

Beer Distribution in China

The Supply Chain Logistics Institute
The School of Industrial and Systems Engineering
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Center of Excellence: Logistics in China

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We hope you find this report useful and we would like to hear from you. Please direct all correspondence to Professor Chen Zhou at School of Industrial and Systems Engineering, Georgia Institute of Technology, Atlanta, GA 30332, USA.



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1. Introduction

Today, many multinational companies (MNCs) are either already in China or planning to enter the Chinese market. With the recent entrance of China into WTO, this trend will most likely continue. Of all the MNCs that entered China, few provide transportation or logistics services. One may wonder about the reason behind this. As China matures, information regarding logistics becomes more accessible. Logistics reports are now available regularly from the National Bureau of Statistics, China Federation of Logistics and Purchasing (CFLP) ^[1], China Road Transportation Association (CRTA) ^[2], China Communications and Transportation Association (CCTA) ^[3], Li and Fung ^[4], etc. Such macro-level reports publications tremendously help those who plan to enter Chinese market.

However, these reports do not provide much information regarding the potential issues involved if one starts a distribution service in a region. This study attempts to provide micro-level information to complement to the aforementioned reports. Our strategy is to peek into the world of transportation, distribution and economics in China via the distribution of a simple product – beer. We believe it is impossible to conduct controlled experiments to acquire meaningful data that is statistically significant to cover such a complex and diversified system. Our approach was to observe and to conduct in-depth interviews with selected few brands, factories, regional distribution centers, wholesalers and retailers in different cities of different sizes and locations, an approach similar to economic analysis.

The following is organized in three parts. The first part is the overview of the distribution network and operational characteristics. The second part describes the economics in the distribution system. The third part highlights some interesting observations that are either different from developed countries or counter intuitive. The last part provides arguments of the insights we have derived from our observations and other research.

2. Beer Distribution

A. Tiered Distribution Network

Beer distribution in China from producers to distributors is via a set of distributors and wholesalers. Whereas a producer-distributor-retailer 3-tier distribution network is highly regulated in the United States, the actual beer distribution networks in China vary among brands and regions. The geographic distribution and roles of the surveyed firms are listed in Tables A1, A2 and A3 in the Appendix.

Beer producers vary in terms of ownership structure and size. Large SOE (State-Owned Enterprise) beer producers include Tsingtao Beer and Taishan Beer in Shandong Province, and Yanjing Beer in Beijing. Examples of joint venture beer producers are Heineken, Budweiser, Shandong Yinmai and Shandong Sankong. Producers usually directly serve a number of distributors. For example, Taishan Beer, producer of a popular brand in regional market, has 40% of revenue in Taian, a mid-sized city located in the center of Shandong with a 1.2 million population. It deals with over 400 distributors in

Shandong province with many of them in Taian. Tsingtao Beer, the producer of a much bigger brand, has nationwide sales and over 10,000 distributors in the country. This figure seems rather large, and we were so intrigued that we carried out more interviews around Tsingtao's distribution. More details are summarized in Chapter 4.

Distributors are usually licensed by the beer producer through public bidding to represent its brand in certain regions, though they could also be designated by producers when the distributors are the important link of the channel in a market producers desire to get into. In bidding events, the distributors are required to commit to a certain annual sales goal in order to become licensed. Examples are Lianda, Jinshida and Qisheng in Qinhuangdao, a mid-sized coastal city in Eastern Hebei province with a 2.7 million population.

Unlike in US where each brand of beer can only be licensed to one distributor in one state, multiple distributorships can be awarded by beer producer for each brand of beer in a single province in China. Distributors on this list include Tsingtao Beer's regional distributor in Tianjin – a coastal city 85 miles east from Beijing with over 11 million population, Yanjing's and Budweiser's local distributors in Qinhuangdao – Lianda and Jinshida respectively. Notably, "Guanxi" or personal relationships play a vital role in obtaining distribution rights.

Distributors purchase beers from producers or other distributors and sell them to a number of wholesalers. Distributors can also act as wholesalers in order to directly sell products to retailers. Each distributor normally carries a single brand, though the distributor can carry many other non-competing beverages at the same time. In larger cities such as Beijing and Shanghai, from our surveys we only found one distributor that carries multiple brands from different beer producers. Beyond distribution functions, some distributors also support marketing for the producers, such as product and service policy training programs, customer relationship management, complaint resolution and promotional activities.

Wholesalers procure products from multiple beer and other beverage distributors. By carrying a broad variety of beverage products and being geographically close to the market, wholesalers try to provide one-stop shopping for retailers and achieve a high service level. Haoshen in Shanghai, for example, sell beers such as Budweiser, Harbin, Guinness, as well as wine and bottled water.

Typical beer retailers in China include hotels, restaurants, KTV's (Karaoke entertainment centers), supermarkets, bars, clubs and numerous convenient stores. Retailers may purchase from one or more distributor(s) or wholesalers. It is observed that retailers in Qinhuangdao and Dalian (a coastal city with a 5.6 million population in Northern China) usually deal with multiple distributors to obtain a good assortment of beers of different brands, while retailers in Beijing and Shanghai are likely to obtain all desired brands from the same distributor.

Aforementioned beer distribution network is widely deployed to move products in China, regardless of size and volume of surveyed participants. Producers rarely bypass distributors to deal with wholesalers or retailers. We did observe, however, that one retailer in Dalian bypasses the middle tier and directly source from the beer producers, though this retailer has regular upstream tiered distribution network. It is learned that this direct sale mode is a result of very close personal relationships between producers and

retailers, and takes place when producer and retailer are in the same geographic location where direct replenishment can be achieved conveniently.

Delivery from upper tier to lower tier is the norm, although exceptions do exist. The upper nodes normally manage the transportation. Many operate their own private fleet, such as Haoshen in Shanghai and Qisheng in Qinhuangdao. Some use rental equipment. A few outsource their logistics services, such as Tsingtao Beer that outsource the logistics services for its high end beer to China Merchants Logistics Group (CML), a large state owned logistics provider. In term of inventory carrying, either end of the supply chain, the producer and the retailer, carries little inventory. Most of the inventories are at the distributors and wholesalers.

The large retail chains, such as Carrefour and Hualian, a large domestic supermarket chain, normally procure product to their own distribution centers and then mix beer with other products to deliver to stores.

B. Demand Management

End market demand history is typically not systematically collected and shared. This is compensated by relatively fast response time and frequent replenishments between nodes. In such business context, pull scheme based on market signals to distribute products prevails over push scheme. With wide deployment of point-of-sale (POS) system, accessing market sales data, collaborating and sharing data between supply chain participants is recognized as the key to ensure visibility to the market at each layer of distribution.

Majority of surveyed producers and distributors plan product supply based on downstream demand information and experience, indicating well adopted pull demand management scheme in beer distribution system. However, we found demand information collection and sharing is limited to adjacent tiers of distribution at best, and supportive information system is rarely deployed or quite basic. Producers or distributors usually do not have access to retailer POS data. Among the producers, Taishan Beer has a MRPII (Manufacturing Resource Planning) system that has been upgraded many times. It is also trying to gain visibility to retail sales by having distributors and wholesalers complete detailed order forms at the point of products handover. Tsingtao Beer in Tsingtao and its 3PL (Third Party Logistics), China Merchants Logistics Group are the only ones that use both ERP (Enterprise Resource Planning) system and TMS (Transportation Management System).

Orders from downstream to upstream are predominantly communicated through phone calls or fax and processed manually. Tsingtao Beer's and Yinmai's distributors, on the other hand, have the option of submitting orders through a web-based order management system. While in general it takes 10 to 15 days to fulfill orders from distributors to manufacturers, orders from retailers to wholesalers can be fulfilled in as little as half an hour and no more than 3 days. In Qinhuangdao, wholesalers often have to handle emergency orders with small quantities and unplanned routes. In contrast, in Beijing and Shanghai, wholesalers very rarely or are never requested of emergency delivery. This interesting difference between cities will be explored with more details in Chapter 4.

Promotions are mostly sponsored and organized by manufacturers and distributors in low business season, during holidays or at a new product launch, and take place at retailer

sites. Such promotional activities are often independent of retailer's regular business operations.

Overall the survey indicates lack of demand and order management processes among the beer distribution participants. No obvious collaborative planning exists between different tiers of the distribution.

C. Long Haul Transportation and Transshipment

From beer producers to distributors, long haul trucking is most often used. A distinctive feature of long haul trucking is the strong influence of highway toll charges that contributes to high transportation cost. However, it is faster and more reliable. Rail and water are also used but to much lesser extent. For example, Budweiser Wuhan plant deliver beer via rail to Budweiser's only licensed distributor in Qinhuangdao. The order cycle takes around 10 days. Mode selection between Tsingtao Beer to its licensed distributor Qisheng in Qinhuangdao, on the other hand, is order quantity dependent. When the order size reaches one carload, rail will be used and trucking vice versa.

