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**SUPPLIER SELECTION PROCESS
IN EMERGING MARKETS**

-The Case Study of Volvo Bus Corporation in China-

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ABSTRACT

“Hearing a hundred times is not as good as seeing once” – Old Chinese Proverb

The complexity of managing an international operating environment has changed significantly over the last few years. The increasing presence of Multinational Corporations in emerging markets has not only increased the advantages of developing global economies of scale, but it has also identified a need for the further coordination and assimilation of company activities into the local market of operation.

As more and more MNCs begin entering the Chinese market in an effort to establish long-term competitive advantages and low cost production sites, there becomes an even greater need for a developed business infrastructure, globally integrated technology processes, greater overall efficiency, increased coordination of procedures and synchronized learning efforts.

The aim of this thesis is to further investigate how MNCs transfer and apply their global supplier selection processes to emerging markets. We will use Volvo Bus Corporation as our case company, and we will focus our study on the transfer and application of their global supplier selection process to the Chinese market through their joint venture company, Silver Bus Corporation, in China.

In order to present a realistic picture of how the supplier selection process is being carried out in the Chinese market, it is first necessary to present a broad overview of the Chinese bus industry and a description of the Chinese Automotive Industry Policy, as well as to provide a brief discussion of the environment in which our research was collected, for a more comprehensive understanding of the situational factors which were present at the time our research was conducted.

Key Words: *Supplier Selection; Chinese Bus Industry; Sourcing Strategy; Supplier Relationship; Supplier Evaluation Model*

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LIST OF ABBREVIATIONS

CBU – Complete Build Up

CKD – Complete Knock Down

FDI – Foreign Direct Investment

GDP – Gross Domestic Product

JIT – Just In Time

MNC – Multinational Corporation

OEM – Original Equipment Manufacturer

SBC – Silver Bus Corporation

SQA – Supplier Quality Assurance

USD – United States Dollar

VBC – Volvo Bus Corporation

WTO – World Trade Organization

Chapter 1. INTRODUCTION

In this chapter we present the background and basis for our thesis discussion. We will introduce our research question; discuss our delimitations, and finally, present an outline for our thesis structure.

1.1 BACKGROUND

In a truly global industry the competitive position of a company in any one market depends on its position in other markets. Meaning that, a company which is absent from emerging countries, regardless of its vulnerable position to this type of uncertainty, would be permanently reproached. It can be very difficult, if not impossible, to catch up with the initial movers, and although the repercussions of deciding not to position oneself in these countries might not be felt immediately, they can be very costly over the long run. Therefore, maintaining a competitive edge, such as Volvo has done, makes it easier to move into a new market and to achieve an advantaged, dominant position.¹

In the 1990's, much of the attention shifted towards the globalization of the automotive industry. The emerging markets were regarded as being the major sources of growth in the automotive industry during the early part of the 21st century and they seemed to offer a combination of constant rapid sales growth and low cost production opportunities.² The eventual transfer of emerging markets from being the underbellies of the global automotive industry to being at the forefront of new developments occurred in part because the growth outlook for the Triad economies (North America, Western Europe and Japan) appeared dismal. Markets for vehicles in these Triad economies appeared to have become saturated, while in contrast, the emerging markets were becoming increasingly attractive. Eventually the levels of automotive production began to increase in the emerging markets and component manufacturers began making major investments in these markets in search of continuous growth and low-cost production sites.³

The international playing field has experienced a number of important changes over the last few decades. Among these changes, which have contributed to the increasing globalization of markets, include visible improvements in both transportation and communication, increasing economies of scale in a number of different industries and an increasing homogenization of tastes and market structures among different countries. As described in this global context, MNCs can better attain a sustainable competitive advantage by further integrating their value chain activities performed within their subsidiaries

¹ Humphrey, Lecler & Salerno, 2000

² Ibid

³ Humphrey, Lecler & Salerno, 2000

around the world. For example, this can be done by raising the level of interdependence among subsidiaries, designing narrow product lines to be sold worldwide and focusing production in a few plants in order to obtain economies of scale.⁴

Scholars often depict the current international scenario as one characterized by the simultaneous existence of strong globalizing and localizing pressures.⁵ The globalization of industries has often been connected with the increasing interdependence across national markets, creating new opportunities for firms to operate globally. These global strategies highlight how firms can develop competitive advantages by operating in interdependent national markets. These advantages include emphasizing potential strengths, such as flexible MNC networks, variations in national resources and enhanced mutual learning.⁶

Combined with these globalizing pressures MNCs are also beginning to face a series of localizing pressures. This can be seen as national governments continue to push for MNCs to increase their local investments, create employment opportunities in the domestic market, improve the host country's balance of trade, and continue to place informal obligations on the firm to increase the transfer of advanced technology to the domestic market. However, while the government plays a major role, it is not only the government which draws MNCs towards a strategy of localization, but rather, it also has to do with a number of practical issues such as diverse distribution channels, variations in local regulations and tariffs, national standards, differing product tastes and varying market needs and capabilities. In order to speak about strategy as a device used for the coordination of a number of activities, the focus must be on the strategy of the subsidiary, or rather, the role which each subsidiary plays within the firm's overall strategy.⁷

To conclude, internationalization is one of the most important influences to change the competitive business environment in recent decades. Globalization has opened up national markets to new competitors and has created a number of business opportunities through increased trade and direct investment activities. The globalization of business has created networks of international transactions, which encompass service, technology and capital flow, product trade, and the influx of highly skilled people to developing countries.⁸

⁴ Martinez & Jarillo, 1991

⁵ Ibid

⁶ Malnight, 1996

⁷ Martinez & Jarillo, 1991

⁸ Grant, 2002

1.2 RESEARCH PROBLEM

In order to better understand our major research question in a greater context, it is first necessary to present an introduction to some of the bigger, related issues. Therefore, in this section we will present an introduction to the Chinese bus industry, briefly explain China's automotive industry policies, as well as provide a description of the environment in which our case research was conducted.

1.2.1 Research Background

The increasing globalization of the automobile industry, the rapid pace of technological change, the increasing establishment of long-term strategic partnerships with a few key suppliers and recent trends in moving production facilities to low-cost countries has resulted in a newfound emphasis on the changing structure of the automobile industry.

The automobile industry is, more or less, considered to be an assembly industry. Meaning that, it brings together a variety of components, many of which are manufactured by independent firms in other industries and is a primary example of a producer-driven production chain. There are three major processes, which take place prior to the final assembly; these include the manufacture of body structures, components and engines and transmissions. The very nature of the automobile industry allows for the possibility of organizational and geographical separation of the individual assembly processes, as can be seen, for example, with large manufacturers moving production sites to emerging markets. For example, the chassis may be produced and partially or fully assembled in the manufacturer's home country before being sent to the emerging market manufacturing plant to be assembled with other components in order to produce a completed bus. A generalized pattern of development of a country's automotive industry can be seen in Figure 1, however, this example does not serve as a predictor that all countries will actually pass through this sequence, but rather, it provides a somewhat idealistic development, or a functional gauge of the possible developmental routes.⁹

⁹ Dicken, 2003

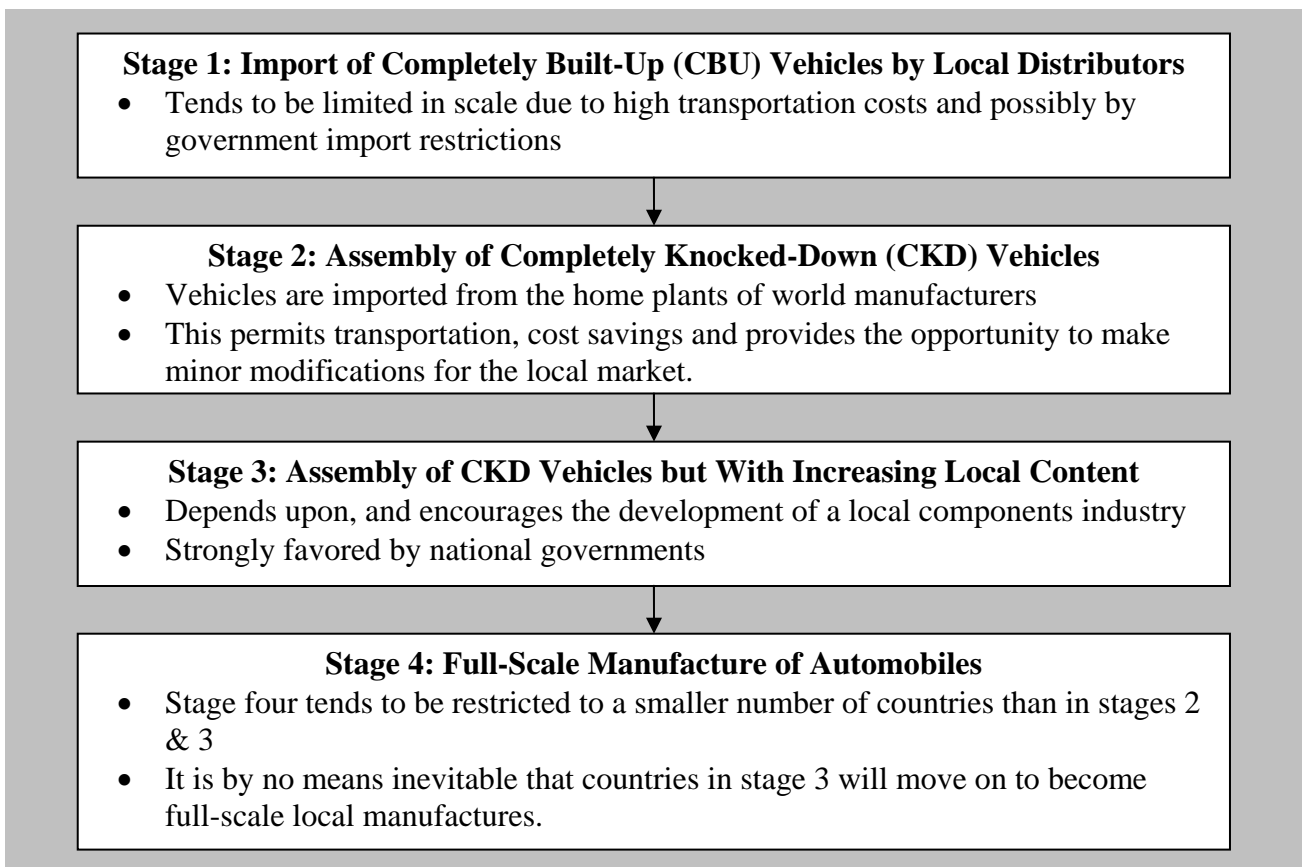


Figure 1. An Idealized Sequence of Development in the Automobile Industry

Source: Dicken, 2003

As can be seen in Stage 1, of Figure 1, the import of complete vehicles is strictly limited due to high transportation costs or high government tariffs. Manufacturers will usually only import complete vehicles or complete chassis' when it is a new model and it is intended to be used as a guide for assembling the new model. At Stage 2, the local assembly of vehicles takes place from a full 'kit' of component parts, also known as CKD, or complete knock down kits. The use of CKD kits allows for savings on transportation costs as well as the opportunity for manufacturers to make minor product modifications for the local market, by substituting the necessary parts. Stage 3 utilizes a mix of imported and locally sourced components, both of which encourage the development of a local component industry and is widely favored by the national governments. And finally, Stage 4 describes the move to a full-scale manufacturing plant. This stage is largely restricted to a smaller number of capable countries than is the case in Stages 2 and 3. There is no guarantee that, because a country has managed to reach Stage 3 they will move to a full-scale manufacturer; In fact, the opposite is possible. A country may actually regress from the status of full-scale local manufacturer to that of a mere assembler. This is significant in the sense that a country may not be able to support a full-

scale manufacturer's specific component needs and technology requirements locally, and therefore, the manufacturer may have to resort back to importing certain components and assembling them locally. This description provides a detailed introduction and example of how the global automobile industry has changed and continues to progress and adapt an enhanced global perspective.¹⁰

