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WORLD MARITIME UNIVERSITY

Shanghai, China

**Research on the Feasibility and Necessity of Finance
Logistics Outsourcing in China**

By

CHEN JUNWEI

China

A research paper submitted to the World Maritime University in partial
fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE

In

INTERNATIONAL TRANSPORT AND LOGISTICS

2008

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DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

.....

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After great efforts of more than half year, my dissertation of Research on the Feasibility and Necessity of Finance Logistics Outsourcing in China has finally come to an end. This dissertation is completed under the direction of my supervisor professor Shi Xin.

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ABSTRACT

Title of Dissertation: **Research on the Feasibility and Necessity of Finance
Logistics Outsourcing in China**

Degree: **MSc**

Abstract: Due to China government carried out the policy of financial market opening, Chinese banks are facing challenges from these coming foreign banks. So, if they keep the pace with others in the intense competition, they should focus on their main business and put more effort on it, to provide new financial products, therefore, they have to outsource some non-main business to other industry to take, specially, the cash escort business. Shenzhen Vpower finance Security Company has set an successful example, it saved tremendous resources including human and material resources in last few years. The operating model benefits both sides – bank and logistics company.

This dissertation is analyzing the feasibility and necessity of finance logistics outsourcing in the view of logistics company. Chapter 1 to chapter 4 are all about the feasibility and necessity, they are analyzed more in theory; And chapter 5 and chapter 6 are talking about the operating models and cost-control method after set up a company like Vpower, in these two chapters, it is analyzed more in practice with the figures from Vpower.

KEY WORDS: Financial Escort, Outsourcing, Cost Control, Financial Escort Model and Risks,
Position-Chosen, optimal stowage

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LIST OF ABBREVIATIONS

WTO	World Trade Organization
RMB	Renminbi (Chinese currency)
Vpower	Shenzhen Vpower Finance Security Company Limited
BCM	Bank of Communications
CCB	China Construction Bank
ICBC	Industrial and Commercial Bank of China
ABC	Agricultural Bank of China
CMB	China Merchants Bank
BOC	Bank of China
ZBB	Zero-based Budget
DC	Distribution Center

CHAPTER 1 INTRODUCTION

1.1 Background of this Dissertation

After the WTO Entry of China, domestic commercial banks face the more intense competition. According to the statistics published by China Banking Regulatory Commission, as the end of May 2007, there are 75 foreign banks from 42 different countries operate business in 25 cities of China, and it is must be mentioned that 16 foreign banks are allowed to become legal entity banks. The original “2-dimension” competition between state-owned banks and joint-stock banks changed into “4-dimension” competition among large state-owned banks, small and medium-sized joint-stock banks, city commercial banks and foreign banks. From now on, with more foreign banks transiting to legal entity banks, deepening the process of localization and showing services advantages gradually, they will push bigger and bigger competitive pressure to China local banks.

Compared with the banks from developed countries, China local banks are inferior in terms of capital, management system, operational model and personnel quality. However, the development tendency of bank is to cut down the operating cost, improve operating efficiency and enhance core competitiveness. Thus, non-primary business outsourcing--one of effective ways to enhance core competitiveness has become a useful weapon for bank development.

Recently, a new outsourcing model - the cash-escorting business outsourcing is more and more concerned by banks. For a long time, China's banking industry spent a lot of human, material and financial resources in the cash-sorting, which not only increased the bank's operating costs, but also to some extent affected development of the bank's main business. If banks outsource it to the professional company-the 3rd party logistics company, banks will put more money and effort into the core business expansion and innovation, so as to continuously improve their core competitiveness. In the other side, financial convoy companies undertake cash-escorting businesses instead of just cash-convoying business, it will bring changes in the operational system and business innovation, improve the quality of personnel and management and improve and upgrade their hardware and software capabilities, so that to become a more professional and more skillful novel financial logistics companies. Under the tide of development of social economy, cash-escorting outsourcing is an inevitable trend, therefore, it is worthy to explore and research.

1.2 Literature Review

There is no much works on it, and most of these works are published in these 3 years, because financial escort industry is novel industry in China, all the works I found want to tell a truth, cash-escorting outsourcing is the inevitable tendency. And very little works talk about whether china banking should adopt the new outsourcing model, and how to operate.

Through 20 years reform, China's financial system structure has been changed significantly, gradually forming to a new one that China central bank as the leader,

commercial banks as the main entities, existence of diversiform of financial institutions at the same time. And by the new century, the domestic economic structure and financial market structure are constantly adjusted. Since China's accession to the WTO, the domestic commercial banks are facing ever more intense competitive environment.

Liu MingKang, president of China Banking Regulatory Commission, who pointed out the priority of banking industry is to enhance the core competitiveness. With the free-entry of foreign banks, how to enhance the core competitiveness, explore new customers and retain exiting customers, which are the keys to lead banks' sustainable development.

According to the promise of China's entry into the WTO, the banking industry allows foreign banks to operate RMB business for domestic enterprises in two years; allows foreign banks to free access in five years. From the WTO Entry of China in December 2001, there are more than six years till now. So, lots of foreign banks from different countries have entered into China's market.

With the increasingly fierce market competition, banks are all trying to increase revenue, at the same time; they consider reducing operating costs. Cash handling, it is a heavy workload for banks, if banks outsource cash-handling business, can greatly reduce equipment purchase and maintenance costs, but can also reduce the cost of management and supervision of staff, furthermore, the most important thing is to transfer risk out.

To decide whether outsourcing logistics business, confirmed their core competitiveness, is the product development capability? Or service? After banks identify logistics is not the core competitiveness of enterprises, so that to decide to outsource logistics business.

Tang Xu explains how to enhance core competitiveness, he says:” To enhance a bank’s core competitiveness, firstly, you should make sure the primary business. After that, you should put the resource focus on it, to form a model which cannot be imitated by others.” What is more, *China Security* suggested that bank’s primary business is currency operation, and it should not pay too much attention on other non-main business. It also indicates:” For a long time actual situation, China's banking industry has been put a lot of human and financial resources on working cash-escorting which is non-main business to bank, that has a serious impact on the banks’ intensive scale operation.”

So, cash-escorting outsourcing is the trend in banking industry, and it has been adopted by some banks and some region of China, such as Shenzhen, Shanghai, etc. They all approved that the result of cash-escorting outsourcing is: cost-reducing, more safety, more efficient. Ren Wenchao describes that compared with the commercial banks deal with currency logistics themselves, to outsource their non-main business to professional logistics companies; there are great reduction in costs, better condition in security, and remarkable resources-effectiveness and economic efficiency. Xiao Dao lists comparable figures to illustrate the result of escorting-outsourcing, in 1997, Shenzhen's commercial banks had a total of 460 cash-escorting trucks with 4400 escorting workers, the total expense of cash-escorting was 280 million RMB. Now, Vpower Company just owns a escort

team with 1000 workers, 220 escort vehicles, to take much larger amount escorting than 1997, and it reduces the cost to 100 million RMB, which brings enormous benefits to financial industry in Shenzhen.

In the other side, the opening of security market also provides the support for cash-escorting outsourcing. Miss Peng mentioned that as the end of 2006, China government would keep its promise to WTO: any eligible individuals, units or groups can run a security company. Therefore, it provides a platform to carry out the cash-escorting outsourcing for banks.

Tan, Liu and Lu also believe that cash-escort outsourcing is the best feasible choice to avoid risks for banks, and it is the necessary way to globalization. Zhang Hong points out that Shenzhen, Shanghai, Hefei, Wuhan, Chongqing, Fujian and Gansu have set up professional finance-escort companies. He also forecast there will appear a lot of similar companies in all regions of China in next two years.

