

CHINA LOGISTICS REVIEW AND BUSINESS OPPORTUNITY ANALYSIS

by

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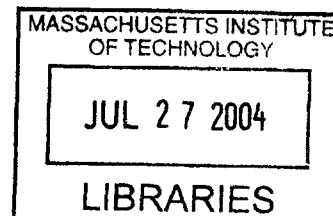


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Introduction to the thesis

Logistics has become one of the most popular words in China since 2000. If one were to evaluate the logistics industry, the words frequently used are: “huge, enormous, low market penetration and high potential.” There is a strong interest in logistics services from both business and government. In the past, most manufacturers in China regarded logistics as only a low-level concept, mainly referring to transportation and warehousing services. But now more and more manufacturers are seeking integrated logistics services to improve efficiency and minimize total cost.

This thesis provides an overview of the huge logistics market and infrastructure in China in the first two chapters as well as the obstacles for modern logistics development in China. The third chapter shows the reasons why we should look at third party logistics in China and analyzes business strategies for current and potential logistics services providers. Furthermore, this chapter also points out challenges that 3PL providers should pay attention to. The next chapter analyzes the development of SCM software market and business opportunities. The final session is a business plan for a SCM software and consulting company. The appendix contains the useful contact information for people interested in logistics in China.

Finally, I wish to thank my advisor, Professor Jim Master, who gave me great help for this thesis and my study at MIT.

Chapter 1: China logistics market:

1.1 China economy overview:

China has begun its economy reform since 1978. With 24 years development, China has successfully moved its centrally planned economy to a more market-oriented system. The system of household and village responsibility in agriculture has taken place of the old collectivization. Starting from 1993, the Chinese Central Government implemented a series of macroeconomic readjustment measures. The local government and manufacturers gained more power in their development. More and more small-scale enterprises were started up. The central government also encouraged foreign direct investment and international trade. Now China is a very important investment destination for international corporations. Over the last two decades, despite Asian and global financial crises, China's economy is still growing very fast.

In year 2002, its GDP reached \$ 1.3 trillion which is three times of its GDP in 1978. With 1.3 billion of population and a GDP of \$4,600 per capita, China stood as the second largest economy in the world after the US (Based on purchasing power parity). [1] Since China joined WTO and Beijing will hold 2008 Olympic, experts estimated Chinese economy will keep its 8% growth rate annually in the next 20 years. Due to the huge domestic market, open-door policy and low labor cost, more and more multinational corporations began to transfer their manufacturing facilities and regional headquarters to China. More than 400 of FOX top 500 corporations have already set up their branches in China. With China expected to be a huge manufacturing base for the world, logistics is an already large industry set to expand.

1.2 Huge logistics market:

According to a research report by the State Council, China's total logistics cost was about 20% of its GDP, or US\$ 245 billion. In USA, the total logistics cost was just 10% of its GDP. On average, 90% of a manufacturer's time is spent on logistics while only 10% of its time is spent on manufacturing. Most of manufacturers in China only care about the transportation cost instead of the total logistics cost. It partly because those manufacturers do not have accurate accounting systems that can provide the enough data to minimize the total logistics cost. While supply chain management is about delivering the right goods to the right place at the right time at the right price, in China it is hard to get everything right due to the unlinked information systems. According to the CSA survey, 61% of Chinese logistics providers do not even have a logistics information system. It is also because they do not have the necessary logistics expertise. According to the news report in China Central TV, China needs to import and train 600,000 logistics managers in the next five years.

1.3 Market features:

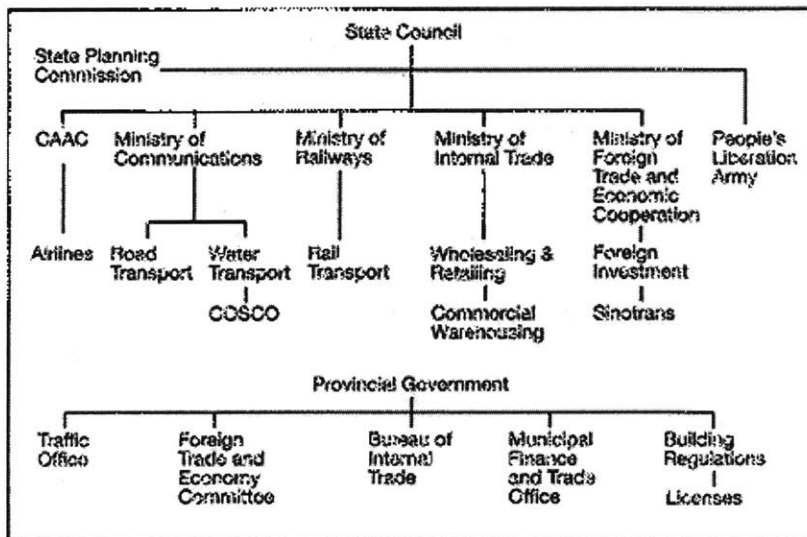
In-house logistics at state-owned enterprises is a legacy of the planned economy. According to *Containerisation International* (September 2001), there is only 18% of raw material logistics in industrial companies handled by third parties. Even many small manufacturers still have their own trucks and warehouses. Moreover, geographic constraints and regulatory complexities make logistics operations a headache for most enterprises that are willing to pay specialists. Warehouses in China seldom meet the customer's needs due to the lack of adequate information systems.

