

IMPROVING LOGISTICS AND SUPPLY CHAIN SERVICES

FOR MNCS DOING BUSINESS IN P. R. CHINA

by

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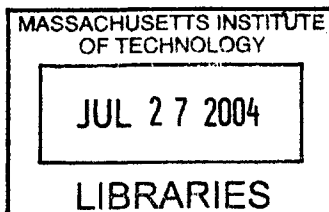
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1. INTRODUCTION

China's accession to the WTO presents Chinese logistics services providers the golden opportunity to render tailor-made logistics solutions to better service various multinational manufacturers and retailers doing business with or in China. Among these multinational companies ('MNC'), some have long established manufacturing facilities in China or outsourced manufacturing functions to contract manufacturers in China, while others are in a process expanding its sourcing extensively in China. According to the WTO [1], China has become the world's 6th largest exporter in 2001, exporting US\$266 billion worth of goods. The country has been successful in turning itself into the world manufacturing powerhouse.

On the other hand, with WTO entry, China will open up most of its logistics sector to foreign companies, bringing decisive changes to the regulatory regime of foreign investment in logistics sector, which may not be so favorable to Chinese logistics service providers. Currently, there is still a huge gap between the intra-China and international supply chain requirements of these MNCs and the services provided by the local logistics companies. Our studies show that logistics in China's industrial production is extremely inefficient. According to the UN Nations Development Program Office in China, it accounts for almost 90% of the whole production cycle time and 40% of general production cost. In China, logistics counts for 17% to 20% of GDP, almost twice as much as the rate in the US (9% to 10%) [2, 3].

Just as the economists at Hong Kong Trade Development Council ('TDC') pointed out [4], logistics has become a bottleneck for China to further sharpen her competitiveness. Labor cost of the relatively well-developed east coast has been rising. It is no longer sufficient to guarantee further success. Logistics management is becoming an indispensable competitive advantage for companies selecting China as their manufacturing or sourcing base to compete in the world and domestic market.

Study Objective and Methodology

In this paper, we first review the current status of logistics services available in China. The information collected in this part are mainly through literature review. We then examine the business requirements of some sampled MNCs who are doing business in or with China, and match the requirements with the services. The information of this part is acquired through a mix of phone interview and literature review. Analysis in this part turns out to be more qualitative rather than quantitative due to limited access to data. Through this comparison, we intend to mitigate the gap between the evolving supply chain requirements of the MNCs doing business in or with China and the local logistics services by:

1. Identify the strategic direction and trend of the logistics sector in China
2. Identifying areas of improvement for local logistics service providers
3. Assisting local logistics companies to fully utilize their idle assets and capacity
4. Improving quality of logistics service, and subsequently
5. Increasing the competitiveness of these companies against foreign logistics service providers.

2. BRIEF REVIEW OF THE TRADITIONAL LOGISTICS SECTOR IN CHINA

Below, we briefly review the current status of traditional logistics and transportation services being offered in China.

Rail:

As of October 2000, China had 68000 km of railway tracks. Out of which, only 27% are double-tracked. Although the general perception evaluates rail service in China as being inefficient and unreliable, the rail system has been extensively used for its relatively low cost. Nonetheless, foreign-trade related companies tend to use trucks instead of rail mainly because the railway containers in China are not compatible with those used by shipping companies. Cargoes have to be unloaded and reloaded when using rail, resulting in higher handling costs and more importantly, higher damage rates. The second reason is that foreign-trade related companies have more experience managing vendors of trucking services, and they are more comfortable with the service reliability. Thirdly, the capacity for rail cargo is highly seasonal due to the general policy that always gives priority to passengers, and then to basic commodities from the agricultural and extraction industries. Finally, not many companies could generate the kind of volume that enables them to enjoy the economy of scale provided by the rail transportation. Rail accounts for about only 8% of total transportation (measured by volume of goods shipped) of foreign joint ventures.

However, there are a few exceptions that have the scale to charter certain rail routes and thus are able to better control the time scheduling and physical transportation

operations. The net cost is only a third of trucking. Some other companies such as APL Logistics, a wholly owned subsidiary of Neptune Orient Lines, went a step further. It signed a memorandum of understanding with Eastern China Railway Express (ECRE) to take advantage of ECRE's comprehensive inland supply chain networks with its 160 rail hubs.

We expect deregulation of the rail system to move into high gear soon in order to meet the changing requirements of users of logistics services. For example, rail freight infrastructure has yet to meet containerized multi-modal transport demand. As China enters the WTO, China Rail will be under pressure to restructure to attract more commercial business, and to achieve higher efficiency. It is looking for foreign participation in rail freight-related business opportunities. According to a report in *Cargo News China* [5], the restructuring will establish separate market-oriented corporations to manage freight transport, passenger transport and railway infrastructure. It is likely that the authorities will release control over the transportation of "general merchandise" and free up prices step by step. Railway operators will compete with one another for market share, which is expected to raise efficiency and benefit shippers.

River Shipping:

River shipping is another mode of transportation that has not been considered by foreign-trade related local companies and MNCs. State statistics [6] show that the country has only spent about US\$145 million on Yangtze shipping since 1978, less than the cost of building a single highway. This is despite the fact the Yangtze's 55,300 km of

waterway represent half of the country's total river course and account for a significant share of its cargo traffic. Changjiang Group, the largest river carrier in the country, carried a record-breaking 85 million tons of cargo in 1999, 46% of the total throughput of the river. Containers and mineral-ore transportation were the major contributors to the growth. Another active river in China is the Pearl, with gross cargo volume second only to the Yangtze. However, water transport has fallen short of expectations in the past decade, despite the fast growth registered by bordering economies.