There are little articles discuss the model of operating a finance escort company. Zhang Hu lists four models, firstly, Shenzhen model which is to set up a escort company by co-operating between all the financial organization in share-holding form, and the escort company is charge for all the financial organization's escorting business. Second one is to set up a stocking center. The purpose of it is to reduce the storehouse, reduce the storage risk. The third one is RMON (remote monitoring), but this one is most risky, there is no authority to confirm. The last one is set up escort team by co-operating between Security Department and Banks. As Zhang's view, he thinks the first one is the ideal model, it is hard to achieve. And second one is one

have improvement on avoiding of risks. He holds the forth one is the feasible one, because of the advantage of Security Department in escorting.

By reviewing of all of these works, it need time to verify which model to be chosen in Chinese financial escort industry. But, banks outsource their cash-escorting business to professional 3rd party logistics company which is feasible and necessary.

1.3 Methodologies

This dissertation is aimed at pointing out the problems and disadvantages in present bank cash-escorting business, bringing in new operating model—outsourcing to professional 3rd party logistics company, then to use successful example to analyze the advantages of specialization of cash-escorting, so that to make sure that it is necessary and feasible to adopt the model instead of traditional one in Chinese finance industry.

CHAPTER 2 RELATIVE INFORMATION ABOUT FINANCIAL ESCORT ENTERPRISE

2.1 Definition of Currency Logistics

Currency logistics refers to the dynamic currency cash flow process as the main research object, and reveals the links between all cash currency logistics activities (transport, storage, packaging, handling, clearance points, and currency logistics information, etc.). In detail, it is a physical process which refers to the printing of money, allocation, custody, put in circulation, and repeated circulation, from new to the old, from a block to the residue, until it finally withdraws from circulation and destroyed. Broadly speaking, the currency logistics, including cash logistics and information flow logistics and information flow of anti-counterfeit RMB while the narrower currency logistics refers to the general physical mobility of currency. Research here is talking about China's banking system cash currency, belongs to the scope of narrow one.

2.2 The Status of Financial Escort Industry

In abroad, the storage of cash, dangerous cargoes and high-value cargoes, and the transportation of bank's deposit, jewelry and artworks are all protected by professional escort enterprises, to prevent these properties from robbing and stealing

in the procedure of storage and distribution. With the economic development in China, and the creasing of crimes, a large mount of cash and jewelry become the object for criminals. In recent few years, there happened more than ten accident about bank cash-escorting, under this situation, more and more people realize that the importance of financial security. And the professional escort enterprises have been established in Wuhan, Chongqing and Shenzhen, etc, which shows the advent of specialization of cash-escorting.

2.3 The Feature of Financial Escort Industry

The financial escort industry is special and novel due to the special features as following:

2.3.1 Special Object

The cargoes which are escorted are all high-value, such as cash, bank deposit, stocks, gold, jewelry and artworks, etc.

2.3.2 Limited Time

Banks have strict request in distribution time of high-value cargoes, so the escorting time is controlled by banks. It will affect the operation of banks if the escorting time

is delayed.

2.3.3 Serve Intra-city

Normally, escort enterprises are organized by banks which located in a same city, therefore, it provide services in a fixed city. However, it is should be mentioned that the route selection of distribution has to consider the traffic condition and safety besides of distance of the route.

2.3.4 Relatively Simple Structure of Cost

General logistics companies have complex structure of cost, which including storage cost, transport cost, package cost, distribution cost and handling cost. But, because of the intra-city service, escort enterprises are focusing on cost of distribution and storage.

2.3.5 Risks

There are many risks existing in the procedure of escorting because of the cargoes are high valued, such as, transfer risk, operational risk and security risk. Transfer risk refers to the rob when money is transferring was robbed, operational risk means the in the course of dealing currency with the risk of errors, also known error rate risk;

security risk is the currency in the storage and usage will face robbery risk.

2.4 Advantage of Financial Logistics Outsourcing

2.4.1 to Enable Enterprises to Focus Limited Resources on the Development of Main Business

Enterprises outsource Logistics business to third-party logistics companies, which can achieve the optimal allocation of resources, reduce vehicles for logistics operations, warehouses and labor input, so that can concentrate limited human and financial resources on their core business.

2.4.2 To Save Expenses and Increase Profits

The third-party logistics enterprises have its professional scale advantages and cost advantages because of scale operation. They can improve the utilization of all links and achieve cost savings, so that enterprises can benefit from the cost of separation. .

2.4.3 To Enable Enterprises to Accelerate the Goods Turnover, Reduce Inventory, Lower Operating Risks

Third-party logistics companies provide meticulous logistics plan and timely transportation, which can accelerate stock turnover in maximum extent, reduce inventory and reduce operational risks for enterprises.

2.4.4 To Enhance Corporation Image

Third-party logistics providers use improved facilities and trained staff on the whole supply chain to achieve complete control, and help customers improve their services to establish their own brand image.

2.4.5 To Lower Management Difficulties, and Enhance Management Efficiency

Logistics Outsourcing can bring professional management efficiency and effectiveness to enterprises, but also change internal management activities into external contractual relationship, and change internal management responsibility into external liability, which is favorable for simplifying management.

CHAPTER 3 THE FEASIBILITY OF FINANCIAL ESCORT OUTSOURCING

3.1 Support of Government

3.1.1 Publication of Regulations of Using Firearm for Full-time Escort Personnel by State Department

August 2, 2002 the State Council promulgated the *Regulations of Using Firearm for Full-time Escort Personnel*.

The regulation aims at reinforcing the management of usage of gun for guard, escort official, make sure use gun properly, which includes eighteen rules.

The alleged full-time security guard and escort personnel, refers to those who equipped with gun according to law, such as official military, financial, and the state's important storage, large-scale water conservancy, electricity, communications engineering, as well as the full-time guard, escort personnel allowed by provinces, autonomous regions public security organs and municipal people's governments.

3.1.2 Publication of Regulation on Establishment and Management of Security Escort Company by Ministry of Public Security

The regulation was promulgated by Ministry of Public Security in 2005, which includes twenty-seven rules.

In recent years, the national public security organ to meet economic and social development and the need to maintain social order, and vigorously promote the development of security services, security escorted actively expanding services business, and effectively protect the safety of the service units. However, because of security escorted the company management was not standardized, some localities in carrying out security escorted the process of a lot of problems, and some have even caused serious consequences and negative impact on society. Security escorted to further regulate the management, the Ministry formulated the "security escorted Interim Regulations on corporate governance.

The above two publication of documents on escort present government's attitude, the China government supports to set special escort enterprise. The two documents are the platform for those enterprise, they do not know how to organize to run escort business if without these two document, in other works, China government set a standard for them, maybe because of the success operation which done by Vpower in Shenzhen. The government hopes other provinces and regions can learn from Vpower to set a systematic escort procedure, and advocates banks should focus on their main business, outsource their non-main business, in order to save the whole social resources and reduce cost.

3.2 Support of Other Industries

3.2.1 GPS Technology of IT Industry

One of GPS' the greatest contribution is to monitor the whole process through the logistics transportation. Customer can get information about the delivered cargo at any time by using this system, and work out the time to destination, which solves the traditional logistics problem, "Nothing about the cargo after it issued".

