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WORLD MARITIME UNIVERSITY

Shanghai, China

**THE APPLICATION OF CRM AND SCM
PRINCIPLES IN VOLKSWAGEN**

By

WANG YAO LEI

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

INTERNATIONAL TRANSPORT AND LOGISTICS

2006

DECLARATION

I certify that all the material in this research paper 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 research paper reflect my own personal views, and are not necessarily endorsed by the University.

(Signature):

(Date):

Supervised by

Associate Professor Xu Dazhen
Shanghai Maritime University

Assessor

Professor Shuo Ma
World Maritime University

Co-Assessor

Professor Zong Beihua
Shanghai Maritime University

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I will also thank the friends and the professors who help me do the dissertation. Some important information is from my friends and classmates. Additionally, my parents give me life support during the period of writing dissertation. They are my best support.

ABSTRACT

Title of Research paper: **The application of CRM and SCM principles in Volkswagen**

Degree: **MSc**

The paper is a research of Customer Relationship Management System. This paper is under the condition of applying Customer Relationship Management in Volkswagen.

According to the analysis of CRM system and Volkswagen Company, the author find some problems in the application of CRM: long waiting time and high cost of the maintenance, fewer distribution centers, inefficiency of logistics.

With the support of theories (Customer Relationship Management, Supply Chain Management and The Third Party Logistics) and the researches of Volkswagen company's facts, the author educes two solutions. One is to combine the CRM with SCM to optimize the CRM System. The other is to use the 3PL in order to enhance the efficiency and solve the problems.

Last chapter concludes the analysis and solutions.

KEYWORDS: CRM, SCM, 3PL, Optimization, Solution, Combination, Outsourcing

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LIST OF ABBREVIATIONS

V-auto	Volkswagen
CRM	Customer Relationship Management
SCM	Supply Chain Management
3PL	The Third Party Logistics
CS	Customer Satisfactory
GDP	Gross Domestic Product
WTO	World Trade Organization
ERP	Enterprise Resource Planning
CTI	Computer Telephony Integration
LP	Linear Programming
AHP	Analitic Hierachy Process
ABC	Activity-Based Activities

1 Introduction

1.1 The purpose of this dissertation

After the milestone of China's entry into WTO, the economy of China is growing rapidly and investing environment is better than before. China is running fast in economy. China's real gross domestic product (GDP) grew at a rate of 9.5 percent in 2004, held steady from 2003's growth rate. Real GDP for the first quarter of 2005 was up 9.5 percent year-on-year -- a pace most observers expect to slow in coming years. Real GDP growth is forecast to drop to 9.0 percent for 2005 as a whole, and 7.8 percent in 2006. More and more auto Companies have intensified their investment in China. The business of auto Companies has a fast development; meanwhile, competence among the enterprise has been drastic. These Companies in China face great challenge in how to build a Competitive Supply Chain system in China with improved customer service level and decreased operational cost.

Customer relationship management (CRM) is the main process of an organization to identify, choose, get, improve and sustain his customers. CRM system integrates human resources with business process and information technology to enable organizations to fulfill customer's demands with low cost and high efficiency. With CRM system, organizations can increase customer satisfaction¹ and loyalty²,

¹ Customer satisfactory used to be a general conception in the business. In 1986, an American psychologist used this word to define the satisfactory situation of customers in the purchasing. Then CS becomes to be a scientific

maintain most profitable loyal customers while attracting new customers, and gain more potential value from these loyal customers, which will be the organizations' competitive advantage.

V-auto Co. Ltd. is a joint stock limited company which is solely sponsored by S-auto Company.

With the great support from S-auto; the company has had continuous capital expansion these years. It has infiltrated from the production of auto-parts into the manufacturing of whole cars, into the realm of financial industry as well as information industry. It has also invested in more than twenty whole cars and auto-parts manufacturing enterprises. At present, it has formed an independent marketing system with the support from S-auto, serving the whole country and actively participating in the competition in the international market.

Since it became a public listed company seven years ago, the company has achieved steady growth in economic profits, offering good rewards to its shareholders, thus establishing a standard market image with good performance. The current total capital stock of the company is 3.276 billion shares, of which the S-auto holds 2.293 billion shares, while the public holds 0.983 billion shares. Every economic index of the company has been one of the best in the same industry throughout China, thus making a very solid basis for the steady development of the factory in the automobile industry.

With the development tendency of economic globalization and integration, the

conception.

² Customer loyalty is an action that customers very like production or service of a certain company or brand and they purchase repeat.

company will exert great efforts in pushing forward the four projects of “satisfaction from customers, advantage through innovation, and internationalization in operating and concentrating on people” and the management mode of “everybody becoming a manager”. It’ll have standard and steady capital operation to incessantly improve the comprehensive competitiveness of the company, to rights in order to realize the guarantee incessant growth of the shareholders three strategic targets of the S-auto: “Manufacturing one million cars annually by the year 2007, becoming one of the world top 500 enterprises, and manufacturing 50 thousand cars with its own brand” to make great efforts for the car industry in China to go to the world.

V-auto Company produces cars. The car industry is increasing fast. However, the market is over-capacity because of the high productivity of car industry. It means that the supply quantity is far more than demand quantity. In order to improve competitive advantage, V-auto Company conducts CRM system. The CRM system help the V-auto Company to fit customers’ requirement, sustain important customers and get most value of them, find out customers’ need , provide individual products and services, enhance sales, service and marketing management ability.

It is necessary to investigated CRM system in the V-auto Company. In this dissertation, I will do this research and find some optimize solutions for V-auto Company to gain maximum profit with minimum cost and have a good relationship with customers.

1.2 The content of this dissertation

The paper contains three parts with six chapters, firstly, the author gives a brief

introduction and purpose of the dissertation, then the background and introduction of the V-auto company, the SWOT analysis of this company and the basic conception of Customer Relationship Management, Supply Chain Management and The Third Party Logistics, finally the author provide two improvement for the optimization of Customer Relationship Management System: one is the combination of CRM and SCM, the other is the application of 3PL in V-auto company.

1.3 Academic structure of the paper

Through the analysis of the CRM system in V-auto Company and the analysis of the situation of car industry, the author finds some deficiency of CRM, which need to be improved.

In the dissertation, the author advises two solutions. One is join the CRM to Supply Chain Management. The other is to make a suggestion that using the Third Party Logistics to solve the problem. The author shows the structure as follows:

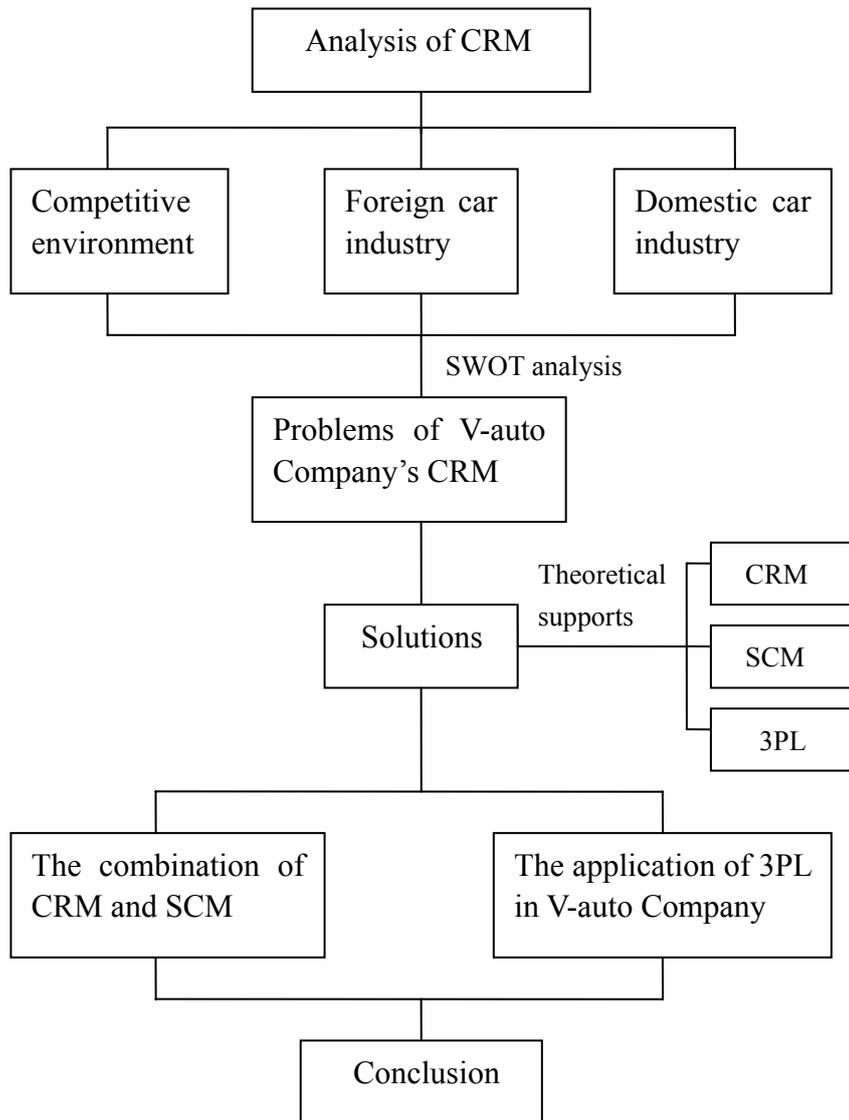


Figure 1- The structure of paper

With the continuous development of information technology and the information exchange ability, the increasing final customer information receiving ability bring large pressure to the supply chain members all around the world and require faster and more efficient for supply chain members entering into market. In the past, many supply chain partners, especially the partners far from the final customers, just pay

attention to the issues which affects their companies directly. However, if a company wants to survive in the high-speed competitive environment, it must focus on the customer demand away from the supply. If we can combine the CRM and SCM, the new system will enhance the total Supply Chain Management to gain more customers and profits. New system will provide more value for the customers than the old Supply Chain Management. The change of market will not only change the operation and organization of the company, but also change all the Supply Chain; it means that customers will become the dominant partner of SCM. New system combines every part of CRM with counterpart of SCM to magnify the effects of final customer. The final customer will be the power center of the new system.

The Third party logistics develop fast because of the advantages compared self-support logistics. One advantage is the high cost of self-support logistics. 3PL will low down the cost, improve the service quality. Another advantage is the systemic service of 3PL. the whole service involves storage, transportation, information, market forecast and so on. This will provide efficient logistic service for the customers. 3PL can optimize the CRM system.

1.4 Limitation

I research the Customer Relationship Management at the aspect of function and affection on the V-auto company. For the aspect of computer technology, I just has a brief introduction because the point of this paper based on the logistics. So, one of the limitation of my paper is lacking of computer technology support. If I have sufficient knowledge in the computer technology, I will have a further research into the software of CRM system to complement the paper. The other limitation is that it

is hard for me to find more information of V-auto Company. The information I got limited the research and analysis of the paper.