Trucks with various capacity and style are used in long haul transportation. Capacity-wise 5-ton and 8-ton and 35-ton trucks are common. There are open trucks, boxed trucks, trucks covered with canvas, and even container trucks used for the long haul. None of the surveyed participants use refrigerated trucks.

Some beer producers still own their own fleet instead of utilizing 3PL (Third Party Logistics) to handle long haul delivery. Examples are Lubao Beer and Yinmai Beer. This is no surprise based on our 2004 China Road Transportation Enterprise study ^[5]. Others outsource to 3PL or utilize fragmented trucking resources for long haul transportation. Tsingtao Beer in Northern China, for instance, designated China Merchants Logistics Group (CML) for its regional distribution services in North and East China. CML operates a Central Distribution Center (CDC) near Tsingtao Beer's brewery in Tsingtao. The throughput at CDC is over 1 million tons per year. From CDC, the beer are sent to regional distribution centers (RDC). The largest RDCs are in Beijing, Tianjin, Jinan, Taiyuan, Zhengzhou, Dalian and Taizhou, shown in Figure 7 in the Appendix. For this project CML owns 90 trucks, mostly 35-ton open top trucks. CML uses trucks to distribute product from factory warehouse to Jinan, Beijing and Tianjin RDCs, and replenishes products from Qingdao to Taiyuan and Zhengzhou RDC by rail. In addition, CML uses 2,000 to 2,500 ton barges to ship product in cases to Dalian and Taizhou RDCs via sea water. The annual volume is around 120,000 tons to each coastal RDC. The replenishment is weekly and could be more than once a week in peak seasons. CML outsource about 50% of the transportation to cottage trucking services.

It is noted that the surveyed participants that utilize 3PL services tend to be more aggressive in adopting advanced logistics and distribution practices in comparison to their peers with own fleet. For example, Tsingtao Beer's 3PL, China Merchants Logistics Group, has implemented a TMS system to proactively analyze transportation routes and loads to improve space utilization and transportation efficiency.

In many cases long haul transportation cost is borne by beer producers, though some distributors may pick up the shipping payment tab. If beer producers are responsible for outbound shipments, they usually will apply the long haul cost into sales price to distributors.

Shipments from producers are usually dropped off at rail station warehouses in destination city or at local public warehouse awaiting pick-up, where deconsolidation or cross-docking happens. In these transshipment stations, products may be palletized and moved with forklift, or simply stacked up on the floor. Loading is still manual in many cases.

D. Local Delivery

Local delivery refers to short distance transportation from transshipment station to distributor's warehouse, and delivery from distributors or wholesalers to retailers in the city. It is often through densely populated districts and heavy traffic areas. Most city regulations require special registration for cargo trucks in cities during daytime, and deliveries are normally made in passenger vans of various sizes. We have noticed other types of equipments such as tricycles, push carts and trolleys are used for very small volume and short distance deliveries. Some retailers request boxed or canvas covered trucks for delivery in inclement weather.

In general, delivery from transshipment station to distributor's warehouse is the distributor's responsibility, and is handled by its own trucks or rented spot trucking resources in market. Our survey results show that distributors and wholesalers are also often responsible for local delivery to retailers.

A wholesaler typically serves in a small district in a city, or a small city in some cases. They usually own one or a few vans. Some wholesalers also own 5-ton open trucks, such as Haoshen in Shanghai. Due to the capacity limit, van delivery usually makes more stops per route compared with trucks. Trucks are often used for customers with larger demand.

The surveyed participants rarely choose professional 3PL to handle their distribution needs, with cost and efficiency concern cited as the main reasons. Again this fact concurs well with our findings in the 2004 China Road Transportation Enterprise study.

E. Distribution Network Sharing

Producers push distributors to solely represent their brand as much as possible. Multiple brands are allowed as long as they are non-competing ones. For example, a distributor representing high end beer can at the same time carry low end beer, soda and bottled water.

On the other hand, distributors are always motivated to boost sales and provide "one stop shopping" for customers. One way of achieving this is to share distribution channel of multiple beers. Aside from their contracts with producers, distributors may reach agreement with each other that one distributor will act as a wholesaler of the other, resulting in a mixed role of the distributor in the distribution system. One such example is Yanshan beer sales company, which while being a Qinhuangdao distributor for Snow Beer, is also a wholesaler of Budweiser and Tsingtao Beer by purchasing other brand products from local licensed distributors.

F. Inventory Control

Surveyed beer producers reported to hold 3 – 4 days of inventory on average, and replenish distributors based on pull signal. Producers all have warehouses, and inventory

storage and handling is highly manual. The picture below shows beer in cases stacked in a wholesaler's warehouse.

Most regional and local distributors rent warehouses, and manage inventory using seasonally adjusted order point and order quantity. Tsingtao Beer's RDC and central distribution centers (CDC) usually hold about 2-week safety stock inventory. Tsingtao Beer's CDC has a size of 15,000m² in comparison to an average size of 1,000 to 2,000m² for a RDC. The strong seasons are summer months and during major events such as World Cup. It is mentioned in the survey that about 60% to 70% of Tsingtao Beer's sales is generated between May and October. The sales will increase more during the golden weeks in China such as the week of May 1st and October 1st. Some distributors adapt more frequently to market dynamics to manage inventory. Example is Yanshan in Qinhuangdao, which places orders dynamically based on daily sale volume and season.



Distributors in Qinhuangdao normally hold 1 to 2 weeks inventory. Distributors for Taishan Beer, specifically Kangjian and Mingyou, pick up order with their own trucks, often bypass their distribution centers and directly deliver the products to wholesalers and retailers. By doing so, their inventory is greatly reduced. Wholesalers such as Haoshen in Shanghai, typically keep 2 days of inventory. Beer packs are stacked up from the ground to ceiling about 10' high in low cost warehouses, as seen in picture showing one wholesaler's warehouse. Ladders are used for operators to reach the top stack if it is too high. FIFO (First In, First Out) inventory management is achieved by piling in an ad-hoc fashion.

Retailers surveyed carry the least inventory, typically one to two days and sometimes even less than that, compared to beer producers, distributors and wholesalers. This is due to space constraints, high space rental cost and also the short order lead time from wholesalers. Distributors and wholesalers are involved in intense competition to win the contract, and are willing to deliver products in short notice. The low inventory level at retailers and market demand dynamics they directly face often lead to high order frequency to wholesalers or distributors. This in turn translates into frequent replenishment and high delivery cost. This observation will be studied in more details in Chapter 4. Overall retailers have higher inventory turns thanks to the lower inventory level they carry compared to other tiers.

G. Reverse Logistics

The government encourages bottle recycling for material and energy savings. This is enforced by allocation of bottle return fees. However, bottle return is less profitable than beer distribution, and it is often carried out by lower cost providers. For the producers,



distributors and wholesalers, the most important motivation for bottle recycling is to ensure that the products are sold through intended channel. For example, in order to reach sales goal, a restaurant may sell its product to the neighborhood convenient store who acquires beers from the same wholesaler. The picture on the right shows an example of empty bottle recycling.

For producers, Taishan requests distributors collect empty bottles from lower tiers of distribution, and have incorporated the recycling cost in delivery payment to distributors. Taishan also buys empty bottles from independent recycling stations. Sankong's customers directly drop off empty bottles for recycling when they pick up orders from Sankong factory.

On average the credit for recycled empty bottles is Chinese Yuan (RMB) 0.2 – 0.5 per bottle. Bigger brands give more credit per returned bottle. For example, one returned Tsingtao beer bottle is worth RMB0.35. However, the restaurants surveyed in Beijing reported credit per recycled bottle is only RMB0.05 – 0.1. At such low margins, the 3PLs, the distributors and wholesalers who distribute the beer do not handle the reverse logistics. The returns are normally handled by lower cost providers.

Speaking of reverse logistics, we must also highlight cap return, which is a very distinctive part of beer reverse logistics in China. Like bottle return which is demanded by producers for materials recycling purposes, cap return is also advocated by producers or distributors as a major marketing strategy to promote sales. Cap return will be covered in-depth under the “Cap Fee” section in Chapter 3. The picture on the right provides an example of a Tsingtao beer cap.

Plastic totes, as seen in picture on the right, are mostly chosen as packaging cases for low end beers, are widely used for empty bottle packaging, though we observed that gunnysacks are also often used. Recycling transportation vehicle types are very diverse, from small trucks, tractor-pulled carts to human pedaled tricycles. Other than some roller conveyors we saw at one recycling company that move toted bottles to shipping area, loading and unloading are largely manual.



3. Distribution Economics

The beer price in China is much lower than that in the US. That translates into much lower margins at each tier of the distribution. With the high cost in a fragmented and cottage logistics industry revealed from previous study ^[5], we are interested to find out how the current distribution system creates value for each participant.