Secondly, it solved the bottlenecks on scheduling and management of logistics. It solves the difficulty which troubled logistics scheduling for a long time, GPS can not only improve efficiency, but also lower the fuel consumption and other costs. It defaults transport routes, sends information and data package back to monitoring center. Customers will be able to have real-time monitoring of goods sit at home, and ring emergency alarm if the cargo is not transported along the default routes in the electronic map. It has a anti-robbery security function. When encountered robbers, the drivers just press the alarm switch, the center will be timely access to emergency state.

According to the application of practical business statistics, primarily reflected as followings:

3.2.1.1 Cost Savings:

3.2.1.1.1 With the alarm on over-speeding and overtime, real-time monitoring, emergency calls, it can reduce the cost of security by 30 percent, reduce the accident rate by 50%.

3.2.1.1.2 The monitoring of actual mileage statistics, average speed and route, engine control and air conditioning monitoring make fuel costs decreased by 10%.

3.2.1.1.3 To improve and standardize the driving habits, which reduce maintenance charges by 15 percent.

3.2.1.1.4 Route monitoring and management reduce the toll fee by 10 percent.

3.2.1.1.6 Real-time monitoring, estimated time of arrival, it reduce communications costs and scheduling cost by 20%.

3.2.1.1.7 Parking time monitoring, parking place monitoring and route monitoring make cargo lost rate reduced by 50 percent.

3.2.1.2 Increase Revenue

3.2.1.2.1 Real-time monitoring, estimated time of arrival and route planning, make vehicles turnover rate increased by 20%, equivalent to the same vehicle capacity increased by 20%.

3.2.1.2.2 Location, estimated time of arrival, to command vehicles arrived quickly and accurately which improve service quality, customer satisfaction increased by 30%.

3.2.1.2.3 To meet customer demand which helps to win new customer, so that new orders increased by 20%.

3.2.2 Vehicle Manufacturing Industry

The development of escort industry can not neglect the effort and development of escort carrier industry. In previous time, cash escort carriers are refitted from some passenger or cargo carriers, like Jinbei seven-seat cars and IVECO cars. But, now, cash escort carrier is considered as a special car by vehicle manufacturers, and they

bring in all kind of advanced technique into the manufacturing of cash escort carriers.

The first element of a cash escort carrier should have is the ability of bulletproof. Equipped with 6.0 mm bulletproof steel can resist the 7.62 mm bullet shot by Tommy-gun 56 in speed of 710 m/s, the same effect as equipped with 12mm normal steel, but the weight of carrier is much lighter. If the steel is replaced by a new bulletproof material which is made of solid ceramic, it can resist the shot by snipe-gun 79 in speed of 838m/s, and the weight is lighter than steel. These material and technique all insure and provide a carrier work smoothly and safely.

Nowadays, the carriers are equipped with remote-controlling, burglar alarm, Wireless communications, video and other electronic equipment. The cockpit and escort slot are all equipped with shooting holes, and escape skylight on the roof, and fire-fighting equipment, tear gas bulletproof jackets and helmets. Because of the carrier has a certain extent of anti-violence ability, although the carrier can not move, it is not easy to rob cash from its slot which is so-called delay crime, to win the time for the arrival of police.

The cash escort will be equipped with more and more functions and equipment to fight for violence. Such as the following one, although it is a concept cash escort carrier. It is not only equipped with those function which mentioned above, but also can anti-fire, which cause by petrol bombs, petrol bomb is harmful to the carrier's tank, pipelines and exhaust pipe, if seriously, it will cause whole car burning and exploding. It is a new subject and technique researched in car manufacturing field.

Figure 3.1 a concept cash carrier



CHAPTER 4 THE NECESSITY OF FINANCIAL ESCORT OUTSOURCING – FROM THE OPERATING MODEL OF VPOWER COMPANY

4.1 Standardization and Security

Financial escort outsourcing will lead to standardization in document and training of escort team. The escort contracts between banks and escort enterprises, because every bank has its own contract with its co-operated escort enterprise, and the treaties are also different. Then if to carry out the financial escort outsourcing, the document will be standardized; it is easy for escort enterprises to manage centrally. Standardization of document also can reduce cost for the whole financial escort field, because when bank drafts up a contract with its partner, it should pass this work to law office, if every bank does like that, there will be a large expense in total, but, if to outsource the escort business to specialized logistics enterprise, it only can be drafted once for all. The standardized contract of one escort enterprise is listed in the Appendix I, only Chinese version.

Another standardization is reflected in the training of escort team. In present situation, most banks operated the escort business by themselves, and the escort teams are often the people who retired from army, which means the age of the team is relatively old, there is potential risk existing if a accident or robbery occurred, may be they cannot deal the urgency quickly and correctly, it is a big problem in the position. But, in Vpower, a strict trained escort team has been organized. Strict employment procedure is an important guarantee for safe escort. Before the escort

team anticipates the real escort work, it is taught in theory and practice from Police Department, the members are skilled on martial arts and driving. Through a strict and military training, the team forms as a discipline, organized one. Due to the specialized escort team, Vpower has run for about 10 years from its foundation, but there was no financial escort accident happened, Insure the cash reached every destination in the 10 years, it is should be mentioned that its total escort voyages reach 12 million times. The following is the a form about the escort accident of six main banks in 2007, in Whenzhou, a city of Zhejiang Province, and the lost cause by these accidents. And the form also has a comparison with Vpower in Shenzhen.

Table 4.1- the accident happened in Whenzhou and Shenzhen in 2007

Bank	Serious accident	Small accident	Lost	Information
BCM	0	2	10 thousand	small traffic accidents
CCB	0	3	--	small traffic accidents
ICBC	0	1	--	small traffic accidents
ABC	1	0	11 million	Treasury stolen
CMB	0	1	--	small traffic accidents Escort carrier knocked a man into death and small traffic accident
BOC	1	1	--	small traffic accidents
Vpower in Shenzhen	0	4	--	small traffic accidents

Source: *Whenzhou Finance Times and Vpower website*

In Whenzhou, most banks operate the escort business by themselves, is totally different from the model of Shenzhen, so from the form, we can see there were two serious and 8 small traffic accidents happened in 2007, but in Shenzhen, Vpower, a specialized escort company which takes 17 financial institutions' escort business, accident happened only half of Whenzhou, because Vpower owns a skilled escort

team, which provides safer and quicker transportation.

4.2 Social-Effect and Economic-Effect

Before the socialization of currency logistics, the traditional mode of banking escort existed two major drawbacks: first, one bank must be equipped with the treasury, warehouse keeper, cash-carry vehicles and escorting personnel when one bank branch added, which causes staff swelling and expense increasing. Secondly, due to duplication of investment of every bank, there will be lack of business for cash-carry vehicles and staffs that makes the vehicles and staff laid idle, it is a waste of resources.

In early 1996, the national financial work conference proposed the reform of forming specialized cash-escort company, and the central bank decided to have a first try in Shenzhen Special Economic Zone because its financial industry is leading in China.

In early 1997, Shenzhen's 17 financial institutions jointly funded 11 million RMB, registered and formed Shenzhen Vpower Finance Security Company Limited.

As a vector, Shenzhen carried out a new model on cash-escort, the essence of it is reflected on the "three centralization": First, implementation centralized management of the bank treasury, that is, within the city, except the People's Bank and all commercial subsidiary banks (head office), the sub-branch of banks should cancel treasury, and replacing it by the cash-escort companies' cash warehouse. The escort company takes the responsibility of keeping and escorting. So far, Vpower has undertaken more than 1,000 branches between all the Shenzhen Commercial Bank

and nearly 800 large enterprises' cash-escort business. In 2003, it completed 1.12 million times escort, and nearly 700 billion RMB safe deliveries of cash in total, the annual total distance is 8.15 million kilometers, send more than 200 million person-time armed security officers and service network covering both inside and outside the Shenzhen Special Economic Zone.