Shipping along the Yangtze could be revived owing to China's recent decision to open up and develop its western regions and the entry into the WTO. China is not a unified market. The labor cost on the west is much cheaper than that along the east coast. As the cost of living in the east keep rising, and local government policies start to favor investment in high-tech projects, more and more labor intensive industries may start to move from the east to the west. The new factories are likely to settle along the Yangtze, because it will take quite some time for the road construction project that fully connect west with the east to be completed. According to Morgan Stanley's Industry Research [7], cargo volume along the Yangtze trunk river is expected to rise to 300 million tones by 2010, compared with 186 million tons in 1999. By 2020, western regions should be able to sail to the sea by river, which will also mean that ocean-bound container vessels will be able to sail the other way to Chongqing.

Air Express:

Air express is the most lucrative segment among all cargo sectors. Over the past decade, the volume of air express has grown at about 20% per annum, while several Sino-foreign joint ventures have achieved a 30-45% growth. Before WTO entry, foreign companies need to sign joint-venture agreements with Chinese partners in order to enter the market and were not allowed to operate domestic air express. China will have to lift all restrictions on its air express market in the next four years, after which the competitive ground will level.

Express mail services (EMS) under China Post dominate 70% of the domestic express market owing to China Post's extensive network and legislative protection. In the international arena, joint ventures between UPS, DHL, TNT and Fedex with Chinese companies have captured 50% share. Domestically, EMS also faces serious threats. In September 1993, China Rail established China Railway Express (CRE). Availing itself of the railway network, CRE has reached more than 150 cities and is planning to link its 5,500 railway stations to form a network. In February 1996, China Air Express (CAE) was founded by a consortium of airlines and airports. Its turnover has risen at about 20% a year for the past four years, and the company has established more than 30 branch companies and 40 allied partners, capable of reaching more than 200 Chinese cities. Despite the competition among domestic players, we still envision EMS as a winner given its unparalleled network.

Forecasts in the Chinese authority publications [8] predict a doubling of air express volume in the coming five to seven years, thanks to rising foreign trade and bilateral air agreements.

Air Cargo:

The air cargo sector is one of the biggest beneficiaries of China's WTO entry, as the trade of electronics and telecom equipment, the top commodity transported by air, is expected to get stronger. In 2000, the electronics sector grossed US\$118 billion in industrial output, up 34% from 1999, with exports up 41%.

Airline industry consolidation will also improve efficiency. After the consolidation, Air China will still carry the largest share of international air cargo, followed by China Eastern and China Southern. China Eastern is expected to benefit more from China's WTO entry, as it flies more international routes than China Southern. Moreover, its alliance with China Airlines, a leading global air cargo carrier from Taiwan, through equity investment in China Airlines Cargo, will help develop the infant air cargo market in China.

The Ministry of Information Industry announced recently that this sector was expected to double its gross industrial output by 2005.

Trucking

Trucking in China is an extremely fragmented sector due to several structural factors. As a result of the planned economy, many manufacturers have their own fleets, with low utilization rates. It is generally noted that there is excess trucking capacity in China today. Much capacity was wasted also because there is no efficient and effective system to link supply with demand. The backhaul rate is extremely low comparing to that in the developed countries. Trucking services for hire has remained a cottage industry and barriers to entry are low. Many local manufacturers, distributors and retailers are newly exposed to the concept of logistics outsourcing or 3PLs. Due to the small size of most operators, only 20% of freight trucks in China are containerized. For long hauls, local protectionism is a big problem, which results in reloading of goods and empty returns. For example, non-Shanghai trucks are not allowed to enter Shanghai from 0700 to 2100 for traffic control, while Shanghai licensed trucks have full access. Road tolls represent 15-20% of trucking cost, nine times higher than Europe. Because of these inefficiencies, electronics and food products cost 40-50% more to ship in China than in the US.

The consequence of inefficiencies is always opportunities. Given its flexibility, trucking is still the mode of choice for finished goods producers in most mature economies: in the US the trucking industry's share of the nation's freight bill increased to 81.5% in 2000 [9]. We expect this to be the trend in China. With China's WTO accession, demand will be even stronger as foreign companies will be allowed to enter the wholesale and distribution sectors. The direction for truckers is clear: find out where money is being made and lost. With the government determined to eliminate local

protection, industry leaders should be able to emerge from companies that can best meet rapidly emerging customer needs for containerization, cross-border transportation, reliable, guaranteed service and value-added services.

Ocean Shipping

Ocean shipping has been one of the most open sectors for years. By the end of June 2000, there were nearly 80 wholly owned foreign shipping companies and branches, plus 120 joint-venture shipping companies operating in China. In general, most companies in the industry welcome WTO accession, which means more competition but a larger pie.

According to Morgan Stanley Industry Research [10] in Asia Pacific, cargo destined for international markets is expected to rise to 650-700 million tons by 2005, compared with 400 million tons in 1999. Container volumes are predicted to rise above 40 million TEUs by 2005, compared with 15 million TEUs in 1999. Now that China has joined the WTO, more than 100 countries will give it most favored nation treatment (MFN), and US MFN treatment for China will be settled once and for all. Chinese cargo dealers will be in a better position to expand overseas because in return WTO also provides China equal market entry opportunities in other member countries. The largest three Chinese carriers (COSCO, China Shipping Group and Sinotrans) will be the major beneficiaries.

