on import and export cargo to generate the majority of its revenue. Yet that traditional source of income was beginning to dwindle. In 1994 mainland China opened its ports to international trade and Hong Kong suddenly had a number of competitors on its doorstep. Within the HPH Group, YICT began to take import and export cargo away from HIT. By 1996 other Shenzhen ports followed, benefiting from lower tariffs than could be offered in Hong Kong. Over time the difference between tariffs in the neighboring cities began to converge, with efficiency gains pushing them down in Hong Kong and rising labor costs working in reverse in Shenzhen. Yet HIT knew that if it were to lower its tariffs to specifically compete with the Shenzhen operators, the firm's EBIT would drop drastically.

The situation grew worse in the late 1990s because shipping lines refused to commit to contracts past July 1997.[27] There was a good deal of uncertainty about whether the Chinese government would interfere with the local industry given that Shenzhen's ports were just beginning to move ahead. When Eric became Managing Director of HIT in early 1998, the import and export dominated throughput had already reached a plateau in Hong Kong, and it began to drop later in the year. By the end of the 1990s HIT realized that any new increase in throughput for the Shenzhen ports would mean a direct loss for Hong Kong. In 2000 the HIT management team knew that local throughput for all Kwai Tsing operators was dropping, and that became more obvious in 2003.

Yet even then HIT did not consider a move away from reliance on the Pearl River Delta hinterland as a generator of and destination for deep-sea cargo. Instead, the management team's initial strategic reaction to the situation was to have HIT offer shipping lines more flexible tariffs. They would be charged the current tariff for what HIT expected them to bring in over the year, but any volume over that level would be charged a lower tariff. The threshold would protect the firm's existing margins and anything beyond that would simply generate added revenue. HIT persisted with the policy for two years, but it became obvious that changes to tariffs would not generate extra throughput. The flexible rates covered only a tiny fraction of business and the shipping lines generally refused to be drawn in by them. They wanted to be offered discounts from the first container. The management team realized that shipping lines willing to continue using Hong Kong rather than move to Shenzhen generally did so because of the higher efficiency provided by Hong Kong operators. The Chinese Maritime Code, which required that maritime transport between ports of the People's Republic of China should be undertaken by ships flying the national flag,[28] also generated throughput for the free port of Hong Kong.

*27 That was when the United Kingdom was scheduled to hand back Hong Kong's sovereignty to mainland China.*

*28 Maritime Code of the People's Republic of China, available at **http://www.cosco.com/en/pic/research/025109361827329146.pdf** (accessed 27 September 2011)*

## The Transshipment Hub Solution

The solution was to rethink HIT's role in the regional container port trade. As with the other operators in Kwai Tsing, HIT still considered Hong Kong to be a gateway to China. Yet within the HPH Group alone, YICT in Shenzhen had overtaken HIT in import and export cargo throughput in 2003. The only viable option seemed to be transshipment, but the firm had never gone into that line of business because it saw Singapore dominating the market in Asia with very strong government involvement. However, the port of Singapore did seem to have created a sustainable hub and spoke system in Southeast Asia with a very limited set of natural resources: it managed to continually grow its throughput when the country was so small and had almost no domestic sea cargo. When the HIT management team studied the shipping routes leaving the U.S. west coast they traced paths leading to South Korea, Japan, Taiwan and finally Singapore for transshipment around Southeast Asia. If these ships were turning around in Singapore, why not Hong Kong? Using Hong Kong as a transshipment hub would save a seven- or eight-day journey further south.

In 2003 HIT began a transshipment experiment with the American shipping line DEF, which soon realized that if it could cut its service short at Hong Kong it could drop one ship from the U.S.-Asia weekly loop for a considerable cost saving. HIT wanted to take the new business model to other shipping lines, but first it had to reconsider its tariffs in another example of revised pricing coupled with more effective customer service. Eric explained that:

> *"We were all conditioned to our tariffs. We would say that we would only do this at certain rates. But when you do something new like transshipment, which we didn't do before, you should be more daring in your pricing decisions. The cargoes that come from South China—we call them local cargoes, our bread and butter—are charged very high premiums, but transshipment is a cost movement for shipping lines and not a revenue movement. For every shipping line, when they move ten boxes probably only four are revenue boxes. Six are empties and transshipment boxes. That is a cost movement. So we thought about it: if these were cost movements for shipping lines, we should not treat them like revenue cargoes. We should be on their side to help them to move their boxes more effectively."*