Companies continue to pursue diverse and ongoing global strategies when operating in different emerging markets. Their efforts at increasing profitability cause them to favor some policy combinations more than others, such as volume, diversity, quality and specialization, innovation, flexibility and the ongoing reduction of costs. However, to be truly proficient, all of these strategies must correspond with the environment in which they are to be applied. For example, Western companies producing in the Chinese market must seek to adopt or adjust their strategies to the local market in order to be truly successful, since the local culture, traditions and practices have tremendous influence over the ways in which business is conducted.¹¹

China has become one of the most popular of the emerging markets and, increasingly, more international companies have begun making their way to this giant of the Far East, better known as the world's current automotive "hot spot". As a result, China's automobile industry has experienced significant growth within the last ten years. With a population of 1.3 billion people it would seem only reasonable that the world's largest population would also claim the most cars. However until recently, the traditional emphasis has been on two wheels, rather than on four.¹² During 2000, China's first year as a member of the WTO, auto production amounted to a little over three million units, a near forty percent rise on the previous year. China recently overtook France to become the fourth largest automobile producing country in the world, coming up behind the US, Japan and Germany. In fact, the automobile industry is one of China's largest growth tools for GDP, which is expected to reach about USD four billion by the year 2020.¹³ In 2003, over thirty-six percent of Chinese exports came directly from foreign-invested companies, making China the single largest recipient of FDI in the world, surpassing the US.¹⁴

However, behind this massive industry expansion, there is a fundamental weakness in the foundation of China's automotive industry. Specifically, there is a lack of strong self-development of its own technological capabilities and brands. When evaluating the real strength of China's auto industry, it is important to remember that its growth is heavily supported by the entry of the

¹⁰ Dicken, 2003

¹¹ Humphrey, Lecler & Salerno, 2000

¹² Gluckman, 2004

¹³ Business in China, 2004

¹⁴ German Industry & Commerce in China, 2004

world's top automakers into the local Chinese market. Most of the cars manufactured in China are produced by joint ventures between foreign firms and Chinese companies. Regardless, it is the foreign automakers that have managed to gain a solid footing in the profitable domestic car market through local production, while their Chinese counterparts have been unsuccessful in incorporating enough of the necessary technology, vital for improving their development capabilities in the market.¹⁵ In other words, China has essentially adopted, “with limited success”, an industrial policy of exchanging its domestic market for foreign technology, such as can be seen in the automotive industry. China's increasing dependence on foreign firms has become even more apparent since its initial entry into the WTO. And yet, while foreign firms have begun to entirely occupy the Chinese market, the country has yet to successfully acquire the essential technology needed to further flourish.¹⁶

For the most part, the major incentive for foreign automakers expanding into China was originally to gain ‘first mover’ access to the domestic Chinese market, rather than to cut production costs. Under the present situation, China's domestic market is well protected from global competition as a result of high tariffs, giving foreign automakers producing locally the clear competitive advantage. However, it is predicted that that higher profitability in the future will be difficult to maintain as a result of the changing industry dynamic. This prediction is largely a result of the aggressive production strategies from the world's top automakers, as well as the participation of the new domestic players, eventually resulting in overcapacity in the market.¹⁷

1.2.2 China's Automobile Industry Policy

Beginning in the late 1970's, China's government utilized an ‘open door policy’, whereby the major purpose was to promote modernization through the easing of restrictions on capital investments. This was mainly done in an effort to increase the shortage of domestic savings as well as to transfer technology and management experiences from the more advanced foreign countries. The Chinese government kept the same position throughout the 1980's and 1990's with a foreign policy, which gave first priority to the development of the industrial structure. In 1994, the central government outlined these terms in the form of a formal industry policy. In July of 1994, in an effort to further regulate the automotive industry, China's State Planning Commission announced the first ever “Automobile Industry Policy”. At the end of 1995, China's ninth five-year plan (1996-2000) was formally announced. This plan was a comprehensive document detailing all policies concerning investment, domestic localization, the parts industry and the promotion of exports by the

¹⁵ Business in China, 2004

¹⁶ Kwan, 2003

¹⁷ Ibid

automobile industry, and was actually considered as the official implementation of the automobile industry policy established in 1994. Strategies set for the automotive industry development included objectives such as: reaching economies of scale by building larger companies; enhancing technological capabilities and product development; developing international competitiveness and improving the market environment.¹⁸

China's initial expectations for activities under this policy were that foreign enterprises would first transfer technology through semi knock down (SKD - meaning the components are sent to China as partially assembled pieces in containers) and then through complete knock down (CKD - meaning all components are shipped in containers as individual parts which are to be assembled locally). China had also hoped to further develop a domestic parts industry in an effort to achieve independent development.¹⁹ On June 1, 2004, the "China Automobile Industry Development Policy" was released. This was the first new policy in over a decade and its goal was to transform China's automobile industry into a support for the national economy by turning China into one of the major automobile production countries in the world by 2010.²⁰

1.2.3 The Chinese Bus Industry

The 1960's and 1970's laid the foundation for the initial developments of the bus industry in China. The rather recent introduction of foreign technology and joint venture partnerships has helped to create a solid bus industry and a product mix pattern of large, medium, light and mini-sized buses.²¹ The demand for passenger buses has increased greatly in the last decade as a result of a growth in tourism and a dramatic improvement in the transportation infrastructure. The sophisticated pace of city construction and the marked extension of urban highways each year have helped to increase public transportation and caused an increase in demand for large and medium buses.²²

Buses have become increasingly necessary for providing much needed public transport services in a country where there are estimated to be only about seven million cars, many of which are taxis and official vehicles; however, the private ownership of cars is increasing.²³ Since 1998, the production and sales of both large and medium buses has increased and currently, the annual production capacity of large and medium buses exceeds about 100,000 units. Large and medium buses can be classified into city buses, highway buses, tourism buses and special buses. As the main mode of public transportation in China, the city

¹⁸ Lee, Takahiro & Chen, 2003

¹⁹ Ibid

²⁰ Kwan, 2003

²¹ Auto in China

²² Ibid.

²³ Jack, 2004

bus usage rate has gone up significantly. The highway bus market continues to grow alongside the national economy. Its growth continues to enhance the development of the long-distance bus as a result of increased passenger traffic and the construction of new highways.²⁴ The market for medium and large buses has progressed considerably over the last six to seven years, however, leveling off slightly in 2003 as a result of the SARS epidemic which swept through parts of China.²⁵

Presently, there are estimated to be slightly more than one hundred and thirty bus and coach manufacturers in China. Approximately seventy percent of the market is currently controlled by the top five producers, which include King Long, ZhengZhou Yutong, Yaxing, Golden Dragon and the Changzhou Bus Company.²⁶ Since about 1987, the domestic Chinese bus producers have been exporting the majority of their buses to countries within Asia and Africa.²⁷

Although the production and sales are growing rapidly, the Chinese bus industry is still behind the world-class industry, largely in terms of technology. The underpinning of a modern industry is hardly in place and the production process currently depends on a great deal of importing of technical components and capabilities in order to function smoothly. In the near future, manufacturers hope that the quality of local components will continue to improve and the number of local suppliers will begin to gradually increase.²⁸

There is still a need for China to improve the passenger buses it produces, in terms of reliability, economy and technical foundation. Significant gaps still remain in some of the most basic requirements, such as the bus body's strength and rigidity and in the chassis breaking assemblies. There is also a shortage of bus engines and special bus chassis', which are considered suitable for motorway operation. The restricted variety and low quality of the current domestically produced bus chassis' continues to restrict the development and advancement of buses in China.²⁹ At present, all luxury coach producers must import their chassis due to the high-level quality requirements for the luxury coach.³⁰ For example, Silver Bus Corporation sources its chassis' from the Volvo Bus assembly plant in Boras, Sweden.

China's bus industry will soon begin facing tougher competition as a result of future changes in the setup of the automotive industry. There is a continuing

²⁴ Auto in China

²⁵ Jack, 2004

²⁶ Ibid.

²⁷ Auto in China

²⁸ Fourin Auto China Weekly

²⁹ Auto in China

³⁰ Fang, Interview, 2004

need for further consolidation within the bus industry. At present, there is approximately thirty percent overcapacity in the world automobile industry.³¹ In 2002, China's annual output capacity of large and medium sized buses reached approximately 110,000 to 120,000 but the country actually produced and sold less than 80,000. The Chinese government would like to see a major industry consolidation take place in the coming future.³²

1.2.4 Supplier Trends

Meanwhile, a progression continues to take place away from the automobile industry's characteristic arm's length market-driven relationship towards a more flexible type of buyer-supplier relationships. As companies continue to reduce the number of first tier suppliers, the remaining suppliers will continue to be further integrated into the company's supply chain. A focus on developing strategic partnerships, which involve longer-term contracts and closer relationships, has become especially important for the bus industry, where volumes are usually low, and the relationship with the supplier is essential for enhanced bargaining power.³³

One of the most significant developments in the automobile industry over the last few years has been the changing relationship dynamic between the major automotive producers and their component suppliers. In the past, the large American and European producers maintained a specific type of relationship with their suppliers based on short-term, cost-saving contracts. Today, however, there is a clear trend moving away from these types of relationships towards close functional relationships between the buyer and the supplier, in terms of commitment to production, costs, technology transfer, research and development, and geographical proximity.³⁴

Suppliers continue to play a defining role in helping companies to achieve success. Selecting the right supplier can greatly enhance value, cost savings, quality standards and standardization throughout the manufacturing process; therefore, it is imperative that companies select suppliers who are not only reliable, but who are trustworthy and share similar strategic objectives and values that are consistent with the overall strategy of the business. The fundamental objective of the supplier selection process is essentially to reduce risk while getting the most value for the buyer. As a result, the automobile industry has begun taking a more holistic approach to the supplier selection process and selection criteria, now more than ever before.