Multi-Modal Transportation

We have read many reports bemoaning the lack of multi-modal capabilities in China. However, we foresee the demand for multi-modal transportation will increase as new investment is being guided towards the west part of China. For most products made or sourced in the west, many customers prefer to have the goods shipped to the east coast with an economic mode of transportation, and then consolidate all these shipments with another mode of transportation more appropriate for international shipping. Currently, very few companies have the capability to offer such integrated service. A few service providers are engaged for different legs of the whole shipment and multiple versions of shipping documents are generated. Furthermore, the shipper or the owner of the goods will have to work with each service provider to coordinate the transshipment. A few companies have the first mover-advantage in this area, such as Sinotrans International Multi-modal Transportation, and a couple of foreign players (SempCorp Logistics and APL Logistics) who have built strategic alliances with local players in addition to their strong international presence and network. We believe multi-modal will be an area of rapid growth as long as the policy to develop the west does not change.

Warehousing

Warehousing in China barely meets customer needs due to poor infrastructure and inadequate information systems. A survey [11] jointly conducted by the Logistics Institute-Asia Pacific (TLI-AP) in Singapore and the Institute of Logistics and Transportation in Beijing found that most of the warehouses in China are not storied-

shelf type. In fact, for over half of the companies surveyed, storied-shelf warehouses constitute less than 10% of their warehouses, and only 20% of the companies have more than 50% of warehouses of storied-shelf type. Bungalow and open storage yards are still the dominant type of warehouses in China. As expected, joint ventures with foreign companies use more storied-shelf warehouses.

High discrepancies in actual and recorded inventory data, high damage and missing rates, and general lack of real-time product and order tracking and tracing have forced manufacturers to build their own facilities. Realizing this deficiency, government and companies have been building modern logistics centers in or around major cities. However, the planning of the location and designing of the facility are still judgmental rather than relying on professional expertise. Other than special warehouse, warehouse construction project typically last no more than six months.

Information and Funds Flow

The lack of visibility of inventory moving down the supply chain is the main cause of high logistics cost in China. While supply chain management is about delivering the right quantity of the right product to the right place at the right time, it is hard to get everything above right in China due to the poor information system and infrastructure. According to CSA survey [12], 61% of local logistics service providers in China do not even have a logistics information system. Among those who have information system in one form or another, only 36% provides financial summaries of inventory to their clients.

While 7% of the commercial enterprises hoped their logistics providers would collect payments for them, only EMS has been able to do so.

Customs

The general impression about China's customs office is that it is inefficient and rigid. However, just as many other government bodies with local presence, the performance of customs offices varies from one city to another. Although all local customs offices are reporting to General Administration of Customs in Beijing, many of them are heavily influenced by the local government. Generally speaking, the customs offices of the bigger cities have higher visibility, and thus are more efficient and less corrupt. Volume, investment in technology, and potential smuggling problems are the other critical elements determining the efficiency of the local customs. Taking Shenzhen for example, it is a major center for manufacturing and trade as well as a main conduit between China and the special administrative region of Hong Kong. Shenzhen Customs is using TransCore's eGo™ radio frequency identification (RFID) products as part of a multimillion dollar automatic vehicle and driver detection and identification system [13]. This intelligent border crossing application is expected to facilitate the flow of low-risk traffic and goods. The clearance time varies by the type of commodity. For inbound (into non-Free Trade Zone) raw material, it usually takes one to two days. Equipment or tools usually takes three to four days. Outbound clearance takes an average of one day. The General Administration of Customs announced recently to put its emphasis on reforms in the three systems as declaration, inspection and supervision. However, it will take some time to implement all changes under the reform scheme at the local customs offices.

Third-Party Logistics

3PL is now becoming an area with huge potential to grow. Given that the logistics is traditionally and typically an in house function in China, the market for 3PL in China is very fragmented. Customers in electronics, household appliances, and food and beverage account for the largest share of revenues of the 3PLs in China (Table 1). These are all moderately fast moving and highly competitive consumer products. Textile and apparel do not seem to generate much revenue.

Industry Sector	Average revenue contribution (in %)
Electronic Products, Computer and Telecommunication	15.92
Household Appliance	15.35
Automotive and parts	9.65
Fast-moving Consumer Products	9.65
Food and Beverage	9.40
Industrial Machinery and Equipment	6.00
Textile & Apparel	4.58
Furniture	4.06
Pharmaceutical	5.85
Others	16.69

Table 1: Revenue Contribution of Different Industry Sectors

The current leading service providers in China are either subsidiaries of experienced 3PLs from Hong Kong or Southeast Asia, or subsidiaries of some SOEs, most of them being the dominating air or ocean freight forwarders. Most of these companies are in an evolving process to transform themselves into more value-added contract logistics. To date, these freight forwarders have benefited from overcapacity in the freight market, as they use a larger number of carriers. Another group of fast growing 3PLs are those internal logistics functions spun off from leading local manufacturing companies such as Haier. These companies are very competitive as they are from the

industry, and have better understanding and knowledge required by multinational manufacturers and retailers. They know how to meet customers' business needs with relatively low cost. Comparing to the SOEs, resource or capacity could be issues these companies need to address.

These "early birds" are among the prime beneficiaries of the WTO entry. Apart from an increasing foreign trade volume, high value-added imports by China will boost the actual worth of agency trade. Such imports could include automobiles and parts, machinery and electrical products and petrochemical products.

Although dominating the market with strong network and customer relationships, the 3PLs evolved from State-Owned freight forwarders are facing the threat of being dis-intermediated due to increasing visibility between shippers and carriers through the Internet. To avoid that, freight forwarders have to provide value-added services such as customs clearance and dedicated capacity. The limited commitment to developing customer (manufacturers and retailers) orientated full-blown supply chain service is another impediment for such companies. As such, we are not surprised to find that some MNCs are not happy with the services offered in the market, and created their in-house logistics function just for operations in China. Many of them believe this is only a temporary solution and will fade out as the 3PL sector in China is fully developed.