2 Theoretical supports---CRM, SCM, 3PL

This chapter shows the basic conceptions of CRM, SCM and 3PL. these conceptions are the theoretical support of dissertation. They are the key point of textbooks with some opinion of the author.

2.1 The evaluation of CRM

Customer Relationship Management, or CRM, is an information technology industry term for methodologies, strategies, software, and other web-based capabilities that help an enterprise organize and manage customer relationships.

With the advent of e-commerce comes the e-customer. According to Vantive, a customer relationship management solutions provider that was acquired in 2000 by Enterprise Resource Planning (ERP)³ software company PeopleSoft, the e-customer expects constant access to a company through e-mail, call centers, faxes and Web sites. Customers demand immediate response with a personalized touch. Meeting their needs puts new demands on the enterprise. Since traditional ERP applications

³ Enterprise Resource Planning is a management system that integrates all facets of the business, including planning, manufacturing, sales and marketing.

did not include a customer management aspect, CRM was the logical next step. Vantive, for example, started as early as 1992 in the development and implementation of these customer management applications.

Two trends have brought CRM to the forefront, explains Boston University professor Thomas H. Davenport, who directs Accenture's Institute for Strategic Change. First, as global competition has increased and products have become harder to differentiate, "companies have begun moving from a product-centric view of the world to a customer-centric one," says Davenport.

Second, technology has ripened to the point where it's possible to put customer information from all over the enterprise into a single system. "Until recently, we didn't have the ability to manage the complex information about customers, because information was stored in 20 different systems," says Davenport. But as network and Internet technology has matured, CRM software has found its place in the world.

2.1.1 The structure of CRM

CRM system is composed with six modules. They are as follows:

- ③ Selling merchant, maintaining shop and customer web

V-auto Company provides basic hardware for the communication between selling merchants and maintaining shops through establishing intranet for the two parts. Only selling merchants, maintaining net and local service center can access to this intranet. This intranet response for the issue of selling strategy, production

information, termly market analysis report, the sale information and provided potential customers information to the calling center. It also has other functions such as customer information and market information feedback.

Intranet can gather customer information to support following the whole purchasing process for the selling merchants. It can send information which is format by system to company for sake of gathering and managing the information. If somebody wants to enter into intranet, he must be ascertained by the headquarters. Each employee has different right to the intranet.

Customer web is various, which attracts customers to experience services on line. The intranet must have clear process of web maintenance, information supply and update to insure that intranet can attract customers chronically.

③ Distribution module

This module has five parts, which responses for advancing the automatization of selling and selling effect.

Selling is the base of distribution module. It helps decision-maker to manage distribution, which responses for the production ability management and local management.

Locale selling management is designed for the locale sales. The functions are connection of customers, customer management, opportunity management, schedule arrangement, commission forecasting, price report and analysis.

Selling by phone is a special part for internal sales representatives. It involves making price, establishing orders, the management of linkman and customer.

Selling commission provides encouragement and commission for the selling managers and selling groups. It also helps sales representatives understand the selling achievement of sales visually.

③ Management module

This module helps the sales to plan, carry out, and supervise and analysis the distribution of market directly. It provides automatization for some common assignment and operation flow; and provides analysis market capacity for sales, so distribution department can get affection of operation, carry out and manage various activities timely.

③ Service module

This module has four parts. Its purpose is to improve the customer support, locale service and automatization and optimization of operation flow related to the warehouse maintenance.

Service is the center of service module. It involves distribution of local service, customer management, productions' life-span management, service technician files and local management. It can provide service machine management by integrated with ERP, such as order management, logistics, accessory management, purchasing,

quality management, cost management, invoice, accounting and so on.

Contract management is mainly responsible for the establishment and management of customer service contracts. It insures that the service which customers received correspond to the money which customers spent. This is helpful to the following maintenance files and continuous contract.

Customer care system is another part of this module. This module supports customers to record and solve the problem by them. It involves linkman management, customer dynamic files and assignment management. Customer care information can be edited, deposited and managed to seek for solution easily.

Movable locale service is supported by a wireless accessory. Service technicians and engineers can obtain information about service, production and customer timely by it; meanwhile they can communicate with the office. It is convenience for both technicians and customers.

Calling center and Data inventory and data searching tools are two parts which related to the computer technology. The author will not introduce them in this paper.

2.2 The evaluation of SCM

SCM, Supply Chain Management – is a process-oriented system of purchasing, producing, and delivering product to customers. Its scope includes both internal enterprise processes and external business contributions from suppliers, transporters, channels and end-users. SCM systems are often extensions of existing ERP systems,

interfaced to encompass all areas of the complete supply chain. These areas include demand, supply, manufacturing, transportation and distribution.

Lower cost of goods sold is achieved by making the inventory smaller and therefore turn more often; while making sure that stocks are large enough will result in increased sales because products are available when customers call for it. Inventory management is balancing those two opposing factors for optimum profitability.

Inventory turnover is the measure of how well the business is managing its inventory. It shows how many times a year the inventory is turning (or moving) through the organization. The higher the turnover, the better; However, there is a larger probability that stock may not be available when the customer needs it.

An Internet-enabled supply chain may have just-in-time delivery, precise inventory visibility and to-the-minute distribution-tracking capabilities. With technology advances, supply chains have moved from the paper-heavy adventure noted earlier to a strategic weapon that can help avoid disasters, lower costs and make money. All the businesses establish their supply chains around product lines and people. But today, customer orders touch multiple product lines and multiple channels of distribution. Modern supply chains focus on the customer — and on delivering one order at a time rather than moving one product line at a time.

Most of the today's supply chain optimization stars often come from the retail industry. Since retailers add no value to the product itself (because they are not manufacturers, after all), intelligent and efficient product distribution can be a top competitive differentiator. Wal-Mart famously led the way a decade ago, leveraging

its colossal buying power to make suppliers play a greater role in managing inventory.

2.3 The evaluation of 3PL

More and more organizations worldwide want to develop products for global markets. At the same time, they need to source material globally to be competitive. One of today's trends to solve this problem is outsourcing logistics or using third-party logistics (3PL) to manage complex distribution requirements.

Organizations have developed strategic alliances with 3PL companies all over the world to manage their logistics operations network. These alliances are also known as logistics or supply chain outsourcing and contract logistics.

According to a 2003 Cap Gemini study, North American organizations planned to outsource 56% of their logistics expenditure by 2006 – 2008, with Western Europe planning 81% and Asia-Pacific 60%. The same report revealed that 78% of the respondents are outsourcing logistics activities in North America; 79% in Western Europe and 58% in Asia Pacific.

These organizations are outsourcing logistics activities and upgrading relationships with 3PL companies from transactional to tactical and strategic relations. According to a 2005 survey, CEOs of 3PL companies operating in Asia-Pacific expected 17% average business growth over the upcoming three years.

Unfortunately, only a few 3PL companies achieve strategic status with their customers. They do it by constantly innovating and maintaining operational integrity. Some use an open-book costing method to demonstrate their system's transparency.

3 Company's situation analysis

3.1 Current situation of car industry

When the car industry was over capacity in May, 2004, depreciation was apparently the Christ of the car market. However, manufacturer waked up to the fact that new production and depreciation can not stimulate the weak car market. Manufacturers were puzzled when facing to the large inventory and downturn sales.

Manufacturers have met a big problem in sale. "In 2004, the manager of Huatai auto company said, the market was in its booming time, but the competitors were like the electrical appliance market several years ago, which are full of price wars. Price war can not solve the problem. Haier should be an example to all of us. It didn't take part in the price war, but finding another good solution---service. Haier won the war by service, and it became the well-known brand." Obviously, the development of electrical appliance market shows us that production is the flat, only service can be the commodity. Who provides the better service will wins the sale war in car industry. The manufacturer should pay more attention to the service, it is mans that customers will be the core element in car market.

Many companies are turning to customer-relationship management systems and strategies to gain a better understanding of their customer's wants and needs. Used in association with data warehousing, data mining, call centers and other

intelligence-based applications, CRM "allows companies to gather and access information about customers' buying histories, preferences, complaints, and other data so they can better anticipate what customers will want. The goal is to instill greater customer loyalty."

Using CRM can improve the loyalty of customer, search for the VIP customers and gain the maximum value of customer, provide individual production and service, advance the efficiency. CRM has many advantages in almost all realms. In car industry, CRM is a good helper, too. Then, the author shows the implementation of CRM in car industry.

3.2 The application of CRM in the car industry---some cases

This year the auto industry will see over 250 new models introduced globally, and 50 will be global brand leaders in 2006. Likewise, any given segment of the enterprise software market, like catalog and content management, For example, has at least over 250 vendors, with multiples more products. Like the car industry, only 20 percent of these companies will ever become widely known, even to those prospects searching for them. Why? It's because the top performing marketing departments are not just relying on themselves, but get the entire company behind their efforts and they are passionate about changing how prospects learn, consider, evaluate, purchase and use their software. The same dynamic is happening in the auto industry. The clear winners are those that turn passion into a competitive weapon and get out of the blame game when a company doesn't get to its goals. There is a no-excuses mentality in these companies that have a passion for marketing, and it's not coercive, it's driven by vision. Let us see some cases using the CRM system.

The CRM in Lexus Company got achievement. The repetitive rate of customers reached 68% in USA. At the same time, the repetitive rate of Benz was 42% and that of BMW was 43%.

All the selling merchant of Lexus has a system, which involves compute, satellite antenna and soft ware. These parts are all used in transferring selling and service information from service nets to the headquarters. This system recorded the sale, service incoming, cost and maintenance of selling merchants, and it was connected to a accessory distribution system. Lexus Company ranked all the achievement of the selling service system by this system. Selling nets can get ranks from system. And they can also know how much profit they lost due to the low down of the customer loyalty. They will improve a lot from this system.

Lexus Company attained customer loyalty from the record of maintenance. In the auto industry, customers purchased cars very five years. However, before they bought a new car, customers often had five to twelve times connection with selling merchants for maintenance. It is easy to see that service is much more important than purchasing for the sake of customer loyalty.

Lexus Company had many measurements in order to have long-term relationship with customers. They made detailed management of the 1000 miles and 7500 miles free maintenance after cars being sold. The computer of headquarters reminds managers of sending reminding postcards to customers on time. These postcards remind customers to have free maintenance of their cars. In order to avoid wasting time in waiting in the maintenance nets, the computer of headquarters arranged schedule before head. So every customer can enter into the garage without delay.

Lexus Company established a good relationship with customers and obtained maintenance after quality assurance data through persuading customers to experience knight service. About 84% customers went to Lexus Company's maintain nets very six months. This rate is very high in the auto industry.