Offered commercially appealing tariffs, two more shipping lines followed DEF's lead and by 2010 four lines were using HIT for more than 1 million TEU of cargo each per year, mainly in transshipment. The spokes radiating out from the hub HIT created reached as close as Vietnam and as far away as Thailand, two of Singapore's traditional transshipment destinations and part of a new, vast hinterland. Yet this was no all-out push into a new line of business, in part because a complete shift to transshipment would have meant that HIT could no longer maintain the facilities and capacity needed to attract large shipping lines. The management team was careful in maintaining around 40% of HIT's throughput in import and export cargo. In fact, the growth in regional transshipment business was accompanied by a boost in HIT's intra-Asia import-export business. Combined throughput of the two increased each year from 2003 to 2009, with only a moderate decline towards the end of the global financial crisis.



## Future Challenges

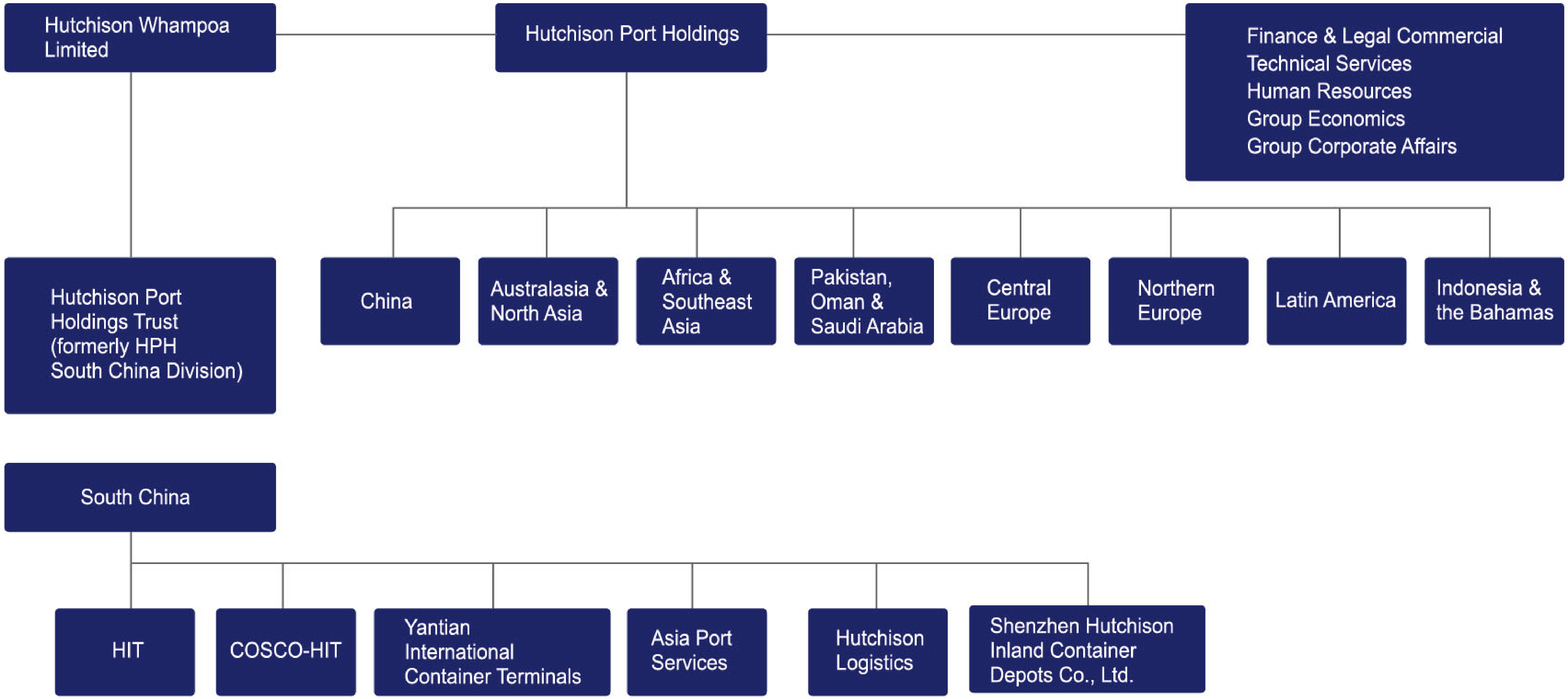
HIT began the second decade of the 21st century with what Eric considered a golden problem. Given the rapid increase in its transshipment throughput the firm had too much cargo to handle on its own and resorted to subcontracting in busy periods. However, competition from mainland Chinese ports was still causing difficulties. The Chinese government's 2008 Outline of the Plan for the Development of the Pearl River Delta (PRD) had envisioned the region's ports increasing in capacity to 47 million TEU annually by 2012 and 72 million TEU by 2020.[29] Would the rapidly expanding ports across the border take ever more cargo away from HIT? There was no space for expansion in Kwai Tsing, and transshipment containers tended to stay in the yards longer than the import and export containers handled in the mainland Chinese PRD ports.