Vpower's practice has fully proved that the reform of "three centralization" and the currency logistics outsourcing is adapted for development of social division and intensive operation , solved the problems of banks did respectively, low efficiency, and poor security. Compared with the traditional operation of cash-escort, specialized outsourcing enables the cost had a big reduction, better security, social and economic benefits are obvious. As following:

Table 4.2 - comparison of Vpower model and bank self-carrying

	personnel	Expense(10,000RMB)	treasury	carrier
Bank self-carrying	4500	38,000	200	450
Vpower	1000	9,000	4	200

Source: Finance Logistics. *Journal of China Storage and Transport*, 3, 18-19

From view of third-party logistics, it is no doubt that Vpower model is a tremendous savings for social resources. Therefore, the optimization of cost and maximum of efficiency are the substance of third-party logistics operation. On third-party logistics, there is no distinction between industries, all of the industries are neither mysterious nor special, but the products and services targeted are different. To follow the principle and eliminate artificial obstacles and pursuit maximum savings of social

resources, we can achieve a positive progress that China's socio-economic development benefited by third-party logistics industry.

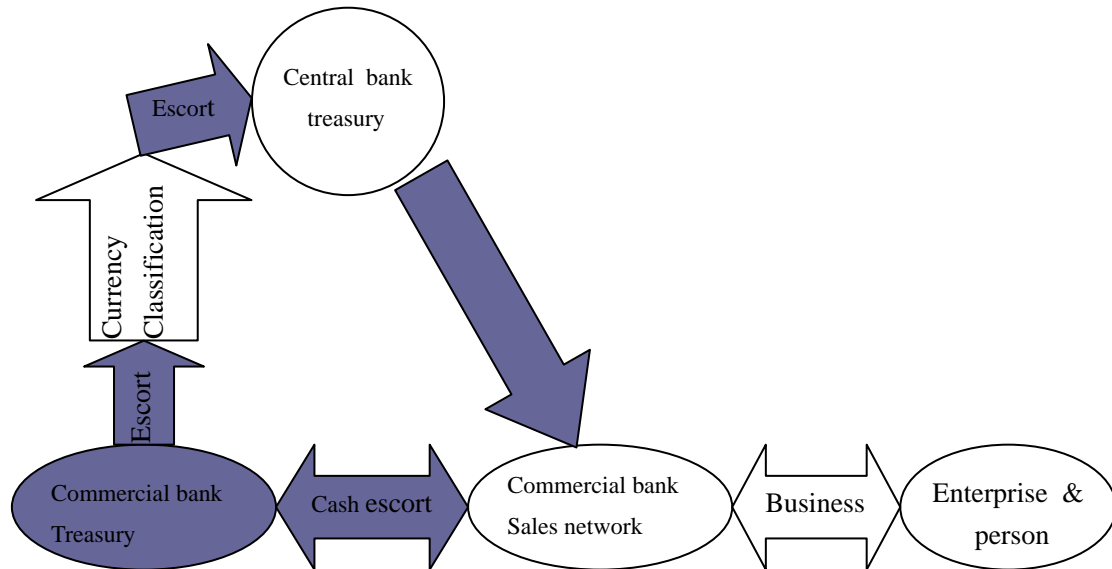
Vpower has set a perfect example in China's logistics industry. Its mode of operation has broad market prospects, can be cloned, transplanted, transformed and integrated to other industries.

CHAPTER 5 OPERATING MODELS OF FINANCIAL ESCORT ENTERPRISE AND RISK ANALYSIS

5.1 Centralization Management Model

It also named as Shenzhen model or Vpower model. It is a joint-stock enterprise in the form of corporate financial institutions, and takes the business including all the financial institutions and other enterprises' cash-escorting in the region. To summarize the practices and experiences of the model, mainly is the "three centralized management". One is the implementation of centralized treasury management. Within the city, except the People's Bank and all commercial subsidiary banks (head office), the sub-branch of banks should cancel treasury, and replacing it by the cash-escort companies' cash warehouse. The escort company takes the responsibility of keeping and escorting, in order to solve the problem which is treasuries are set up too much but too dispersed, and are easy to rob. The second is to achieve centralized cash scheduling and monitoring. The second one is the implementation of centralized cash scheduling and monitoring. Thirdly, the implementation of centralization of personnel specialized training and management. With unified command, unified deployment, unified action, the security guard team is well-trained, disciplined and has rapid response, which can ensure safety escort.

Figure 5.1 – procedure of centralization management model



Source: *China Co-operation Times*

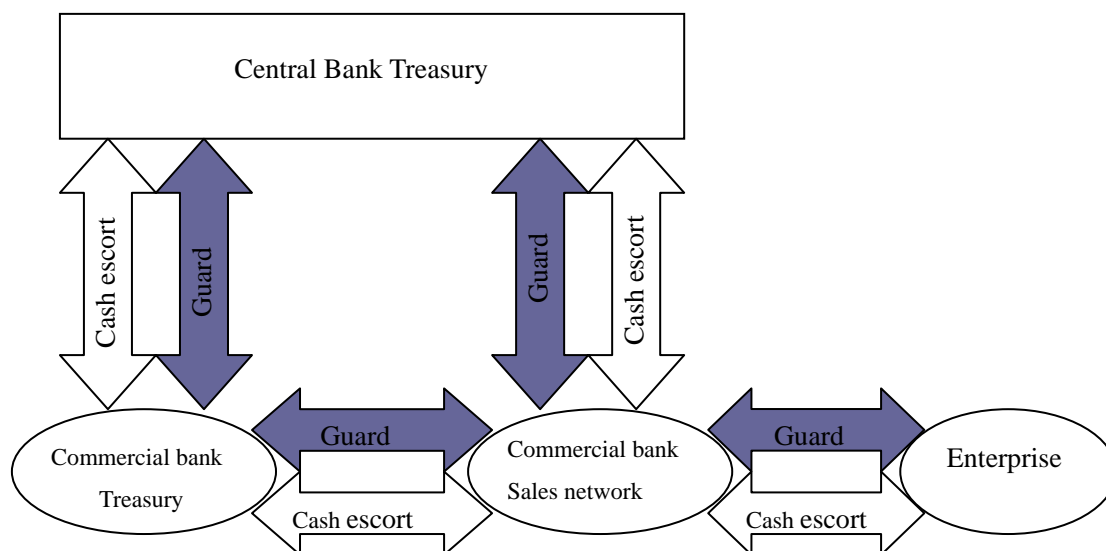
The arrows in Figure 5.1 represent processes, a round and ellipses mean the node of every procedure. In this model, there are six links in the movement of currencies, namely, six processes. Among them, arrows in gray show the processes which done by Vpower while white ones indicate the processes done by banks. All the gray symbols express that Vpower takes the security responsibility when currency is moving, and Vpower also takes over the security guard of bank's operations, participates in banking business, it provides door-to-door service.

5.2 Co-operation Model

Co-operation mode means that co-operation between security department and banks. Security department sets up a financial escort company or security company, and

financial institutions outsource cash-escort and treasury-keeping to these companies, in other words, it is a way to transfer the risk which is accompanied in all movement of currency. The practices of this model are: firstly, escorting is priced by the number of vehicles. The security company should escort the cash in a round trip for every network everyday. So, the security company has to decide how many vehicles to carry its business. Second one, for ensuring the compensation ability banks will require the security company to cover the safety of cash to an insurance company in their contract. Thirdly, the security company also takes the business when banks need to collect money from a enterprise in temporary situation or flit from central bank. The model is characterized by: full-time security personnel reduction, banks are not equipped with cash carriers.