Lexus Company had comprehensive training, detailed maintain flow design, advanced exception handles and accessory management system. These provided powerful support for customer value-added service.

Lexus Company was always the NO.1 in the comparison of customer satisfactory. The profit of selling merchants was also very good. These must be thanks to CRM system. It is analysis by expert that although the sales of Lexus Company was only 3% of the sales of TOYOTA, the profit of Lexus Company was about 30% of the sales of TOYOTA.

However, the CRM in FORD was not successful. The selling merchants didn't provide detailed information of customers to FORD. They just provided basic information of customers. Selling merchants afraid that if they provide detailed information to FORD, FORD would connect with customers directly, and the selling merchants themselves would be omitted. At the same time, the potential customers which FORD provided didn't helpful to the selling merchants. The customers were not interested in the direct connections with manufacturers because they thought that they can not get value form it.

3.3 The competitive environment of V-auto

Presently, car consumption is moving upward and the China auto industry is becoming more open to the world and linked to international practices. It is exciting that, to a great extent, car consumption pulls the development of the auto industry. Experts predict that over the next five years China's car sale are expected to experience an annual increase of 10%-15%. And starting from 2010, the annual demand for family cars will dramatically grow to over six million. Obviously, V-auto Company is facing a great opportunity for the booming of the auto industry, particularly to the domestic car manufacturers and accessory suppliers, who could seize the opportunity to enhance their resources and development capability and core competences so as to catch up and even reach the high level of their international counterparts in a relatively short time.

Considering in long views, China's car market has a huge potential on account of three basic conditions-----huge population, large country and high increasing potential of our economy. The average standard of living will be increased in the large potential space because of the slightly low standard of living comparing the others' in the world. It is exist in a long-term that the demand of car market will increase continuously.

However, the car market is changeable these years. A new concern is rising over the overheated automotive investment with billion of RMB put into the China auto industry in resent years. Auto companies with annual sales less than one million units can hardly survive; those with annual sales over two million are at the risk of becoming a merger target. China's auto industry will face real challenges when the restrains on import license and quota are lifted in 2005 and the import car taxes will

be reduced to 25% starting July 1st, 2006. The increase of imported cars will put great pressure and risk on China auto makers whose overlapping construction and capacity expansion are at the low level.

With China’s entry into the WTO and sweeping global mergers and acquisitions, V-auto Company entered China 25 years ago and occupied 50% of the market share at its peak, it was then followed by General Motors, Honda and Mazda, filling into the Chinese market and creating a second climax of car production n China with when Toyota, Ford, Nissan, Citroen, Peugeot and BMW were given “permits for car production” in China. More recently, Daimler-Chrysler’s most famous brand Benz has also set its foot on China for local production in Beijing.

We can see the production and net profit of V-auto Company from the figure as follows:



Figure 2- V-auto company’s Group Sales and Pre-Tax Profit and Net Earnings

Source: www.autointell.com

From the figure, we can see that the sales of V-auto Company increased dramatically

from 1997 to 2001 and reached sale peak in 2001 and then have a tendency to decrease in 2002.

V-auto Company meets the tremendous problem of sale in the first season of 2005. It was calculated that V-auto Company sale 11343 cars, which was the lowest in the history. In February, sale was 13189 which 31% lower than that of before. The low sale was caused by the depreciation in the ending of 2004.

Although the car market is expanding dramatically, production capacity is far more than the market requirement. It means that supply is far more than demand. In this time, if a car company wants to survive, it must low down the cost and attract more customers to improve the sales. Nowadays, with the development of producing technology and information exchange technology, the production cost of every manufacture is similar. So, many companies pay much attention on the services. Most of them try the customer relationship management to manage the relationship between them and customers.

3.4 Description of problems in V-auto Company

Some of the problems can be solved by the improvement of the CRM system, such as the free maintenance service management, the management of potential customers, the direct communication with customers and the information analysis tools.

Company must pay attention to the free maintenance service management: remind customers to maintain on time so that customers can establish relationship with selling merchants. Only when customers have relationship with selling merchants

and maintenance nets, can the customers be loyal through development of knight service and advancing relationship. If customers did not experience free maintenance service, they can not understand service quality. It is hard for selling merchants and maintenance nets to build long term relationship with customers.

Company should advance the management of potential customers. The company should often connect with customers and provide information which customers wanted to customers according to the different level of potential customers. And record the information of potential customers until the customer purchasing the production of our company or they turn to other companies.

Company should have direct communication with customers. There are so many selling merchants and maintain nets, so it is hard for very selling merchants and maintain nets to provide knight service. The service will probably have some problems. When customer did not satisfy with the service which selling merchants and maintain nets provided, they can connected with company to make feedbacks. This guarantee the communication between customers and company and it also is the supervision of selling merchants and maintenance nets.

Because most of the information is gathered by selling merchants and maintenance nets; if selling merchants and maintenance nets can obtain profits, company can transfer this information for its own use. When applying CRM system, company must have information analysis tools to have efficient information. Then company provides this information to selling merchants and maintenance nets. Selling merchants and maintenance nets can gain many profits from efficient information.

However, there are also some problems which can not be solved, such as the long

waiting time and high cost of the maintenance, fewer distribution centers, inefficiency of logistics. These will be helped by other method except for CRM. The author gives us two feasible solutions in next two chapters.

Customers must spend a lot of time and money in the maintenance shop. Because of the inefficiency accessory transportation, customers may be spending one day or even one week to waiting for the new accessory in order to instead the old one in their cars. The rough-and-tumble logistics service caused the high cost of maintenance. These problems will loss customers especially loyally customers of V-auto Company.

V-auto Company has many maintenance shops to complete the after service. However, these shops are in every parts of China. Although through CRM system and information system these shops are connected like a net, there is fewer distribution centers. It means that the maintenance net is incompact and has no core. This is the death-wound of V-auto Company, which will baffle the improvement of V-auto Company.

The inefficiency logistics will waste a lot of money and time of V-auto Company. Inefficiency inbound logistics⁴ will increase the production cost and maybe delay the manufactory which will effect the cargo delivery. Inefficiency outbound logistics⁵ will affect the whole delivery of the cars and the customer satisfactory. This problem will affect the sales directly.

⁴ Inbound logistics are activities associated with receiving, storing, and disseminating inputs necessary to build the production or provide the service.

⁵ Outbound logistics is the part of the supply chain process, such as custom assembly or private labeling, that moves, stores, and adds value to goods on the way to their final destination, it sits between supply-side processes such as purchasing and material management and demand considerations such as sales, marketing, order-taking and customer service.

Through the research of cases and theories, the author advises two solutions for the V-auto company. One is to make a combination between Customer Relationship Management System and Supply Chain Management System to solve the problems. The other is to use the third party logistics to solve the problems.

However, before the solutions, let us see the SWOT analysis of V-auto Company to have a holistic and further view of V-auto Company. The causes of the problems can be found in the SWOT analysis, too.

3.5 Possible ways for solution---SWOT analysis of V-auto

SWOT analysis is a tool for auditing an organization and its environment. It is the first stage of planning and helps marketers to focus on key issues. SWOT stands for strengths, weaknesses, opportunities, and threats. Strengths and weaknesses are internal factors. Opportunities and threats are external factors. In SWOT, strengths and weaknesses are internal factors.

Advantages of SWOT analysis

- ③ To identify and carve out a niche for the company
- ③ Find your place in the industry structure
- ③ Devise and employ tailor made marketing and advertising tactics to develop and maintain the company's brand share in the market
- ③ To be aware of potential threats and to be prepared with appropriate responses.

A successful business should communicate to the customer why they should pick you among the myriad of options in your industry today. For that A SWOT analysis should be done from a realistic point of view and keeping in mind a very discerning customer. The analysis should also consider the standards of the industry and your major competitors.

Because of the objective and systematic of the SWOT analysis, I will use it to analysis the V-auto Company as follows:

Table 1- SWOT analysis of V-auto Company

<p>Strengths: Santana Net of service shop Satisfaction of customers Full services</p>	<p>Weakness: Supervising and support Supply centers Maintain inefficiency Low service level Little communication Service characteristics</p>
<p>Opportunities: Demand increase Population Taxi</p>	<p>Threats: Homogeneity of the after service Foreign car companies High service</p>

Strengths:

The number of Santana was the most in China, and most of Santana rely on the service of V-auto Company. V-auto Company has a net of service shop all around the country. The employees of service shop are confidence of V-auto Company. The customers are satisfied with the service of V-auto Company. The environment of

service shop, service processes, roles of operation and the maintaining technology are outstanding. V-auto Company provides the full services for the customers

Weaknesses:

The supervising and support have some problems, especially in the rewards and punishment, fittings supplements and training. Fewer fittings supply centers due to the inefficient logistic system and high cost of logistics. It will cost a lot of time and money for customers to maintain their cars. Employees pay more attention on the technology and think little of service. Little communication between the service shops. Lack of service characteristics.

Opportunities:

With the development of our standard of living, the demand of cars is increasing. The population and up-dated of taxi will bring a big market for the cars

Threats:

The competitive of auto companies caused the homogeneity of the after service. After entering into the WTO, competitive environment became complex on account of so many different auto companies entering into China. Customer structure changed a lot. Personal customers increased dramatically. These customers need high qualified services.

Then let us see the SWOT matrix:

Table 2- SWOT Matrix

	Strengths	Weaknesses
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Opportunities	S-O strategies	W-O strategies
Threats	S-T strategies	W-T strategies

In the SWOT matrix, there are four kinds of strategies: S-O strategies, S-T strategies, W-O strategies and W-T strategies. S-O strategies pay much attention on the strengths and opportunities in order to maximize two elements and are the ideal situation. S-T strategies emphasis on the strengths and threads in order to maximize the strengths and minimize the threads and are the general situation. W-O strategies focus on the weaknesses and opportunities so as to maximize the opportunities and minimize the weaknesses and are the general situation, too. W-T strategies consider on the weaknesses and threads so as to minimize two elements and are the worst situation.

In V-auto Company, the strengths are very steady and obvious. The weaknesses are the hidden troubles. Company must pay much attention on these weaknesses. So W-O strategies are the best for the V-auto company. CRM also has weaknesses. These weaknesses will affect the survival and development of V-auto Company. These weaknesses caused the problems above. Regarding these weaknesses the possible solution can be used to improve the efficiency of V-auto company. According to the evaluation of the conceptions above and the SWOT analysis, the possible solutions are the combination of CRM and SCM and the application of 3PL into the V-auto company. And then let us see the solutions given by the author.

4 The combination of CRM and SCM

In order to balance the two solutions, the author divides the solution chapter into two parts---chapter four and chapter five.

In this chapter, the author gives us the idea of the implementation. It is just a conception of the combination of CRM and SCM. In order to apply the idea of the author, we also need an expert in IT so as to establish software and flow of the CRM and CSM for operation therefore the solution parts can be complementary.