To address this problem the firm was negotiating with the Hong Kong government to lease vacant land in nearby Kwai Chung to extend its yards, which would reduce storage density and improve productivity by allowing an increase in crane movements per hour. However, the negotiations had yet to bear fruit and unlike in other successful ports, including Singapore to the south and Shanghai to the north, operators in Hong Kong did not customarily receive strong government support – Kwai Tsing even lacked a government authority to oversee terminal operations. Perhaps the alternative was to increase tariffs to compensate for business lost due to capacity constraints. Yet how would transshipment customers react to that?

As he looked to the future Eric pondered the sustainability of Hong Kong as a regional transshipment hub. How could HIT balance the robust demand for lower yield transshipment cargo and that for higher yield import-export cargo? What would be the ultimate implications of this mix for the firm's long term growth strategy?

[29] *"New Dawn for the Delta", Sphere 29 (June 2011), p.11; National Development and Reform Commission (2008), The Outline of the Plan for the Reform and Development of the Pearl River Delta", p.40, available at* **http://www.en.ndrc.gov.cn/policyrelease/P020090120342179907030.doc** *(accessed 22 September 2011)*

## Exhibit 1: Hutchison Port Holdings Group Structure[30]




*Source: HIT*

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[30] *Detail from regions other than South China omitted.*

## Exhibit 2: Biography of Eric Ip

Eric Ip is Executive Director of Hutchison Port Holdings (HPH) and Executive Director of Hutchison Port Holdings Management Pte. Ltd., the Trustee-Manager of HPH Trust. He is also Chairman of Yantian International Container Terminals (YICT).

Eric has over 30 years of experience in the maritime industry. He joined Hongkong International Terminals (HIT) in 1993 and was promoted to Managing Director in 1998. His responsibilities soon expanded to cover YICT and he became Managing Director of the South China Division of the HPH Group. In 2005, Eric was appointed Executive Director on the Board of HPH and became Head of Commercial of HPH, while maintaining his responsibilities in the South China Division.

Eric graduated from Lanchester Polytechnic in the United Kingdom with a Bachelor of Arts degree. He is a member of the Hong Kong Port Development Council and Chairman of the Shipping and Port Operations Group of the Employers' Federation of Hong Kong. He was the founding Chairman (2000-2001) of the Hong Kong Container Terminal Operators Association.

*Source: HPH website: http://www.hph.com/webpg.aspx?id=86 (accessed 9 August 2011)*



## Exhibit 3: HIT Facilities Map, 2011


Map of Kwai Tsing Port showing the HIT and COSCO-HIT terminals. Also shown is the terminal operated by Asia Port Services (APS), and the terminals of competitors MTL, Asia Container Terminals (ACT) and DP World.[31]