Figure 5.2 – procedure of co-operation model



Source: *China Co-operation Times*

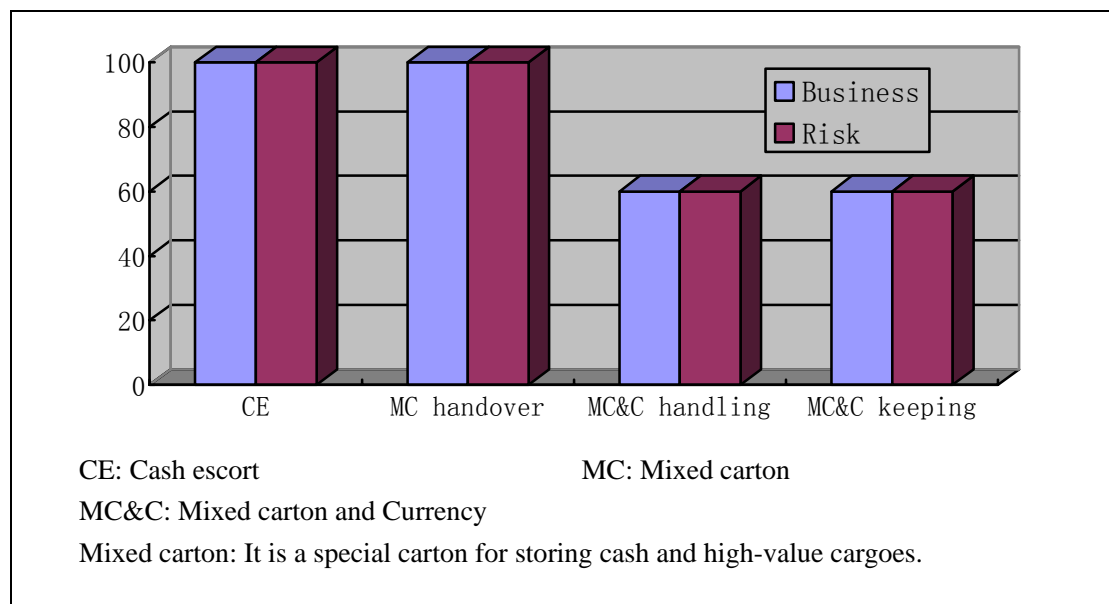
From the Figure 5.2, under the model of co-operation, although there are four processes in the movement of cash, actually, the processes of guard and cash escort are separated, so there are eight processes, and the security company does not anticipate any business of bank, but just guards the cash transportation.

As different models provide different services and undertake different risks, the composition and level of expenses are also different. Security companies charge service fees, which including four parts (three insurances and an expense): the three insurance are reflected in the three risks which have been mentioned in Chapter two, transfer risk, operational risk, security risks, and an expense refers to the cost of Currency escort, from location of customers to destination. Generally, escort companies charge service fees = Transportation costs (including insurance) + Transition expenses (including insurance) + Operating costs (including insurance) + Security costs (including insurance).

Vpower's service charges also include four parts (three insurance and an expense), but it does not undertake 100 percent of the risks, because Vpower does not anticipate all the business of bank. So, the structure of service fee is different. Vpower's service charges = Transportation costs (including insurance) + Transition expenses (including insurance) + part of operating expenses (including insurance). Vpower is responsible for guarding the bank's transferring treasury, and classify the stored mixed cartons, according to the requirements of banks, the mixed cartons are divided into: stored, non-stored, temporary stored, not-fixed-time stored and weekend-stored. The different cartons are in different colors and different codes to reduce errors caused by handling. But Vpower is not responsible for the cash

classification, packaging and handling of defective currency. Therefore, Vpower only takes part of business and risks in dealing with the mixed cartons and currency. Vpower is responsible for mixed cartons delivery directly to the bank counters, but not responsible for safety of mixed cartons when they are in counters for about 9 hours. As showed in Figure 5.3:

Figure 5.3 – risk analysis on centralization management model

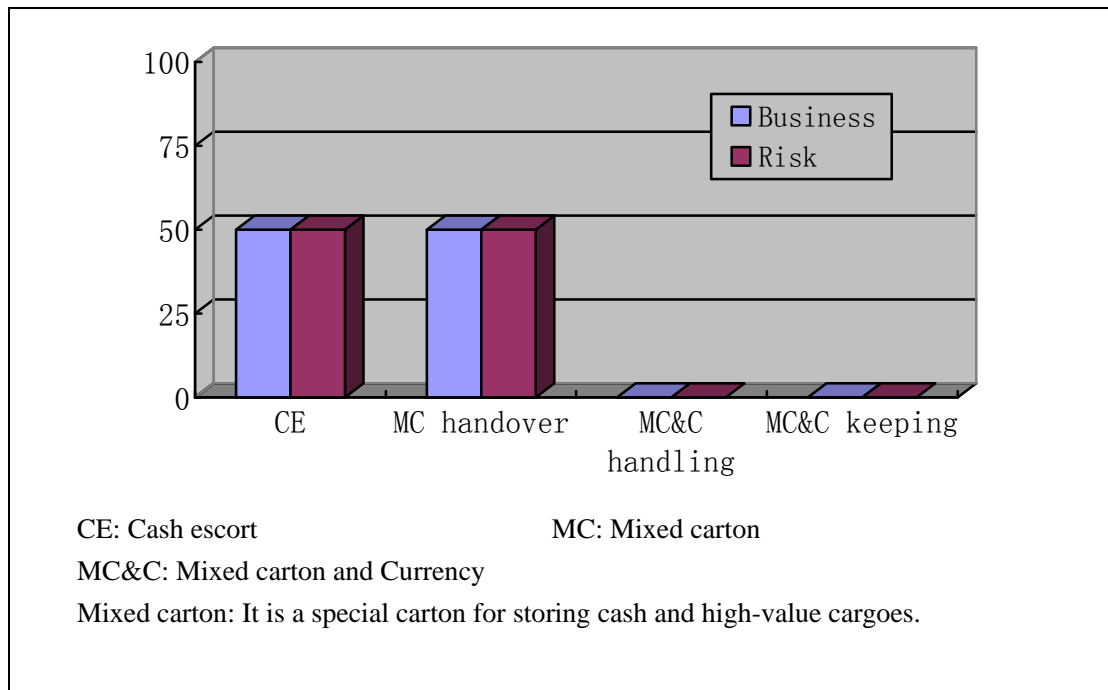


Co-operation model's service charges only include the service fees for security guards during cash transportation, so, service charges = security guard fees (including some insurance), showed in the Figure 5.4. This model only provide security guard during transportation of cash, while it is still required bank's staff appointed during the escort of cash, public security department only takes part of the work, and also because of the involvement of banks, the risk is taken by whom is very vague. The work of mixed carton handover happened besides banks network,

and it is done by bank, the security company merely provides security guard. So in this process, security companies only undertake part of the task and risks.

In the two processes of handling of mixed carton and currency and custody of mixed carton and currency, the public security department does not involved in, so it needn't to takes any risks.