Contract Logistics

Chinese logistics providers are increasingly moving from ad-hoc 2PL services to this subset of 3PL, which involves subcontracting transport tasks such as trucking and warehousing to capacity providers, although frequently 3PLs will retain their own operation capability in this field to ensure product integrity. The projects that normally fall under this category include a) warehouse management (b) customs broking/clearance and (c) trucking/distribution. Globally, logistics contracts usually last between three to five years. With asset ownership falling, and increased preference for shared use over dedicated facilities emerging among most 3PLs, we would expect contract periods to shorten, or at least become more flexible. Most logistics contracts in China are on one-year terms subject to renewal.

Summary of Review

We found in our study that there is a low level of integration in the provision of logistics services in China. Most of the local logistics companies participate in only one or a few of the sub-sectors, rather than a total service for the whole supply chain. In short, the inefficiency of logistics support such as communications and high inventory levels are the main contributors to high logistics cost. They erode the profit, affecting the competitiveness of manufacturers, wholesalers and retailers in China.

All the above findings indicate that there is great potential to improve logistics efficiency and reduce cost in China. In fact, both the Chinese government and private sector are feeling the sense of urgency to improve its infrastructure as well as logistics

service to sustain its competitiveness as the world manufacturing powerhouse.

The logistics market in China is very fragmented. No logistics company has more than 2% share of the China market as of 2002. There are considerable untapped opportunities in a period of extended market growth. Mainland logistics opportunities for Hong Kong companies will come as much from relaxation of regulatory constraints as the global trend towards more demanding service requirements."

3. KEY DRIVERS OF 3PL DEVELOPMENT IN CHINA

Several facts are propelling the 3PL development in China, and they are:

1. Global outsourcing to China
2. An integrated East Asia around China (increasing Chinese demand for goods from its Asian neighbors)
3. Emergence of international brands and mega-cities
4. WTO accession

Among all the drivers above, the increase in MNCs' outsourcing to China is the dominant force that drives the revenue growth of 3PL providers. Sembcorp Logistics estimates that logistics costs account for 5-8% of an MNC's selling costs and that for every 1% improvement in the logistics margin, the profit margin of an MNC could be boosted by 5-20% [14]. Hence, we think the MNC has a strong incentive to shop for the most innovative global 3PL providers that can provide domestic solutions in China to improve its logistics function. Another factor leading to the trend of using third-party logistics is the shift in geographical trade patterns. A study by the US-China Business Council found that over 42% of foreign industrial and retail firms distributed their products in over 20 provinces in China (Exhibit 1) and more than 50% sold to more than 50 cities in China (Exhibit 2). This pattern requires logistics providers to focus more on rendering total distribution solutions, rather than just transportation services.

The integration of China and Southeast Asia through the goods market and China and Japan through the capital market could eventually lead to one integrated economy in East Asia, which would demand China's heavy presence in the regional 3PLs.

Number of Provinces in the Sales Network of MNCs in China

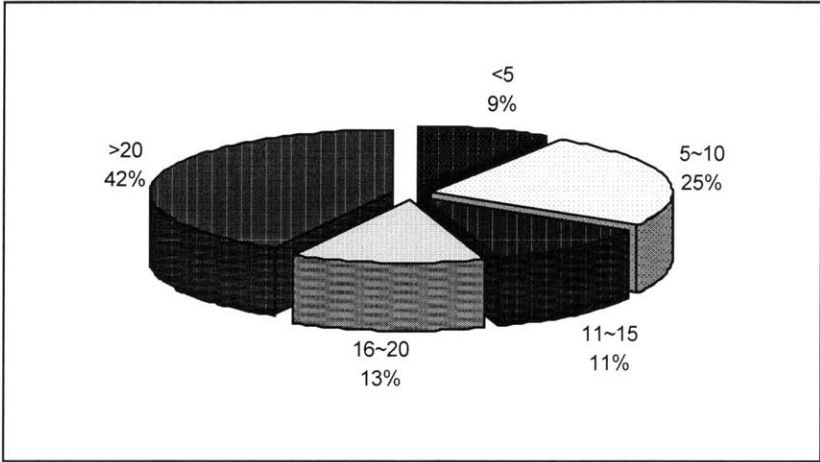


Exhibit 1 (Source: US-China Business Council)

Number of Cities in the Sales Network of MNCs in China

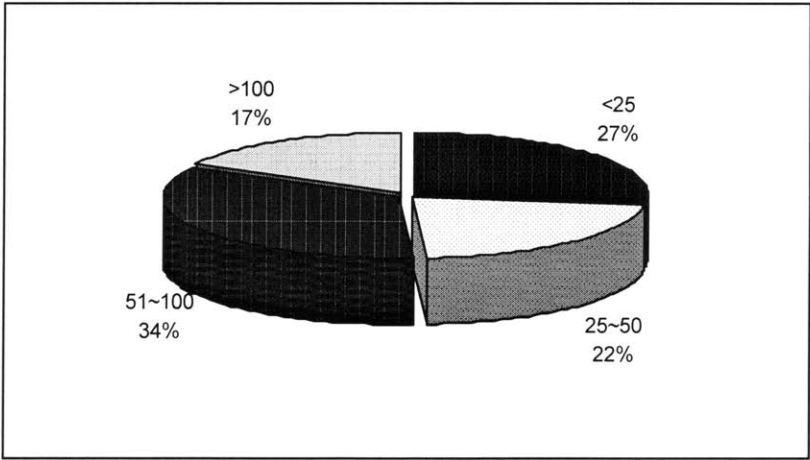


Exhibit 2 (Source: US-China Business Council)

Low-cost urbanization is rapidly taking its place in China as a solution to the rural income disparity. Densely populated cities cut down distribution costs, and hence increase the value of branded consumer franchises, leading to emergence of large chain stores and hypermarkets with national brands, which calls for nationwide 3PLs.