*Source: HIT*

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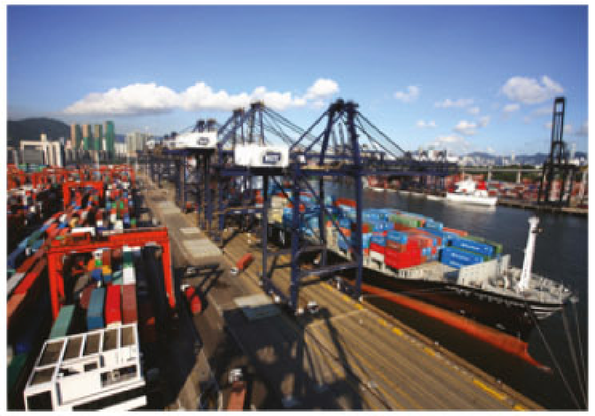
*[31] DP world was formed by the merger of the Dubai Port Authority and Dubai Ports International. Asia Container Ports was a joint venture between DP World and PSA International, formerly known as the Port of Singapore Authority and a subsidiary of the Singaporean government's investment arm Temasek; Asia Port Services website: **http://www.hph.com/globalbusiness/business.aspx?gid=63** (accessed 20 September 2011);*
*DP World website: **http://webapps.dpworld.com/portal/page/portal/DP_WORLD_WEBSITE/About-DP-World/History** (accessed 21 September 2011);*
*PSA International website: **http://www.internationalpsa.com/about/heritage_f.html** (accessed 21 September 2011); HPH Trust, Prospectus, p.80.*

## Exhibit 4: HIT Facilities at Work

Aerial perspective of the HIT terminals

Twin-lift crane operations

Quayside operations, ground view



Quayside operations, aerial view

*Source: HIT*

## Exhibit 5: Awards and Certification

| Awards |
|---|
| **2010** |
| Hong Kong Awards for Environmental Excellence – Transport and Logistics Sectoral Awards – Gold Award 2009 |
| Caring Company Award 2003-2010 |
| Care and Considerate Award |
| **2009** |
| Hong Kong Awards for Environmental Excellence – Transport and Logistics Sectoral Awards – Silver Award 2008 |
| **2007** |
| Environmental Certificate of Performance |
| The Young Entrepreneurs Development Council – School-Company Partnership 2006-07 |
| Corporate and Employee Contribution Programme – 2006/07 Certificate of Appreciation |
| **2006** |
| Corporate and Employee Contribution Programme 2005/06 – Bronze Programme |
| The Best Performance School-Company Partnership 2005-06 Award, the Young Entrepreneurs Development Council |
| Hong Kong ICT Awards 2006: eBusiness Grand Award |
| Hong Kong ICT Awards 2006: eBusiness (Application) Gold Award |
| **2005** |
| Technology Innovation Award, Logistics Awards Hong Kong 2005 |
| **2004** |
| CILTHK Transport and Logistics Award |
| Franz Edelman Finalist Award for Achievement in Operations Research and the Management Sciences |
| **2003** |
| Hong Kong Occupational Safety and Health Award Forum 2003 – Bronze Award of the Safety Technological Achievement Award |
| Productivity Award, the Hong Kong Productivity Council |
| Environmental Performance Certificate of Merit, the Business Environment Council |
| **2002** |
| Intelligent 20 Awards, Intelligent Enterprise Asia |
| Best Container Terminal Operator in Asia, Lloyd's List |
| **2001** |
| Hong Kong Occupational Safety and Health Enhancement Forum – Gold Award |
| **2000** |
| Hong Kong Computer Society IT Excellence Awards Silver Award |

| Certification |
|---|
| **2011** |
| Continual Improvement Safety Programme Recognition of System (CISPROS) Level 3 certificate |
| **2009** |
| Certified ISO/IEC 27001:2005 |
| **2007** |
| Gold Wastewise Logo |

*Source: HIT website: http://www.hit.com.hk/1abo/awards.asp (accessed 9 August 2011)*

## Exhibit 6A: Indexed Port Throughput, 2000 and 2010

| | Yr. 2000 | Yr. 2010 |
|---|---|---|
| Kwai Tsing Port | 100# | 147 |
| HIT | 46 | 82 |
| Shenzhen Port | 34 | 194 |
| YICT | 18 | 87 |

# Kwai Tsing port year 2000 throughput = 100

*Source: Provided by HIT*

## Exhibit 6B: Indexed HIT Throughput, 2000 and 2010

| | Yr. 2000 | Yr. 2010 |
|---|---|---|
| Origin & Destination | 68 | 71 |
| Transshipment | 32 | 107 |
| **Total Throughput** | **100#** | **178** |