Figure 5.4 – risk analysis on co-operation model



Through the comparison and analysis in Chapter 5 and Chapter 6, we can see that the Vpower model is the most advanced escorted model in China, and also recognized by financial industry. Nevertheless, compared with international counterparts, Vpower has many problems for improvement, but as a third-party logistics, it has set a model for domestic counterparts. Vpower saves logistics cost about 290 million

RMB for all banks in Shenzhen every year, and reduces cash carries and security personnel, reduces the occupation of public facilities.

CHAPTER 6 METHOD OF LOGISTICS COST CONTROL IN FINANCIAL ESCORT ENTERPRISE

6.1 The Budget of Distribution Cost

Everything should be estimated before done, because that can make the process ran smoothly. To make a budget of distribution cost is a affective way for enterprises make plans, adjust plans and evaluate plans. The theory is to make a budget of logistics expense according to the enterprise's annual plan, and set a control standard for logistics cost control. After that, to work out the actual logistics cost in the actual situation, provide exact cost information to logistics cost controlling, and do a comparison between the actual cost and budget, the purpose of comparison is to find out the maid elements and sectors which effect the actual cost differ from budget, so that to feedback the information to decision-maker, in order to adjust the strategy of cost controlling, improve controlling method. If there appears some unreasonable budget in cost analysis, feedback the information to the department of cost budget, and adjust or re-set the original goal, to achieve the goal of cost control with continuous circle and optimization. Budget and control can not be separated, logistics cost budget is not only a process of planning, but also a process of setting controlling standard.

Table 6.1 – the main expenses structure in a escort enterprise

Item	Content
Freight	Cost of shipment, tax
Storage Fee	The expense during storage which includes: 1. storage transportation expense 2. Storage expense 3. Loading and discharging expense 4. Other expenses for service
Value-added expense	The expense which distribution center provides value-added service for customers, which includes: 1. Equipment expense 2. Material expense 3. Labor expense 4. Other expenses

Source: Finance Logistics. *Journal of China Storage and Transport*, 3, 18-19

Although there is no mutual and special budget method on logistics cost, we can follow the three main budget methods in China: Zero-base Budgeting approach (ZBB), Fixed Budgeting approach and Flexible Budget approach.

ZBB: Zero-based budgeting, which wholly-called "zero-based for the preparation of plans and budget", originally, was developed by Texas Instruments Co., in the preparation of the budget for all budget Expenditures, zero as the basement, does not consider how was the past situation, analyze the necessity of each budget expenditure and the amount of expenditure. This budget approach does not adjust according to historical information and data, according to cost-benefit analysis, re-emit the management activities of the priorities, and finally to decide the distribution of capital and other resources allocation.

Fixed budget approach which is made without regard to potential variations in business activity. Fixed budget is a budget for the relatively stable preparation;

generally, it is adopted when there is no big change between actual situation and planned circumstance. The calculation of fixed budget is more direct and simple, and the many uncertain factors, frequent changes in daily's business, so that fixed budget approach is not adopted widely in financial escort enterprise, and it is also not suitable for this industry.

Flexible budget is also known as changeable budget and sliding budget. It is a budget method based on the variable cost method, and different level of business in future, this budget method is just the opposite of fixed budget. It refers to the variable volumes of different business in the estimated period as the basis, then work out the each expense amount on these items, it is a method for budget of multiple-business. So, each business's expense depends on the amount of business, therefore, this approach has an extent of flexibility, that's why it is called flexible budget.

For financial escort enterprises, it is the most suitable budget approach, because in most circumstances, financial escort enterprises' business is variable, which is depended on each bank's business, bank's business is different every day, someday, bank may need very few cash or other high-value thing to escort, and at that day, the cash almost for withdrawing and depositing through ATM. But, sometimes, the bank needs a lot of cash for its business, such as a core customer's requirement. Then the escort enterprise has two more voyages than normal, then it increase the operational cost in fuel, personnel and other expense, such as toll fee, etc.

For example, in Vpower, in 2006, each vehicle is equipped with one driver, two escort security men and two missionaries. The initial price of the vehicle is 0.25 million RMB, and the salary for those personnel are 3000, 2500, 3000 RMB per

month respectively, these expenses are considered as fixed cost, and the annual mile for each vehicle is about 50750 kilometers, and the vehicle's oil consumption is 9.0 L/100KM, and in 2006 the average price of 0# diesel is 4.46 RMB per liter, other fees include and maintaining, toll and insurance expenses are about 0.18 million RMB, these are all average figures because this expense is classified as variable. So, when we make a budget for 2007 cost controlling according to above information, the total fixed cost is 0.102 million RMB (8500*12/1 million), while the total variable cost is about 0.2 million RMB (50750*4.46*9/100/1million+0.18). Those figures are calculated in average, generally, thought flexible budget method, the annual business' volume is floating between 80% and 110%, that mean the each vehicle's annual mile will be between 40600 and 55825 kilometers. At the end, to make a form as above:

Table 6.2 – cost budget in Vpower by flexible budget approach

fixed cost (million)	0.102	diesel price in 2007	5.1		
other fees (million)	0.18				
mile (km)	50750	oil consumption (L/100km)	9		
floating percentage	mile	fixed cost	variable cost	total cost	
80%	40600	0.102	0.1626354	0.2646354	
85%	43137.5	0.102	0.172800113	0.274800113	
90%	45675	0.102	0.182964825	0.284964825	
95%	48212.5	0.102	0.193129538	0.295129538	
100%	50750	0.102	0.20329425	0.30529425	
105%	53287.5	0.102	0.213458963	0.315458963	
110%	55825	0.102	0.223623675	0.325623675	

Source: Internal source

So, the decision-maker can decide the plan according to this form and controlling the cost in actual situation, the form also can provide other function to decision-maker, such as when the actual cost is not match to the figure in form, in other words, the actual cost is higher than the budgeted one, then we can find out where the problem is, is there some problem within the fixed cost or variable cost, and to find what makes the cost higher, is the staff require more salary, or the increasing price of fuel, then to solve the problem, and make a correct decision in order to achieve the aim of cost controlling.

The key of this approach is to classify cost into two categories, fixed cost and variable cost. Variable cost depends on the business volume, the function is set as: flexible budgeted cost = budgeted fixed cost + estimated business volume * unit budget variable cost. It is a method for those business costs which depend on business volume.

6.2 Position-chosen of DC

For escort enterprises, to choose a suitable position as distribution center can not only improve quality of customer service, but also reduce distribution cost in a great extent.

Assume there are s candidacy nodes as D_1, D_2, \dots, D_s ; Bank has m networks, as A_1, A_2, \dots, A_m , and the supply are P_1, P_2, \dots, P_m , respectively; Commercial bank treasuries as B_1, B_2, \dots, B_n ; Their sendout are Q_1, Q_2, \dots, Q_n ; The unit transport cost from A_i to D_j is considered as C_{ij} , while the unit transport cost from D_j to B_k is marked as d_{jk} ,

and unit storage variable cost as C_j , storage fixed cost as G_j . The objective is obvious to get the minimum logistics cost by choosing an optimal position of distribution center.

Now, suppose variable $X = (X_1, X_2, \dots, X_j)$, when

$X_j = 1$, then to choose this position as distribution center;

$X_j = 0$, then it means this position is not suitable to set as distribution center.

And the position-chosen objective function can be expressed as:

$$\text{MinC} (X) = \sum_{j=1}^s (\sum_{i=1}^m C_{ij} P_j + \sum_{k=1}^n d_{jk} Q_k + \sum_{k=1}^n (Q_k - P_j) C_j + G_j) X_j$$

$$\text{St: } \sum_{j=1}^s X_j = 1$$

This objective function can be solved by static simulation solving method by Excel.