There are two steps in solution. First, the author introduces CRM, SCM and applies them into V-auto Company. Then, the author uses 3PL to outsource the logistics. This is the first step to operate.

4.1 Customer Satisfactory in the V-auto Company

Customer satisfactory (CS) is the purpose of customer relationship management. CRM establishes good relationship between company and customers in order to satisfy the customers. So every process of the CRM system can affects the satisfactory of customers. In other way, CS is an important element of SCM. It will affect the final successful of the SCM. CS is the ligament between CRM and SCM. If we can combine the CRM and SCM, CRM will be improved and the SCM will be completed. It will be a good solution to the problems of V-auto Company.

First, the author analyses the important ligament---CS in the V-auto Company, and then analyses the practice in V-auto Company.

4.1.1 The final CS in the SCM of V-auto Company

General speaking, the SCM is composed with supplier, manufacturer, wholesaler,

retailer and customers. Here, V-auto Company responsible for the manufactory and the wholesaler. Besides the final customers, other parts can be supposed to be a company (a whole). Every participant in this suppositional company likes the apartments in a big company. They do their own job to manufacture final productions and provide services to the markets. The V-auto company is facing to the choice of customers. So, it is valuable to focus on the CS in the SCM. It is different from the general CS. Now, we pay more attention to the final CS in the SCM. It is much wider than before. The final customer satisfactory can be illustrated as follows:

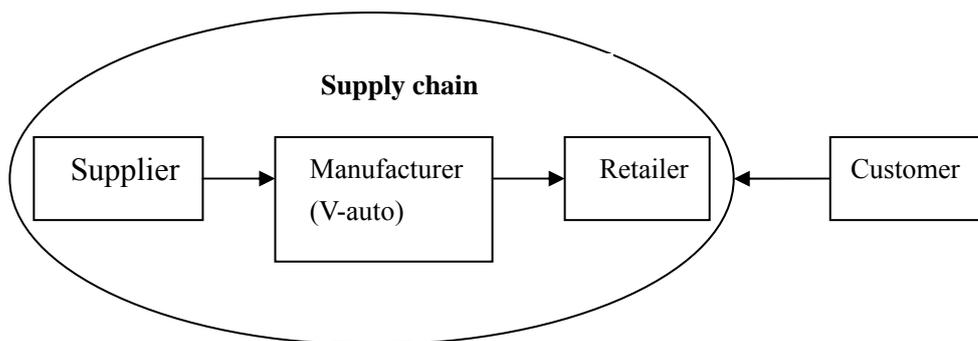


Figure 3- The final CS of Supply Chain

CS can provide an important measurement for the effect of SCM operation and accounting situation. CS can measure the basic incoming fountain---customers. High customer satisfactory can advance customer loyalty, decrease the price elasticity, keep market share, low down operation cost and failing cost, helpful to establish the model of core company in the market. Otherwise, CS can be the important sign of SCM future accounting situation. Through establish long-term relationships with customers, CS can help V-auto company forecasting, improve the production or

service pertinently; in order to meet the customers need and improve CS.

The V-auto company has many purposes. The final purpose is to maximum the profit of the shareholders. The purposes involve decreasing operation cost, advancing CS, advancing market reactive time, increasing profits. For the CS in the SCM, the maximum must have some restrictions. CS maximum without restriction is impossible. If V-auto Company searched for the CS maximum blindly, perhaps, company would have good reputation and high market share in a short-term, but the profit will decrease finally.

It is impossible to provide same service for the customers due to the restriction of CRM itself. Nowadays, we first do some segmentation to the market, then separating the important customers and general customers, finally, on the condition of keeping the general customer services, try the best to take care the important customers to increase the CS of important customers to optimum the resources.

4.1.2 The internal parts CS in the SCM of V-auto Company

Then, we also suppose SCM to be a company which includes the V-auto company. However, we change the focusing from the CS between SCM and final customers to CS between SCM internal parts and SCM managements.

The suppositional company has a core part---V-auto Company. For the whole SCM, V-auto Company has important roles. The ability, reputation and image of V-auto Company affect the whole ability, reputation and image of the SCM. The core part is the data exchange center of SCM and the logistic distribution center of SCM. The

V-auto company is also the sponsor, organizer and manager of the whole suppositional company. When the SCM are not organized, the core part is the sponsor and organizer of the SCM, which is responsible for the choice of participants, establishing the relationship of the participants and doing the preparation for the SCM. When the core part have choose participants (SCM is under control), core part is responsible for market research, production design, selling and service, production management, the management of whole SCM such as deciding the future of SCM, harmonizing the relationships of participants, supervising every parts of the SCM, distributing profits and risks between participants reasonably, dismiss disqualified partners and absorb new partners. The following figure will shows the internal parts CS in SCM:

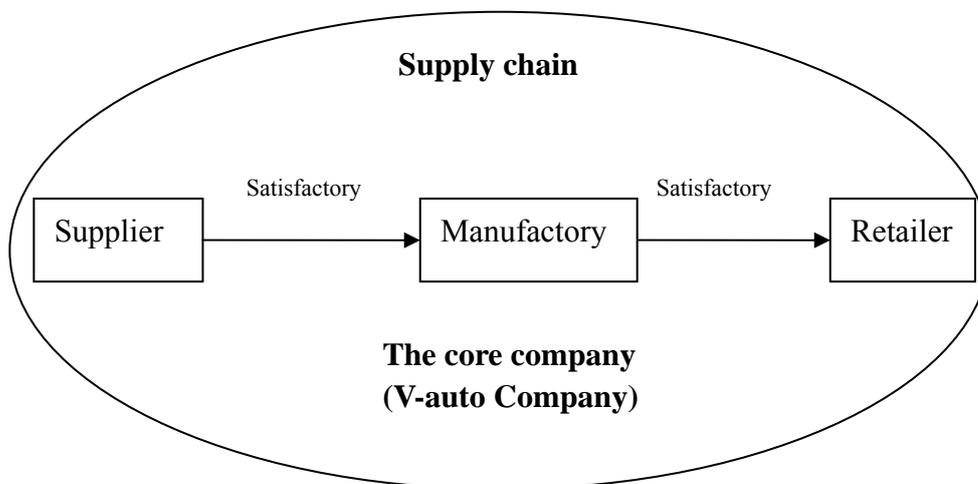


Figure 4- The internal CS of Supply Chain

The degree of the SCM internal parts satisfactory affects the operation of the participants directly. This will affect the CS of the SCM. It is hard to image that a SCM with low internal parts satisfactory can satisfied the customers for a long time. The internal parts dissatisfactory can cause the instability of the whole SCM

operation: in the contract, the dissatisfaction of internal parts can break out the internal cooperation relationship, the cooperation will disappear and the quality of whole SCM will low down; after the contract, some participants will leave the SCM. At this time, SCM must restructure. But the restructure organization should have a long time to work well. This will cause the increasing of operation cost, decreasing of service quality and long distribution time so that the CS of final customer will decrease.

The satisfactory of internal parts is helpful to advance cooperation of suppositional company and increasing the share of information in the SCM. This will increase the satisfactory of final customer, and then the benefit will respond to all the participants in the SCM. Benign cycle will improve the cooperation. Increasing the satisfactory of the final customers includes four parts: identifying internal participants of SCM, understanding the different demand of participants, improving the daily management pertinently and Advancing the management to meet the need of participants.

③ Identifying internal participants of SCM

First of all, we must define who the internal participants are. In the SCM, there are three internal participants:

The parts which V-auto Company can completely control. These mainly are apartments and subsidiaries in the core company. They are the composing parts of the V-auto company. They are not absolute corporate bodies. They belong to the core company meanwhile they have their own profit. V-auto Company must pay attention to their needs.

The parts which V-auto Company can not control completely but can have direct or indirect effect on it. They are the parts which have direct contact with the V-auto Company such as retailer and wholesaler. They are the corporate bodies. They have many contracts with the V-auto Company instead of being belonged to it. These internal participants are very important.

The generalized parts in the SCM which V-auto Company can not control or has little effect on. They are maybe the suppliers of supplier, raw material supplier and sub-retailers. V-auto Company can not control them. However, suppliers and wholesalers can connect with them directly. So V-auto Company dose not put these parts into consideration.

③ Understanding the different demand of participants

In this part, we must definitude the need of the internal participants. The needs of them are as follows:

Profit

The profit of entering into a SCM should more than the average market profit. It means that participating in the SCM is better than nonparticipation. V-auto Company hopes that the endeavors and risks of them and profit should be balanced.

Opportunity of V-auto Company development

The participants hope that the SCM which they joined in can bring good opportunity to them. The participants hope that the V-auto Company in the SCM has much space for development and market affections, and establish a long-term relationship with the V-auto Company to gain the technology and financial support from the core company.

Satisfactory of cooperation

Every company wants to be in a harmonious cooperation situation which includes the trust, support, and help of V-auto Company and the cooperation of partners. They want to pay attention on the development not the conflict. Otherwise, partners also hope to advance the spreading of the information and share of the data.

Achievement of social value

Many companies want to achieve the social value expect for the profit. Partners hope that V-auto Company has good reputation so that they can improve their images through entering into the SCM.

Satisfactory to core company

Partners want to participate in the SCM. It means that V-auto Company should emphasis the suggestion and advice which partners provide. They want to be concerned with the big decision of the SCM.

③ Improving the daily management pertinently

Share production contract

The SCM provide production and service for the market as a whole. The profit is belonged to all the participants in the SCM. However, every partner in the SCM has different distribution and risk, so the share of the profit is different. It is according to the distribution of each part. The share production contract will decide the creditor, right and profit of each partner. The V-auto Company in SCM should analysis the flow of operations and advances the supervision of every participant to make a fair share production contract.

Company culture

The company culture of the V-auto Company is very important to the cooperation. Generally speaking, the company culture of contain, optimism, opening, enterprising, positivism will attract participants.

Share information

The share information is very important to the whole SCM. In a company, it is easy to share the information. However, it is hard to share the information in the supply chain. Every participant was a corporate body, and was not belonged to the V-auto Company. They can participate in the SCM or depart from the SCM freely. The high share of information is a big problem of the V-auto Company.

Cooperation situation

Supply chain is emphasis the establishing of the relationship between the participants. The supply chain should be a strong whole to join into the market competition. The cooperation is the internal agglomeration. Good cooperation situation is one of the key points to measure whether the SCM is successful or not.

Common purpose

The V-auto Company in the supply chain wants to gather all the participants. A very important mean is to advance the drumbeating and education of the common purpose. When all the participants combine their own purpose with the common purpose, they will pay more attention to the long-term profits and cooperation.

Partners' participation

The V-auto Company in the supply chain should emphasis the participating of the

partners when managing the whole supply chain. In an ideal supply chain, every partners in the supply chain is the expert in a field, has the core competitive advantages in this field. The production and service need this advantage. The participants will play an important role in the supply chain.