In China, “Channel is King” was most cited as a marketing motto, implying the importance of sales channel control for market penetration. Given the market driven nature of the beer business, retailing points directly feel the market pulse, and are especially critical for the entire beer supply chain. This well explains special leverages the retailers enjoy in China.

A. Payment Term

The first leverage of the retailers is the stretched payment term, typically 1 – 3 months. In particular, retailers in Shanghai make payments to distributors 1.5 – 3 months after order. The typical payment term in Qinhuangdao and Beijing are 1 month. Distributors in this survey are all required to pay producers at the time of order placement. Shipment is dispatched from producers once payment from distributors is received. This obviously puts much financial pressure on middle tiers in the channel. Also distributors and wholesalers are subject to risks under the payment term agreement. As they allow retailers to pay back later, they may have difficulty collecting the funds and often wind up seeking resolution through court by bearing court fee as well.

B. Retail Fee

The second leverage of the retailers is the Retail Fee. It was started in Hangzhou around 2004 and spread quickly around the country. It is an upfront payment a distributor or wholesaler pays to the retailer in order to sell its brand through the retailer. There are usually three types of retail fee with one or all available for distributors or wholesalers to choose from. First type has the lowest amount requirement, and the brand is allowed for sale at the retailers. Second type has relative higher cost, and the brand will be the main selling brand at the retailers. Third type has the highest premium and it could be ten times or more of the first type retail fee. In return, the brand enjoys exclusivity at the retailer and all other competing brands are not allowed on the retailer’s shelf. Retail fee can be a one-time and non-refundable fee, or attached to certain preset sales goal so that the fee may be partially refunded to distributors if sales goal is not achieved. The exact amount of retail fees is determined through negotiation between distributors and retailers, and depends heavily on locale, beer brand, the size and market positioning of the retailer. However, not all retailers charge retail fee to distributors.

In Qinhuangdao, if requested, the retail fee is around Chinese Yuan RMB2,000 to 3,000 per brand per year for the brand to be put on retailer’s shelf. It can reach RMB10,000 a year in Dalian for the distributor to become the retailer’s only supplier of the given brand. In Beijing and Shanghai, the retail fee is significantly higher if charged, likely reaching RMB100,000 a year. No sales goals are attached to the retail fee in these cases in Dalian, Beijing and Shanghai.

As opposed to on-trade which refers to in-store beer consumption, supermarkets belong to off-trade markets where beer sale occurs but not beer consumption. Retail fee

also applies to off-trade markets including large retail chains such as Wal-Mart and HuaLian, the latter being a big domestic retail chain in China. The retail fee at Shanghai Carrefour can be a hefty RMB200,000 a year. Such steep capital barrier steers many wholesalers away from the particular channel and leave only capital-rich producers to penetrate directly.

Another form of leverage for retailers is kickback. If a retailer surpasses a preset sales goal, the wholesaler would provide kickback, up to 20% of the sales value to the retailer. In a way, this is similar to the retail fee at the end.

C. Value Chain

It is probably of all readers' interest to find out how much a bottle of beer adds value along the distribution channel from a producer to the end consumer. We learned that Heineken's mark up is around 30%, a rather healthy level thanks to its brand recognition. The less recognized brand producers command lower markups. The markup by distributors is reported to be around 0% – 15%. In absence of markup, the distributors' profit comes from kickbacks when a preset sales volume is reached. For example, eligible distributors of Taishan Beer get kickbacks of 7% of sales. Wholesalers charge higher markups to retailers to cover their operating cost and make profit. The wholesaler's markup in Beijing and Shanghai is between 25% and 35%. However, the real profit may only be less than 15% because of the retail fee, long payment term etc. The average markup in Qinhuangdao to retailers is lower, around 10%. The distributors' cost in retail fee and long payment term is also lower in Qinhuangdao.

There are a big variety of retailers, such as hotels of different star ratings, corner restaurants vs. upscale bistros, KTV's and nightclubs. The target customers, beer brands carried and provided service have big differences as well in these retail points. Hence, we found retailers' markups to customers vary significantly, from a modest 70% to an astounding 1000%. To be more specific, the survey found that low end stores have lower markup. Retailers tend to impose higher markup for smaller or less popular brands, as smaller brand producers or distributors are willing to sacrifice profit margin to retailers to gain market share. Across different geographic regions, retailers in larger cities have higher markup.

Figure 1 illustrates the markup breakdown by brand at Yanshan wholesaler in Qinhuangdao. The wholesaler's markups are from 6.4 to 15%, as compared to a minimum 10% markup demanded by law in U.S.

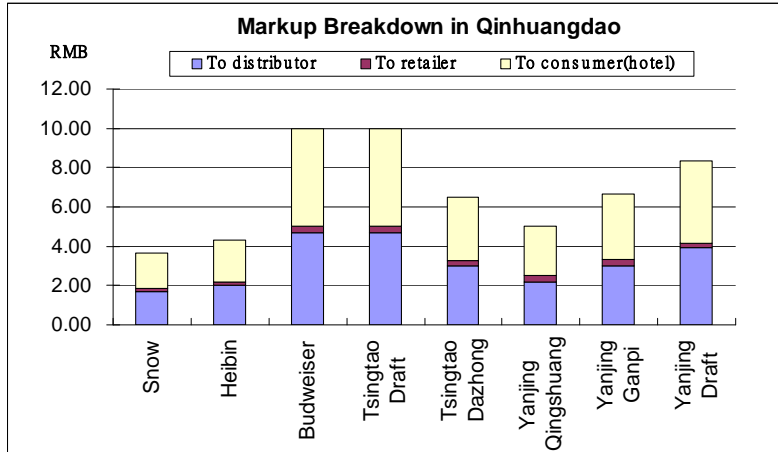


Figure 1: Markup Breakdown at Yanshan wholesaler in Qinhuangdao

For comparison, the cost breakdown at of Heineken in Shanghai is rather different. The producer’s markup is about 60% of the production cost, and the wholesaler’s markup is around 25 to 35%, although the cost of distribution accounts for about 10%. For small brand, wholesaler’s markup is much higher, often from 40 to 60% and is inching up driven by market forces. This is much higher than that in Qinhuangdao. In contrast, the wholesalers in Shanghai are often upper middle class while in Qinhuangdao they are closer to working class. More differences between cities are highlighted in Chapter 4.

D. Cap Fee

Cap Fee is rather unique in China. Consumers dining in may find bottled beer served had caps removed and taken away by the waiters or waitress, and wonder why. There are incentives in doing so, for in many cases caps can be collected and submitted to distributors for cash credit, i.e. cap fee. First, returning the caps to distributors can be a proof that the sales were realized via intended channel. Second, restaurants in most cases get cash back from distributors on a cap-by-cap basis.

Cap fee is brand, region and store specific and typically falls into a range from RMB0.1 to 1.0 per cap. It is usually predetermined by producers. Cap fees are distributed in different ways among employees in the restaurant: evenly distribute among waiters, distribute based on number of caps collected, evenly distribute among all employees, or install “funds” to improve the working environment and workers’ welfare. Some restaurants allow waiters return caps they collected directly to distributors to exchange for money.

Illegal cap exchange, mentioned by some retailer participants in the survey, means caps are returned to distributors directly by waiters or waitresses, without going through the intended return process. The motivation can easily be seen that waiters want to keep such benefits for themselves. They may not want to share their benefits with other workers who did not contribute to sales, or they do not want their benefits being used as “funds”. Taking a restaurant in Beijing as example, distributors give back cap fee of RMB1.0 each, and the waiter gets RMB0.80 per cap if he returns the caps to his manager through the defined channel. The balance of 20 cents is going to be distributed to other

workers such as cleaners and cooks who do not have the chance to sell beer and collect caps.

An estimated calculation based on the survey data indicates cap fee at retailers is insignificant, usually less than 10% of the total revenue.

E. Transportation Cost

The percentage of transportation cost out of total landed cost can serve as a good indicator of the efficiency of one logistics system. We are particularly interested in local delivery as it covers many special characteristics of distribution in China. For example, a 1-ton boxed truck or a 2-ton open truck in Qinhuangdao has a typical transportation cost structure consisting of following components:

1. Fuel charges (FUEL)
2. Driver wages (DRIVER)
3. Porter wages (PORTER)
4. Road maintenance fee (RM)
5. Transportation administration fee (TA)
6. Vehicle maintenance fee (VM)
7. Vehicle annual inspection fee (VAI)
8. Toll way charges (TOLL)
9. Vehicle insurance (VI)
10. City pass fee (CP)
11. Parking fee (PK)
12. Tire cost (TIRE)
13. Repair cost (REP)
14. Industry and commerce administration fee (ICA)

Table 1 provides a comparison of transportation cost components listed above between trucks in Qinhuangdao and in Beijing based on the survey. All costs are in Chinese Yuan (RMB). Driver wage and porter wage are per person per month, and all other costs are per truck per month. All trucks use Diesel fuel.