# HIT year 2000 throughput = 100

*Source: Provided by HIT*

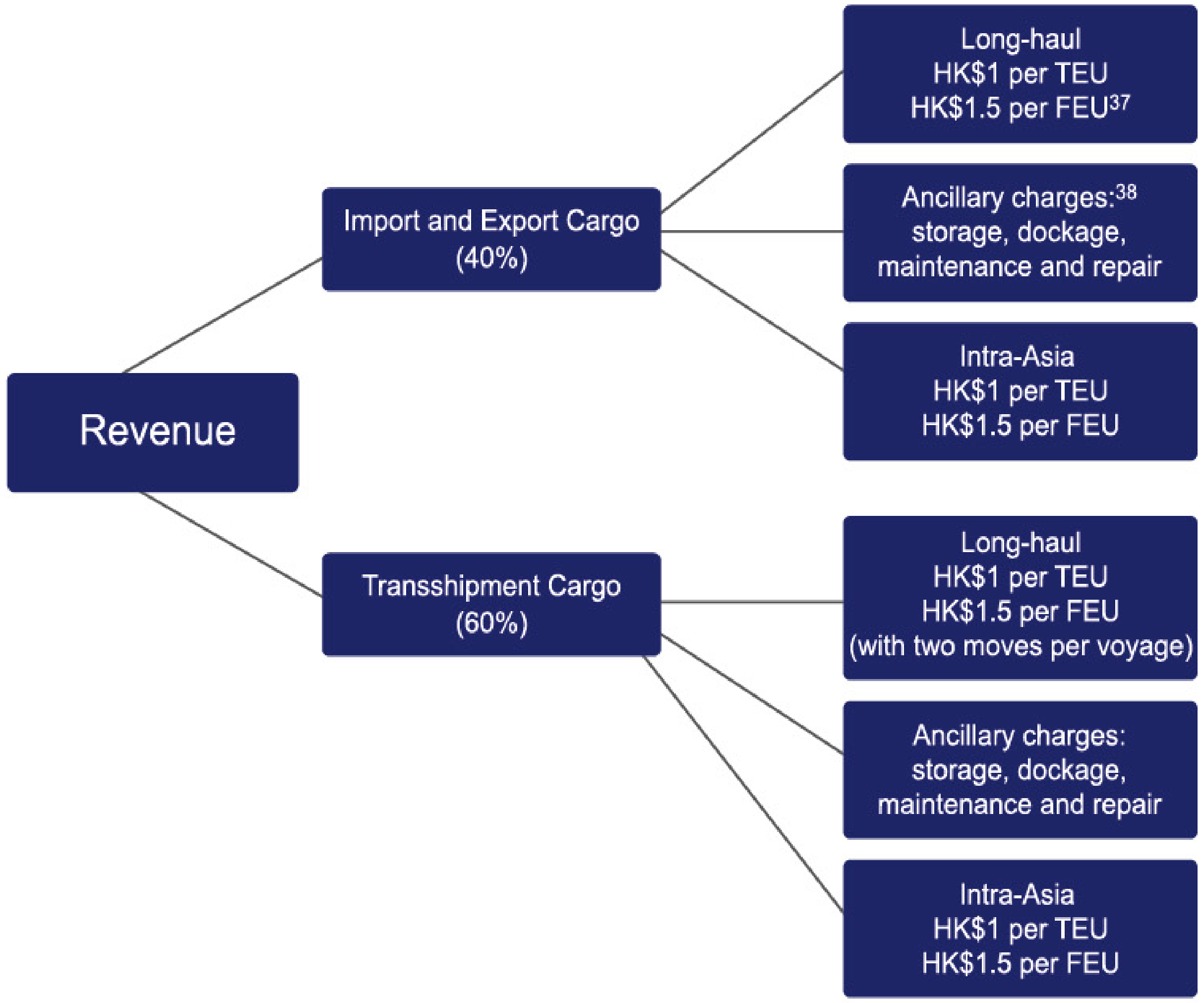
## Exhibit 6C: Indexed HIT Tariffs, 2000 and 2010

| | Yr. 2000 | Yr. 2010 |
|---|---|---|
| Origin & Destination | 100# | 67 |
| Transshipment | 58 | 107 |