High discrepancies in actual and recorded inventory data, high damage and missing rates, and lack of real-time product and order tracking, have forced manufacturers to have their own facilities. Also there is a lack of trust between shippers and recipients. Only 36% logistics providers give financial summaries of inventory to their clients.

1.4 Regulatory constraints:

There are many authorities involved in regulating and licensing, such as The Ministry of Communications, Ministry of Foreign Trade and other local authorities. These complexities resulted in lack of coordination, low flexibility, poor response to market changes and local protectionism.

State control of transport and warehousing in China:



(Source: MMC Views- *China Logistics: Obstacle and Opportunity*)

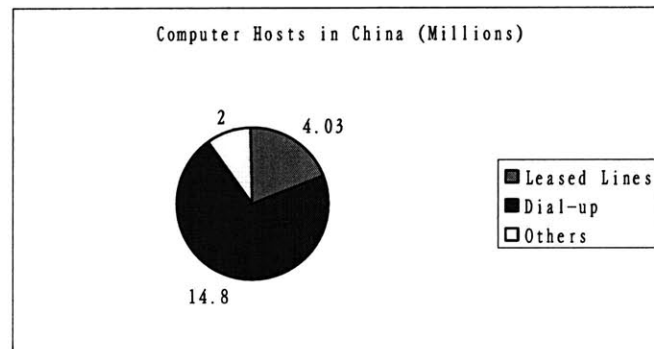
Chapter 2: Logistics infrastructure review and analysis:

Compared with developed countries, China is last in its development of infrastructure. Challenges to the movement of goods abound: underdeveloped Internet network and telephone system; insufficient highway system; antiquated warehousing and overstressed civil aviation. Due to those shortcomings, it is very difficult for companies to apply standard approaches to supply chain management. According to the Hong Kong investment bank, China will need to invest more than \$230 billion in its infrastructure to sustain continued economic growth through the next 5 years.

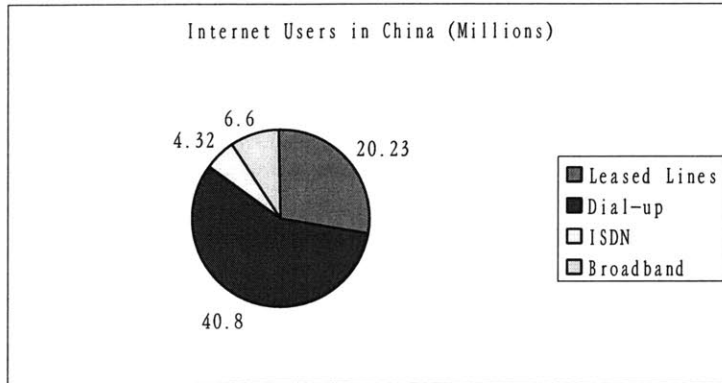
2.1 The development of China Internet network and telephone system

According to the China Internet Network Information Center, there are 59.1 million Internet users by the end of 2002.

Computer Hosts in China (Millions):



Internet Users in China (Millions):



Besides computers, 1.53 million Internet users use other facilities such as mobile terminals and information applications. [2] There are total 230 million user of fixed-line telephone in China. The number of mobile cellular phones increased dramatically to 260 million in March 2003. According to *the World Fact Book 2002*, China also installed inter-provincial fiber-optic trunk lines. And China also has several international fiber-optic links to Japan, South Korea, Russia and Germany.

Although China has developed its information technology infrastructure very fast recently, a 2001 International Data Corporation (IDC) paper still rates China's electronic logistics service as "very poor". It is partly because reliable data and information necessary for modern logistics are not as publicly available as it is in the US and Europe. Another important reason is that most Chinese manufacturers just started to implement their ERP systems. Without reliable transaction data and standardized business procedures, it is almost impossible for modern logistics to be successful. It also because most Chinese Internet users have reservations about payment security and prefer to require cash-on-delivery. Actually E-Payment tools

such as credit cards are not very common in China and cannot make payment on-line easily.

2.2 Highway and Trucking service:

There are about 1.6 million km highways in China and 26,000 km expressways. 1,128,700 km highways are unpaved. [3] About 10,000 companies provide trucking service in China, and many manufacturers have their own fleets with low utilization rates. Only 25% of freight trucks are containerized because of the small size of operators. There are also many other factors contributing to the low efficiency of the trucking industry, such as local policies to protect local trucking business, and regulations to non-local trucks. The road tolls represent 20% of the trucking cost that are much higher than those of other western countries. [4] However, trucking service is still the most popular mode for some industries such as food industry due to the high flexibility and low loading cost. With the entry to WTO, MNCs will be allowed to completely enter into the wholesale and distribution business in the next three years. For example, Walmart will launch its business in China in Oct. 2003. The trucking leaders will meet a great opportunity to further develop their business by meeting rapidly MNCs needs for containerization, cross-border transportation, reliable, guaranteed service and value-added services.