Table 1: Transportation Cost Comparison

Vehicle Information		Cost Breakdown													
City	Vehicle Capacity (ton)	FUEL	DRIVER	PORTER	RM	TA	VM	VAI	TOLL	VI	CP	PK	TIRE	REP	ICA
Qinhuangdao	1	1500	1500	1300	190	21	65	56	416	342	15	200	185	200	10
Qinhuangdao	2	1500	1500	1300	380	42	65	56	416	342	15	200	185	200	10
Beijing	1.5-2	3200	2800	1300	220	20	53	25	0	92	0	30	100	400	0

Some fees are vehicle weight dependent such as road maintenance and transportation administration fees. We learned discounts are available if one year's road maintenance fee is paid in full.

Vehicle maintenance and vehicle annual inspection fee may be counter intuitive and very different from tire and repair cost. The former fees are fixed annual cost mandated by government, while tire cost and repair cost are dependent on actual parts wear and tear and failures.

Many passenger vans have been used in cities to handle small order transportation. This in fact is against regulations. However, there are lots of incentives doing so from retailers and wholesalers perspective, as transportation administration fee, industry and commerce administration fee and annual vehicle inspection fee can all be exempted for vans. In addition, compared to trucks, vans are not subject to route and city entry time restrictions. Even if such practice is caught by the regulation enforcers, fines imposed are so low that participants are still willing to take the risk.

The cost components for delivery trucks and vans can be grouped into fuel cost, fixed monthly cost, variable monthly cost by application, and wages ^{[6][7][8]}. Table 2 shows the cost comparison between some vans and trucks in Qinhuangdao and Beijing with all costs in RMB per month. Detailed fixed cost data and cost by application data for Qinhuangdao vehicles are listed in Table A4 and A5 in Appendix.

Table 2: Cost Comparison between Van and Trucks

City	Vehicle Type			Cost Breakdown				
	Vehicle	Capacity (ton)	Fuel Consumption Rate (l/100km)*	Driver Wage	Porter Wage	Fuel Cost	Fixed Cost	Other Cost by Application
Qinhuangdao	Van	0.6	8.8	1200	0	750	376	126
Qinhuangdao	Truck 1	0.8	5.8	1200	1000	700	442	145
Qinhuangdao	Truck 2	2	15	1500	1300	1500	895	600
Beijing	Truck 3	2	N/A	2800	1300	3200	385	530

* Based on the manufacturer's published data and tested in an optimal environment

4. Cases

A. Case 1 – Tsingtao Beer in Beijing and Tianjin

Tsingtao Beer was introduced in previous Chapters and highlighted with its large number of distributors. In developing a new market, Tsingtao Beer has a phase-by-phase strategy in distribution channel establishment. In the first phase, Tsingtao Beer identifies the existing brand of the market and takes over its developed distribution channel through acquisitions. In the second phase, Tsingtao Beer redefines the market segmentations. Certain distributors are selected or grown from existing distributor base for new market sectors. This phase tends to continue until Tsingtao Beer's business goal for the market is achieved and then the third phase kicks in. In the third phase distributors are either gradually eliminated or they morph into sole logistics providers in the distribution. For example, in 2000 Tsingtao Beer acquired Five Star Beer in Beijing and added a low end brand DaYou. Along with the acquisition, Tsingtao Beer in Beijing has adopted a

distribution channel with the high level structure shown in Figure 2 for its low end beer sales.

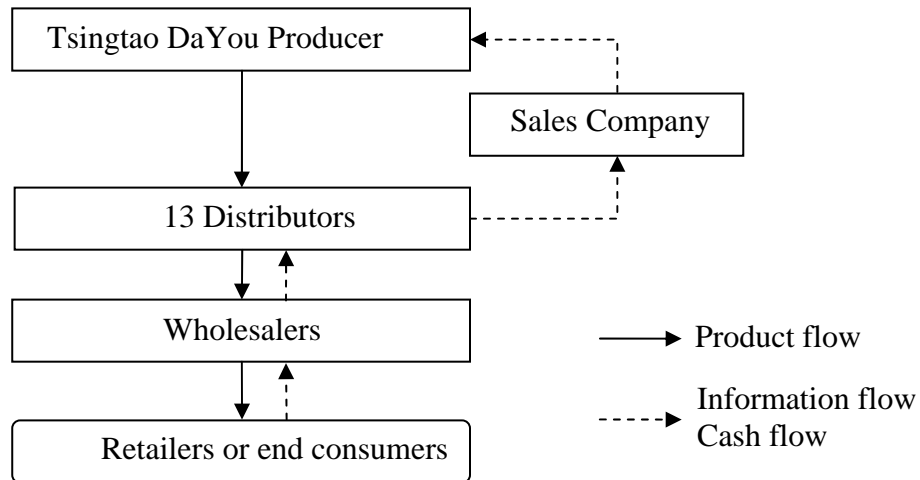


Figure 2: Distribution Structure of Tsingtao DaYou Beer in Beijing

Tsingtao Beer has two low end beer producers in Beijing suburban area (The other one is Three Rings, approximately one-third larger than Five Star) with annual sales volume around 350,000 tons. Five Star Beer produces both Five Star and Tsingtao DaYou. Due to beer production tax imposed in China, an independent sales company was setup to manage market development, distribution channel operations and financial transactions. Beijing Five Star Beer divides the Beijing market into 13 geographic sales segments with one major distributor and over sixty other small distributors serving the whole Beijing market. The distribution channel consists of 6 local distribution centers (LDCs) and around 100 wholesalers. Beijing Five Star Beer had its own fleet a few years ago and later it was spun off to form a trucking company. In 2005, Beijing Five Star acquired a major share in the trucking company. This trucking company has approximately 100 trucks and is responsible for beer delivery to the 6 LDCs and large wholesalers. The fleet consists of open trucks in 300-case or 150-case capacities with each tote holding 24 640 ml bottles. The delivery schedule is based on the requests released by the distributors. The Five Star Beer's factory store approximately 500 tons of beer. The LDCs have about one day of inventory supply. The average cycle time of bottles and plastic totes are 4-5 days.

The market for low end beer in Beijing is approximately 1 million tons per year. Tsingtao DaYou constitutes 15% of the market share and is striving for 20%. It has direct business with over 100 wholesalers. Its fleet, established with the help of Tsingtao Beer, handles about 60% of Tsingtao Beer's low end beer distribution volume in Beijing.

The distributors of Tsingtao DaYou in Beijing collect demand information from wholesalers and submit through the sales company to the producer between 4pm and 5pm every day. Tsingtao DaYou's producer is paid by its sales company immediately for each confirmed order. The sales company then collects payment from distributors. All purchases and sales are made in cash. There is no markup from Tsingtao DaYou's factory

to the wholesalers in Beijing. The distributors make profit from revenue return from producers at a preset percentage in contract.

Tsingtao Beer does not have a brewer in Beijing or Tianjin, a coastal city 75 miles south of Beijing, for its high end beer. Instead a sales company was established in Tianjin to manage the high end beer market in Tianjin. In Tianjin, Tsingtao Beer has over 100 distributors with 10 largest ones having approximately 30k cases monthly sales. Other distributors only have a few hundred cases of monthly turnovers. Tsingtao Beer’s distribution in Tianjin is 100% outsourced to a 3PL - China Merchant Logistics Group (CML) Tianjin Company. It rents a 160,000 ft² DC 13 miles away from its office in the city. Tsingtao Beer’s warehouse in the DC is about 20,000 ft². In peak season the DC can process 700,000 cases a month compared to 450,000 cases in off-peak season.

The business relationship structure of these parties is shown in Figure 3.