³¹ Dicken, 2003

³² Mingquan, 2004

³³ Seppälä, 2001

³⁴ Dicken, 2003

1.2.5 Introduction to Research

The thriving development of the Chinese economy will continue to present a number of investment and low-cost opportunities for MNC's looking to expand and further develop their industry, especially within the automotive sector. In discussing these various issues, we initially became most interested in the way in which MNC's maneuver the transfer of various technologies and processes to emerging markets. More specifically, the way in which MNC's transfer and adapt their global supplier selection processes to the Chinese market. Given our interest in this area, we were presented with the opportunity to involve ourselves in a project with Volvo Bus Corporation (VBC), a part of Volvo Group and Silver Bus Corporation in China, a joint venture company with VBC.

The Volvo Car Corporation and the Volvo Group own the Volvo brand in a joint trademark company. Since 1999, the Volvo Car Corporation has been wholly owned by the Ford Motor Company and is part of a Premier Automotive Group, along with Aston Martin, Jaguar and Land Rover. Volvo Group, on the other hand, is one of the world's most well know and innovative suppliers of transport solutions for industry and commercial use. Its product mix includes buses, heavy trucks, financial services, boats and aircraft carriers. Volvo Group is the world's second largest producer of heavy trucks, as well as the world's second largest bus manufacturer, providing a complete range of inner city and coach buses. Volvo Group also manufactures high-technology components for aircraft, rockets and gas turbine engines, a range of high tech boats for personal and commercial use and provides financial services support for customer financing and capital needs on a global basis.

Our Chinese case company, Xi'an Silver Bus Corporation, was founded in 1994, and is jointly owned (50/50) by Volvo Bus Corporation (a part of Volvo Group) and Xi'an Aircraft Industry Company Limited. It is the first Sino-foreign joint venture to manufacture luxury tourist and inter-city coaches in China.

The objective of our project is to study Volvo Group's global supplier selection process and how it is being applied to the Chinese market. We plan to focus specifically on Volvo Group's supplier evaluation model (SEM) and how VBC's joint venture partner in China, Silver Bus Corporation (SBC), is actually applying the model to the Chinese market. We hope to be able to identify suitable supplier selection criteria, which add value to the selection process, as well as to identify those selection criteria, which do not necessarily add value or may be considered too unrealistic for the Chinese market's specific needs and present capabilities, in terms of suppliers, technology and infrastructure.

1.2.6 Problem Definition

In this section we present our main research question, in addition to our sub research questions, which are used to further answer our main research objective.

Main Research Question:

How do MNC's transfer and apply their global supplier selection process to the Chinese market?

Sub Research Questions:

The following sub research questions will be used in order to break down and further analyze our major research question.

1. How does Volvo Group's supplier selection process work?

In order to be able to better understand how Volvo Group's supplier evaluation model is being applied to the Chinese market, we must first study the criteria presented in the model, what it means and how it intended to be used. It is also necessary to present a picture of Volvo's formal supplier selection process, including the selection criteria and its supplier characteristics.

2. How is Volvo's supplier selection process being applied by Silver Bus Corporation to the Chinese market?

Our objective is to present a picture of how Silver Bus Corporation's supplier selection process works in reality, in the Chinese market. We intend to better understand how Volvo's supplier evaluation model is actually being applied by SBC in the Chinese market context. Our goal is to understand how the evaluation criteria within the model are being applied and which aspects of the model are better suited than others for the Chinese market from the perspective of SBC and its suppliers.

These research questions are conceptually summarized in Figure 2 below.

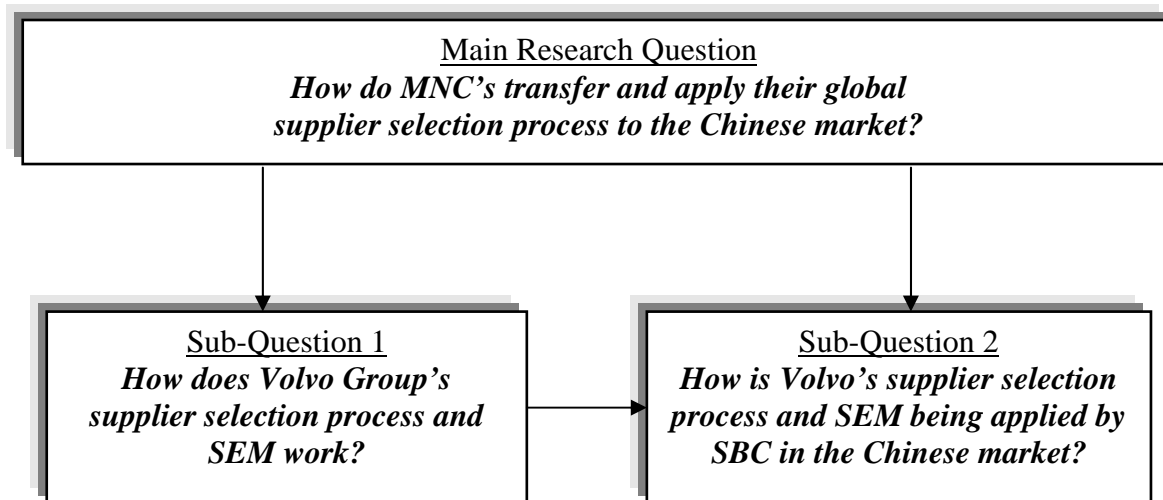


Figure 2. Research Question Model

Source: Authors

1.3 PURPOSE

The main purpose of our research is to further analyze how MNC's transfer and apply their global supplier selection process to emerging markets, or more specifically, to the Chinese market. Volvo Bus Corporation is used as our case company. Based on our research and understanding of Volvo Group's supplier selection process, we will further attempt to understand how the supplier evaluation model is actually being applied to the Chinese market in order to better assess which criteria are not necessarily suitable or 'transferable' to the Chinese market given the present conditions.

1.4 DELIMITATIONS

The Chinese bus market was used as a basis for our research in order to better assess how MNC's transfer and apply their global supplier selection processes to emerging markets. The paper will highlight issues for coping with supplier selection in emerging markets by using China as an example of an emerging market. We concentrate mainly on the internal application of Volvo's global supplier selection process and supplier evaluation model (SEM) in the Chinese market; however, we do not focus on any other emerging market scenarios, nor do we emphasize how the selection process is being applied at any of VBC's other joint venture manufacturing plants in other emerging markets. This paper does not attempt to change the supplier evaluation model, but rather, we seek to present different methods, parallel selection processes, alternative criteria and a range of various evaluation processes with the intention of creating a better overall understanding of Volvo's SEM model and supplier selection process. This paper will attempt to identify those criteria within the selection process and SEM model, which are considered to be incompatible with the Chinese market's needs and capabilities. It is important to point out that when

describing Volvo's SEM, the paper will focus on how it is applied in theory; however, when discussing its application in the Chinese market, the focus will be on the reality component of how it is actually being applied.

The focus of this paper concentrates on the bus segment of the automotive industry, in which VBC and SBC are active participants. Additional segments of the global and local Chinese automotive industries could not be analyzed in-depth, due to a limited time frame. It should also be noted that since this paper is related to China-specific issues, it does not incorporate any type of in-depth focus on the Swedish automotive industry.

1.5 OUTLINE OF THESIS

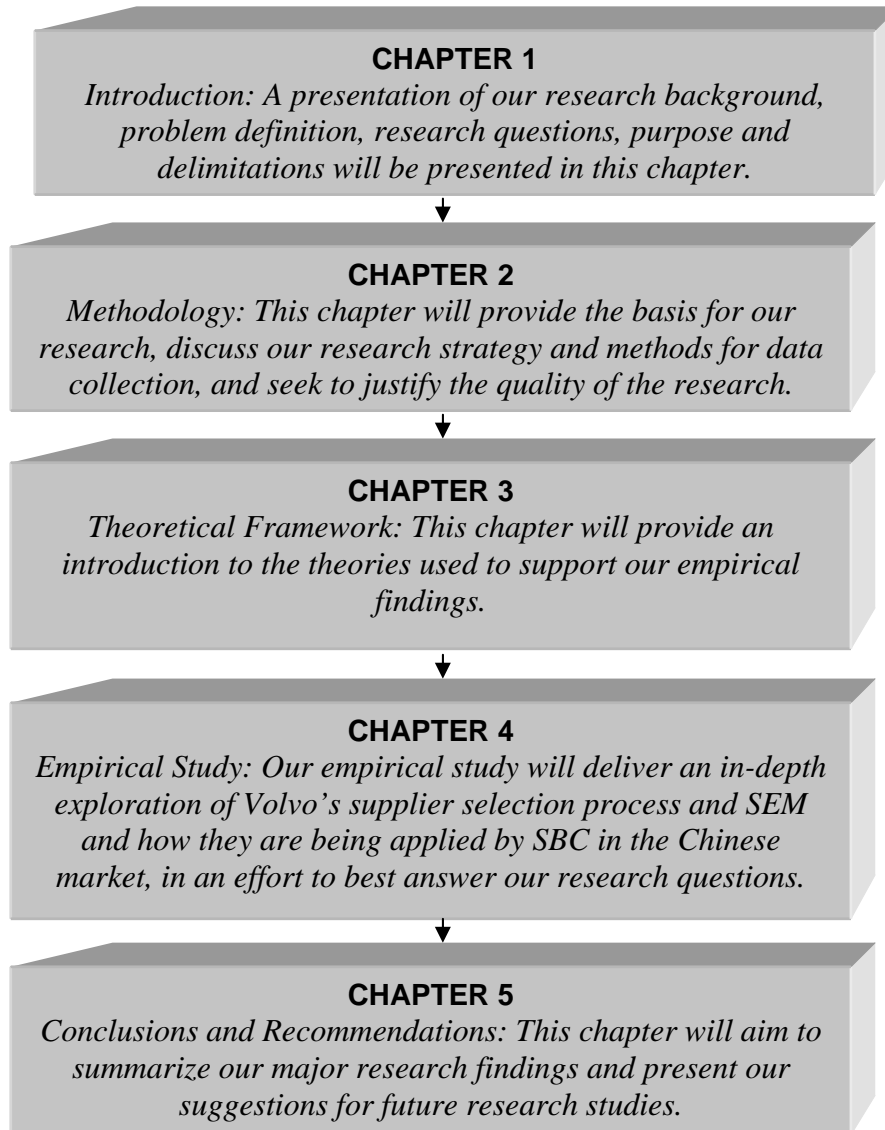


Figure 3. Thesis Outline

Source: Authors

Chapter 2. METHODOLOGY

The intended purpose of the methodology chapter is to present a clear picture of the methods we have used and the ways in which we have chosen to carry out our research. Our objective is to explain and to justify the various steps we have taken and the approach we have used in collecting our information in order to provide a better overall understanding. A portrayal of our research strategy, data collection methods and a description detailing the quality of research will be presented in this chapter.

2.1 RESEARCH STRATEGY

Research methods can be defined as guiding principles for the enhanced creation of knowledge. It is sometimes necessary to approach the research problem from the perspective of business world reality and of the case organization in question. Furthermore, the research problem and the circumstance under study are such that, in order to conduct credible research, the researcher must get close to the object of study.³⁵ Therefore, in order to better answer our research question, we traveled to China to be able to observe first hand, how the supplier selection process was being applied.