The entry of foreign 3PLs adds pressure to China's domestic market, and facilitates the development of local players through collaboration and competition. Some visionary SOEs sensed the compelling need to reform, which will lead to spin-offs of non-core business and assets, fledgling private sector development, eCommerce development and companies' embracing the notion of mass customization, JIT and total cost concept, which will also boost 3PL growth.

4. TREND ANALYSIS

Standardization

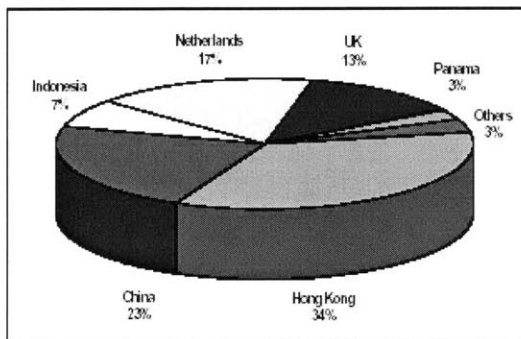
Supported by the “Go West” policy, the infrastructure that connects the west to the east (e.g. highways and river ports along the Yangtze River) will be developed or further improved in the next one to two five-year plans. When these projects are completed, more and more labor-intensive manufacturing facilities will be moving to the west to take advantage of the lower labor cost. Demand for multi-modal will increase, as more company will choose rail and river shipping as the preferred mode for inland shipping with volume and scale. In fact this is happening now to some of the earlier movers (such as some toy makers who moved to the west) as road/highway construction takes longer. In the following five years, railway companies and river liners will go through a long standardization process. As mentioned earlier, these companies are not the carrier of choice simply because they lack the capacity to handle and ship containers. The extra handling costs incurred by loading and unloading on the east coast offsets their competitive advantage. Other areas of standardization include shipping documentation, EDI format, international shipping practice and customs clearance practice.

Deregulation and Privatization

From the local government side, local train stations and river ports will also be involved in this standardization process. To accelerate these processes, the central and local government authorities are planning extensive deregulation and privatization. Traditionally, railway companies, airlines, water ports and airports are all owned and run by the government. The deregulation will start from the sea and river ports, followed by

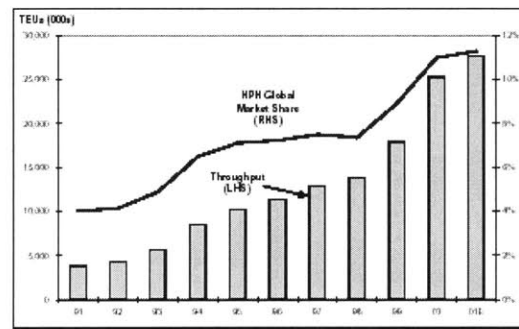
railway and lastly airlines and airports. Some currently listed port management companies are Beijing Capital International Airport, China Merchants, Cosco Pacific and Hong Kong based Hutchison Whampoa (Its unlisted member company Hutchison Port Holdings is the largest private port operator in the world in terms of throughput, see Exhibit 5 for its throughput by country and by year). Nonetheless, port management as a business observes heavy involvement from the local government. As the distance between the seaports along the east coast becomes smaller, we believe the competition among the ports (for cargo import and export) will become more intensive.

Hutchison Port Holdings
Breakdown of Throughput by Country, 2000



Source: Company data, Morgan Stanley Research

Hutchison Port Holdings
Throughput and Global Market Share, 1991-2001E



Source: Company data, Drewry Consultants
E = Morgan Stanley Research

Exhibit 3

Mergers and Acquisitions

For Chinese logistics companies to quickly transform themselves from traditional transportation companies into real 3PLs, mergers and acquisitions are the shortcut.

Another key driver behind all the M&A activities is that more and more customers are trying to reduce the number of vendors and prefer integrated services (one-stop shop) while most of the logistics service providers in China are still 2PLs and only provide a few types of services.

We foresee there will be a few types of mergers and acquisitions:

1. Local logistics companies merge with local sector niche players. For example, most of the above listed ports management companies belong to the niche player category. These companies do not seem to possess the capability and capacity to provide full-blown 3PL services in China. However, as long as they know how to leverage on their strength and find the right partner whose strength compliment with theirs, they could form a winning team in the 3PL market in China
2. Foreign 3PLs merge or acquire local logistics companies. Theoretically, this is a perfect merger. Foreign 3PLs can tap on the local players network and assets while the local companies need the management expertise and technical know how that foreign 3PLs can offer. Practically, there will be some challenges in terms of accounting system standard and etc.
3. Hong Kong based 3PLs merge or acquire local logistics companies. In our opinion, this may help to form the strongest player. Once a British colony, and now part of China, Hong Kong has its unique advantage to play an active role in the newly created Chinese logistics sector. Companies in Hong Kong had a long history dealing with companies in the mainland of China and are very familiar with the system and practice. On the other hand, they possess most of the intellectual property foreign 3PLs have to offer. From the integration and procedural prospect, we believe this type of merger will generate quick and fruitful results.

Strategic alliance is another option in the international context. However, given our understanding of the business environment and culture, we do not believe it will become a trend that the local players will follow in the short term. Any loosely defined contract or agreement may not be very helpful to the transformation of the local companies.

5. CASES ANALYSIS: What Do MNCs Need for Their Supply Chain in China?

Case I Consumer Electronic Retailer

Traditionally, US consumer electronics retailers source and acquire their products from domestic distributors of electronics manufacturers (such as Sony, National).