2.3 Railroad industry:

According to *the World Factbook 2002*, there is 67,524 km of railway including 5,400 km provincial local rails. The program of economic reform has gradually changed the ownership of enterprises in China, but in the rail industry, all large railroad operators are owned by the government. Due to the low cost, railroad dominates in the transportation mode for domestic products. However, with

insufficient rail lines, big population of passengers and huge demand for delivering basic commodities, capacity constraint is a serious problem. Service quality is generally low, such as long transit times, poor service reliability, and lack of tracking information. China has already improved the train speeds nationally four times in the past five years. And now China has begun its huge construction plans such as the Tibet railroad plan. However, the constraint of capacity is still a serious problem due to the huge population of passengers and huge demand for delivering basic commodities such as agriculture products. Transit times are long and service reliability is very poor due to the management of state-owned enterprises. Some necessary services for modern logistics are not available at this moment such as tracking the goods and notification of arrival at rail stations. Foreign trade related companies always use trucks instead of rail because the rail containers are not compatible with those used in the ships. Cargos have to be unloaded and reloaded when using rail, resulting in higher handling costs and higher damage rates. 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. As China enters the WTO, China Rail will be under pressure to restructure to attract more commercial business, and to achieve higher efficiency. According to "Cargo News China", the restructure will include establishing separate market-oriented corporations to manage freight transport, passenger transport and railway infrastructure. The competition for the market share will raise efficiency and benefit customers.

2.4 Shipping:

Shipping has been among the most open sectors on the mainland 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, many people in the industry welcome WTO accession, which means more competition but a larger pie. Since China entered the organization in 2001, cargo destined for international markets is expected to rise to 650-700 million ton by 2005, compared with 400 million tones in 1999. Container volumes are predicted to rise above 40 million TEUs by 2005, compared with 15 million TEUs in 1999. [5] Once China joins 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. Small carriers will probably be driven out of the market.

2.5 Air Express and Air Cargo:

Air Express is the very important segment in all the cargo sectors. The volume of air express has grown at about 20% per annum in the past decade and is predicted to double in the coming five to seven years. More foreign companies signed the joint-venture agreement with Chinese partners in order to enter the Chinese domestic market. UPS, DHL, TNT and Fedex with Chinese companies have taken 50% share. Under the legislative protection of China, EMS (Express Mail Services) dominates 70% domestic express market. In September 1993, China Rail established China Railway Express, which reached more than 150 cities and 5500 rail way stations. China Air Express (CAE) has risen at about 20% per year in the last four years. [5] After China lift the restrictions, the competition is growing.

Air cargo is one of the sectors which benefit from China's WTO entry. More manufacturers will invest in China. Transformation of Chinese industry from its traditional low-cost items to electronics is accelerating the demand for air cargo service. Because most of these goods are intended for export, there is expected increase in international air trade. Also domestic cargo traffic has become an important driver as well. During 2001, the domestic China cargo grew 17.4% over year 2000 levels. China has the second largest domestic air cargo market in the world. Overall air trade within China will grow 10.3% annually by 2007.

2.6 Ports and warehousing:

Both airports and seaports will benefit from China's entry to WTO, because of the increase of cargo volume. The ports companies, Beijing Capital International Airport, Cosco Pacific and China Merchants, will benefit most. Warehousing in China barely meets customer needs due to poor infrastructure and information system. The problems are the lack of cargo tracing services, the lack of delivery reliability for local carriers, complicated customer procedures, high discrepancies in actual and recorded data, and high damage and missing rates. This encourages the factories to build their own warehouse and facilities. In order to correct this, the government and companies have been building modern logistics centers in major cities with government support.

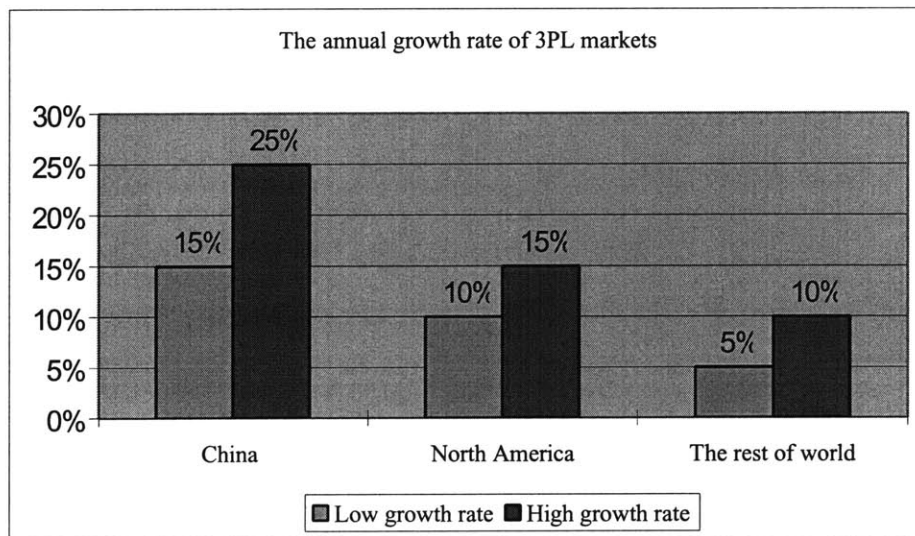
Top10 Coastal Ports by Throughput in China (by 11/30/2002):