# HIT year 2000 origin & destination tariff = 100

*Source: Provided by HIT*

## Exhibit 7A: HIT Revenue Streams Indexed, 2011




*Source: HIT*

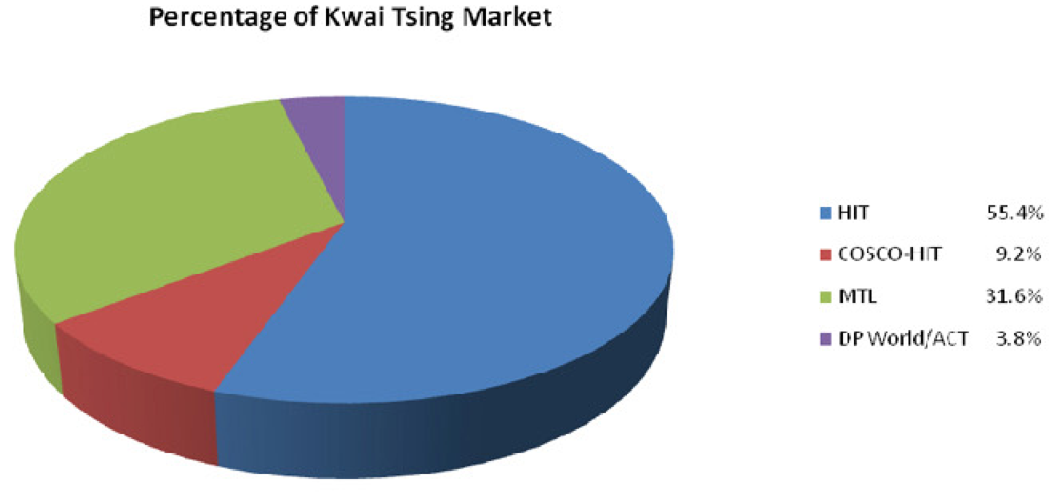
[37] *FEU are forty-foot equivalent units, most often standardized 40-foot containers. They are charged at 1.5 times the rate set for TEU.*
[38] *Ancillary charges comprised approximately 10% of the revenue generated by each of the two streams.*

## Exhibit 8: World Top Twenty Container Ports by Throughput, 2010 (2009 Ranking in Brackets)

| Rank | Port | Millions of TEU | Year on Year Throughput Increase |
|---|---|---|---|
| 1 (2) | Shanghai | 29.07 | 16% |
| 2 (1) | Singapore | 28.43 | 10% |
| 3 (3) | Hong Kong | 23.53 | 12% |
| 4 (4) | Shenzhen | 22.51 | 23% |
| 5 (5) | Busan | 14.21 | 19% |
| 6 (6) | Los Angeles-Long Beach | 14.10 | 19% |
| 7 (9) | Ningbo | 13.14 | 25% |
| 8 (7) | Guangzhou | 12.55 | 12% |
| 9 (10) | Qingdao | 12.01 | 17% |
| 10 (8) | Dubai | 11.60 | 4% |
| 11 (11) | Rotterdam | 11.14 | 14% |
| 12 (12) | Tianjin | 10.08 | 16% |
| 13 (13) | Kaohsiung | 9.18 | 7% |
| 14 (14) | Port Klang | 8.87 | 21% |
| 15 (15) | Antwerp | 8.47 | 16% |
| 16 (16) | Hamburg | 7.94 | 13% |
| 17 (17) | Tanjung Pelepas | 6.53 | 8% |
| 18 (18) | Xiamen | 5.82 | 24% |
| 19 (20) | Dalian | 5.24 | 15% |
| 20 (19) | Laem Chabang | 5.19 | 12% |