Depending on the terms in the contract, the retailers either get the door-to-door delivery service from the logistics company appointed by the supplier or they will have to arrange pick up from the airport or seaport. In either case, the retailer pays under the term of CIF (Cargo, Insurance and Freight) instead of FOB (Free on Board). This practice has lasted for many years. The retailers are accustomed to paying the premium and letting the supplier take charge of its supply chain.

Recently, consumer electronic manufacturers are moving their manufacturing function or facilities to China, and have reduced the manufacturing cost of their products significantly. However, the retailers feel more profits are eaten away by the manufacturers and little savings have been passed to them. It has long been the retailers' interest to source from the country of origin. But before the mid 90s, the manufacturing bases of leading consumer electronics companies were scattered, so it would be very resource consuming for the retailers. Now that more than 80% of the consumer electronics makers are making some or all their products in China, it makes sense to these retailers to embrace the concept of 'Direct Import', and source product from China.

The benefit of direct import has long been recognized and enjoyed by leading chain stores such as Wal*Mart. According to the Global Sourcing Manager at one of the

leading consumer electronics retailers, direct import could help to reduce purchase price by 40 to 60 percent, depending on the cost structure of the product as well as the manufacturer. Taking Sony, who owns 30% market share of the consumer electronics, as an example, once the product is shipped out of the factory; the sales value of the product increases an average of 7% for 13 times before it hits the shelf of a retail store in the US. The longer the supply chain and the more handling parties involved along the chain, the less profit for the retailer with some variation by distribution channel.

However, the savings have been offset significantly by the increase in logistics cost so far. For example, many retailers are having difficulty finding an experienced and reliable partner or logistics service provider to take care of its business process from sourcing to getting the goods onboard. Currently, many retailers have to set up their own sourcing office in China. The additional operating expense inevitably contributed to the increase in cost. Due to trust issue, the employees of such settings usually consist of a mix of expatriates and local staff. Typical responsibilities of the sourcing office cover the following areas:

1. Select supplier, negotiate price and contract terms, and place order
2. Keep track of purchase order and shipment status
3. Facilitate communication and information exchange (e.g. coordinate with local 2PLs or 3PLs for pickup, storage, shipment and customs clearance)

Other than the operating cost of the purchase office overseas, these companies are facing another set of challenges. Depending on the trust and relationship with the contract manufacturers (for no frills or store's own brand), the buyers also play the Quality

Assurance and internal auditor role, making sure the manufacturing process and final products follow the specifications. To enjoy the favorable economics of ocean shipping, the buyers are also making extra efforts to coordinate the pick up and shipping schedule to consolidate different brands and goods from various suppliers into the same container or onto the same vessel.

This could be a very challenging task for retailers with limited volume, and whose buyers are still in a process of building its network and relationship with local suppliers. To some extent, this is about managing a good part of the supply chain in China, coordinating the flow from order till the goods get onboard. The buyers of the US based retailers are not the best candidates for this tough job. The coordination of consolidation needs to start as early as the order placement and production planning. If delivery from any of the suppliers is late, the company will either have to bear a higher freight cost per unit by shipping the goods with a separate container or vessel, or increase the overall delivery lead time of the whole shipment to the US by holding back some of the containers at the port. Currently, the retailers have put in a lot of buffer time for the slower suppliers, and thus increasing the lead-time to the west coast of the US. In either case, the estimated saving from direct import is compromised.

The consumer electronics retailers in the US is really looking for a 3PL service providers who understand their business and can add value such as sub-assembly and packaging (with customized brand name printed). As the consumer electronics become commodities, the whole industry around the product is changing. While still carrying branded products made by famous Japanese suppliers such as Sony and National, many

US retailers are in the process of launching their own brands associated with the store name. Such a strategy could only be successful if an efficient supply chain is built at the country of origin where product is made, which guarantees high quality product at low cost. To some extent, what retailers need in Asia is a partner like Li and Fung [15] for the apparel industry who:

1. Has a good understanding of the consumer electronics industry from raw material sourcing, production planning to distribution
2. Has a good business relationship with all OEMs and contract manufacturers in China, and has good knowledge of their strength, weakness, culture and management style
3. Handles high volume, has reasonably strong bargaining power and is able to negotiate good price and terms for its customers
4. Is able to source quality raw material per design specification as and when required
5. Is able to provide Value-added service such as quality assurance, packaging and assembly
6. Manages the supply chain, provide its customer visibility to the supply chain and ensure on time delivery

Sourcing for direct importers is an area full of opportunities for 3PLs in China to consider. To become the Li and Fung [15] for the consumer electronics industry, the 3PL companies need to first set an industry focus at the strategic level, and align service capabilities to provide customized logistics service to the target industry. Depending on

the industry and the size of the logistics company, this could be a huge commitment in terms of capital and other resources. Some industries like chemical or petrochemical may require more capital investment as well as industry specific knowledge and expertise. As a trend, more and more logistics companies have realized that they cannot be everyone, everywhere. As such, many service providers will have to carefully select the industries they want to grow with, and decide the industry they will not be servicing.

Logistics companies who have many years experience servicing the OEMs or contract manufacturers are theoretically the best candidates for direct importer sourcing because of their industry expertise and network. However, the direct importers may be concerned about conflict of interest if the short listed vendors are the customers of this logistics company. Sometimes, companies who are not currently engaged in any customer-vendor relationships with these potential suppliers are preferred. The best way for such companies to fully develop its service capability is to recruit experts from the industry and tap on their knowledge and network.