Trust

We can not separate the cooperation from trust. Trust is the precondition of the cooperation, and cooperation can advance the trust of each other. The V-auto Company must choose the partners carefully, but if the partners are chosen and the steady supply chain is composed, V-auto Company must advance the support on precondition of the common purpose. It means that if partners were chosen, the whole supply chain must trust them.

The points above are the basic management measures and principles.

③ Advancing the management to meet the need of participants

After defining the key management measures, the V-auto Company must have efforts to improve the key operation and satisfy the internal participants. In this process, we must know whether the improvement of the management measurement has efforts or not, whether it can meet the need of the internal partners or not and how to improve the key management measurement.

Compare to the three processes before, this point is more important. V-auto Company should pay attention to these points. The daily improvement should be little by little. Then the communication will make efforts.

4.1.3 The mutual CS in the SCM of V-auto Company

Finally, we consider supply chain to be a process chain. The V-auto Company and the internal partners are the processes.

For the process chain, each process is not only the customer of the process before but also the supplier of the process after. So there are many customers satisfactory in the process chain. There are two different customers: general customer and narrow sense customer. Narrow customer is the user or receiver of the final production and service. The general customer is the conception that the input of the process is the supplier and the output of the process if the customer. This point uses the general customer.

The successful supply chain is emphasis the internal cooperation. The relationship between the processes should be cooperation. It means the win-win relationship. Cooperation means that the partners should share the cost and risk and the profit. So the process not only satisfies the process after but also satisfies the process before. It means that the whole process will satisfy each other. The figure shows this satisfactory:

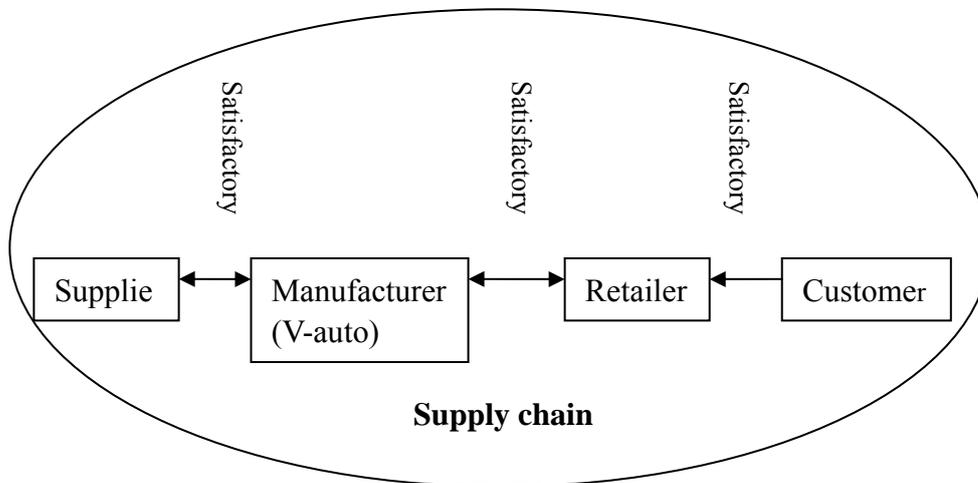


Figure 5- The mutual CS in the Supply Chain

The last two processes in the supply chain, the satisfactory between customer and retailer, is the unilateral arrow. This was caused by the special status of the customer. When the customers are choosing production and service, they will face many choices, but V-auto Company will try their best to meet the need of customers to survive in the market. The other processes in the supply chain are bidirectional arrows; it means that they satisfy others with each other.

The successful supply chain must try the best to make final customers and internal partners satisfactory synchronously. So how to make the whole supply chain which drove by the final customers mutually satisfactory is a big problem.

4.1.4 The relationship of three CS of V-auto Company

We discuss the three satisfactory above. The satisfaction of the final customer is the purpose. The satisfaction of the partners in the supply chain and the mutual

satisfaction of the supply chain are the base and guarantee of the satisfactory of the final customer.

The satisfactory of internal partners in the supply chain is emphasis on the management of the V-auto Company, which researches the relationship between leaders and juniors. On the other hand, the mutual satisfaction of the supply chain is emphasis on the cooperation of every process in the supply chain, which is not only the relationship between V-auto Company and other parts but also the relationships between all the processes.

For the satisfaction of the internal partners and the important efforts to the supply chain and the relationship between these two points, we combine the satisfaction of the internal partners and the customer satisfaction of the supply chain to compose a SC internal satisfaction/CS matrix. Satisfaction is divided into satisfaction and dissatisfaction, and then supply chain can be divided into four models as follows:

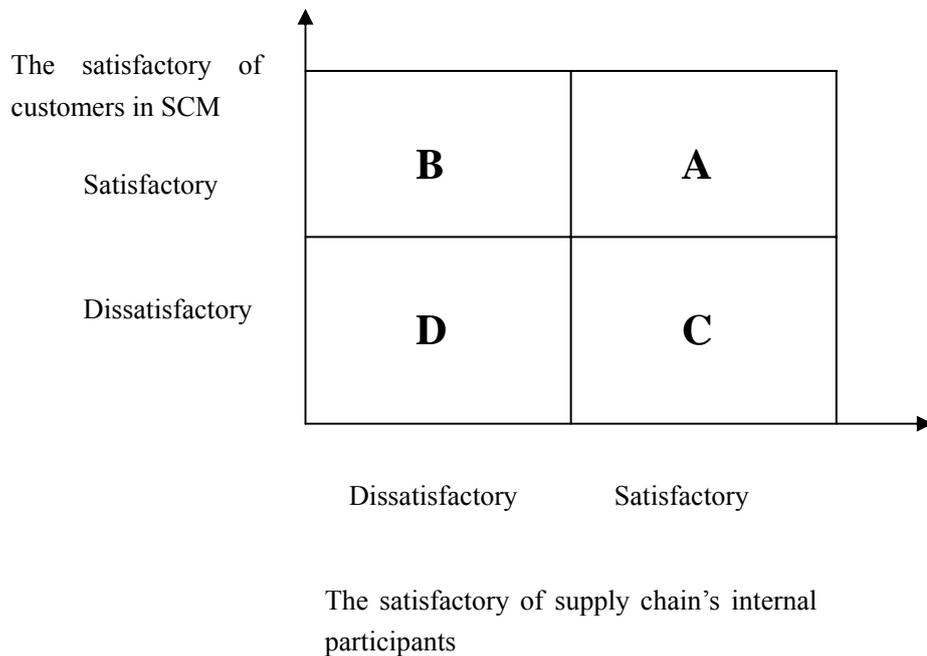


Figure 6- The internal CS/ final CS Matrix of Supply Chain

③ The characteristics of A area

The internal partners are satisfied. At the same time, customers are satisfied, too. The base and purpose of the development in supply chain are come to the truth perfectly. It means that the internal management and the care of customers are perfect in this supply chain. It is an ideal supply chain which should be continuous.

③ The characteristics of B area

The final customer satisfaction is high, but the internal partner satisfaction is low. It means that the care of customers is perfect, but the internal management is not good. The cause is that the V-auto Company pays too much attention on the customers and exploits the internal partners. In long views, if V-auto Company can not solve the

problem, the supply chain will break down by the long-term dissatisfaction of the internal partners. The internal conflict will effect the whole operation of the supply chain, which will result in the decreasing of the customer satisfaction until the customers are dissatisfaction. When the customer dissatisfaction affects the profit of the supply chain, the whole supply chain will be in danger. We can conclude that for the B model, supply chain should advance the management level, harmonize the relationships between partners, and solve all the conflicts to increase the satisfaction of internal partners on based of keeping the satisfaction of the customers. B model should transfer into A model, and avoid transferring into D model.

③ The characteristics of C area

The internal partners are satisfied, but the final customers are dissatisfied. The supply chain is possibly in a monopoly market. There are several causes:

The management of the supply chain is not good so that it can not provide high compromise value for the final customers.

The V-auto Company in the supply chain provides more profit to the internal partners.

The cost is high and the encouragement for the internal partners is too much, and the supervision is not good.

In long views, the customer dissatisfaction will affects the profit of supply chain. When the monopoly disappears, the internal partners will be dissatisfied, and then the supply chain will transfer into D model. It can conclude that if supply chain is C

model, it must to balance the internal partner satisfaction and the customer satisfaction to transfer the supply chain into A model.

③ The characteristics of D area

It is the worst supply chain. The internal partners and the customers are not satisfied. The supply chain should analysis the competitive environment, and restructures the supply chain based on the analysis to transfer the supply chain from D model to A model.

The satisfaction of the internal partners should in a certain degree. If not reaching the degree, the internal partners can not make efforts. However, if over that degree, the internal partners will hubris. When some internal partners think a lot of themselves so that they try to make more profit in the supply chain, they will affect the operation of the whole supply chain. The core company in the supply chain should avoid these problems.

4.2 The combination of the CRM into SCM

To exceed the old relationship between the manufacturer and manufacturer, wholesaler and wholesaler, retailer and retailer thoroughly, a new amphitheater is coming. Agility, speed and production efficiency dominate today's competition. These three elements are affected by the customer demand. The new competitive environment let the supplier, manufacturer, wholesaler, retailer and their partners make new strategic measurement.

With the development of information technology and data exchange technology, the final customers can gain more information. This is a big pressure for the supply chain partners all over the world and has new requirements for the efficiency and speed of new supply chain partners entering into the market.

In the past, the supply chain partners, especially the partners far away the final customers, only care the issues which affect their company directly. However, in order to survive in the competitive market, the leaders of company must know how these pressures affect the final customers. It means that company must transfer the attention from supply to the customer demand. The conception of the customer satisfaction makes a big problem for all the partners in the supply chain: provide more value for the customers than before. The change of market will not only change the operation and organization of the company but also change the whole supply chain. Customer will be the commander of supply chain. Because final customers can make choice from many productions and many distributions, they will make the future of the supply chain.

Traditional supply chain was beginning from the manufactory; retailers selling the production, wholesalers supplying the production, supply chain were ending at final customers. The partners in the supply chain emphasis on the flow of the production. They pay attention to the technology, data exchange, and inventory cycle, the speed of reaching market, cost efficiency, transportation, and distribution.

In a traditional supply chain, the manufacturers who are far from the customers dominate the flow of production in the supply chain. Generally speaking, the manufactory of the production is not based on the demand of the market or the taste of the customers, but based on the background, resource and selling capacity of the

manufacturers. Sometimes, the flow makes the cooperation relationship between retailers and the manufacturers. It causes the improvement based on the retails and cooperation forecasting. Although there's more cooperation between the partners in the supply chain, the traditional supply chain is linearity; the final customers are the ending point (the receivers).