	Seaports	Million tons	Compared with last year (%)
1	Shanghai	239.6	118.0
2	Ningbo	138.4	121.8
3	Guangzhou	134.9	118.8
4	Tianjing	119.4	113.4
5	Qingdao	112.4	116.9
6	Qinhuangdao	103.1	101.1
7	Dalian	99.5	108.5
8	Shenzhen	79.6	132.2
9	Zhoushang	36.8	124.9
10	Fuzhou	35.2	132.5

[6]

Chapter 3: Business opportunities for third party logistics:

The third party logistics market in China is ready to enjoy a fast start. Although the current 3PLs account for only \$4.7 billion, it is expected to enjoy a very high annual growth rate of 15-25% that is leading both North America (10-15% annual growth rate) and the rest of world (5-10% annual growth rate). [7] According to a survey made by Mercer, while only about 22% of logistics expenditures are spent on 3PL today, outsourced logistics services are expected to account for 50-60 percent of total logistics expenditures in 3-5 years.



3.1 Overview of third party logistics in China:

There are more than 16000 companies defined themselves as logistics companies. However, most of them just provided simple transportation and

warehousing service. Value-added services like information services, inventory management; and logistics cost control are not offered. Local industry companies only began to enter into 3PL operations in the past few years and remain small. Most of them come from the traditional firms and have weak network and organization capabilities. Foreign companies have been allowed to get into the 3PL market since 2002. According to a regulation from MOFTEC (Ministry of Foreign Trade, Economy and Cooperation), foreign players can hold up to 49% shares of a joint venture. The initial investments must be higher than \$5 million. And by December 2004, foreign companies will be allowed to operate their own logistics units. With the entry to WTO, the Chinese government promised to completely open its domestic distribution, warehousing and services market to the foreign investors in the next three years. Currently the 3PL penetration rate for China is estimated to be 2%, much lower than the USA (8%) and Europe (10%). Even the largest 3 PL player has no more than 1.4% market share. [7] Therefore, the potential growth for 3PL in China is significant.

3.2 Drivers for the development of third party logistics:

Multinational corporations (MNCs) in China play an important role in the development of third party logistics. Compared to the local manufacturers, MNCs in China have more sophisticated logistics needs and experience with high quality subcontractors in other countries. Currently about 70% of MNCs are outsourcing logistics services to reduce their inventory cost, recycle time, and improve their service levels. A study made by US-China Business Council found that over 42% of MNCs distributed their products in over 20 provinces in China and more than 50%

sold to more than 50 cities in China. This results in the high demand for total distribution solutions instead of just transportation and warehousing services.

The Chinese government has paid much attention to the development of 3PL since 2002. Establishing national logistics centers and large-scale logistics companies is part of the next five-year plan. Several major cities in China such as Beijing, Tianjing, Shanghai, Guangzhou, Shenzhen and Qongqing have already begun or plan to build their logistics centers. As economic centers, those cities hope that modern national logistics centers can strengthen their competitive advantage in terms of attracting foreign direct investments.

The entry to WTO is also a critical factor since more and more MNCs will enter into the Chinese market and transfer their manufacturing facilities to China. As part of the commitment to WTO, the Chinese government will open its logistics market to foreign investments and foreign wholly owned 3PL companies within 3 years.

3.3 Current main players:

Large state-owned companies, such as China Post and COSCO, have just begun to seek business opportunities in the 3PL market while their main businesses are still in the 2PL market. The competitive advantage of those companies is their national or international network and great transportation and warehousing facilities. For example, China Post has more than 10,000,000 square meters of warehouse and 66,000 domestic offices. On the other hand, those companies are too large to be

efficient. Lacking logistics professionals and low service quality also hurt their ability to be the leaders in 3PL market.

Logistics divisions of manufacturers such as Haier Group and TCL Group are very successful for their internal business. For example, Haier Group has very complicated logistics since it became a multinational corporation specializing in electronic appliances. On the average, Haier Group handles more than 6,000 orders for more than 7,000 kinds of products per month. The sorts of materials needed to purchase is more than 150,000 per month. With its successful logistics division, Haier Group has reduced the area of its warehouse by 50% and the capital in its inventory by 67%. Now Haier Group has built 42 distribution centers covering the country. Haier has also established close partnerships with more than 300 transportation companies. Customers in the major cities can receive Haier's products within 4-6 hours after place an order on line. [8] The success of logistics has improved its service level greatly and reinforced its leading position. TCL Group, one of the most famous TV manufacturers, also declared that it would invest \$ 60 million in its logistics network in 2003. Although those logistics divisions have in-depth insight in their industries, they are not familiar with other industries and not good at marketing. Whether they can be the leading players in the 3PL market is still uncertain.

Foreign 3PL companies, such as UPS and Maersk Logistics, are also eager to explore the huge logistics market in China. At the beginning, they aimed at foreign wholly owned manufacturers and joint ventures. With the deregulation of the 3PL logistics market, it can be expected that they can further develop their business by cooperating with local players. The competitive advantage of those foreign 3PL

companies is that they are more experienced in modern logistics and they have strong global networks. However, they are not familiar with the Chinese business culture and do not have strong customer networks. Moreover, compared with their local competitors, they are also lacking the support from Chinese government.