Case II A Semiconductor Manufacturer in China (Interview with Intel)

Intel has observed rapid revenue growth in the Asia Pacific ('AP') Region. Currently, the Asia Pacific market contributes 39% of Intel's annual revenue; consecutively surpassing the North America region (which contributes 37% of the total revenue) for the past six quarters. From the production prospective, 80% of Intel's products are now made in Asia. Among its three major manufacturing bases in Asia (i.e. Philippine, Malaysia and China), China is playing a more crucial and strategic role as it absorbs more and more investment after its entry into WTO. From 1997 when Intel first invested in its flash memory production line in China, to 2003, China has been through Intel's production life cycle that takes others 25 to 30 years to complete.

Although the overall trading environment and relevant local regulations have improved significantly since China's entry into WTO, the semiconductor and other high tech manufacturers are still facing challenges to further develop themselves comparing to the apparel and consumer electronics industry. In fact, Intel has slowed its collocation plan recently as the synergy and benefit of moving its production base closer to some of the consumption market is yet to be realized as long as some of the operational issues could not be addressed. Among all the issues, logistics services and supply chain management is one of their biggest concerns. Right now, 95% of Intel's intra and inter China logistics requirements are being fulfilled by the subsidiaries of multinational 3PLs in China. Local service providers only managed to get 5% of Intel's logistics business in China, mainly local distribution.

Intel has explored the opportunities to work more extensively with local partners or service providers to bring down its sourcing and distribution cost. Unfortunately, Intel has learned from its experience that it did not work out as they expected. The most significant challenges are summarized as the following by the Director in charge of Distribution in Hong Kong,

1. The local logistics company does not understand the business need of its customers in the semiconductor or Hi-tech sector. In fact, they look at themselves more like a vendor rather than a partner to Intel, and thus do not feel the sense of urgency to understand customers' business processes and to be actively involved in those processes. Typically, they are used to taking orders from the customer and doing exactly what they are told to do. From the business development point of view, they use a static frame to scope their business opportunities and do not see the need to invest to acquire competence required by the customers. As such, they miss the opportunity to grow with their customers.
2. The local logistics companies lack the experience in managing large projects with high levels of complexity that provides customers with integrated services. Most logistics companies are used to simple tasks such as shipping and handling a group of containers from point of loading to point of unloading. However, few had the experience to run a real third party warehouse or manage inventory for its customers. There have been a few incidents where Intel initiated discussions with leading local service providers to explore the possibility to outsource its regional distribution center. They found none of the companies involved in the discussion

had experience in managing a project with even half of the complexity they were proposing.

3. The logistics professionals at local service providers need more systematic training. Although in China, 'Logistics' is now a well-recognized word, people involved in this business are still seen as some kind of labor-related clerks. Often, they do not receive appropriate training before or after they join the organization. Many local universities have just started offering programs or degrees in logistics and supply chain management in the past year or so. Students who have studied logistics overseas and returned to China are very unlikely to join these local companies. These people could be paid two to ten times more if they choose to join a multinational consulting firm or multinational manufacturing companies like Intel. The local companies are lagging behind in terms of attracting well trained logistics professionals, not only because they are financially less competitive, but also because they have not been paying attention to the evolution of the body of knowledge in logistics and supply chain management. It is not surprising for operation managers from Intel to find out that sales representatives of local logistics service providers are not familiar with concepts such as Vendor Managed Inventory ('VMI') or Collaborative Planning, Forecasting and Replenishment (CPFR) at all.
4. The information systems used by these local service providers are usually very simple. Some so-called third party warehouse are still using an Excel spread sheet

to manage inventory. Because many of these companies have not really exposed themselves to the changing business requirements, they often found the features and functions of their systems more than sufficient. But some of the local market leaders have started to realize the incompetence of their systems recently as more multinational manufacturers and retailers approached them for integrated services. Some have the intention to implement sophisticated systems, but are still concerned about the justification of the investment. These outdated systems are preventing the service providers from integrating their information flow with that of their customers. In other cases, although these customers are willing to let the service providers use their system to manage its inventory; the logistics companies are unwilling or unable to change their business processes to integrate with that of the system. Training users to use the system efficiently and effectively in a very short period of time is another issue.

5. Organization structure of these local logistics companies is another issue. It was the general perception of the MNC companies that the local companies may have less efficient business processes in comparison with the world leading logistics service providers, however, they may at least have a stronger network in China and can add more value in terms of nationwide distribution. As it turns out, this may not be true. Taking Sinotrans for example (see attached Exhibit for its market position and industry focus), it was founded in 1950 as China's first foreign trade transportation company. Through decades, Sinotrans has now become the largest freight forwarding company in China, with RMB 24 billion in assets and 64000

employees. Sinotrans provides services covering freight forwarding, ocean shipping, ship agency, air transportation, air courier, truck and railway transportation, multi-modal transportation as well as storage and warehousing. Combining 47 domestic subsidiaries and 263 joint ventures throughout the country, it claims to have the most extensive distribution network coverage in China. However, customers often found neither the reliability nor the quality of its service (e.g. promised delivery time) are more competitive than that offered by foreign companies. Our study found that the organization structure of Sinotrans is loose and fragmented. Because it is a state owned enterprise (unlisted), many branches report to local Department of Transportation ('DOT') and are financially responsible to local government rather than its headquarters. Clearly, the goals and objectives of each branch in this case is not aligned, business processes among the branches are not integrated and streamlined, and profit sharing is constantly the impediment that prevents the company from achieve highly efficient operations. We noticed during our research that the management at Sinotrans has set its strategy to accelerate its growth in Global Supply Chain Management and increase its market share with MNCs in China. To acquire accounts such as Motorola, Sinotrans has even formed a team stationed in the Tianjin manufacturing facility as part of the client's supply chain team. However, as long as the organization structure and matrix remain untouched, the increase in market share and the improvement in customer service will all come with a significant increase in Sinotrans' operation cost.