When transferring the new production to the final customers, the traditional supply chain has profit and efficiency. Manufacturers develop, design and produce many new productions, then put them into the market to the customers. The most of the productions are successful in the supply chain through the reasonable distribution, suitable logistic strategy and advanced information technology. However, the main fail of the traditional supply chain is that it can not transfer the productions which customers need and will buy to the market. The researchers are trying their best to transfer the traditional supply chain (linear, from left to right) into the conception and cooperation relationship (nonlinear, over the limitation). Concretely speaking, we combine the customer demand with every partner in the supply chain compactly. The affection of the final customers will be increase little by little, and then the affection will be transferred into a right. The final customers will be the right centre of the whole supply chain.

The V-auto company brings forward the conception: meet the need of customers, improve the innovation ability, and gather the resources all over the world, advocate management individually. The customer satisfactory project is the most important project in the company. The V-auto company is convinced of that advancing the customer satisfactory project conforms to the market environment in the competitive market. It is necessary to build a quick respond department to improve the core competition of the company.

The leaders of V-auto Company consider that carrying out customer satisfactory project is to create satisfactory, market, top-ranking and efficiency in the new competitive market. This creation must rely on the whole advantages: the company cadre and every company, company and company, department and department must establish the cooperation relationship. All the employees know that customer satisfactory project is a customer service project, which include all the producer, seller and maintenance man in the supply chain. The company must press close to the market, be good at communicate with customers, be willing to accept the complain of customers, be brave in self-criticism, improve the operation forwardly and actively, advance the service quality and customer satisfactory.

It is the key point of the development of the auto market in China. With the update of the consumption conception and the increasing of incoming, purchasing cars is one of the consumption hotspot in the domestic market. It becomes the power fountain of the car industry development in the domestic market. Nowadays, domestic car industry advances rapidly, market capacity increases continuously, the proportion of private consumption increasing rapidly, new production which is to meet the need of different levels emerge in endlessly, competition is more and more furious. The v-auto company is facing the pressure and challenge from new economy. Only meet the need of customers in the respects of production and service----customer is the God can improve the customer loyalty of the V-auto company, hold the new opportunity and market, and survive in the fluctuant domestic market.

Whether the customer is satisfied or not will affect the vital of the V-auto company. So the customer satisfactory project is not only the requirement of V-auto company's self-value, but also the demand of customer and the new requirement for the

company from the development and change of the market. It is signality.

The customer satisfactory project is called the life project. V-auto Company put the customer satisfactory project into the each training project, leaders first, carrying out the training of all the employees, study the new conception, new standard and new knowledge, which improve the understanding the customer satisfactory project and participation of all the employees. Advancing the company culture construction is one of the important work of V-auto company. Improvement and press of the customer satisfactory project provide a good work carrier for improve the company spirit and value, the establishment of service conception and reputation of production, nurturance of behavior principle, improvement of the occupational morality, advancement of the employees' diathesis, establishment of the supervision system. V-auto company hold the opportunity of pressing the customer satisfactory project, improving the company culture building based on the customer satisfactory project and try best to establish a service company whose tenet is satisfactory culture.

5 The application of 3PL in the V-auto Company

Because the third party logistics is just coming into China, most suppliers of 3PL is not qualified. It is not good to cooperate with a bad participant. The choice of the 3PL supplier is a very important process. According to the foreign successful experience of 3PL strategic, the choosing of third party logistics are including:

③ Buildup an outsourcing logistics strategic group. Partners include the managers of manufactory, logistics, selling, accounting, human resource, information system.

③ Define the purpose of the outsourcing logistics, such as to expand the market, purchase the accessory, distribute the production, or to meet the need of customers for the increasing expectation of the service level, to decrease the cost or change the management strategic.

③ Define the function of outsourcing logistics such as warehousing, transportation, added service. Company chose the outsourcing logistics item according to the demand of itself.

③ Choose the outsourcing logistics supplier through reasonable filtrate process: research and judge.

The company using the 3PL to operate the logistics is an outsourcing process little by little. The outsourcing logistics is not the purpose of the company but the measurement of company to achieve the strategic purposes when the outsourcing is suitable for the company according to the analysis. In the practice, the company must outsource logistics little by little according to the demand and the cooperation situation of the 3PL.

As a measurement of achieving the strategic purpose, outsourcing logistics is not suitable for all the companies. Nowadays, there is a logistics heat in China; many companies are considering using third party logistics. However, in the practice, the company chooses the 3PL not because of the fashion or other companies are using 3PL in the field, but because of the demand of company. Especially the domestic

logistics which is not developed, many 3PL is the warehousing and transportation company before. In the condition of lacking of integrated logistics experience, the company will not only analysis the status of the company but also chooses the 3PL cooperater carefully, when the company decides to outsource the logistics.

There are many fail cases which did not make sufficient preparation in other countries. The main causes are from the internal company such as make little of the demand of the outsourcing, bad cooperation of every department, deficient and half-baked description of company's demand to the suppliers. These will cause the problems for the cooperation and passive when the company carries out outsourcing. Some failure is caused by the choice of supplier. Outsourcing maybe brings much more troubles than using the 3PL before because the unsuitable suppliers. So after deciding to outsource logistics, first, the company must analysis the management of internal department and concrete demand, and then reviews all the outside logistics suppliers.

5.1 The operation status

The V-auto company is a joint-venture company. Company has 25 selling service centers, three accessory warehouses, hundreds of participants which include more than one hundred retailers and more than four hundreds maintenance shops all over the country. Selling service center has eight functions:

- ③ Selling management
- ③ After service support
- ③ Market selling

- ③ Logistics programming
- ③ Capital balance
- ③ Manager training
- ③ Retailer training
- ③ Retailer evaluation
- ③ Information system

The large production and selling of the cars need efficiency and fast logistics. CRM system can establish a good relationship between company and customers, and know the demand of market quickly. However, if there is not an efficient logistics, the time using in the delivery is too long, CRM can not work in order.

Outsourcing logistics is not a simple process, which includes many steps. No matter which step of this process is omitted, the 3PL will have problems in the practice. So it is necessary to pay attention on these steps and introduce them to the readers first.

5.2 The process of outsourcing

The processes of outsourcing logistics include three steps. They are review of internal elements, the analysis of outsourcing and the forecast of expenses and choose supplier.

5.2.1 Review of internal elements of V-auto Company

- ③ The preparation of the internal company

When part or all of the logistics are outsourced, not only the way of logistics operation will change, but also it will affect other internal departments of the company. So, the V-auto Company must evaluate the affections of whole company accounting situation and other departments after company outsource the logistics. V-auto Company must buildup a special department for the evaluation to analysis carefully. This department should be guided by leaders directly, and employees who are in the related departments should take part in the group. The main task of the group is to evaluate the target of outsourcing and operation of internal.

In order to calculate the cost of all the items, group must have participants as follows:

Accounting participants who are familiar in the ABC method

Participants who are familiar in the logistics flow and can distinguish every part in the logistics.

③ The purpose of evaluating the outsourcing

The first task for the group is to know what V-auto Company can gain from the outsourcing. It means to define the purpose of outsourcing. Although the key point is to evaluate the cost of outsourcing, problems will more than that, it includes:

- ⑤ What problem must the V-auto company solve?
- ⑤ What dose V-auto Company expect?
- ⑤ Is the outsourcing and strategic and purpose of the V-auto Company same?
- ⑤ What are the competitors doing? Is it efficient?
- ⑤ What are the affections of outsourcing for V-auto Company?

- ⑤ What are the customer service requirements of our operation? What are the affections for the customer service requirement after outsourcing?
- ⑤ Have we had sufficient knowledge of third party logistics?
- ⑤ What are the risks of outsourcing? Can we accept them when risks appear?

The V-auto Company can define the purpose of outsourcing through answering these questions. Then define the operation range of the outsourcing logistics and has understanding and evaluation of the logistics operation now.

③ Evaluation of the operation now

For some company, the evaluation of current operation is the most difficult part in the whole process. Because in the self-logistics, the logistics has complex relationship with other departments, it is hard for V-auto Company to apart logistics from other operations. However, for the right decision of choice supplier, cost, profit, this part is necessary. Group should have a clear description for the current logistics operation, logistics capacity, limitation, cost and future demand.

Generally, the best method of description is to draw the operation flow chart of the whole logistics. The V-auto Company must clear describe the detail of every flow, and show the affection of the company. When evaluating the current operation, V-auto Company should pay much attention to the demand of information technology. This is important to the guarantee of logistics operation and the link up of the other operations.

The calculation of the logistics cost should be all-around, which must include all the cost, mixture cost, variable cost, direct cost, indirect cost. Some logistics cost can not

be numberable such as: disposal for orders, management cost. But in order to gain the reasonable comparison results, these items should be put into consideration. If V-auto Company can analysis the cost through the operation, it is easy to compare the cost of current operation and that of outsourcing. The Activity-based Cost⁶ is often used in the logistics cost calculation. ABC method need numerous of data.

5.2.2 The analysis of outsourcing and the forecast of expenses of V-auto Company

The V-auto Company analysis the demand of company logistics through the review of company elements and analysis of logistics demand. The analysis results are not all the operations for outsourcing, the V-auto Company must do further analysis and plot out to make sure which part is outsourced to the 3PL, which part is outsourced little by little in the cooperation and which part to be achieved are company. This is not the strict distinguish of the outsourcing and self-doing, the clear distinguish is written in the contract. The analysis of the logistics operation has three steps as follows:

③ Define the elements in logistics service

Analysis the logistics demand first must define the elements which logistics service including and the standards. The V-auto Company must review which logistics operation composed the whole logistics service and the standard for all the services. Generally, elements include preparation of goods; receive the order, delivery time,

⁶ Activity Based Costing is an accounting technique that allows an organization to determine the actual cost associated with each product and service produced by the organization without regard to the organizational structure.

inventory turnover, inventory management requirements, transportation requirements, logistics information requirements and logistics system layout. The first step is to define these elements for the logistics strategic programming. Only understand these elements can the program be carried out successfully. The V-auto Company plots out the operations based on these elements.

③ Define the standard for the elements in logistics service

The logistics elements are the main items of logistics service. The V-auto Company should have clear logistics service standard to scale the affection of service. Making a logistics service standard is to having a scale standard in the logistics operation to prepare for the contract with the suppliers, define the service standard of outsourcing logistics. Every company has different market situation and strategy, competitive environment, standard. In the practice, V-auto Company should combine itself with the items which related to the standard such as customer, distribution, equipment, accounting to design the standard comprehensively.

In order to smooth the operation of company, logistics service must be qualified such as: preparation of goods for production and selling, delivery time. Some logistics are facing the customers directly; this is the main par of the CRM. So the V-auto Company must know the requirements of customers to the company to keep the steady and efficient service standard of customer service.