Our research method is largely based on qualitative research. It has been widely debated that qualitative research produces more significant insights into the problem than “hard and superficial” quantitative methods, and that the two different approaches are more complementary than competitive, with their own area of applicability.³⁶ It has been noted that qualitative researchers generally tend to be more influenced by their own interpretations and, therefore, emphasis is most often placed on the description and importance of the context in which the research is conducted; the overall research process; the importance of flexibility within the research structure; and that the concepts and theories are inductively arrived at from the data collected.³⁷

We decided to conduct a single, analytical case study strategy, whereby the researcher attempts to analyze and understand the research process, as well as the outcome. According to Margetson, this type of case study attempts to provide a description of the events, or “the lived experience”, while satisfying the three commonly used interpretations of qualitative research - describing, understanding and explaining.³⁸ A real defining strength of a case study approach is that a case study allows for generalizations about an instance. A case study distinguishes the complexities and deeply rooted social truths of the

³⁵ Seppälä, 2001

³⁶ Ibid.

³⁷ Bryman & Bell, 2003

³⁸ Global Research Business.com

research problem. Therefore, the case study researcher makes the case, an actual case, by carrying out the study, whereby they transform the situation from an object of perplexity into an object of understanding.³⁹

Our main objective when conducting this study was to first grasp a solid understanding of our task, thereby formulating a solid research question, which would help us to best reach our goal and a deep understanding of the subject matter. After having read extensively on the subject matter, we decided to focus our research on the aspect of supplier-buyer relationships, which interested us the most; therefore, we chose to further explore the supplier selection process. Having identified our major research focus, we then developed two sub-research questions in order to help us further break down and investigate our major research purpose. In order to be as objective as possible, we conducted a number of different interviews within Volvo Bus Corporation, Silver Bus Corporation, as well as with SBC's suppliers, so that we were able to increase our understanding and achieve a broad overview of the subject at hand. Our research took on an abductive approach, meaning that we first collected our information, conducted our interviews and then developed our theoretical framework based on our findings.

2.2 DATA COLLECTION

Our research will utilize both primary and secondary data sources. The application of the primary and secondary data sources is described below.

2.2.1 *Primary Data*

Primary data can be defined as new data used to solve the problem, or question at hand. The use of primary data has a number of strengths associated with it. Primary data is often targeted and focuses directly on the case study topic. Primary data is also insightful and can provide seemingly fundamental conclusions.⁴⁰

Our main objective in collecting our primary data was to collect as much useful information as possible by conducting a series of structured and unstructured interviews, meaning that some interviews followed a formal question and answer process, whereas other interviews took the form of a more informal conversation. However, both types of interviews were used in an effort to best achieve our goal by posing structured questions to the respondent. Our starting point was chosen as the Volvo Bus Corporation assembly plant, located in Boras, Sweden. This was the most logical starting point for obtaining the background information necessary to our study before traveling to China to meet with our Chinese case company. At Boras, we were given considerable

³⁹ Kemmis

⁴⁰ Tellis, 1997

background information regarding the assembly of the different buses, as well as information regarding VBC's global bus manufacturing plants and CKD procedures. Before leaving for China, we also met with a manager from Volvo's Global Purchasing Department, where we received valuable information specific to our research problem. Since the main focus of our study was how Volvo's supplier selection process was being applied by SBC in the Chinese market, we made plans to travel to China for two weeks to conduct our study first hand. This was done in an effort to obtain credible research using our own observations.

Before going to China we re-worked our research objective so that it now focused on the whole supplier selection process, with a specific emphasis on how Volvo's supplier evaluation model (SEM) was being applied to the Chinese market. We decided that we would focus primarily on conducting our interviews within the purchasing department; however, we would also include those related departments, which were involved in the selection process. With regard to suppliers, we had decided to interview those suppliers who had either gone through the SEM, or those suppliers who were familiar with the procedure. We ended up having to make minor adjustments to our original plan once we arrived in China. SBC did their best to accommodate us in our desire to speak to those suppliers who had a good knowledge of the supplier evaluation model; however, most of our interviews were based on the geographical proximity of the supplier to SBC. Telephone interviews were also conducted with those suppliers who were located further away from the company.

Upon arrival at SBC in China, we were asked to submit a two-week plan of what we would like to accomplish during our time there. We asked to schedule interview times with everyone in the purchasing department, the President, someone from aftermarket services, finance, logistics, design and material control, or essentially, anyone that was involved at some stage of the selection process. Since relationships are very important in China, the interviews usually took a less formal approach; getting to know the respondent was an essential part of the interview process.

Before leaving for China, we prepared two separate interview questionnaires, one for suppliers and one for internal SBC employees. The SBC questionnaire asked respondents to explain the supplier selection process, as well as a step-by-step account of how the SEM evaluations were carried out. The supplier interviews asked basic informational questions, whether or not they had gone through the SEM evaluation, and their feedback regarding the SEM process and criteria. The majority of the interviews were conducted in Chinese, however a few were conducted in English, allowing for both partners to make

contributions as well as to take notes. The interviews were not recorded, but rather, were all hand written in order to allow for more open discussions. We usually conducted three to four interviews a day and conducted thirty-two interviews in total. At the end of each day, all interviews in English were typed, and the Chinese interviews were translated, typed and discussed. Upon our return from China, we decided to conduct a follow-up interview with a Volvo SEM Lead Auditor in Sweden, also using a similar open-ended interview format. This interview was used as an opportunity to further discuss and confirm our findings from China, as well as to clarify and confirm specific facts and various different aspects of the SEM and the procedures surrounding its application.

2.2.2 Secondary Data

Secondary data can be defined as previously gathered data, or data which is not being collected for the first time and has been used by someone else for a different purpose. Secondary data sources are usually used to provide sufficient background knowledge of the subject matter.

The secondary data sources we chose to use were of great importance for providing a solid foundation from which we could build upon. Our study began with broad search for any journals, articles, books, papers and Internet sources, which could provide us with focused information regarding the supplier selection process. Our secondary data sources gave us a broad overview of the subject matter and were especially useful for continuous referencing, as well as for comparing and contrasting different research perspectives. We read a number of different books, journals and concurrent thesis papers which described supplier selection methods, supplier selection procedures, purchasing literature, trends in supplier selection as well as supplier literature reviews. We received numerous secondary data sources from our interviews with VBC and Volvo Global Purchasing, such as corporate information, detailed descriptions of the SEM model, CKD statistics and background information, etc., which allowed us to grasp a better understanding of how the Volvo-specific supplier selection process worked, as well as other related Volvo corporate information. Before leaving for China, we also received a number of written documents regarding procedures within SBC, as well as an introduction to the company, since they presently do not have a website. Our trip to China was extremely useful and provided us with many secondary data sources, such as company procedures internal documents, specific bus market information, and supplier selection process materials, etc., which could have not otherwise been obtained.

2.3 QUALITY OF RESEARCH

It should be noted that although reliability and validity are logically discernible, they are related because validity most always supposes reliability; meaning that, if your measure is not reliable, it cannot be valid.⁴¹

2.3.1 *Validity*

One of the most important research criterions has to do with the validity of the results. Validity is primarily concerned with the integrity of the conclusions that are generated from a piece of research. For our purposes, and having used a qualitative research approach, the concept of validity deals specifically with internal validity and external validity, however other methods for determining validity do exist. Internal validity can be defined as the form of validity, which primarily relates to the issue of causality, or rather, why things are the way they are (most commonly of concern to quantitative research). External validity is concerned with whether the results of a specific study can be generalized beyond the scope of the research context, or rather, the degree to which a study can be replicated. To put simply, validity assesses whether the measure of a concept really measures that concept.⁴²

Some writers argue that qualitative studies should be judged or evaluated according to different criteria employed by quantitative studies. They propose two primary criteria for assessing a qualitative study, which include: trustworthiness and authenticity. Trustworthiness is made up of four criteria, each of which has an equivalent criterion in quantitative research. These include:⁴³

- *Credibility*, which parallels internal validity, such as, how believable are the findings?
- *Transferability*, which parallels external validity, such as do the findings apply to other contexts?
- *Dependability*, which parallels reliability, such as, are the findings likely to apply at other times?
- *Confirmability*, which parallels objectivity, such as, has the investigator allowed his or her values to intrude to a high degree?

In order to best evaluate the above criteria, we took measures to ensure that our research was credible through continuous fact checking and constant confirmation from interviewed respondents, in order to be sure that we had correctly understood the process, the feedback and the environment in which we were researching. Since our research focused primarily on the Chinese bus

⁴¹ Bryman & Bell, 2003

⁴² Ibid.

⁴³ Bryman & Bell, 2003

market environment and related contexts, it would be difficult to apply transferability to our study, since it is likely that the findings cannot be directly transferred to other emerging market environments; however, the findings may be used as a point of reference for emerging market practicalities or for other MNCs operating in the Chinese market.

We made every attempt to ensure that our research was as dependable as possible by maintaining complete records of documents at all phases of the research process. Accurate records of our fieldwork were kept, and books, journals and articles were also kept close by for quick and accurate referencing purposes. Additionally, all initial documentation submissions, such as early problem formulations and early research proposals, were kept accessible at all times. With regard to confirmability, we took efforts to ensure that our research, as well as the research process, was as objective as was realistically possible, doing our best not to allow our personal values, opinions, or premature conclusions to affect the research findings. In order to avoid drawing upon our own subjective conclusions during the interview process, questions were carefully composed so as to provide a basis for discussion, rather than guiding the respondent to provide the answers we wanted to hear. We have done our best to interpret the information we received at face value, and to make assessments based on facts through the use of relevant theories.

We decided to apply the triangulation method in our study. As broadly defined by Denzin, the term refers to an approach, which uses ‘multiple observers, theoretical perspectives, sources of data and methodologies’.⁴⁴ Multiple data sources and two observers were used in collecting and analyzing our research in order to provide a well-informed and reliable perspective.

2.3.2 Reliability

Reliability is primarily concerned with issues of consistency measures, or rather, whether the results of a study can be repeated. The notion of reliability is closely related to replication and more specifically, case study design and comparative design. In order for replication to take place, a study must first be capable of being replicated; therefore, if the researcher does not explain the research process in vast detail, replication is impossible. Replication requires that the results of a piece of research should be unaffected by the researcher’s special characteristics or expectations.⁴⁵

Reliability can also be broken down into external reliability and internal reliability. External reliability essentially means the degree to which a study can be replicated, however this is often difficult to do in qualitative research

⁴⁴ Bryman & Bell, 2003

⁴⁵ Ibid

since it is impractical to ‘freeze’ a social setting and the circumstances of an initial study to make it replicable. Internal reliability refers to whether there is more than one observer, and members of the research team agree about what they see and hear.⁴⁶

Precise reliability is always difficult to achieve when trying to replicate a case study because it is impossible to have all of the right conditions, which made the first study possible. However, we have done our best to ensure that all materials have been well documented. We also made it a point to use reliable sources, which could be sourced at a future date if necessary. We found it difficult to achieve highly accurate internal reliability. This was due to the fact that, although both observers were present during the interviews, it was difficult for us to agree on everything that was said (and interpreted) by the respondent, since most of the interviews were in Chinese. However, every effort was made to assure accurate translations of the interviews. We also took the time to stop and provide intermittent translations during the actual interview, so that both researchers were able to follow along as best as was possible. Additionally, every interview was followed up by a lengthy discussion between the researchers so that both researchers were able to reach a common understanding of what had been discussed.