For example, the following map is a part of Shenzhen, and generally, in Vpower, its each cash escort carrier takes 10 bank networks, in the map, there 10 bank networks in blue belong to 3 banks, the squares in red are the candidacy position of distribution center, and the squares in black are bank's treasuries. And the other information as following tables.

Figure 6.1 – a part of Shenzhen’s map and some bank network location



Source: Dingding Electronic Map website

This table 6.3 shows the distance from the candidacy position to every bank network or from the red square to every blue circle. Table 6.4 means the distance from every black square to every red square. And the letters in same color mean they belong to a bank. Such as network A1, A6, A7, A10 belong to Bank B2. (unit: kilometer)

Table 6.3 – distance from DC to bank network

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	sum
D1	2.3	1	2.5	3	3	2	3	5	6	4.3	32
D2	1.8	2.8	2	2	3.3	3	5.2	2	4	4.5	31
D3	4	4.2	3.8	4	4.6	3	5	5	3	1	37

Source: Internal source

Table 6.4 – distance from bank treasury to DC

	B1	B2	B3	sum
D1	1	2	5	8
D2	5.5	5.5	2.5	14
D3	5	4	1	10

Source: Internal source

Table 6.5 is the number of mixed carton need for every bank network every day. And table 6.6 is the total mixed carton supplied from bank.

Table 6.5 – daily demand of bank network

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
Demand	3	4	4	4	2	3	3	2	2	2

Source: Internal source

Table 6.6 – daily supply of bank treasury

	B1	B2	B3
Supply	10	15	10

Source: Internal source

From table 6.5 and table 6.6, we can get

Table 6.7 – the number of mixed carton stored in DC

	A2+A4+A8	A1+A6+A7+A10	A3+A5+A8	sum
demand	10	11	8	29
<=	<=	<=	<=	
supply	10	15	10	35
surplus	0	4	2	6

Table 6.8 is the land expense in Shenzhen, for sale, the unit is RMB per square meters, and for rent, the unit is RMB per month. (One month includes 30 days)

Table 6.8 – land expense in Shenzhen

	Land expense	
	For sale	for rent
D1	20000	5000
D2	15000	3500
D3	10000	2600

Source: Shenzhen Shunchi real-estate data

Some other information, if the distribution center buys a place, the area is about 100 square meters. But in this case, the distribution center wants to rent place. And the unit transport cost is 20 RMB per kilometer including fuel and maintain expenses and some fee to escort staff. If the supply overnumbers demand, then there will be some mixed cartons should be stored in the distribution center, and the unit storage cost is 25 RMB per day including keeping and maintain expenses.

Now, define D1, D2, and D3 as variables, X1, X2, and X3; D1, D2, and D3 should be 1 or 0; and the sum of X1, X2, and X3 equals to 1. That means only one of the three positions will be chosen as the distribution center finally.

So, we can get the objective function aim at minimum cost as the one introduced in above modal. Through the static simulation solving method of Excel, the outcome (minimum cost) is 896.17 RMB per day when X2 equals to 1, X1 and X3 both equal to 0.

Now, we get the result, if Vpower set its distribution center in D2, it is the most economical and profitable.

6.3 Optimal Stowage Decision

Stowage decision is fully considered about both the elements of cargoes' weight and cubage, in order to achieve maximum space utilization of a carrier. Generally, the cubage of a cargo is small when its density is big, if a carrier transports this kind cargo, it is economical in weight, but in cubage, in other words, there is some space wasted or unutilized. The aim of stowage decision is to utilize the free space with the light cargo whose density is relative small when the carrier is nearly full loaded with heavy cargoes.

Assume it need to distribute n cargoes from distribution center, every cargo is packaged, and the amount of every kind of cargo is marked as Q_i ; There are m customers along the distributing route; The carrier's capacity is G in weight, and V in cubage; Suppose the weight of cargo i is w_i , and cubage is v_i ; The amount of cargo i for customer j is considered as x_{ij} , and cargo i 's transport distance from distribution to customer j is assumed as l_{ij} , and the unit transport cost is c_{ij} . Then the cargo stowage decision proposal can be expressed as the following function.

Define the total distribution cost as Z , then:

$$\text{Min}Z = \sum_{i=1}^n \sum_{j=1}^m a_{ij} c_{ij} x_{ij} w_i l_{ij} \quad (3)$$

$$\text{St: } \sum_{i=1}^n \sum_{j=1}^m x_{ij} w_i \leq G \quad (4)$$

$$\sum_{i=1}^n \sum_{j=1}^m x_{ij} v_i \leq V \quad (5)$$

$$\sum_{j=1}^m x_{ij} w_{ij} \leq Q_i \quad (6)$$

$$x_{ij} \geq 0, \text{ and } x_{ij} \text{ is integer, } i=1, 2, 3, \dots, n; j=1, 2, 3, \dots, m \quad (7)$$

Explanation:

a_{ij} is time value coefficient, expresses the time of cargo i for customer j , the value is the more urgent, the bigger; Function (3) is the objective function of distribution cost; Function (4) means the total cargo weight cannot be larger than the weight capacity of carrier and function (5) shows the total cargo cubage cannot be larger than the cubage capacity of carrier; Function (6) indicates the sum amount of every cargo to every customer cannot be larger the capacity of distribution center. Function (7) is a constraint for x , x should be integer.

Summary of this chapter

Logistics is regarded as the third profit source of an enterprise, because profit is equal to revenue deducts cost which includes production cost and transport (or logistics) cost, so controlling of logistics cost is vital, and it is also important to use suitable method to estimate and control cost, the above methods are all adopted in logistics companies, because these methods can help controlling cost to achieve minimum cost. Because of the different scale and physical allocation of networks of every bank, they have different distribution time requirement. Some need more capital and more quick distribution, but some which are located in out-of-the-way place with less customers, so they have not strict requirement in distribution time. When an escort enterprise owns so many different kinds of customers, it will only increase distribution cost if the enterprise provides same service standard for

different customers. Therefore, enterprises should classify customers into different groups according to their characteristics and different time limitation requirement, such as group A, group B and group C, or other thing like that, which means primary important, secondary important and ordinary, then make the special transportation pattern for special customer, provide customized service. Generally speaking, enterprise should deal with group A's business primarily and put main human and material resource on, but for group C, enterprise can only work according its requirement and order, but should attention that whether it can be leveled up to group B or A.

CONCLUSION

In 1776 Adam Smith put forward absolute advantage theory in his *The Wealth of Nations*; he found that if the two nations only produce their relatively familiar product instead of producing all products, the total social benefit is higher, because of labor division.

Nowadays, the phenomenon is also as Adam Smith's theory between financial industry and logistics industry. That means banks outsource their logistics business to special 3rd part logistics company, it is not only beneficial for both banks and escort companies, but also achieve a tremendous saving for the whole society.

And in China, there are only a few big cities has carried out the model as Vpower, the advantage is obvious, specially, facing the challenge and affect of the entry of foreign banks, financial logistics outsourcing can make sure banks put most effort in his main business, provide better service. With the support of China government and other industry, to borrow idea from successful operation of Vpower, it is feasible and necessary to set the new model in China other areas.

But, logistics is still a novel industry in China, in many aspects are immature; there is a large space for development. To set companies as Vpower is still need to overcome some obstacles, such as knowledge of logistics and it is very difficult to form a company like Vpower, because the initial investment is large and it is not recognized by whole society. But the real figures can tell everything and I believe financial escort outsourcing is the inevitable tendency.