Major Players in the Chinese 3PL Market

<p>Foreign logistics providers</p> <ul style="list-style-type: none"> • APL • Maersk • HTB • Panalpina • Exel • Danzas • TNT • Schenker • FedEx • UPS • DHL 	<p>Traditional Chinese transportation companies</p> <ul style="list-style-type: none"> • COSCO • Sinotrans • China Materials Storage and Transportation Co. • China Shipping • China Resources • China Post • CRML • CRE
<p>Internal logistics departments of Chinese companies</p> <ul style="list-style-type: none"> • Annto Logistics • Haier Logistics • Attend Logistics • Ding Xin Logistics • TCL • Bright Dairy & Food • Konka 	<p>Emerging Chinese logistics companies</p> <ul style="list-style-type: none"> • EAS • St-Anda • PGL • Hurry Top • China Overseas Logistics • Jiuchuan Logistics

Source: China Warehousing Association, China Logistics Market Demand and Supply Analysis Report.

3.4 Business strategy analysis: who will be the winners in 3PL market

All the players in the 3PL market want to be the winners in this virgin territory. Each of them has its advantages and disadvantages. How can a player be a winner? I believe that the solution is --- cooperation, consolidation and merger.

Model 1: Successful logistics divisions of manufacturers separate from their parent companies step by step and grow as independent 3PL providers. Although those 3PL providers can provide excellent service to other manufacturers in their industry, they cannot gain too much due to direct competition and fear of leaking business confidences. However, those 3PL providers can penetrate into other

industries by utilizing their distribution networks and facilities. For example, Haier Group has already begun to provide 3PL service to some food companies such as Nestle in China. In order to enter into other industries' markets, those 3PL providers need to cooperate with or merge with some 3PL providers in other industries to get necessary expertise and customer networks. And cooperating with foreign SCM solutions' providers will also be very helpful. For instance, Haier Group has cooperated with SAP very closely. With their parent companies' brand names, they can achieve their market shares in other industries in a short period. On the other hand, whether this model can be very successful also depends on some other factors. For example, the success of Haier's logistics division is partly because of the top management's commitment. However, it won't be easy for Haier's logistics team to get the necessary support from other manufacturers' top management.

Model 2: The merger between foreign 3PL companies and local 3PL providers will be a trend in the next few years. This kind of alliance can provide both sides with complementary skills and capabilities. Foreign 3PL companies are looking for partners who can provide the customer relationships, government support, local facilities, and local business skills. Local 3PL providers are seeking partners who can provide advanced logistics methods, western management experience, finance support and international networks. However, to find a good partner is easier said than done. Even if they match each other very well in terms of capital, skills and networks, the model is still far away from success if both sides do not have the same objective or target for development. In addition, currently China does not have scaled pure 3PL providers.

Model 3: Another feasible way is that 2PL companies cooperate closely with 4PLs and 5PLs to transfer their main business from the 2PL markets to the 3PL markets. 2PL giants in China, such as Sinotrans and China Post, may not be interested in cooperating with 3PL providers since the capacities of both sides may overlap with each other. However, those 2PL giants may cooperate with or even buy some 4PL providers. They have national or worldwide network, good customer and government relationships, and sufficient finance support, but they lack expertise to restructure their huge organizations, improve their low efficiencies, and plug modern logistics concepts into their old systems. The main difficulty for this model is how to evaluate 4PL providers' assets. Most assets of 2PL companies such as warehouses, trucks or vessels are tangible. Most assets of 4PL providers such as skills and experiences in logistics or SCM solutions are intangible. With the state-owned enterprises' culture, most of those 2PL giants are not willing to pay a high price for intangible knowledge.

Model 4: 3PL companies can also try to establish the strategic alliance with those new national logistics centers. Since those logistics centers are still under development, 3PL companies can enjoy the first movers' advantages by providing their national network and skills in logistics. With the strong support from the relevant ministries and local governments, those centers definitely can provide more customers and some favorable policies for 3PL companies. Although that means 3PL companies have to deal with complicated personal relationships with Chinese officers, those 3PL companies who do not cooperate with logistics centers are most likely to fail in the future competition. The problem for this model is that the overlap of capacities between centers and 3PL companies.

3.4 Obstacles to third party logistics in China

No matter which model 3PL companies choose or which industry they are in, they must pay attention to the following challenges:

Challenge 1: How to deal with customers' own logistics assets. No leading 3PL company can only focus on multinational corporations or joint ventures and neglect local manufacturers that represent the majority of the Chinese economy. However, most of those customers have their in-house logistics departments. Although those in-house logistics departments are not as efficient as 3PL companies, local customers especially state-owned enterprises, cannot spin off or sell those assets and lay off their employees easily. The win-win strategy is to utilize those assets as much as possible. That means both sides may give up the optimal solutions sometimes.

Challenge 2: How to deal with different accounting systems. Compared with leading western manufacturers, most of state-owned enterprises in China do not have standard and clear accounting systems that can identify and account for their logistics cost efficiently and effectively. Actually those Chinese manufacturers simply regard transportation and warehousing cost as their logistics cost. Based on those accounting systems transferred from planned economy systems, it will be very difficult to determine the costs of stock out, holding costs, ordering costs, and internal costs between operation departments and logistics departments. In order to implement efficient modern logistics methods, organizational restructuring and standard accounting systems should be done first.