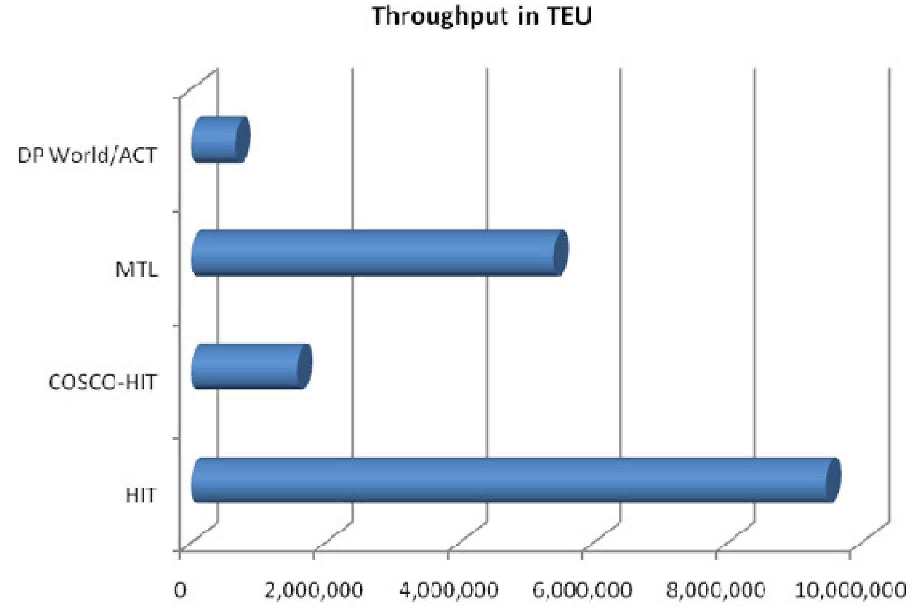
*Source: HIT*

## Exhibit 9A: Market Share Percentage, 2010



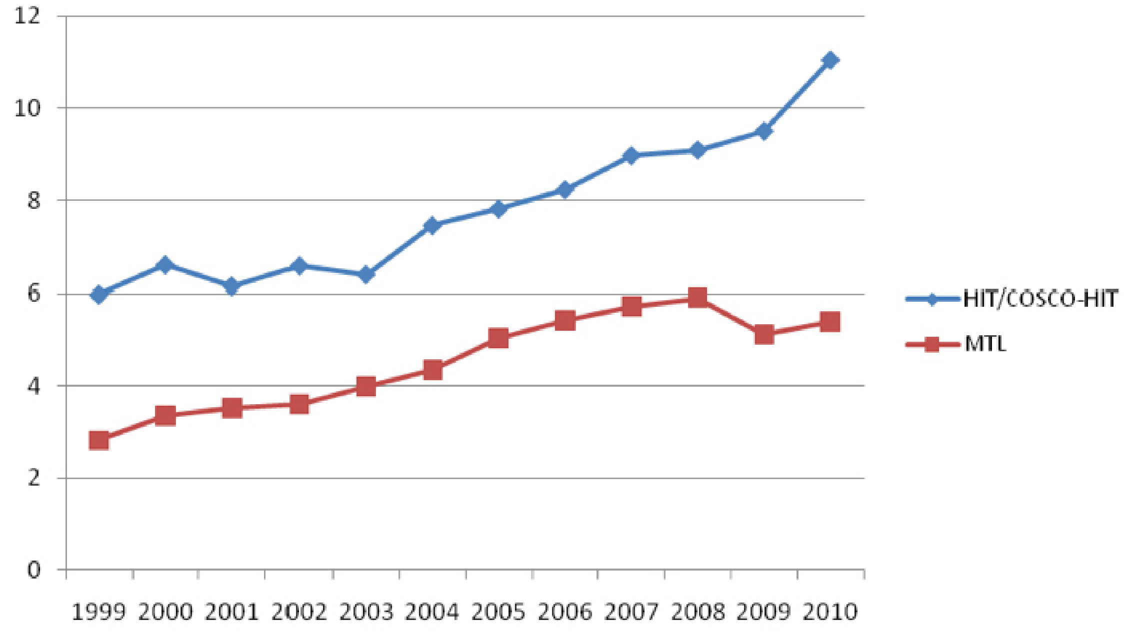

Source: HIT

## Exhibit 9B: Market Share by Throughput, 2010




*Source: HIT*

## Exhibit 9C: Throughput Growth in Millions of TEU HIT/COSCO-HIT vs. MTL, 1999-2010




*Sources: HPH Trust, Prospectus, p.189; Wharf Holdings website: http://www.wharfholdings.com/eng/investor_annual.html (accessed 30 August 2011)*