2.4 ANALYSIS OF DATA

Qualitative data originating from interviews or participant observation typically takes the form of a large mass of unstructured, contextual material and is anything but straightforward to analyze. One of the main intricacies of qualitative research is that it produces a large amount of material as a result of its reliance on text, primarily in the form of field notes, interview transcripts and written documents. The researchers must protect themselves against being rapt by the richness of data collected and try to focus on the aspects which are necessary for achieving the objective, and so that the data has a wider significance for the business and management community. In other words, the researchers must find a path through the “thicket of prose” that comprises the data by creating a clear-cut method for the presentation of the qualitative information.⁴⁷

Our data was analyzed using a slightly modified version of the structure presented in our empirical research. Our analysis focused on the major themes, which we identified in our empirical research. We attempted to further explain these findings through our own understanding of the information, as well as our through our own abilities to accurately and critically assess the findings. The

⁴⁶ Bryman & Bell, 2003

⁴⁷ Ibid

analysis also incorporates the theories, which we elected to use, in order to help us internalize, explain and better analyze our major empirical findings.

2.5 CRITICAL REVIEW

Had we not been working with a limited time frame, it would have been interesting to further explore and benchmark how other leading bus and automobile manufacturer's apply their global supplier selection processes to the Chinese market. Additionally, it would have been interesting to compare our research findings from VBC's joint venture with SBC in the Chinese market to VBC's other joint venture operations in other emerging markets, in order to see whether or not our results were related specifically to the Chinese market, or whether our findings were characteristic of, or could have been applied to other related emerging markets. The more we were able to explore our research subject, the more in-depth we realized we would have liked to have gone; however, since time did not permit, it was necessary for us to ensure that our study focused on the aspects related directly to the supplier selection process.

Since most of the interviews were conducted in Chinese, we were obliged to rely on one Chinese-speaking researcher to perform the majority of the note taking and translation procedures. The Chinese interviews also made it difficult for the non-speaking Chinese researcher to have any sort of real participation in the conversation. Although we were capable of having our questions translated, it was impossible to determine which route the conversation had gone, and therefore, it was difficult to resolve whether or not the question was relevant at that particular time. This aspect of the research made it even more critical that both research partners were of a similar mindset and that they communicated repeatedly, and clearly, in order to discuss, clarify and understand the results at each stage of the interview, translation, discussion, writing and research process.

Furthermore, had geographical proximity not been a factor, we would have liked to have met with more suppliers in different areas of the country. This would have been especially relevant for a deeper understanding of, to what degree relationships affect the supplier selection process, and whether or not those suppliers who are closest geographically to SBC, are also the closest to SBC from a relationship perspective. Furthermore, had we been able to select the suppliers for our interviews, a higher degree of objectivity may have been achieved in the results. We would have liked to be able to interview additional global and key components suppliers, as well as those suppliers who had a better knowledge and understanding of the SEM. Additionally, it would have been interesting to target some of our supplier interviews through random selection, rather than interviewing those suppliers who either had good working

relationships with SBC, or were located close to the company, in order to see if this approach would have produced a different outcome.

Chapter 3. THEORETICAL FRAMEWORK

In this chapter we will describe the specific theories we have chosen to work with. We will first present a discussion of some of the different trends, methods and theories used in developing a supplier selection process. We will then present the specific theories we have used as the basis for supporting our empirical findings.

3.1 INTRODUCTION

This chapter will present a discussion of the theories, which we will apply later on in our analysis. We have divided the theory into four major parts, which include supplier selection theories and literature, a supply network theory, a theory describing industrial buyer-supplier relationships theory and finally, Guanxi theory. We will review the supplier selection theories by focusing our emphasis on the methods and criteria most commonly described in the academic literature. Mostly all MNCs' supplier selection processes are based upon or incorporate some of the different methods, processes, models, theories and equations found in the popular supplier selection theories which are presented later in the chapter. We will then provide an introduction to the supply network theory, which will be used to analyze Volvo Group's supplier selection process. Next, we discuss the significance of supplier-buyer relationships in industrial markets and how they differ from consumer mass markets, and finally, we present a discussion on Guanxi theory, which describes the significant and unique roll, which relationships play in the conduct of Chinese business relationships. We decided to use these theories because we felt that they would help us to best support and clearly explain the issues presented in our empirical study.

3.2. REVIEW OF THE SUPPLIER SELECTION THEORIES

In this section we present a review of the widely accepted supplier selection theories, in addition to a range of popular supplier selection methods. The first section explains the recent developments within supplier selection, or more specifically, supplier selection criteria, and the second part concentrates on the methods used for supplier selection.

Before addressing the supplier selection methods, we will first take a look at what role, or roles, supplier selection plays within the purchasing function. One of the primary processes carried out in companies today is the strategic selection, evaluation and continuous improvement of suppliers. Over the years, numerous different studies have claimed that the supplier selection process is the most important function among all purchasing activities combined. This observation was first pointed out by researchers as early as 1943, and has

continued to serve a point of interest, and grounds for further research.⁴⁸ The role of purchasing has changed dramatically over the past two decades and has transformed into an increasingly important subject confronting the everyday operations of organizations. The significance of the purchasing function has largely come about as a growth of increased specialization in this area. In order for the firm to achieve a high level of efficiency, the purchasing function must be optimal; meaning that, purchasing decisions almost always determine the cost of the product (aside from market value). For many industries, purchasing is a large part of a company's expenditures and it can have a significant influence on a firm's profit. Therefore, a company's ability to make efficient and strategic purchasing decisions is essential for sustaining a competitive advantage.⁴⁹

Since supplier selection is one of the most important aspects within the purchasing function, it is necessary to present the specific steps used in supplier selection. In Figure 4, Robinson et al⁵⁰ have identified eight steps for comprehensive supplier selection. This model has been widely recognized and acknowledged by researchers as a basis for providing a comprehensive approach to supplier selection, as well as a systematic classification of the steps within the purchasing process. The actual purchasing process begins with the recognition of a purchasing problem and ends with the performance feedback and supplier evaluation. As seen in Figure 4, the actual supplier selection process begins at *Step 4*, with the search for a potential supplier, and ends at *Step 8*, with the performance feedback and evaluation of the supplier.

⁴⁸ Lewis, 1943, Leenders, 1975

⁴⁹ Ulkuniemi & Pauliina, 2003

⁵⁰ Robinson, Faris, Wind, 1967

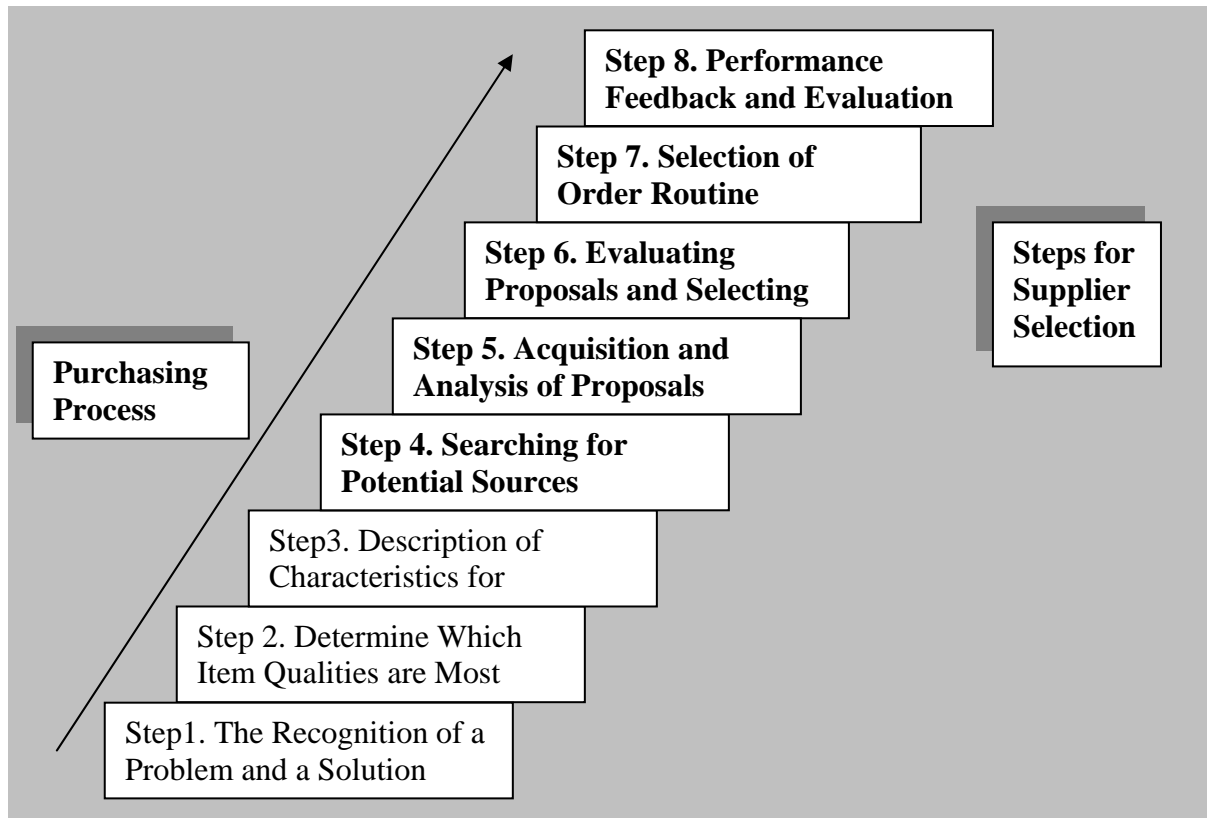


Figure 4. General Steps in the Purchasing Process

Source: Robinson et al. 1967

Another important aspect of the purchasing process are the supplier evaluations, which often follow a meticulous, prepared approach, through the use of a survey. An effective supplier survey should contain certain specific characteristics such as depth, objectivity, consistency, and flexibility, and finally, must be scientifically straightforward. To ensure that a supplier survey contains these essential criteria, it is suggested that a general step-by-step process be used when creating this tool, as can be seen in Figure 5.