Challenge 3: Lacking of efficient information systems. Most Chinese customers have not established efficient information systems to provide sufficient and accurate data. Some of leading manufacturers have already built their intranet and installed some software such as ERP software and CAD software. However, those systems are not as efficient and effective as they thought. Often computers are just used as word processors. People from IT departments are not familiar with overall management, while people in logistics teams are not familiar with information systems. That results in the lack of a useful database to support the forecasting of demand and supply.

Challenge 4: Trust between manufacturers and 3PL providers. In order to provide better services, 3PL companies need to work as closely to their customers as possible. 3PL companies play a role as partners more than service vendors. And sometimes 3PL companies have to be involved in the management issues of customers. Whether those 3PL companies can get the trust from customers is very critical for their business and service quality.

Challenge 5: Modern logistics requires that all the players in the supply chain can also cooperate with each other very closely as a strategic alliance. In order to avoid losing bargaining powers, however, the core manufacturers may not want to open their business information to the other players in the chain. In addition, the other players who cannot gain significant benefits from these integrated logistics services may not be interested in investing money in their IT infrastructure and services from 3PL providers.

Chapter 4: Market analysis for SCM software and case study

4.1 Market analysis for SCM software

Market Overview:

According to *2002-2003 China IT Industry Annual Report*, management software in China achieved a total sales of 8.65 billion RMB (\$1.04 billion) in 2002. Compared with the total sales of 6.5 billion RMB in 2001, the growth rate was more than 33%. Within the management software market, the sales of general/ standard products was more than 3.48 billions RMB (\$420 million) while the sales of special products was about 5 billions RMB. [9] Among the general/standard products, ERP software were the most popular products.

China General/Standard Management Software Market in 2002

Products	ERP	Finance software	CRM software	SCM software	Business Software	Others	Total
Sales (Millions RMB)	1896	579	284	162	203	356	3480
Market Share	54.5%	16.6%	8.2%	4.7%	5.8%	10.2%	100%

From the above data, we know that the current SCM software market is far from saturated. In the next few years, SCM software will definitely enjoy a high growth rate given the blooming economy and the demands of modern logistics management.

Current Players:

Some experts estimated that there are about 500 SCM software providers in China now, while other experts believed that the actual number might be much higher than that. However, no one has a market recognition ratio of more than 20%. The current players can be divided into the following categories:

Foreign SCM software providers, such as ORACLE, SAP and I2, are the most competitive companies. They targeted the high-end market and served mainly for multinational corporations and top domestic manufacturers such as Legend.

Domestic SCM software providers, such as Dichain, CA-CSS and Bokesoft, are also very famous in China now. Some of them have strong financial support with foreign capital while some of them are based on foreign technologies to explore the domestic market. Although their products are not as mature and commercialized as those products provided by SAP, they have their own competitive advantages in terms of software localizations and communications with customers. In addition, some domestic SCM software providers are very successful in some special industries. For example, Shanghai Shiyun is very familiar with Chinese retailers' business procedures and has a complete set of standard SCM solution that enjoyed a high popularity in retail business.

Domestic ERP providers, such as Ufsoft and Kingdee, also began to get into the SCM software market. At the beginning, they were famous for their finance software and then began to provide ERP products. During the implementation of ERP products, they established very strong relationships with customers by excellent

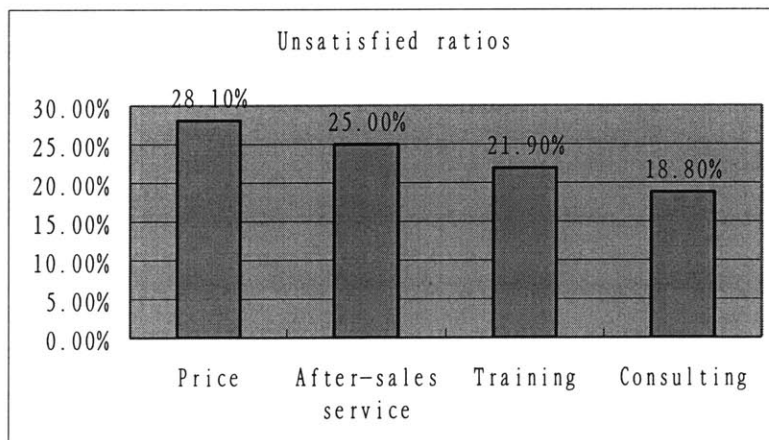
services. Since most Chinese manufacturers wanted to design their supply chain systems based on ERP, those ERP providers extended their business to SCM software and consulting soon.

Small-scaled SCM software companies also benefit from the overall market growth. They are seeking for their niche or low-end markets by some special expertise and low costs.

Market Characters:

General speaking, the SCM software market is still in its infancy. Although many customers declared that they have already installed SCM software, these softwares are very simple and often just a part of SCM such as Vehicle management software or Inventory management software. According to a survey made by CCW-Research, about 68.7% of customers were satisfied with the service provided SCM software companies. Price is the most sensitive issue for Chinese customers while totally 28.1% of customers were not satisfied with prices. And 84.4% of customers cannot afford more than 1 million RMB (or \$ 120,000) for SCM software.