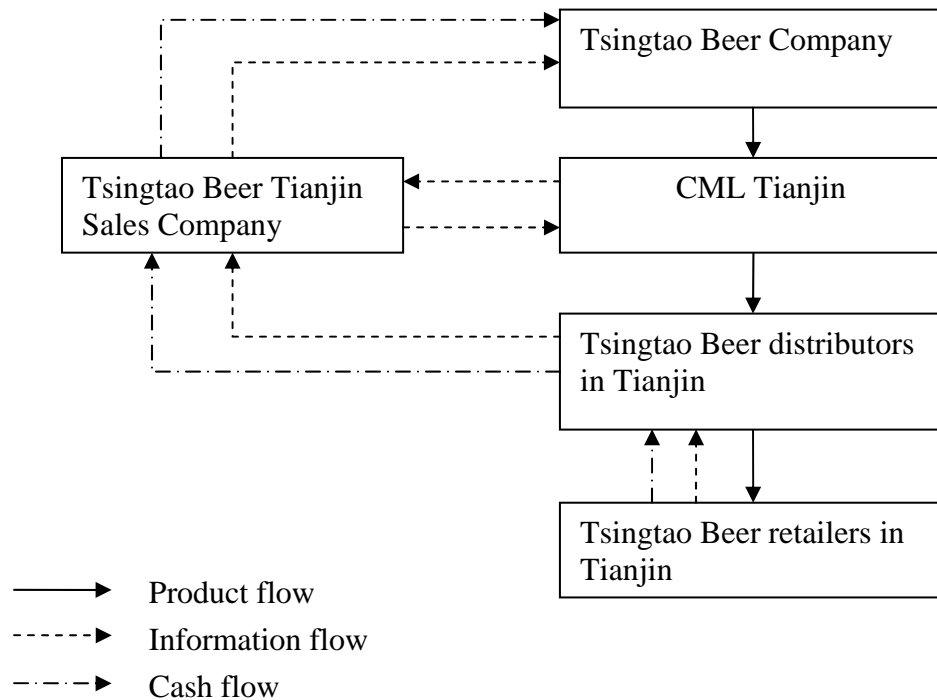


Figure 3: Tsingtao Beer Distribution Structure in Tianjin

Tsingtao Beer Company, Tsingtao Beer Tianjin Sales Company and CML Tianjin are sharing the same logistics information system developed by CML. On a daily basis, Tsingtao Beer Tianjin Sales Company takes purchase orders and collects payments from distributors. Such demand information is shared across the system. Once payment to Tsingtao Beer Company is received, the purchase orders will be confirmed and get fulfilled by CML Tianjin to the distributors from the DC the same day or the next day morning. On average it takes a bottle of beer 7 days from production to reach end customer in Tianjin.

CML Tianjin Company does not participate in Tsingtao Beer’s cash flow transactions, but is responsible for tracking daily shipments and inventory level, and Tsingtao Beer Company will replenish Tianjin DC based on the daily inventory updates.

Large rented 20-ton open trucks are used for 14-hour long haul replenishment from Tsingtao to Tianjin DC. CML Tianjin use private trucks and rented 5-10 ton trucks for city delivery. It was estimated the city distribution cost is about RMB 0.02~0.06 per bottle, which is almost negligible given the beer price is typically above RMB 6.00 per bottle.

B. Case 2 – Beer Company A in Central China

Beer Company A was located in central China and established in the mid 1990s. It produces 9 types of beers and 105 SKUs. In addition to its existing plant, it will build another plant in Southern China with expected operational date in late 2008. In 2008 Company A will reach its design capacity to produce 665,000 tons of beer with most in bottles and some 30% in cans.

Company A has a standard 4-layer beer distribution: factory, DCs, wholesalers and retailers. It owns some DCs in approximately 20 major markets and 30 smaller markets, and normally delivers from DC to many large retailers directly. The transportation mode by volume is listed in Table 3 below.

Table 3: Transportation Mode by Volume for Beer Company A

Transportation Mode	% by volume
Rail	65
Barge	19
Truck (<250 KM)	11
Long haul truck	2
Kegs	3

Company A chooses three forms of rail shipment:

1. Train flat car for palletized loads and it accounts for the largest shipment volume of Company A.
2. Container load. This form is the most preferred mode and is growing the share rapidly.
3. Fixed volume on partial train flat car. Due to its smaller scale of economy this form incurs higher shipping rate, though still lower than trucking rate.

Full 4,000-5,000 ton barge is used for Company A's largest market - Shanghai. It is selected also because of the Company's geographic proximity (about 1600 ft) to the barge port and the river that links to other major markets conveniently. In addition to trucks, barge is used to handle some reverse logistics too, where empty bottles are shipped to glass factories for cleaning and shipped back to factory for reuse.



In regular season, Company A allows no more than 1.5-day inventory in factory, and requests the DCs carry no more than one month worth of inventory.

5. Observations

Admittedly, data collection in China, especially concrete operational and financial information from industrial players, is difficult. We are fortunate to have some valuable data acquired which are detailed in Chapter 2 and 3. By combining the factual data with other information carefully, we observed following interesting phenomena that are either unique in China or not obvious to casual observers. These observations are highlighted and implications are explored in depth in this chapter.

A. Cost Drivers

Low labor cost has been unanimously reckoned as the biggest advantage of all a foreign business can reap in China. This understanding is still true based on our survey. Typical labor rates for workers in beer distribution are around \$120/month in Beijing and Shanghai, and less than \$100/month in Qinhuangdao. As a result, the payback for investment in storage, material handling and IT system would be very long, if ever. Within expectation, we have observed product loading and unloading are heavily manual. Pure hand



carrying, use of pushcarts and hand trolleys are widely seen at product handover points. The picture below provides a good example of this labor intensive operational feature.

Assuming fixed daily delivery distance and stops using van or truck, the survey shows that in Qinhuangdao driver wages and loading and unloading labor cost account for about 55% of the total local delivery cost, dwarfed by a lofty 82% to 88% for similar US operations from a cost analysis based on the survey data. For other labor cost such as administrative cost, one distributor in Qinhuangdao hired 10 people to manage the business at a fraction of one average US manager's cost. As we have covered in Chapter 2, order management, processing, warehouse inventory management and FIFO control are highly manual as well. This is very common in China.

The advantage of labor is its flexibility. This flexibility reduces the setup cost or fixed cost in operations. As a result, frequent deliveries in short routes and small quantities using passenger vans, human pedaled tricycles, pushcarts and hand trolleys do not mitigate operational efficiency much, if any.

B. Packaging and Handling

The most popular form of beer in China is bottled beer. Soaring raw materials and energy cost suppress aluminum canned beer production. Canned beer only accounts for a very small percentage of the total sales volume. All surveyed beer manufacturers mainly produce 12-pack or 24-pack bottled beers. There are large size and small size bottle types. For large size bottles in 12-pack case, 600ml, 630ml, 640ml, 500ml are widely seen. In 24-pack case, 330ml and 350ml bottles are commonly used. Some manufacturers may produce small lot of 24-pack canned beer for the holiday season.

Typical beer packs at supermarket and restaurants are shown in pictures on the left



and below. Cardboard boxes are most widely used for high end beers and leading brand in major supermarkets like Carrefour, Wal-Mart and Hualian. The plastic totes are normally used for low cost beers, local beers in neighborhood convenient stores and low end restaurants. Bigger brand and high end stores choose cardboard box due to the simplicity, sanitation and esthetics. Cardboard boxes also promote and provide friendlier customer handling.

Small brand producers and low end retail stores prefer plastic totes due to lower cost and its sturdiness and reusability. Also, plastic totes are made standard and can be stacked up securely with one's base fits into the other's open rim. It is also more ergonomic for warehouse operators to handle. On the other hand, different producers have their plastic totes marked differently; recycling plastic totes can also be quite cumbersome.

Regardless type of packaging used, loading and unloading are still very manual. The boxes are laid on the surface in layers without cushion or separation. In warehouses, beer is simply stacked up box by box from the ground up to the ceiling without any protection. Product retrieval is achieved using ladders.



C. On-Trade VS Off-Trade

Beer consumption can be categorized as on-trade and off-trade, depending on whether the beer is consumed at the retailer's premises. On-trade refers to in store consumption and off-trade is the opposite. For example, beer sold to end consumers through supermarket falls into off-trade as it will be consumed outside the store. According to a beer report published in 2005^[9], off-trade is responsible for about 72% of

the beer sales, almost three fold of 28% of sales contributed by on-trade channel such as restaurants and hotels.

To producers, the wholesalers are necessary “evil”. They are necessary because they provide the marketing force in the channel through “Guanxi” to very large set of small retailers. They are “evil” because they erode producer’s profit. In off-trade channels, due to higher retail fee and limited number of high volume retailers, the producers have been either successful to penetrate without the wholesalers, or is making inroads in achieving the goal. In on-trade channels, producers have realized that the wholesalers should be part of the channel for long time to come.

D. Consumers’ Behavior

In Chinese cities, people have traditionally shop daily in neighborhood market. This is due to the desire for freshness, lack of refrigeration, lack of space and lack of cars. Today, the space and refrigeration are lesser of concerns for consumers but car is still not widely possessed. For those with cars, the congested city traffic and lack of parking make them impractical. The Wal-Mart store in Beijing addresses this issue by providing free bus services to customers, as shown in the picture. High population density in cities also leads to high density in retail outlet. As a result, frequent replenishment to these stores by small vans in small lot and frequent delivery is economical. There are other major reasons as well for using small vans over trucks to handle local delivery, as explained in “Transportation Cost” section in Chapter 3. This subject will be revisited in “Transportation Particularities” in a later section.