The standard of logistics service must according to the instance of company. The current instance of company has two fountains: the requirements of the operation of V-auto Company; the other is the requirements of customers. When V-auto Company makes the service standard, it should do some visitation and research, visiting related

employees which includes the leaders and operators to get suggestions. V-auto Company should get suggestion from customers through questionnaire, informal discussion, visitation and research by third party which includes the importance of the logistics, the requirement of customers for the logistics to improve the satisfactory of customers. The V-auto Company defines the elements of logistics based on it.

③ The forecast of the expenses in the outsourcing

The forecast of outsourcing expenses is to let the V-auto Company control the expenses in the process of outsourcing and after the operation. The V-auto Company will not only forecast the logistics expenses after the outsourcing but also forecast the expenses in the process of outsourcing. This includes choice supplier, negotiation cost, cost of operation transition and the cost which can not be prefigured.

5.2.3 Choose supplier of V-auto Company

Choosing the suppliers has five steps. The V-auto Company must define the beginning time of each step. Every step is dynamic and is an improvement of operation for the company. The steps are as follows:

③ Define the choice target of participants

The V-auto Company should make sure how to carry out the participants' evaluation system and how to operate the information flow, which will be responsible for it, build the factual purpose which includes the requirement of purpose for the future

participants and purpose for the operation model. The choosing and evaluation of the participants are not just the process of choosing and evaluation, it is an operation flow restructure for company and between companies. The good implementation will bring a lot of profit to the V-auto Company.

③ Make the evaluation of participants

The comprehensive evaluation system of the logistics supplier is the evidence and standard of comprehensive evaluation to the participants. It shows the different attributes of the complex environment combined by company and situation. It is a gathering according to the subjection relationship and the hierarchy. It builds a comprehensive evaluation system for the participants which are under the surrounding of integrated logistics. It is according to the principle of comprehension, compendious science, and steady comparable and flexible operability. Different company, field and production need different evaluation of the participants. Generally, it includes the outstanding achievement, equipment management, human resource researching, quality control, cost control, technology development, customer satisfactory and delivery contract for the participants.

③ Participants of 3PL

When V-auto Company decides to evaluate the participants, evaluation group must contact with the participants who are chosen to communicate with them furthermore to make sure if they have the ability and willing to gain more achievement. The V-auto Company should let the participants take part into the design of evaluation as soon as possible. However, because of limited resources, V-auto Company can only clasp with little important logistics suppliers. The logistics suppliers who take part in

it are not many. Generally, three participants are good.

③ Evaluation of suppliers

The important processes of evaluation the suppliers are to research and gather the information of production and operation of suppliers. The company can evaluate the suppliers by using some tools and methods based on the gathered information. After the evaluation process, company can choose the participants according to their principles. If the choice is successful, the V-auto Company can carry out the outsourcing logistics. If there's no suitable participants, V-auto Company should turn to step 2 to evaluate and choose again. Every company uses different evaluation and choice method.

③ Cooperate with the 3PL

When V-auto Company carry out the outsourcing, the market demand is changeable, company can amend the participants' evaluation standards or restart the evaluation and choice of the participants. When V-auto Company restarts the choice of participants, it should provide enough time for the ole participants to adapt.

The choice of suppliers is the most important step in these steps. The demand of every company is different and the suppliers are different. The V-auto Company must choose a supplier who adapts to the company in both the service orientation and service level and can provide good service. The V-auto Company should communicate and connect with all the logistics suppliers actively to gain a wild choice range. Company can understand them by description of themselves and the researching of logistics group. If there's many suppliers, company can use the bid to

choose.

5.2.3.1 Review the suppliers from the service characteristic of V-auto Company

If V-auto Company didn't have outsourcing logistics before, the choice of suppliers will be difficult because of the complex of logistics operation and not understanding the 3PL. the V-auto Company can define the range of the suppliers through the plotting out of the suppliers and combining with the demand the company. Logistics operation can be plot out differently. The types are as follows:

③ Plot out by the capital

All the logistics suppliers can be divided into two basic types: asset based supplier and non-asset based supplier. The asset based suppliers have transportation tools, warehouse and other fixed capitals to prided service for the customers. They provide logistics service for the V-auto Company through the operations. The most 3PL companies which were transferred from the warehouse and transportation companies have fixed capital for operation. The non-asset based suppliers do not have the most assets for operation; they make contract with the V-auto Company which need 3PL service and they do not operate by themselves. However, the suppliers have contract with other company to gain whole or some operation. They main responsibility of these suppliers is distribution and management. Nowadays, China has some non-asset based suppliers which provide the complex logistics service through making contract with the asset based company. The advantages of these suppliers are in the aspects of logistics decision, distribution and management.

There are some suppliers like the brokers. They do not have any capitals for the logistics operation, but they have logistics knowledge and experience. They make the contract with other suppliers through the negotiation with customers. These suppliers are called the 4PL. when the company is lack of the outsourcing deciders, these suppliers can be a department of company.

③ Plot out by the type of logistics service

Currently, most people consider that suppliers can be divided into three types as follows:

Provide basic warehouse and transportation service, such as communal warehouse and general freight company. They provide the capital-intensive and standardized service.

Provide the value-added service such as freight management and warehouse. Warehouse logistics can provide distribution, package, accessory distribution and bar code for the customers. Freight logistics can provide choosing carriers, barging price, arranging freight, choosing freight rout and supervising of cargoes.

Integrated logistics and SCM service. It can provide the forecast of market demand, automatic order disposal, customer relationship management, inventory control and return logistics for the customers.

There are many other divisions. The global supply chain management forum divides the 3PL into three types according to the character of 3PL: provide the special logistics service for the customers, provide logistics solution for the customers and

provide innovation service for the customers. According to the mutual relationship of the companies, we divide the 3PL into random dealing logistics, long-term logistics and strategic alliance logistics. According to the service content, 3PL can be divided into three types: logistics which purchases the industry raw materials and accessory, distributes the productions; logistics which do production trading, retailing and distribution; logistics which do transportation, warehouse and freight. The company should choose the service type according to the demand.

5.2.3.2 Review suppliers from the service industry of V-auto Company

Different industries have different requirements for logistics such as: the accessory distribution requires good packaging, careful transportation arrangement, and equipment and experience for fresh goods. However, most industries have different requirements: such as cars require careful scientific logistics management considering the valuable production. Suppliers sometimes have experience in a special industry such as retailing, production logistics and distribution. The review will show the company the characteristics of the suppliers.

It is good to cooperate with professional suppliers. Their professional knowledge and experience can improve efficiency and advance innovation. V-auto Company can advance the development of logistics when cooperating with these suppliers. Generally, high efficiency and low cost logistics service can only be gained from the suppliers in this industry. When a company wants to choose a supplier, the company should first consider the suppliers in this industry. The company can refer to the experience and results of other companies.

In China, many 3PL companies alleged that they can provide logistics service to all the industries, but in the practice they will not have much experience. If company is the first customer of such suppliers, it will be have many troubles. In this case, the review of the suppliers is very important. In some cases, there's no a leading card, company only can choose in the industry whose requirements and service content are similar. The companies in these cases should be more careful. In order to control the future situation, company can require an operation arrangement for the future work to describe the service operation as detailed as possible.

5.2.3.3 Review service capacity of suppliers of V-auto Company

After distinguishing the suppliers from service type and service industry, we must review the suppliers from the service capacity. The evaluation includes the software and hardware. Although the assets of suppliers can not show the service level, the capital is the precondition and guarantee of good service. When the 3PL suppliers are few, capital is an important element for evaluation. The V-auto Company must pay attention to this.

Nowadays, customer service is more and more important, so the software of the suppliers is very important which includes logistics experience, information system, and management level, and the detail of logistics. Their affections are sometimes more than that of hardware. So in the review, the software is an important element.

5.2.3.4 The choice of suppliers of V-auto Company

Generally, we use linear programming (LP) and Analitic Hierachy Process (AHP) to

choose the suppliers. When V-auto Company wants to choose a supplier, company can mark all the elements of the candidates. Then V-auto Company can calculate the comprehensive service capacity combining the weight. Finally, V-auto Company can choose the top one. Because of the characteristics of all the suppliers, sometimes, company has to choose several suppliers. If V-auto Company hopes to choose several suppliers, it can make decision by combining the LP and AHP.

③ AHP was issued in 1970s by T.L Satty. AHP transferred the qualitative problem to the quantitative problem. The basic conception of AHP is to decompose a complex problem to several combined elements, then grouping these elements according to the dominant relationship in order to form hiberarchy, defining the relative importance by comparing two elements, defining the ranking and weight of relative importance according to the deciders. Wilbur advanced that it was easy to choose the partners using AHP. The basic conception is to evaluate the project according to the hiberarchy target, sub-target, restricted condition and department; defining the matrix by comparing two elements; then put the eigenvector heft which was corresponded to the maximum character of estimation matrix be the corresponding coefficient; finally, show the weight of all the projects. Because this method shows the relative importance function for the evaluators, it had high dependability and low error. However, when there are many elements, this method will have problems. The figure shows the processes of AHP:

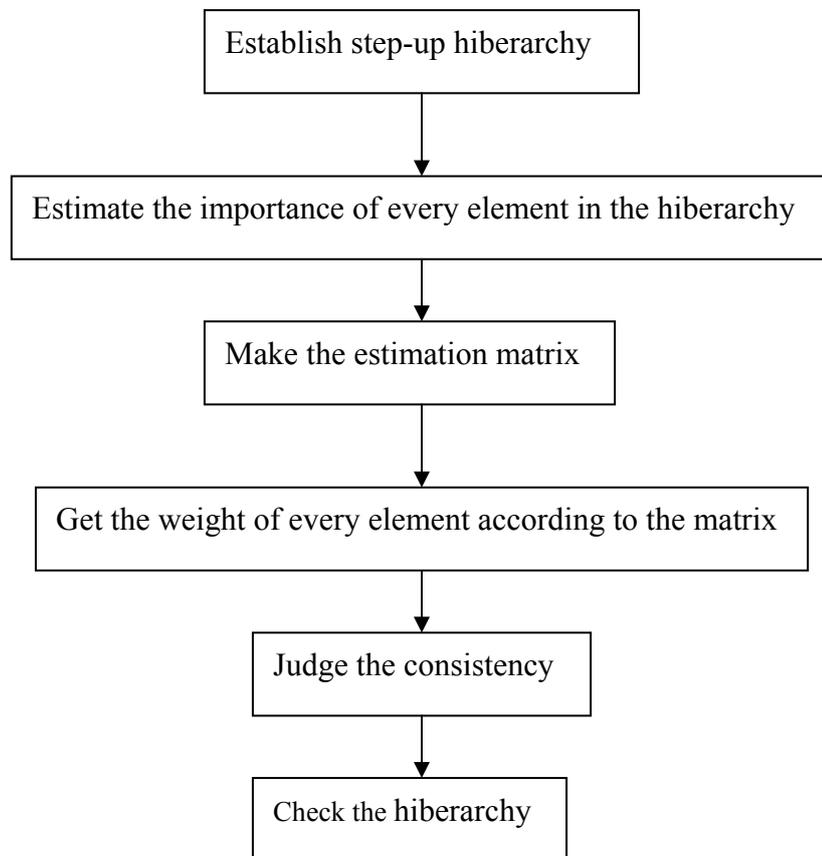


Figure 7- The structure of AHP

Timmerman advanced the categorical method. Wind and Robinson, Gregory advanced the weighted point plan using in the choosing of partners. These are the development of the AHP. They can be used in the choice of 3PL suppliers. However, company should considering the situation to evaluate and choose the suppliers efficiently.