Four aspects customers concerned most



4.2 Case study: Business plan for our SCM software and consulting company

In 2003, I will begin to launch my own business in the field of SCM software and consulting. With intensive discussions, I have already got the commitments from the other co-founders and partners. The new company will not only provide consulting service in logistics for manufacturers but also implement SCM solutions by cooperating with some leading solution providers such as I2, and we will design our own SCM software.

Objective: To be a leading SCM software and consulting company in China in the next 5 years.

Team introduction:

Daguang Zhang: Co-founder; Master of Engineering in Logistics of MIT, MBA of Boston University, M.S. in international business of BUA; Daguang has been Vice President of BHT Co. Ltd since 2000.

Xing Zhao: Co-founder; M.S. in E.E. of Tsinghua University, PHD in computer science of University of Connecticut; He has been Senior Analyst for SCM software of I2 since 1999.

Li Da: Co-founder; He has been Purchasing and Supply Director of DongAn Engine Group, the leading state-owned enterprise specialized in automotive engine in China, for more than 20 years.

Partner introduction:

BHT Science & Technology Co., Ltd, established in 1997, has 2 branches and 5 representative offices in China. With annual revenue of \$ 20 millions, BHT has built its brand name in the Chinese railroad industry. Its main business includes: Multiple-system and trans-platform application plans, computer system integration, network technology, ORACLE database, CAD/CAM software, OA and ERP products. With its own software development base, BHT has an abundance of experiences in terms of the integration and implementation of CIMS and ERP systems.

BUAA is one of the most famous universities especially in engineering in China. Since 1950s, BUAA has ranked among the 15 key universities of the country by the Education Ministry of China. At the beginning of 1995, BUAA was one of the first 15 key universities that entered the State's "Project 211".

Strategies and business development plan:

Our strategies to enter the market can be described as: "Borrow a boat to sailing" and " From small to large". In details, our new company will take full advantage of our partners' resources. The new company will utilize the sales network of BHT to promote our services and products. Besides the strong customer network, BHT also has good relationships with its upstream companies. For example, BHT has become the Gold Supplier of ORACLE solutions and the value-added dealing partner of HP since 2000. It won't be difficult for our new company to get some special offers or big discounts from those upstream companies. BUAA will provide the necessary

facilities as well as its brand name in China. With the great reputation of BUAA, our business can be easily extended to other industries such as the Aviation Industry of China.

Here I would like to divide our business development as three phases in 5 years:

First phase (from 0-1.5 years): At the beginning, the new company is more likely a project team than a company. Since BHT has a close relationship with state-owned enterprises in railway industry, we will begin our business with QLC (Qingdao Locomotive Corporation, a large state-owned manufacturer with 12,000 employees). In 2001, BHT won the tender of MRP implementation for QLC that also showed its interests in SCM products. For the first project, we won't charge any fees for consulting and system implementation except the costs of software bought from other leading providers such as I2 or ORACLE if necessary. Training our team and gaining project experiences are our aims. Based on my past experience, it will cost us 8-10 months for the first project that will also be our example for future business. Base on the first project, hopefully we will finish 2-3 projects and reach the break-even point within the first phase. More importantly, we will develop our own SCM software with copyright and attract as much attention from locomotive manufacturers as we can.

Second phase (from 1.5-3 years): In this phase, we will commercialize our SCM software and build a consulting team. We will hire more programmers for our software and more skilled logistics consultants. With the support from BHT and BUAA, our new company will become the leading SCM solution providers in the railroad industry and aviation industry. Since our business will have a large expansion,

financing support will be critical. However, we will seek for new investment with our own software and consulting expertise at that moment.

Third phase (from 3-5 years): In this phase, we will get into the national SCM solution market with our mature products and excellent consulting services to compete with other leading SCM solution providers head to head.

Financial analysis:

Considering the market and operational risk, minimizing the initial investment is always the best way for new companies despite low labor costs in China. A 10-12 people team will be enough at the beginning. All the co-founders at the first phase will not be paid by salary but by shares and options.

Investment and shareholders:

Shareholders	Initial Investment	Shares in the new company
Daguang Zhang	Co-founder	8%
Xing Zhao	Co-founder	5%
Li Da	Co-founder	5%
BHT	3 million RMB	49%
BUAA	Facilities and other intangible assets	33%

Operation costs and revenue for the first phase (from 0-1.5 years):

Items	RMB
Labor cost (8 employees for 18 months)	640,000 (by a monthly salary of 5,000 RMB per employee)
Cost of business trips	200,000
Other administration cost	400,000
Tax	0 (Hi-tech company launched by overseas graduates can waive tax for 3 years.)
Total Cost	1,240,000
Revenue from 2 projects	1.3-1.5 millions
Profit	60,000-260,000

In addition, there are also some other exciting policies given by Beijing local government, such as providing a free 80 square meter office and 100,000RMB for a new company launched by overseas graduates.

Although it will be a small company at the beginning, we are confident that our new company will benefit from the fascinating growth of modern logistics in China and have a great potential to be a leading SCM software and consulting service provider. In China, “Nothing is easy, but nothing is impossible.”

Chapter 5: Summary and conclusion

5.1 Summary:

The Chinese logistics market is blooming together with China economy. Many professionals in this field have become more and more interested in this huge potential market. The goal of my thesis is to give you some basic ideas on the Chinese logistics market from both macro-economic and micro-economic sides.