E. Difference between Cities

In the small city Qinhuangdao, as each distributor is licensed to solely represent one producer, a retailer will have to manage businesses with multiple distributors to get a variety of brands. In Shanghai, a much bigger city, major producers grant licenses to many of the one hundred wholesalers. Each wholesaler carries a large assortment of products. Among the two retailers we surveyed, two of them, Bandao and Xiaotianyuan, can get all they need from a single wholesaler. In Beijing, there are mixed scenarios regarding the number of distributors one retailer needs to work with.

Retail fee, in terms of its presence and amount, is also vastly different across regions. None of the retailers in Qinhuangdao we surveyed charge retail fee to

distributors. One upscale restaurant in Beijing may charge as high as RMB100,000 annual retail fee to its distributor (and to producer eventually) if the brand wishes to get exclusive representation in restaurant. One of the two restaurants we surveyed in Shanghai does not charge retail fee, while the other does though the exact figure is not released. In Dalian, another coastal city in Northern China, one restaurant surveyed charges RMB10,000 per brand for the product to be on shelf. Based on the data, there are no indications that retail fee is related to the size or population of the city. But in general, large retail stores such as a giant supermarket store may charge high retail fee.

The income for wholesalers varies a lot in different cities too. In Shanghai, the wholesalers are well-off middle class businessmen. In Qinhuangdao, the wholesalers are struggling businessmen making meager incomes.

In Qinhuangdao, wholesalers often have to handle emergency orders from retailers. In sharp contrast, the surveyed wholesaler in Shanghai reported no emergency delivery request was ever received in its 11 year's business history. In Beijing, emergency requests also occurred every once a while for some retailers. An extreme case in beer delivery frequency is 3 to 4 times per day for an upscale restaurant in Beijing. We believe the size and population of the city and the traffic partly attribute to this difference. Undoubtedly, traffic during rush hour in Beijing is as terrible as one can imagine, the Beijing restaurant example just mentioned, however, is within walking distance from its wholesalers so that emergency requests can be fulfilled within half an hour. This also implies the market competition has been very intense in certain regions, that wholesalers are willing to stay very close to the retailers and carry excess inventory for emergency needs.

Almost in all cities, if there are regional or local beer brands, they dominate the local market regardless size and popularity of other competing brands. In Qinhuangdao, Bull and Snow are two most popular beer brands in restaurants and supermarkets. In Beijing, Yanjing dominates. In Shanghai, the two surveyed restaurants mentioned Thousand Island Lake and Budweiser have best sales among all other brands. Local brand dominance indicates high brand loyalty from local customers, regional protection and logistics difficulty in fragmented economy.

F. Transportation Particularities

Toll charges and limited truck access in cities lead to dedicated long-haul routes and the proliferation of vans in city deliveries.

▪ Dedicated Routes

It is quite common that the trucks are dedicated to specific routes, and sometimes even the drivers. China Merchants Logistics Group (CML), one of the biggest 3PL companies in China that serves Tsingtao Beer, has 50 to 70 percent of the trucks dedicated to routes. The dedication limits scheduling and planning efficiency and wastes transportation capacity in terms of trucks and drivers. The main reason lies in the highway tolls. As elaborated in our 2004 China Road Transportation Enterprise Study, tolls account for as high as to 20 to 30 percent of total logistic costs. In addition, "Guanxi" between the driver and toll booth officer can help to reduce the possibility of being caught overloading, a necessary practice in many industries. Another reason for dedicated routes is some cities require permit or local license for entrance. Such permit or

license can cost a lot of money for the company to obtain. At one time a license is traded at RMB30,000 in Shanghai. The dedicated routes also limit backhaul opportunities. CML runs at approximate 30% deadheading, The rate is much lower in the United States.

- **Popularity of Vans in Local Deliveries**

In order to maintain efficient traffic flow, city transportation authorities try to limit trucks in city in daytime. Different cities have their own specific regulations as far as weight and size limit of trucks. For example, trucks larger than 5 tons are not allowed to travel in Beijing from 7AM to 11PM. Therefore, distributors and wholesalers use various sizes of passenger vans. The following picture shows loading of a small van.



Beside regulations, we also observed that the delivery volume at each location is commonly low, a few to a few dozen cases. It is possible that van has cheaper cost also. We build a simple delivery cost per case model to compare 0.6-ton vans and 2-ton trucks. The total cost consists of four parts: annual depreciation, fixed cost and other cost by application, wage for drivers and porters, and fuel cost. We used online pricing, zero salvage and 8-

year straight line depreciation commonly adopted in China. Fixed cost and cost by application are shown in Table 2. Wage has big variations between different regions, and we take Qinhuangdao as an example to illustrate. Fuel cost is affected by many factors, including the gas price, road condition, stop frequencies, and the average volume per stop. We used the online fuel price in March 2007 and fuel consumption rate in Table 3 to find the approximate fuel cost per kilometer. The cost also depends on route topology. In the best case, the stops are distributed in concentric circles of equal distances. In the worst case, the stops are distributed in a one dimensional ray. We assigned an 80% weight to the best topology and 20% to the worst case topology in the example shown. We calculated the average cost per case for different delivery volumes when the average distance between stops are 0.5 kilometers and 2 kilometers, shown in Figure 2 and 3, respectively. 12-hour working day is quite common and thus used in our model calculation.

At the node distance of 0.5 kilometers, the cost of using van is almost always lower than truck when the volume is below 45 cases. When the node distances are 2 kilometers, the truck begins to show an advantage in cost at higher delivery volume.

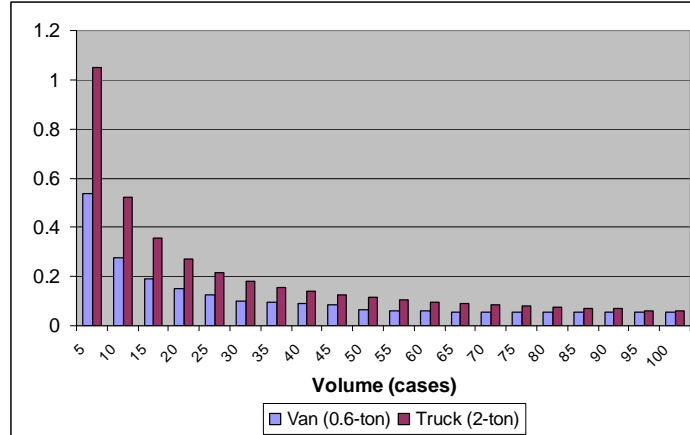


Figure 4: Cost per Case when Distance between Nodes is 0.5 km

Note in Figure 3, when the cases increase from 40 to 45, the cost did not drop while when the cases increase from 45 to 50, the cost dropped over 30%. This is due to the discrete nature of truck capacity and the use of an additional truck as volume increased from 40 to 45 cases.

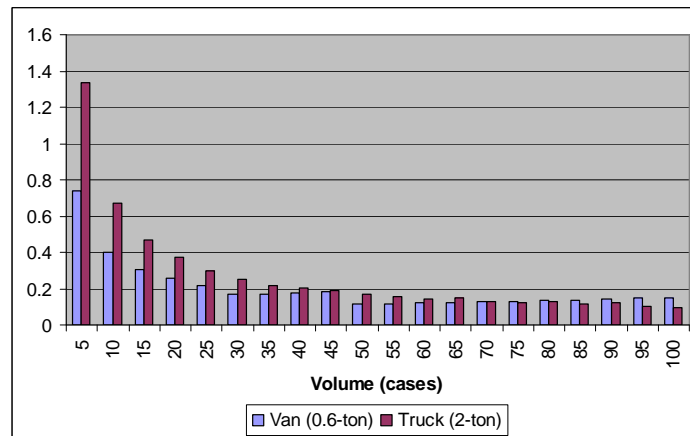


Figure 5: Cost per Case when Distance between Nodes is 2 km

- **Zone Pricing and Its Logistics Problems**

National brand often set higher prices in local zones because it has already established dominance. To be competitive in zones historically dominated by other brand, producers normally set lower prices in other zones. The combination of shorter distance and higher price entices drivers to sell the beer in the local zone.

G. Middle Tier Prevalence

The number of distributors and wholesalers in a city or a state in China is simply astonishing compared to US. In Shanghai there are over 100 wholesalers for different brands. In Qinhuangdao, there is an extensive network of beer distributors and wholesalers. Taishan Beer deals with over 400 distributors in Shandong Province alone. The sizes of many distributors and wholesalers are quite small.

This middle tier prevalence is first induced by provisional brand loyalty, refined market segmentation, huge consumer behavioral and taste differences across geographic regions in China. Beer producers may have deep roots in one area, however, lack of understandings to other marketplaces, loosely controlled distribution network and network management inefficiency all encourage a prevalent middle tier. Producers find teaming up with distributors and wholesalers that have intimate local market knowledge and connections tends to be an efficient and effective solution to penetrate the market and settle other local issues. Secondly, distributor or wholesaler monopoly exists in certain market regions. A cash abundant distributor or wholesaler may pay high retail fee and take full control of a retailer's sourcing channel. Producers must sell products through the middle tier in order to tap the end market.