The important elements of choosing the 3PL suppliers are price, quality, efficiency and customer service. These elements can be evaluated by a series of index. Then,

company can establish matrix according to the conception of Satty to know the combined weight of every supplier based on the coherence checkout of matrix.

③ LP

After company know the combined weight of every supplier, establishing the LP model according to the combined weight of every supplier which is the coefficient of target function. Total Value of Purchasing (TVP) is the total purchasing value of company logistics service. LP model is as follows:

$$\text{MaxTVP}=\sum X_i R_i$$

$$X_i \leq V_i$$

$$\sum V_i \geq D$$

$$\sum X_i = D$$

$$\sum X_i Q_i \leq QD$$

$$X_i \geq 0$$

In the model R_i is the final combined weight of every supplier

X_i is the purchasing quantity from the number i supplier

V_i is the service capacity of number i supplier

D is the total purchasing quantity

Q_i is the failure rate of the number i supplier

Q is the maximum failure rate which can be allowed

This model can calculate the quantity for every outsourcing logistics suppliers to know the combined quantity which meet the need of company.

5.3 The comparison

From the model above, I choose the A-logistics company to do the outsource logistics for the V-auto company. Then the V-auto company is responsible for the selling and after service of cars. A-logistics Company is responsible for the logistics operation. Most of the logistics assets includes warehouse and many logistics managers are transferred to A-logistics Company. V-auto Company remains the logistics department to make the cargo arrangement according to make the market analysis of all the regions, forecast of selling and cargo arrangement of every selling service centers; distribute the resources according to the selling of every region, making the remove information of cars every day; evaluate the achievement of A-logistics company timely. A-logistics Company makes arrangements according to the remove information of cars from V-auto Company, transporting the cars to the warehouses, managing the operation of the warehouses to provide exact logistics information.

In the beginning of the operation flow, there's no change. The two companies follow the operation model. There's no contract between them. The A-logistics company has some troubles in the programming of the whole logistics because there are many problems between two companies. The A-logistics company then signs a contract with the V-auto company in the respects of rights, obligation, service price, solutions for the problems. In the operation, company finds some problems in the cooperation such as the production attainment in the warehouse and transportation, the out-of-order of the remove of cars from the warehouse. For these cases, V-auto Company makes an evaluation for A-logistics Company. The evaluation was focus on the transfer inventory. The result would feed back to the V-auto company. A-logistics Company has the worker to connect with the V-auto company. The worker will connect with

other department to solve the problems. The workload of V-auto Company will decrease. The outsourcing logistics should have two elements: a complete logistics contract which can restrict most of the problems; the evaluation which will increase the efficiency. The beginning of the outsourcing will have problem. Companies can have experience in this phase.

5.4 The information and communication system of two companies

To some extent, whether the outsourcing logistics will be successful or not is not dependent on the capacity of the 3PL suppliers but depends on the combination of two companies and the communication of two companies in the solving of problems. From the beginning of cooperation, two companies hammer at establishing a good information communication channel, firstly is an information system. A-logistics Company has a logistics management system, managing the cars by bar code. The A-logistics company combined the two information systems to form a big information system as follows:

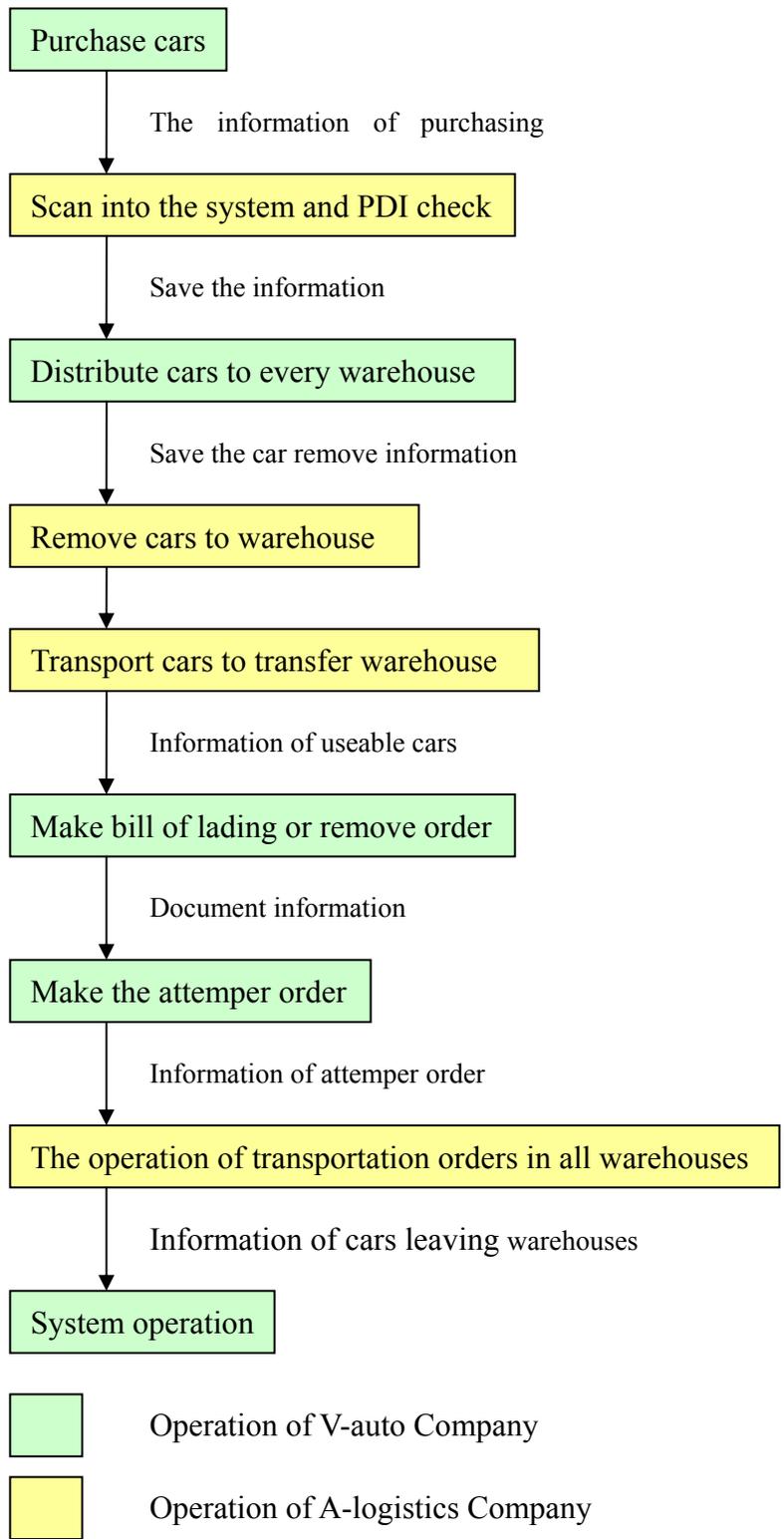


Figure 8- The flow chart of logistics information system

We can see from the chart that two companies are always transferring information. V-auto company transfer the purchasing information, bill of lading information, removing information, standing order information to the A-logistics company. The A-logistics company transfer cars on the way information, transportation tools information to the V-auto company. V-auto Company will deal with this information in the system to transfer to the employees who need this information. The exchange of the information guarantees the regular operation of the company. The information system is the important point for the outsourcing logistics.

5.5 The further suggestion of outsourcing

Two companies will spent some time in the cooperation. But two companies have the same purpose to improve the efficiency of logistics. The areas which need to be improved p are as follows:

- ③ Lack of expedite communication channel, can not solve the problem at first time
- ③ Have trouble in the combination of two system, can not transfer the information quickly
- ③ Lack of evaluation, have problem in the service level
- ③ Innovation an not be accepted

Although these are many problems in the cooperation, two companies must face to the problems corporately. After several years' cooperation, the problems will be solved. The author has some further suggestions of two companies. In the beginning of cooperation, two companies will not have combined system. If here are some

problems, operators will take the problems to the managers, the logistics managers of two companies will negotiate about problems. After a period of adaptation, two companies have a solution structure to communicate with each other timely.

A-logistics Company should develop the logistics management system to adapt to the system of V-auto Company. Then information of two companies can share. This model will restrict the excrescent data, decrease the operation chain cost and let the companies gain the information as soon as possible.

In the cooperation, V-auto Company may have some new requirement such as: need all-night watch for the arrangement of the production and amendment of the transportation tools for the new cars. If the innovation is in some extend without surcharge. There will not be negotiation. Two companies will negotiate if the changed la lot. If the operators of two companies often communicate with each other, the small problem in the operation will be solved quickly. The big problem will wait for the decision of leaders on the view of decreasing the affection of operation to the best of companies' abilities.

Although cooperation will meet many problems, if two companies are solving the problems corporately, they will establish a long-term strategic relationship. The cooperation is little by little. At the beginning is the transportation, warehousing then will have the logistics information cooperation and the accessory logistics cooperation.

6 Conclusions

With the development of producing technology, these are no problem in the production capacity. And then the following problem is the sales of the cars. As mentioned above, the market is over-capacity because of the high productivity of car industry. It means that the supply quantity is far more than demand quantity. V-auto Company applies the CRM system to improve their company. However, the CRM has some weaknesses. It is necessary to make the research in the application of CRM in order to optimize the CRM system to survive in the dog-eat-dog market.

The first solution---the combining of CRM and SCM pay much attention on the customers. The V-auto company put customers to the top situation. Customer satisfactory infiltrates into every process of the operation. In the individualist world, customer is the God. This solution will attract more customers. However, customer loyalty needs a long time to build. This solution will have the affection little by little.

The second solution---applying the 3PL is emphasis on the improving efficiency and decreasing the cost. In this solution, choosing the third party Logistics Company is very important. This will effect the successful of the whole projection. So the preparation of the solution is a key process and will be a long time. On the other hand, V-auto Company will be affected by the outsourcing logistics company quickly.

These two solutions have their own characteristics: one expend the market the other low down the cost. The two solutions are two steps, first to integrate CRM and SCM then to outsource the logistics. The V-auto Company will have more customers and low down the cost through applying these two steps.

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