In this thesis, first I presented the importance, features and regulatory constraints of the Chinese logistics market in Chapter 1. In Chapter 2, I reviewed the Chinese logistics infrastructure in terms of IT infrastructure, highway system, railway industry, shipping industry, and Air express and cargo industry. Based on the data and experience I have, I further analyzed the advantages and obstacles for the development of China logistics. In Chapter 3, I gave a detailed analysis on the development of third party logistics in China. Moreover, I analyzed the pros and cons of different business models for third party logistics players. In addition, I described and analyzed the difficulties in exploring this fascinating market for current and potential 3PL providers. In Chapter 4, I categorized the current players in supply chain management software and analyzed the reasons for their successes. In the last section, I proposed my business plan for a SCM software and consulting company as a case study for who may be interested.

5.2 Conclusion and areas for further study:

In 2002, China's total logistics was about 20% of its GDP, or US\$245 billion. On average, 90% of a manufacturer's time is spent on logistics while only 10% of its time is spent on manufacturing. Underdeveloped logistics infrastructure may limit China's further economic growth. Although China has the second largest highway, railroad industries, and the largest telephone system in the world, those industries are not efficient and effective for modern logistics methods or the integrated service of supply chain management. In addition, regulatory complexities lead to the lack of coordination and low flexibility, as does the lack of logistics expertise. China needs to import and train more than 600,000 logistics managers who are familiar with basic modern logistics concepts.

Currently, the 3PL industry in China accounts for \$4.7 billion and is expected to have a high annual growth rate of 15-25%. The 3PL penetration rate for China is estimated to be 2%, much lower than the USA (8%) and Europe (10%). And the 3PL market in China is highly fragmented-even the largest player has no more than 1.45 market share.

The primary finding in this thesis is the solution to be a winner in 3PL market--cooperation, consolidation and merger. For example, model 1--- those successful logistics divisions of manufacturers should separate from their parent companies step by step and cooperate or merge with some 3 PL providers in other industries. It is also necessary for them to cooperate with some famous foreign SCM solution providers. Model 2--- The merger between foreign 3PL companies and local 3PL providers will

be a trend in the next few years. Model 3--- 2PL companies can cooperate with 4PLs and 5PLs to transfer their original business to 3PL markers. Another feasible way is that 3PL companies may seek strategic alliances with those new national logistics centers. However, there are still some challenges must be addressed. For example, 3PL companies have to deal with customers' own logistics assets and the different accounting systems. The lack of efficient information systems is another challenges must be overcome. More importantly, gaining the trust of customers and persuading or convincing all the players in one supply chain to participate or work closely will not be easy.

In 2002, the total revenue of SCM software in China was \$162 millions, and that represented only 4.7% of the total management software market. There are more than 500 SCM software and consulting companies in China. However, no one has a market recognition ratio of more than 20%. Foreign SCM software providers such as ORACLE, SAP and I2 targeted the high-end market. With the strong finance support and advanced foreign technologies, some domestic SCM providers such as Dichain and Bokesoft also perform very well in this market. In addition, domestic ERP providers such as Ufsoft and Kingdee have begun to get into this market by their strong customer relationships. Although there are many competitors in this market, I still believe I can find a niche market for SCM software and consulting business in some special industries such as railroad industry and aviation industry. With the strong support from BHT and BUAA, I hope that I can launch my own business in the near future and achieve a significant market share in the next five years.

Due to the limit of time and data, this thesis is still weak in the following aspects: Although this thesis analyzed the pros and cons of different business model for 3PL providers, it cannot cover all the factors that may influence 3PL business. The thesis discussed the challenges in front of 3PL providers, but cannot give suggestions or solutions to overcome those obstacles. And also, the case study for a SCM software and consulting company is just a rough business plan for discussion. I would like to do some relevant researches in those areas in future.

Appendix: Useful Contact Information

1. Government:

Ministry of Communications: <http://www.moc.gov.cn>

Tel: (86-10) 6529-2201, 6529-2249

Email: gjszhc@moc.gov.cn

Ministry of Foreign Trade and Economic Cooperation:

<http://www.mofcom.gov.cn>

<http://english.moftec.gov.cn>

Tel: (86-10) 6512-1919

Fax:(86-10) 6519-8173

Email: moftec@moftec.gov.cn

CAAC: <http://www.caac.gov.cn>

Ministry of Railways: <http://www.chinamor.cn.net>

2. Associations:

China Logistics Net: <http://www.china-logisticsnet.com/>

China Warehousing and Logistics Net: <http://www.ec56.com/>

China Logistics Source.com: <http://www.56source.com/>

3. Companies:

Haier Group: <http://www.haier.com/english/>

TCL Group: <http://www.tcl.com/english/index.jsp>

COSCO: <http://www.cosco.com/>

Bokesoft: <http://www.bokesoft.com>

Ufsoft Co., Ltd.: <http://www.ufsoft.com.cn/english/>

4. Institutions:

Tsinghua University: <http://www.tsinghua.edu.cn>

Tel: (86-10) 6278-5001

Email: info@tsinghua.edu.cn

Fudan University: <http://www.fudan.edu.cn>

Tel: (86-21) 6564-2222

Harbin Institute of Technology: <http://www.hit.edu.cn>

Tel: (86-451) 6412-114

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