One of the first steps in creating a supplier survey is for the purchaser, or management team, to decide which performance categories are the most significant and necessary for inclusion. The major criteria are cost/price, quality and delivery, which are often the most apparent, yet are the criteria, which affect the buyer the most. Step 2 is the weight each evaluation category. This step is where the performance categories are assigned a weight that reflects the comparative importance of the category. Flexibility is one of the most important aspects in this category and one of the ways in which management achieves this desired flexibility is by assigning different weights or adding or taking away performance categories as necessary. Step 3 further identifies and weights subcategories. Step 4 defines a scoring system for the different categories and subcategories. A clearly defined scoring system takes criteria,

which, may be highly subjective, and develops a quantitative scale for measurement. Scoring metrics are effective tools if it is necessary for different individuals to interpret and score the same performance categories under review. Step 5 is a direct evaluation of the supplier. This step allows the purchaser to objectively compare and contrast the scores of the different suppliers. The purchasing department should require basic performance requirements which a supplier must satisfy before they are able to join the supply base. Purchasers should have minimum acceptable performance requirements that suppliers must satisfy before they can become part of the supply base. Step 6 allows for a review of the evaluation results and the opportunity to make a selection decision. The principal objective of this step is to provide a recommendation about whether to accept a particular supplier for business. Step 7 focuses on the continuous review of supplier performance. When a purchaser selects a supplier, it is the responsibility of the supplier to perform according to the purchaser's requirements, whereby the focus changes from the initial evaluation and selection of suppliers to the verification of continuous improvement by suppliers. The use of weights and points throughout the evaluation should be simple enough that each person involved in the evaluation process understands the scoring procedures and selection process. In the following sections we will further discuss supplier selection and other related research issues.⁵¹

⁵¹ Bello, 2003

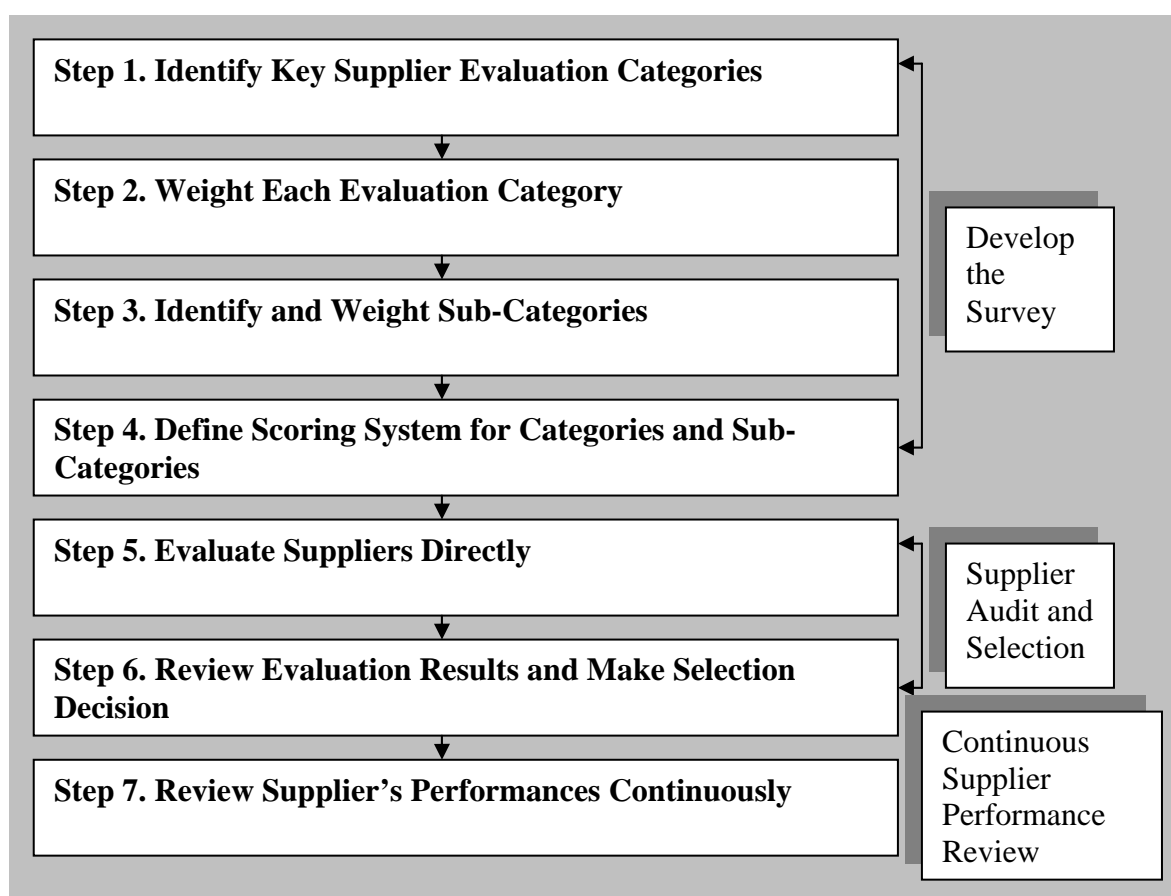


Figure 5. Process for Effective Supplier Selection

Source: Bello, 2003

3.2.1 Review of the Supplier Selection Process and Selection Criteria

In this section, we will review the supplier selection process, whereby, the majority of our emphasis will be focused on the selection criteria. It is necessary for us to first understand the supplier selection process from an academic perspective, and then subsequently, to apply it to our analysis of the empirical data.

There are two significant issues involved in supplier selection. The first concerns the selection method, and the second one focuses on the selection criteria. We found that the contemporary supplier selection literature can be divided into two basic groups which include: descriptive/explanative research and prescriptive (normative) research. According to Liao and Kuhn⁵², the descriptive/explanative research seeks to answer the broad questions what methods and why have these methods been chosen. The second topic looks at how things ‘should be’ and discusses the strategies and procedures for selecting the appropriate criteria. In order to provide a clear and logical explanation of

⁵² Liao & Kuhn, 2000

these two topics, we feel it is necessary to first present a review of the selection criteria, followed by a review of the supplier selection methods in the next section.

Benyoucef et al⁵³ describe supplier selection, as a strategic decision process influenced by multiple factors, numerous criteria and subjective measures, all of which are considered to be typical characteristics of supplier selection. More specifically, they describe supplier selection as an important decision, which must be consistent with the company's strategic goals. For example, it is necessary that the supplier selection decisions be based on a cooperative effort of the different departments within a company. It is also important the various supplier selection criteria support one and reinforce one another. Oftentimes supplier selection includes a number of subjective criteria, which can be described as those criteria, which are based on personal judgment, such as, "quality" or "attitude". Subjective criteria can be complicated to measure and generally, tend to be less accurate than objective criteria (such as quantitative measures).

A number of research studies have been conducted which focus on the importance of choosing the right criteria for supplier selection. We have chosen to focus on three major studies conducted between 1966 and 2003, in order to see how the different selection criteria have changed over the past few decades and where the current emphasis lies. Two of the most popular and often cited studies are a result of research conducted by Dickson's⁵⁴ and Weber et al's⁵⁵. In Table 1, we present a list of some of the most important supplier selection criteria according to recent research. Alongside the list we present an ensuing ranking of the criteria from studies conducted by Dickson in 1966, Weber et al in 1991, and Zhang et al in 2003. This is done in an effort to show how the importance of the various selection criteria has changed over the last few decades.

Dickson's 1966 study was based on a questionnaire, which was sent to two hundred and seventy-three purchasing agents and managers, all members of the U.S. National Association of Purchasing Managers. Based on his findings, Dickson's study identified twenty-three different criteria as being essential to supplier selection. Dickson's study concluded that quality, delivery time and performance history were among the most important factors for supplier selection.⁵⁶ Weber et al's study reviewed seventy-four different articles written between 1966 and 1991, concerning different supplier selection criteria and methods. This study found that net price; deliver precision; quality; production

⁵³Benyoucef, Ding & Xie, 2003

⁵⁴ Dickson, 1966

⁵⁵ Weber, Current & Benton, 1991

⁵⁶ Dickson, 1966

& capacity; and location were among the most important selection criteria at the time. Weber et al's study also concluded that it would be impossible to successfully produce low cost, high quality products with the use of satisfactory suppliers and appropriate selection and maintenance of suppliers⁵⁷. Finally, Zhang et al's study collected forty-nine articles published between 1991 and 2003. The study concluded that net price, quality, and delivery were the most important supplier selection criteria⁵⁸. As can be discerned from the three different studies, price became the number one selection factor, replacing Dickson's number one ranked quality criteria. Additional criteria not listed in this study have also become important in the selection process. These criteria include issues such as product design and development, flexibility, and the relationship with suppliers. The different ranking of criteria also suggests that supplier selection decisions are inherently multi-objective. While some of the criteria have changed, the major criteria have, for the most part, remained the same, reinforcing its significance.

⁵⁷ Ibid

⁵⁸ Zhang, Lei, Cao, To & Ng, 2003

Table 1. Supplier Selection Criteria Ranking: Comparison of Three Different Studies

Criteria	Dickson (1966)	Weber et al (1991)	Zhang et al (2003)
	Rank	Rank	Rank
Net price	6	1	1
Quality	1	3	2
Delivery	2	2	3
Production Facilities and Capacity	5	4	4
Technical Capability	7	6	5
Financial Position	8	9	6
Geographical Location	20	5	7
Management and Organization	13	7	7
Performance History	3	9	7
Operating Controls	14	13	7
Communication System	10	15	7
Reputation and Position in Industry	11	8	12
Repair Service	15	9	13
Packaging Ability	18	13	13
Training Aids	22	15	13
Procedural Compliance	9	15	13
Labor Relations Record	19	15	13
Warranties & Claims Policies	14	22	13
Attitude	16	12	19
Reciprocal Arrangements	23	15	19
Impression	17	15	21
Desire for Business	12	21	21
Amount of Past Business	21	21	21

Source: Author’s Own Elaboration, Based On Dickson, 1966, Weber et al 1991, Zhang et al, 2003

In addition to the well-noted research studies of Dickson, Weber et al and Zhang et al, other researchers have also recently begun discussing the importance of additional supplier selection criteria, not mentioned in the above studies. These criteria include aspects such as financial issues, strategy issues, risk management issues, organizational culture and technological capabilities⁵⁹. Barbarosoglu and Yazgac⁶⁰ have also gone on to define three primary selection criteria, which include: performance of the supplier, technical capabilities, financial position, and quality system. Tullous and Munson⁶¹ conducted a study in 1991, which sampled eighty manufacturing firms and they discovered that quality, price, technical service, delivery reliability and lead times were

⁵⁹ Ellram, 1990

⁶⁰ Barbarosoglu & Yazgac, 1997

⁶¹ Tullous & Munson, 1991

among the most important selection factors. Garfamy's⁶² study concluded that the most valuable supplier selection criteria were cost, quality, service, relationship and organization. While a number of supplier selection criteria studies have been conducted over the years, Dickson, Weber et al and Zhang et al are still recognized as the most common, and cited as the most comprehensive studies done on selection criteria.

3.2.2 Review of the Supplier Selection Methods

Supplier selection methods are the models, or approaches, used to conduct the selection. The method(s) chosen are extremely important to the overall selection process and can have a significant influence on the selection results. It is important understand why a firm chooses one method (or a combination of different methods together) over another. Several of the well-known selection methods have been developed and classified by numerous scholars over the years. Certain methods have been popular selection choices for years, while other methods have only emerged recently. Usually when a company sets out to develop or choose a supplier selection method, the result is usually a combination of several different methods and different strengths suited to meet the company's specific selection needs. Therefore, it is important to explore a range of different selection methods and to discuss their different applications.