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APPENDIX I

“ESCORT CONTRACT” (Chinese Version)

《押运合同》

立合同单位：

甲方：银行

乙方：保安服务有限责任公司

根据总行和公安厅、中国人民银行[xxxx]x号文件精神以及xx分行有关守卫、押运社会化管理有关要求，乙方负责甲方头寸箱的押运。经甲乙双方协商一致达成如下协议：

第一条 乙方义务

押运的头寸箱（装有现金、金银、重要凭证、重要物品、有价证券）的安全，防止抢劫、盗窃、丢失、侵害、火烧、毁损等案件事故的发生（以下简称案件事故）。

- (1) 负责甲方各营业网点早、晚接送头寸箱的押运工作；
- (2) 负责甲方与慈利人民银行之间的上解和调拨现金的押运工作；
- (3) 负责甲方营业中途往返各营业网点的临时出、入库的押运工作；
- (5) 负责押运途中特种物品的财产安全和出纳提款人员的生命安全。

2、根据甲方实际工作需要，提供专用运钞车壹台（以下简称头寸车）。头寸车性能和安全标准必须符合中国人民银行、中华人民共和国公安部（银发[1997]第241号）等有关规定。

3、乙方工作人员须统一着装和佩带统一制发的押运证。

- 4、乙方押运车辆必须停靠在甲方营业网点黄线警戒区内，押运员要负责把头寸箱护送至营业网点（押运人员不得进入营业部），选择有利位置警戒，待甲方出纳提款人员与柜台内当班人员办好交接手续，确认营业厅通行门落锁后方能离开。
- 5、乙方保证人员、车辆每天（含节假日、上门收款）按甲方规定时间、地点按时到位，不得以任何理由延误和拒绝执行押运任务，要保证甲方各营业网点每日在公布的营业时间开门营业。由于道路阻塞、交通事故以及灾害性天气等原因而延误时间不能按时到位的，乙方应及时与甲方出纳提款人员和保卫部门联系协商，并采取有效措施尽快完成任务。
- 6、乙方在执行押运过程中，一旦发生案件事故，乙方押运人员应及时向公安机关报警并同时通知甲、乙双方领导、甲方保卫部门到现场及时处理。
- 7、乙方适当安排甲方留行待命的车辆和人员。留行使用的车辆只限于本合同规定的头寸箱的运送。乙方有权拒绝甲方其他情况使用待命头寸车辆。
- 8、乙方驾驶员、押运人员由乙方负责聘请管理，但须将人员基本情况和照片交甲方保卫部门和各网点备案，以免发生冒领事故。乙方要确保人员素质符合甲方工作要求并保持人员相对稳定，调换人员须提前两天书面通知甲方，甲方认为乙方派出人员中有不称职和不适宜者，书面向乙方提出后，乙方保证三日内更换。乙方工作人员在押运过程中发生伤亡事故由乙方自行承担，甲方不承担任何赔偿责任。
- 9、乙方应确保派出人员在甲方工作期间遵守《中国金融系统保卫人员押运、守卫、值勤工作的规定》、甲方的各项规定和安全保密制度以及本合同约定。
- 10、乙方必须按甲方要求在当地保险公司投保甲方头寸箱的财产安全险和甲方出纳提款人员的意外伤害险，财产安全险保额不得低于 500 万元，人身意外伤害险两份保额不得低于 100 万元。保险单须注明甲方为保险赔偿金的第一受益人，保险单交甲方保管。如发生案件事故赔偿后保险金额不足时，乙方必须进行续保，并将投保单交甲方保管。本合同期满前，乙方不得以任何理由撤销、

中断保险，如乙方撤销、中断保险的，甲方有权代乙方继续投保，有关费用甲方有权从应付给乙方的押运服务费中扣除或向乙方追索。

第二条 甲方义务

- 1、甲方自行安排出纳提款人员随乙方提供押运服务的头寸车负责对营业网点头寸箱的交接及相关工作。
- 2、甲方安排出纳提款人员负责将营业网点和上门收款点早晚接送和营业中调拨的现金、有价证券、重要凭证等用头寸箱封装、打包落双锁。
- 3、甲方营业网点若更改营业时间和调整押运线路，须提前书面通知乙方。
- 4、甲方保卫部门按规定对乙方的押运工作有权按程序开展检查、监督和业务指导。
- 5、甲方按时支付给乙方押运费。
- 6、甲方给乙方押运人员提供一定条件的办公场所。

第三条 押运服务费

甲方支付乙方押运服务费（含车辆、押运员报酬等费用）全年合计人民币壹拾捌万元（包括税金）。

第四条 付款时间及方式

押运服务费分 x 次付清，乙方应提供服务发票。xxxx 年 xx 月 xx 日前甲方以 xxxxx 方式将 xxxxx 元汇入乙方指定的 xx 银行的基本帐户（开户行：xxxxxxxxxxxxxxxx），xxxx 年 xx 月 xx 日前以同样方式付清余款（节假日顺延）。

第五条 合同期限

本合同有效期为壹年，从 xxxx 年 xx 月 xx 日至 xxxx 年 xx 月 xx 日止。

第六条 违约责任

- 1、任何一方违反本合同的条款规定之一，除本合同约定的条款以外，每次以每台车月服务费的 5%给守约方支付违约金，造成损失的则按本合同相应条款执行赔偿。
- 2、在本合同有效期内，若一方有重大违约，另一方可解除本合同，造成的相应损失由违约方承担。
- 3、如因国家和中行总行政策调整必须终止本合同时，甲方可有权解除本合同，但应提前一个月通知乙方。如乙方因经营和政策性有关原因提出解除合同，应提前三个月通知甲方。押运服务费根据服务时间结算，计算公式为全年押运服务费/ 365 天×服务天数。
- 4、乙方在押运过程中若发生案件事故或者甲方出纳提款人员人身伤亡事故而使甲方遭受损失，乙方以甲方提供的有关帐表、凭证确认并经公安机关专案部门核实的数目为依据全额赔偿。人身伤亡的赔偿数额依照有关法律规定标准由乙方赔偿。乙方的赔偿期为案件事故发生之日后二十日内向甲方履行赔偿责任，逾期赔付则每日按实际损失额的万分之四支付逾期违约金。
- 5、乙方押运人员不按时上班出车或乙方头寸车辆发生故障，备用车辆不能及时到位导致头寸箱不能按时送至甲方营业网点的，迟到 10 分钟以上每次扣减押运服务费 500 元作为违约金，造成甲方损失的由乙方另行承担赔偿责任。
- 6、如乙方人员单独或内外勾结他人作案或泄密，为作案人提供信息和便利给甲方造成损失的，由乙方负责全部赔偿损失。
- 7、甲方逾期支付押运服务费的则每日按逾期支付押运服务费的万分之四支付违约金。

第七条 乙方除外责任

- 1、因战争和无法抗拒的自然灾害造成的甲方经济损失；

- 2、经公安等司法部门侦查确认属甲方人员利用职务之便，在营业中盗窃造成头寸箱内现金和物品短缺的。
- 3、经公安等司法部门侦查确认属甲方人员弄虚作假的。
- 4、乙方押运人员将甲方的头寸箱送至甲方营业点或指定地点办理交接并确认安全后，因甲方原因所发生案件事故的。

第八条 其他

- 1、本合同如有未尽事宜，双方另行协商解决，可另签补充协议，补充协议与本合同具有同等法律效力。
- 2、本合同经双方签字、盖章后生效。
- 3、本合同一式八份，双方各执四份，具有同等效力。