Logistics Capabilities of Sinotrans

Sector/services	Market position	Market share
Freight forwarding	No.1	10%
Air express	No.1	30%
Shipping agent	No.2	30%
Shipping	No.3	n/a
Logistics information Management	No.1	n/a
Supply chain management	No.1	n/a
Logistics solution	No.1	n/a
Integrated services	No.2	n/a

Source: Sinotrans, China Shipping Gazette

Exhibit 4

Client Base and Industry Focus

Sector	Clients
Telecoms	Motorola, Ericsson, Unicom, Nokia
Computers/peripherals	Acer
Consumer Electronics	Panasonic, Haier, Philips, Samsung, Sharp
Automotive	Volkswagen, Hyundai, Daewoo, Chevron
Beverage	Coca-Cola
Petroleum & Chemicals	Sinopec

Source: Sinotrans

Exhibit 5

Summary of Case Studies

The highly competitive electronics and semiconductor manufacturing marketplace demands that suppliers provide low-cost, high-quality products to their customers in a timely fashion. The outsourcing decision has caused an increase in the amount of information that is shared among the supply chain partners. As a result, a greater reliance on suppliers and alliance partners has become essential for MNC's success in China as well as other parts of the world.

Currently, very few MNCs are using services provided by local or SOE 3PLs, and the scope is limited. On the other side, foreign joint venture logistics companies typically do not have many SOE customers. According to the industry survey conducted by TLI-AP in 2002, on average, only 10% of their customers are SOEs. The Chinese logistics market is anxiously anticipating the emergence of the local 'Fedex', 'DHL' or 'Ryder'. The MNCs are looking for a 3PL partner who have or at least are willing to develop long-term client relations and expertise in their industry; a 3PL partner who offers integrated logistics and other value-add services with the convenience of one-stop; a 3PL partner who has modern operations and management information system that enables information sharing and provides visibility of its inventory down the supply chain; a 3PL partner who has systematically trained logistics professionals that not only understand its business, but can participate in and improve its business processes with other members in the supply chain; a 3PL partner that has the knowledge and business network to bring the right partners or suppliers to its client, and help to eliminate non-value-add parties from

the supply chain; a 3PL partner that has the capability and capacity to take care of its non-core business.

6. RECOMMENDATIONS

There is no single winning strategy in the logistics industry. Both full service providers and sector niche players could be winners in this market full of opportunity. To seize the business opportunities brought in by the MNCs, Chinese logistics companies, just as service providers of other industries, will need to focus on developing their most valuable resource: people, their knowledge and skills. Although 96.6% of the companies participated in the TLI-AP survey claimed to have training programs for middle management and above, the quality of the training material and resource is questionable, and so are the results. Professor Zhu from Fudan University shared his insights during his visit at MIT [16]. In his eyes, logistics education in China is still an infant in a cradle. China is in need of systematic logistics training programs such as MLOG for the increasing population of logistics professionals and executives. Besides in-class training, the market offers extensive on-the-job training opportunities with the support of the current open business environment in China. In fact, we believe the quickest and the most efficient ways to develop the knowledge and skills are by working closely with the MNCs from the selected industries. In some cases, the Bose JIT II [17] approach is a good model to follow where logistics service providers send their employees to work at their customers' facilities. This model facilitates the learning process and process integration. We think the model and the timing are perfect, because when Bose and some other companies first implemented JIT II in the early 90's, the manufacturers in the US were at the stage that is similar to the situation MNCs in China are currently facing. After the initial investment phases, many MNCs did not achieve the kind of profit they expected due to poor operations efficiency, while labor cost advantage became less

prominent. MNCs are under the pressure to improve efficiency and reduce cost by streamlining their processes with those of their suppliers and partners.

In order to work seamlessly with the MNC customers as part of their business processes, the local logistics companies will also have to work on changing their culture. First and foremost, the local companies will have to let go the mentality of ‘You tell me what you want me to do, and I will do that for you for a fee’. Instead, driven by the strong will to help customers to become more successful in China and in the world market, local logistics companies should be proactively looking for opportunities to extend their business scope outside the traditional 2PL business. As the line between the contractor manufacturers and the 3PLs blurs [18], 3PLs are being asked to perform more advanced technical services for their electronics and high-tech customers. We believe there are ample opportunities for 3PLs to increase customer satisfaction while enhancing their own revenue. Second, Chinese companies are usually good at managing customer relationships, but are not so familiar with partner relationship management where a contract could be loosely defined. Local logistics companies will need to learn to build trust with their clients as well as their partners, and work closely together to increase the size of the pie on the table rather than the size of their own slice.

From the business processes perspective, the local logistics companies need to improve their capability to handle customer orders with more flexibility, and provide customers with more options or customized services as and when needed. All these capabilities are built on top of a good understanding of customers’ business.

Whether through organic growth or mergers and acquisition, local logistics service providers have a very limited time window to quickly increase their international network and presence. Again, both full coverage or niche coverage could work, depending on how the network is aligned with the overall strategy.

Finally, it is the general feeling that Chinese logistics companies are low-tech and thus inefficient. The good news is that many of these companies do not have a clumsy legacy system standing in the way. As such, the new implementation often could be completed within a relatively short time frame at a low cost. Here the key success factor is choosing the right technology, which included but is not limited to information technology. The new systems, tools or vehicles acquired will have to support the operations strategy. In general, they should not just be used to automate any processes, but rather help to optimize the processes, improve information accuracy, facilitate information exchange among parties in the supply chain and increase inventory and cargo flow visibility.

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