In one way, large numbered middle tier also serves producer and retailer's best interest. Wholesalers usually carry a good variety of popular brands. The homogeneity of product offering implies differentiation among middle tier players will be very difficult. When middle tier is oversupplied, market competition intensifies. Producers and retailers are able to take advantage of such homogeneity, hold bargain power against small-sized distributors and wholesalers and enjoy high service level.

6. Insights

Chinese logistics system today is "fragmented," or termed "cottage industry". In beer distribution, this translates into small long-haul carriers and a multitude of wholesalers. For example, in Shanghai, a city's main population of over 10 million occupies an area about 1,000 km², and there are about 100 beer wholesalers. The phenomenon of wholesalers is also popular in Japan^[10].

The wholesaler system competes with economy of scope without the benefit of economy of scale. As the economy grow rapidly in coastal China, should consolidation of wholesalers occur? Could the current strong presence of large number of wholesalers, especially with their highly decentralized logistics resources, prevent from or slow down the emergence of the 3PLs? This 3PL development question was the focus of our 2004 China Road Transportation Enterprise Survey Report^[5]. If the answer is yes, then how and when could the consolidation happen? This is a very involved question. Through observations and discussions, our team has found some insights.

A. Marketing in the Channel

Marketing and sales channel are very important. Even Coca-Cola, the best known brand in the world with tightly controlled distribution channel in US, has to rely heavily on channel marketing and wholesalers in China. This is partially related to the importance of "Guanxi". The wholesalers provide the natural human network of marketing forces, and also provide value added services such as dispute settlement, financing for cash tight retailers, etc. At present, the wholesalers in China serve as an indispensable link of one company's sales channel and must be integrated in marketing.

B. The High Density Retailing and Living

Chinese cities were developed before the automotive industrialization. The limited carrying capacity and living spaces of consumers in the high density of living conditions, plus the desire for food freshness, lead to frequent shopping at small quantities. As a result, the advantage of large scale delivery is limited.

C. Loose Regulations Favor Small and Informal Operations

Laws and regulations are often defined loosely in China to allow flexibility in execution. For example, the use of passenger vans in freight delivery is prohibited. However, out of sympathy, the enforcing agents often looked at the other way for those working hard just to make a living in small companies^[11]. Similarly, small transportation providers often overload the vehicle to reduce unit transportation cost. The drivers work hard to figure out ways to trick the system. However, a large company such as Coca-Cola cannot take such chances of overloading or using vans.

The regulations can often change without prior notice. When there was a shortage of vegetables, the “green pass”^[12] was opened at toll booths to expedite passage for trucks carrying vegetables. Similarly, when coal supply is short, the “black pass” was created.

D. Underemployment

Officially, government does not publicize the unemployment rate. In reality, the official retirement age for men is 55 and for women 50, though this figure may vary among industry, specific duty of employees and across regions. Many receive “internal lay-offs” much earlier. An “internal lay-off” means someone who is forced to leave the company and take the minimum compensation, which is at about the poverty line. These people will work hard to find other jobs. The low entry barrier, high consumer savings rate, plus the little knowledge requirement make wholesaling a viable outlet of living for this group of people.

The opening of various industries required by WTO brings the funds, the know-how and advanced business practices. These forces will help to conquer some of the above impeding factors and promote consolidation to achieve higher efficiencies via scale and scope.

7. Conclusion

Beer is simple and not simple. It is simple by its plain look and the ample availability in many retail points from a consumer’s perspective. It is far from simple, as discovered from our survey on beer distribution in China. The multi-tiered sophisticated distribution network, numerous manual handover and touch points, oversupplied middle tier in China’s market competing fiercely against each other, capital tension at the struggling but indispensable middle tier, the story behind every cap return, particularities of delivery transportation and many more – a single bottle of beer has them all quietly absorbed while they probably go unnoticed in consumer’s hands.

Through in-depth surveys to beer producers, distributors, wholesalers and retailers across different regions in China, we have acquired valuable data, especially some financial data that are rather difficult to obtain. Our study has yielded many crucial

findings on beer distribution characteristics in China. The central conclusion of all is that a prevalent middle tier – a large number of distributors and wholesalers – will continue to be present and play a vital role in beer distribution in China. The deep-rooted “Guanxi”, market regional differences, local protectionism, low entry barrier of wholesaling, and underdeveloped distribution network are all encouraging middle tier prevalence, and forcing producers to choose distributors and wholesalers over direct market penetration option.

Our insights go beyond the specific beer product. They may provide a generalized background picture on China’s consumer product market and a truthful reflection to the underlying ecosystem, if partial. We believe other than availability of funds and venture capital and consumer shopping behaviors, many other issues such as cultural difference reflected on education and risk taking attitude, the existence and power of “Guanxi” over structured business practices, unfavorable transportation regulations and toll charges, and local economy protectionism, will continue to affect the market for some time to come.

The beer distribution study provides a good example of understanding how a simple consumer product can be supported by current logistics infrastructure in China. Like all readers, we are continually interested in learning the future evolvement of China’s logistics industry and making sense from it by peeking into some products like beer. We believe such study is meaningful and becomes increasingly relevant to foreign businesses and investors that have a vision for China.

8. Appendix

Table A1: Geographic Distribution and Roles of Surveyed Firms

Surveyed Firms	Role in Distribution	City	City Population (million)*	City Area (km ²)*	Province	Geographic Location
Taishan	Producer	Taian	1.2	2,500	Shandong	East
Mingyou	Distributor					
Kangjian	Distributor					
Tsingtao	Producer	Qingdao	7.3	10,654		
Lianda	Distributor	Qinhuangdao	2.7	7,812	Hebei	East
Jinshida	Distributor					
Yanshan	Distributor Wholesaler					
Kairui	Distributor					
Qisheng	Distributor					
Haitianyise	Retailer					
Jinfa KTV	Retailer					
Hubing	Retailer					
Heineken	Distributor	Shanghai	17.8	6,340	N/A	East
Haoshen	Wholesaler					
Bandao	Retailer					
Xiaotianyuan	Retailer					
Quanjude	Retailer	Beijing	16	16,800	N/A	East
Opera House	Retailer					
Ganguoju	Retailer					
Shangcun	Retailer					
Shanghaicheng	Retailer	Dalian	5.6	13,237	Liaoning	North
CasaBlanca	Retailer					
Xinzu	Retailer					
Sanguo	Retailer	Wuhan	8.3	8,467	Hubei	South
Shengtaoshayunshang	Retailer					