Benyoucef et al divide the supplier selection methods into three straightforward categories, which include: the elimination method, the optimization method, and the probabilistic method. The elimination method's primary purpose is to eliminate those suppliers whose score, based on the corresponding criteria, is lower than the accepted average. All suppliers must meet the most basic criteria, and suppliers with the highest scores will be chosen. For example, Volvo has implemented measures within their SEM, known as stopping parameters, which requires suppliers to meet these requirements in order to even be considered as a supplier. The optimization method is used to ensure that the criteria function is optimized. There are two possible options for this method, which include a list of criteria subject to a set of specific constraints, or those criteria without constraints. The Analytical Hierarchic Process (AHP) is a good example of situation where no constraints are present. With regard to the probabilistic method, Benyoucef et al believe that supplier selection decision can often be handled in a relatively routine fashion.⁶³

Further to Benyoucef et al's classification approach of supplier selection methods, Liao and Kuhn⁶⁴ have chosen to classify supplier selection methods into sorting methods and supplier final selecting methods. The main purpose of

⁶² Garfamy, 2003

⁶³ Benyoucef, Ding & Xie, 2003

⁶⁴ Liao & Kuhn, 2000

the supplier sorting method is to eliminate the inefficient suppliers in the beginning of the process, such as through the use of a categorical approach, cluster analysis or Data Envelopment Analysis (DEA). The supplier final selecting method includes a range of different methods, such as the cost based method, multi-attribute utility approach and linear weighting. Liao and Kuhn also point out the importance which mathematical programming plays in supplier final selecting methods, as can be seen in the linear programming method, mixed integer programming method, goal programming method, and the multi-objective programming method. Our research has shown that many of the models used tend to be based on a quantitative approach, which is generally more systematic and reliable than a qualitative approach. For example, Volvo's SEM utilizes a combination of both quantitative and qualitative criteria in order to cover a variety of aspects of supplier selection.

Over the years, researchers have begun to classify and group the individual supplier selection methods into a number of broader categories, with each classification having both advantages and disadvantages. Table 2 below, presents a description of some of the most widely used methods for supplier selection. Additionally, some of the more commonly used methods, such as the Analytical Hierarchy Process (AHP), the Multiple Attribute Utility Theory (MAUT), the Activity-Based Costing Approach (ABC), and the Total Cost of Ownership approach, will be given additional focus and further explanation.

Table 2. Commonly Used Supplier Selection Methods

Technique	Proponents	Methodology	Applications
Analytic Hierarchy Process (AHP)	Saaty, Belton, Dyer, Bard, Bhutta, Nydick, Hill	AHP provides a framework to cope with multiple criteria situations involving intuitive, rational, qualitative and quantitative aspects.	Prioritizing Alternatives
Unit Total Cost	Harding, Porter, Monckza.	Unit Total Cost is the total cost to the purchaser per unit after inclusion of all relevant factors	Cost of product is less significant than other costs
Total Cost of Ownership (TCO)	Ellram, Carr, Cavinto, Porter, Bhutta	TCO is a methodology and philosophy, which looks beyond the price of a purchase to include many other purchase-related costs. This approach has become increasingly important as organizations look for ways to better understand and manage their costs	Cost of product is less significant than other costs
ABC costing Approach	Tyndall, Morris, Kaplan	Categorizing costs into ABC categories and then making a selection based on the criteria selected	When cost categories of parts is critical
Life Cycle Costing Approach	Jackson, Ostrom, Handfield, Pannesi	Looks at the cost of the product over its whole life	When periodic maintenance or replacement is needed and costs are high
Multi-Objective Programming	Weber, Ellram	The use of a multi-objective programming approach is generally used in the just-in-time scenarios. The analysis occurs in a decision support system environment	Where multiple conflicting criteria have to be considered in a JIT environment.
Multi-Attribute Utility Theory (MAUT)	Weber, Nitsch	Use of MAUT, can help purchasing professionals to formulate viable sourcing strategies, as it is capable of handling multiple conflicting attributes inherent in international supplier selection	In situations of International supplier selection, where the environment is more complicated and risky.
Dynamic Programming	Masella, Rangone	By setting Input Variables as Control & Environmental variables, State Variables as the internal workings of the organization, and the Output variables as the performance achieved by the organization based on the selection of suppliers made.	Where output is a measured quantity. And discretization of variables can be achieved.
Data Envelopment Analysis (DEA)	Weber, Kleinsouza, Clarke, Kent	DEA is an optimization method of mathematical programming used to generalize single-input/ single-output technical efficiency measure to the multiple-input/ multiple-output case by constructing a relative efficiency score as the ratio of a single virtual output to a single virtual input.	Where there are multiple inputs and outputs that make comparisons difficult

Source: Bhutta, 2002

Analytical Hierarchy Process (AHP)

Our review of the supplier selection literature, showed the AHP method to be one of the most commonly applied methods in practice. AHP is an ideal method for ranking alternatives when multiples criteria and sub-criteria are present in the decision-making process. Similar to that of the Multiple Attribute Utility Theory (MAUT), AHP allows the decision-maker to structure complicated problems in the form of a decision hierarchy. The hierarchy usually consists of three different levels, which include goals, the criteria, and alternatives. With regard to supplier selection, a goal might be the ability to choose the right supplier, the criteria usually includes issues such as quality and price, etc., and alternatives, for example, could be considered as having different suppliers. AHP is often considered as an ideal supplier selection method because it allows decision makers to rank suppliers based on the relative importance of the criteria and the suitability of the suppliers⁶⁵.

Multiple Attribute Utility Theory (MAUT)

The MAUT method is recognized here, most notably for its systematic nature. MAUT is often cited as an ideal method for solving complex problems when multiple criteria are present. Since most supplier selection problems encompass multiple criteria, MAUT is an appropriate approach. Based on a selection previous research studies, Min⁶⁶ presents a six-step example for the application of MAUT:

1. Identify the objectives for the decision, and define the scope of the problem.
2. Form a list of attributes concerning the decision, and then organize them hierarchically.
3. Determine the importance of the different attributes.
4. Build upon the decision maker's utility function.
5. Calculate the overall utility score for each alternative, and then rank the alternatives.
6. Perform sensitivity analysis.

Activity-Based Costing (ABC)

The ABC method is the method which is most focused on cost. The ABC method is most commonly used to assess the direct and indirect resources of an organization and compare them to the activities performed based on the consumption. In the ABC method, resource costs are determined by identifying the amount of resources, which are necessary or consumed in performing a specific activity. The activity costs are then traced to the specific products,

⁶⁵ Benyoucef, Ding & Xie, 2003

⁶⁶ Min, 1994

services, or customers and is decided based on how frequently the activity is performed in support of these cost objects⁶⁷.

Total Cost of Ownership (TCO)

TCO is another method where the emphasis is placed on cost. Since cost is one of the major criteria of supplier selection, TCO is a valuable approach. TCO is a structured method used to find out the total costs associated with the acquisition of, and subsequent use of a specific component from a given supplier. This method determines that an item's purchase price is only a portion of the total cost of acquiring an item, and that the cost of ordering, expediting, receiving, and inspecting is related to the supplier's performance. The TCO method identifies the total acquisition price by incorporating the costs of purchasing, holding, poor quality, and delivery failure and others.⁶⁸ TCO can also be used for communicating with suppliers, as well as for evaluating suppliers' performance.⁶⁹

There are many different supplier selection methods and a number of selection criteria presented in current literature, which can be used in effective supplier selection. When an organization sets up its supplier selection, oftentimes they will make use of several of the popular selection methods and important selection criteria, by employing various aspects of multiple methods and criteria for a combined approach. Therefore, it is important to understand the relative strengths and weaknesses of the different methods and selection criteria, in addition to the ones, which are most widely used and recognized, as presented above.

3.3 SUPPLY NETWORK THEORY

We have chosen to use the Supply Network Theory because we have determined it to be one of the most suitable, and closely-related theories for our thesis subject, in addition to being an ideal theory for guiding us through the analysis portion of our paper. The Supply Network Theory, developed by Lars-Erik Gadde and Hakan Hakansson in their book *Supply Network Strategies*, in 2001, is also one of most popular and well-referenced theories for supply network studies and other related supply industry topics⁷⁰. There are several issues, which have been developed within the theory/book, including: supply strategies, network analysis and purchasing challenges. In the supply strategies section, the authors primarily focus on the boundaries of the firm, the relationship with supplier, the supply network design and the network strategies. For the network analysis portion, the authors place emphasis on the

⁶⁷ La Londe & Ginter, 1999

⁶⁸ Lee, 2000

⁶⁹ Degraeve, Labro & Roodhooft, 2004

⁷⁰ Gadde & Hakansson, 2001

purchasing and activities structure, and the purchasing and resource structure. When discussing purchasing challenges, the authors point out the importance of the role of purchasing within an organization, the dynamics and challenges of purchasing and the impact of purchasing in the 'new economy'. A range of issues is discussed within the Supply Network Theory; however, for our purposes, we have chosen to focus on the issues, which we believe are most relevant to our study.

3.3.1 Efficient Activity Structure

The efficient activity structure of an organization's purchasing department can have a major impact on the supplier selection process and is very important to consider. Gadde and Hakansson stress this issue noting that companies can improve the efficiency of their purchasing function by reorganizing the activity structure. This activity structure typically includes the buyer, the supplier, the sub-supplier, and the customer. We believe it would be worthwhile for us to analyze the activity structure of our case company by applying this aspect of the theory.

3.3.1.1 Between Buyer and Sub-Suppliers

While it is unusual for a buyer to form a direct relationship with its sub-suppliers (as is also true of SBC), it is still sometimes necessary for the buyer to have some type of contact with its sub-suppliers. The level of contact or the type of relationship with the sub-suppliers is usually dependent on the degree of importance of the specific component, which they supply. Typically it is left up to the first-tier supplier to communicate these standards; however occasionally, the buyer must go directly to the sub-supplier. For example, if SBC wants to ensure that a particular component is of a certain quality, they may decide to meet directly with the sub-supplier before going ahead with the production. Therefore, if the component will have a significant outcome on the overall product, it is sometimes necessary that the buyer work closely with the sub-supplier.