* Source: www.wikipedia.com

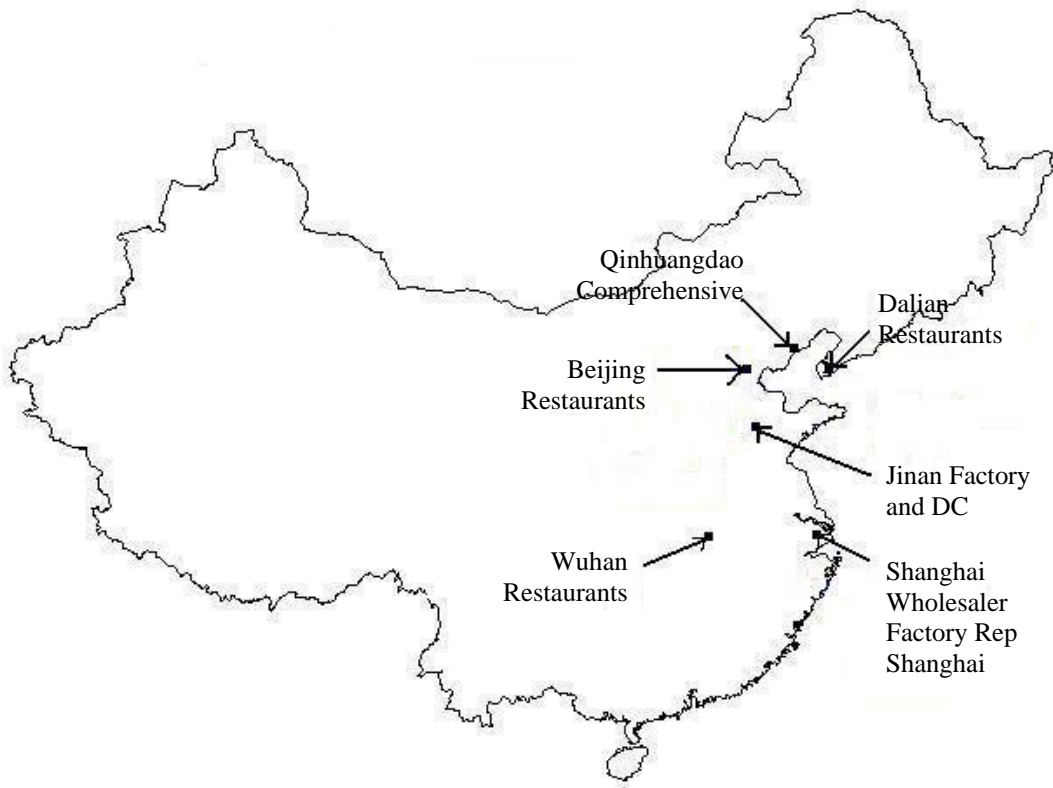
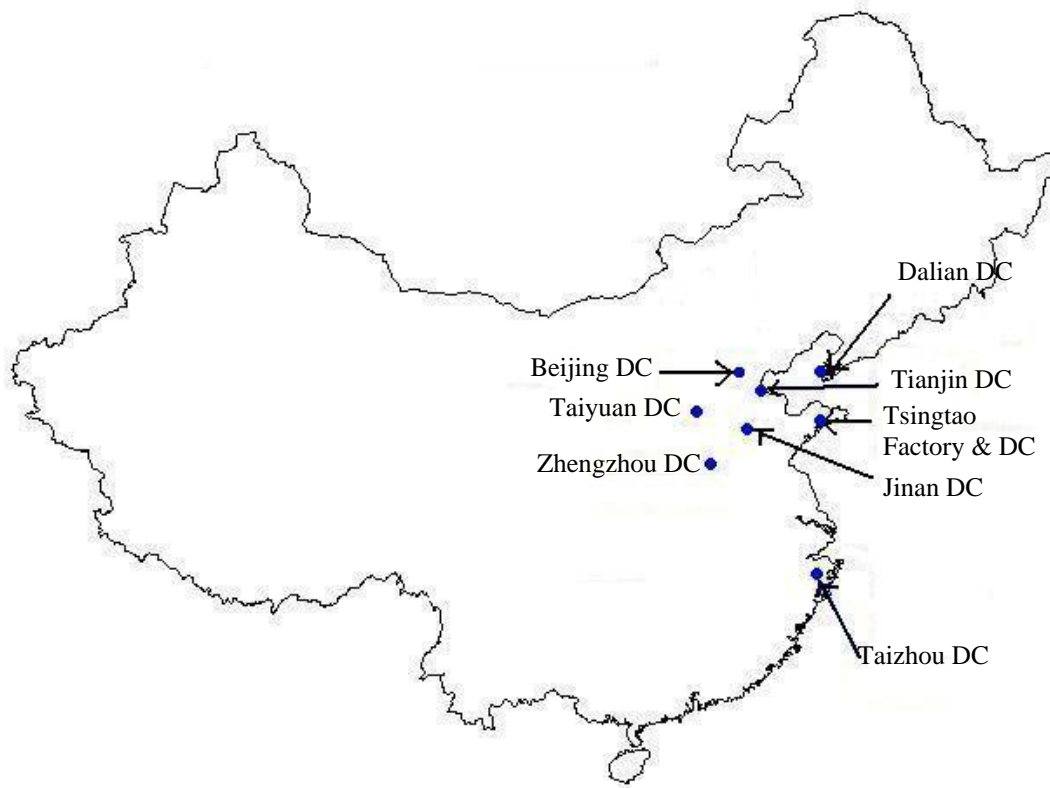


Figure 6: Locations and Types of Facilities Studied



• Tsingtao Regional DCs

Figure 7: Tsingtao Beer Distribution Network in Northeast China

Table A2: Summary of Surveyed Wholesalers

Name/Location	Beer(s) Distributed	Warehouse Space(m ²)	Vehicles and Capacities	# of Suppliers	Mean time between Replenishment Orders (days)*	Quantity Replenished (cases)*	Safety Stock/ Min Inv. (cases)	# of Clients
Lianda/Qinhuangdao	Yanjing	70	1 Jinbei 10 seat van	1	10 – 15	300-500	700-800	70-80
Jinshida/Qinhuangdao	Budweiser	500	5 Jinbei 6 seat vans	1	10 – 15	4000-5000	3000-5000	100-110
Yanshan/Qinhuangdao	Snow, Budweiser, Tsingtao, Yanjing	50	2 Jinbei 6 seat vans 4 1-ton Fotian trucks	4	1 – 3	500-1500	8000-10000	70-80
Kairui/Qinhuangdao	Yanjing	100	1 Jinbei 10 seat van	1	10 – 15	350-800	700-800	70-80
Qisheng/Qinhuangdao	Tsingtao	300	2 7-seat vans 2 0.6 ton trucks	1	15 – 45	2000-4000	2000-3000	70-80
Kangjian/Shandong	Taishan	n/a	3 trucks	1	3-4	3000-4000 (9 bottle case)	13000 (9 bottle case)	n/a
Mingyou/Shandong	Taishan	n/a	3 trucks	1	3	24000 bottles	70000 bottles	n/a
Haoshen/Shanghai	Budweiser, Ice, Guinness, Haerbin	600-700	4 Iveco Vans 2 5-tons enclosed trucks	n/a	n/a	n/a	2000-2500	40-50

***Bold** indicates peak season quantities

**Italics* indicates off-peak season quantities

Table A3: Summary of Surveyed Retailers

Name/Location	Beers Distributed	# of Suppliers	Order Frequency (times per period)	Quantity Replenished (cases/order)*	Safety Stock/ Min Inv. (cases)	Time between Order and Delivery
Quanjude Tsinghua / Beijing	Yanjing, Tsingtao, Heineken	1	3-4/day	10	20-40 per beer	40 min – 2 hours
Shangcun Tsinghua / Beijing	Yanjing, Tsingtao, Heineken, Carlsberg	4	1/day	10-20	20-40 per beer	10 hours
Ganguoju Tsinghua / Beijing	Yanjing, Tsingtao	2	1/day	30-40	20-40 per beer	10 hours
Opera House/Beijing	Yanjing, Tsingtao	2+	3-4/day – 1/day	5+	5 per beer	30 min
Bandao Seafood Restaurant/Shanghai	Budweiser, Tsingtao, Heineken, Thousand Isle Lake	1	1/day	20-30	10 per beer	12 hours 90 min for emergency orders
Xiaotianyuan/Shanghai	Budweiser, Tsingtao, Heineken, Thousand Isle Lake, Steinlager	1	1/1-2 days	n/a	30-40 per beer	30 min
Sanguo Hotpot Restaurant/Wuhan	Snow, Yanjing, KingLong, XingYinGe	1	1/day	Varies	10-15 cases per beer	3 hours
CasaBlanca Bar/Dalian	Heineken, Budweiser, Tsingtao and more	Many	Varies	Varies	n/a	24 hours
Shanghaicheng/Dalian	Budweiser, Tsingtao, Yanjing, Heineken	3	1/2-3 days	10-20 Minimum 5	n/a	16-18 hours
Xinzu Hotel/Dalian	Tsingtao, DL HeiShi, DL GanPi	3	n/a	n/a	5 per beer	n/a
Haitianyise Hotel / Qinhuangdao	Tsingtao, Yanjing, Budweiser, Heineken, Bull	5	3/month (off-peak) 1/day (peak)	5+	10 (off-peak) 20 (peak)	Same day
Huibing Restaurant/Qinhuangdao	Budweiser, Yanjing, Tsingtao, Bull, Snow, Black Ice	6	1-2/week	10 for local beer 5 for non-local	10 for local beer 5 for non-local	24 hours
Jinfa KTV/Qinhuangdao	Budweiser, Yanjing, Heineken, Corona, New Three Star	5	1/day	30-40	40-50	24 hours

***Bold** indicates peak season quantities

**Italics* indicates off-peak season quantities

Table A4: Fixed Cost Breakdown between Van and Trucks in Qinhuangdao*

Vehicle Type	Administration Fee (RMB/Month)			Mandatory Vehicle Cost (RMB/Month)		
	Road Maintenance Fee	Transportation Administration Fee	Industry and Commerce Administration Fee	Vehicle Maintenance Fee	Vehicle Annual Inspection Fee	Vehicle Insurance
Van	210	0	0	0	56	110
Truck 1	190	21	0	65	56	110
Truck 2	380	42	10	65	56	342

* Source: Qinhuangdao Beverage Distribution Corporation

Table A5: Cost by Application Breakdown between Van and Trucks in Qinhuangdao

Vehicle Type	Maintenance Cost (RMB/Month)		Usage Cost (RMB/Month)	
	Tire	Repair Cost	City Pass Fee	Parking fee
Van	63	63	0	0
Truck 1	65	65	15	0
Truck 2	185	200	15	200

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