3.3.1.2 Between Buyer and Customer

The customer of the buying firm also sets objectives for guiding the conduct of the buyer, like that of the relationship between the supplier and the sub-supplier. Examples of these goals or working objectives might be specific functionality, delivery time and precision and production documentation. When the buyer switches to a new supplier, it is sometimes necessary that the customer approve the switch. It is also important for the buyer to have an influence over the customer's choice of certain components or parts, so that the buyer can better manage its supplier selection and achieve economies of scale. Gadde and Hakansson note that it is ideal when two separate buyers are able to coordinate their buying activities, or rather, share a common supplier. The

common needs of two buyers allows for ease of purchasing, larger purchasing orders (which can have a direct impact on cost) and it significantly affects the buyer's ability to achieve efficiency

3.3.1.3 Between Buyer and Supplier

The relationship between the buyer and supplier is one of the most important aspects of the activity structure. There are several buyer functions involved in dealing with the supplier relationship including the purchasing department, R&D, logistics, after market, finance and administrative operations. It is important that a buyer selects suppliers who will provide maximum value to the company and therefore, it is necessary for a buyer to compare a supplier's strengths and weaknesses and assess them accordingly.

3.3.2 Developing Relationships With Suppliers

Relationship is one of the most important aspects of supplier selection, especially in the Chinese market. The buyer usually develops various types of relationships with its suppliers, usually depending upon the significance or importance of the relationship. While the general trend is moving away from arm's length relationships towards establishing strategic relationships with suppliers, it is impractical for the buyer to maintain close relationships with all of its suppliers. The different types of buyer-supplier relationships are usually dependent on the component, which the supplier provides, as well as the level of mutual investment that both the buyer and the supplier are willing to make.

3.3.2.1 Economic Consequences of Supplier Relationships

By comparing the relative costs to the received benefits of a relationship, a company is usually able to determine whether or not to further develop and work to maintain a particular supplier relationship. Gadde, and Hakansson note that the relationship with its suppliers is one of most valuable assets a company can have. The role and value of a relationship is not necessarily determined by a product or service itself, but rather, it depends on several different aspects, such as the volume of business, which the supplier represents, the importance and level of quality, which they supply, the technical level of the supplier, and the suppliers' specifications. For a more effective and mutually beneficial relationship, it is important for the buyer to understand the multiple economic consequences of the supplier relationship. The relationship costs include direct purchasing costs, such as the invoice from supplier and other associated costs such as, transportation, handling and ordering, etc. (See Table 3.). Two major benefits derived from a successful supplier relationship can be considered the cost benefits, or cost savings, which can be difficult to measure due to their sometimes qualitative nature and the revenue benefits, which can directly impact the revenue of the buying firm.

Table 3. The Associated Financial Costs and Benefits of Supplier Relationships

Relationship Costs	Relationship Benefits
-Direct procurement costs	-Cost benefits
-Direct transaction costs	-Revenue benefits
-Relationship handling costs	
-Supply handling costs	

Source: Gadde and Snehota, 2000

3.3.2.2. High and Low Relationship Involvement

The level of relationship involvement is usually determined at the beginning of the relationship. As mentioned above, the associated costs compared to the relative received benefits also affect the level of relationship involvement. Traditionally, buying firms were not supposed to have a deep level of involvement with the individual suppliers. However, this is beginning to change, and we are beginning to see the importance and benefits for the buyer to establish close-working, strategic relationships with its suppliers, as can be seen below.

- High involvement with one supplier would increase transaction uncertainty.
- Buyer firms should avoid locking with a specific relationship.
- Low involvement would encourage competition among suppliers.

High involvement relationships are associated with the relationship benefit side, meaning that increased cost benefits can be achieved by reducing costs within the production process and material flows, as well as improved service levels and enhanced flexibility. The buyer firms can improve the quality of its own product or service by taking advantage of a supplier's skills, knowledge and capabilities. However, the benefits of high involvement are associated additional costs and resources, such as, substantial co-ordination, adaptation, interaction and relationship handling costs. Therefore, the buying firm should only establish a high involvement relationship with a supplier if the benefits are greater than the costs, or follow the investment logic. A similar logic can be applied when a buying firm attempts to determine whether to establish a low-involvement relationship with a supplier.

3.3.2.3 Relationship Continuity

While it is important to determine the level of a buyer's relationships with its suppliers, it is also important to focus on the continuity of the relationship. The degree of continuity is an important dimension of buyer-supplier relationships. Gadde and Hakansson point out those low levels of involvement characterize many of the relationships in an organization, and only high levels of involvement characterize some. The authors also point out that it would be unusual for a high involvement relationship to be characterized by a low degree

of continuity, but that a long-lasting relationship can be effectively managed with limited involvement. There are several advantages related to the effective combining of low involvement relationships with a high degree of continuity, and that the different levels of involvement and continuity can provide different advantages for buying organizations (See Table 4).

Table 4. Relationship Involvement and Continuity

High CONTINUITY	<u>Simple Relationships</u> Continuity makes routinization possible. Low involvement makes change of supplier easy if necessary.	<u>Complex Relationships</u> Efficiency improvements through mutual adaptations lead to cost benefits and revenue benefits, which appear over time.
	<u>Market Exchange</u> Increasing efficiency from price pressure—requiring low continuity and low involvement.	<u>Complex Buying Situations</u> Appropriate for procurement of complex systems and equipment, which are bought at irregular intervals.
Low	Low	High
	INVOLVEMENT	

Source: Gadde & Hakansson, 2001

3.3.3 Supplier Networks

Supplier networks focus on two major issues which include deciding on the sourcing policy, such as single or multiple sourcing, and determining the size of supply base. When routine a buyer relies on one supplier for the purchase of a single item, it is defined as single sourcing. When a buyer depends on more than one supplier for a component, then it can be defined as multiple sourcing. The sourcing policy also influences the actual size of supply base.

3.3.3.1 Single and Multiple Sourcing

There are advantages and disadvantages to using both single and multiple sourcing. Single sourcing usually refers to a few, high involvement relationships with suppliers. The main advantage of single sourcing is the increased bargaining power of the buyer. However, single sourcing also allows for the buyer to decrease the overall number of its suppliers, which usually results in cost savings and an increased ability to manage the supply base. There are two main advantages associated with the use of multiple sourcing. These include: a buyer’s ability to reduce its dependency on a single supplier; and secondly, it encourages the suppliers to bid, or compete against one another to achieve higher efficiency.

3.3.1.2 The Size of the Supply Base

The size of the supply base is extremely important because high costs are associated with maintaining a large supply base. The size of the supply base is

usually reflected in the sourcing policy of the buying organization. There has been a recent trend towards the consolidating the supply base, as many MNCs attempt to lower their costs and increase efficiency on the supply side. There are a number of advantages associated with decreasing the size of the supply base, which include reductions in the cost of maintaining a supply relationship, reductions in the indirect costs of purchasing, reductions in the cost of sourcing potential suppliers, increased bargaining power for the buyer and efficient economies of scale, etc. The primary objective of an effective supply base is to enable the buyer to achieve the highest degree of efficiency for their supply network.

3.4 INDUSTRIAL BUYER-SUPPLIER RELATIONSHIPS

The following section describes the relationship between buyers and suppliers in industrial markets. Given that the different types of relationships which exist between buyers and suppliers is extensive, it is necessary to discern between the different types of relationships, as well as to identify which relationships are most appropriate in the different situations. We will use Seppala's theories on buyer-supplier relationships in industrial markets to further illustrate our point.

Since interactions within industrial markets occur rather frequently, it is only necessary that the focus rest more on the relationships between the buyer and the supplier, rather than on a single transaction carried out within that relationship. As a result, the customer base in industrial markets is much narrower than in the consumer mass markets, as can be seen with SBC in the Chinese bus industry. It is these specific qualities, which characterize the industrial markets and suggest a different type of stability. In practice, this special stability would propose that the study of relationships, rather than single transactions, offers clearer insights into the industrial market reality. We will now present the characteristics, which define a buyer-supplier relationship, as well as the specific components, which distinguish this type of relationship.⁷¹

Buyer-Supplier Relationships

In a classical buyer-supplier relationship, both the buyer and the supplier are highly committed to achieving a common goal. Typically in this type of relationships, the driving motivation behind this commitment is the joint goal of two-way benefit. It is not necessary that the relationship partners share jointly owned assets; however the relationship is often characterized by relationship-specific investments, which ultimately increase mutual dependence. Commodities transacted in buyer-supplier relationships are generally very specific and are normally adapted directly to the customer requirements. This is oftentimes seen with SBC's customers, who often

⁷¹ Seppälä, 2001

request specific parts or components for individual buses. A buyer-supplier relationship is also described as one, which involves a certain degree of commitment over a certain length of time, where the mutual sharing of risks, rewards, and information sharing takes place frequently. It has been noted that these types of partnerships are best maintained through frequent and personal visits. Additionally, suppliers are generally involved in new product development at an early stage, and are also active in developing technology and searching for answers to common problems. Finally, these types of supplier-buyer relationships often involve investments in relationship-specific assets, such as building equipment.⁷²

Relationship Components

The specific components, which make up these industrial supplier-buyer relationships, include trust and commitment. Since trust is such an essential part of establishing and maintaining a successful relationship, it is important that the relationship be based on mutual trust from the start. Trust is generally defined as the firm's belief that another company will take actions, which will result in positive outcomes for the firm, and not take those actions, which would result in negative outcomes. In the long run, in this type of relationship, trust is measured by the willingness of both the buyer and the supplier to invest in the relationship or a similar type of relationship again in the future.⁷³

Communication and Information Exchange

In well-established relationships, open communication and the exchange of information should be transparent at all organizational levels. The information shared by both the buyer and the supplier should be consistent, and should include both practical and technical information in order to increase joint planning and joint problem solving. The sharing of information is also necessary to reduce uncertainty and to increase general control.⁷⁴

Cooperation

Cooperation generally refers to those situations where the buyer and the supplier work together to achieve mutual goals and objectives. In these types of relationships, the supplier is usually involved at an early stage of the product design in order to maximize their potential contribution, as well as to stay informed of all future developments, since it is the supplier who is usually the expert in their field.⁷⁵

⁷² Ibid

⁷³ Seppälä, 2001

⁷⁴ Ibid

⁷⁵ Seppälä, 2001

Commitment

One of the determining factors of successful buyer-supplier relationships is the presence of long-term commitment. Long-term commitment can be described as a persistent desire to maintain an important relationship and trust that the other party will also work to maintain it.⁷⁶

3.5 GUANXI THEORY

In order to best analyze how business relationships work in China, or more specifically, buyer-supplier relationships, we have chosen to use Guanxi theory, since it is one of the fundamental concepts on which Chinese relationship conduct is based. In the Chinese culture, it is professed that one's existence is heavily influenced by one's relationships with others, and that one cannot change the environment in which they live and interact, but rather, they must harmonize with it. Generally, in Chinese culture, Guanxi is a hierarchally structured network of relations, whereby the actor in the relationship network is restricted by mutual obligations. The Guanxi Theory was developed by Y. H. Wong and Thomas K. P. Leung and can be applied to the study of relationships in several different contexts. The term 'Guanxi' can be broadly translated as meaning "personal relationships", or "connections". Guanxi can be found in nearly every aspect of the Chinese community, from politics to social functions. As described by Wong and Leung, "Guanxi is developed with ingenuity and creativity, supplemented by the flexibility of cultivating a relationship through a person's network connections."⁷⁷ Guanxi has a remarkable impact on Chinese business practice, which differs from the Western one in the sense that it emphasizes personal relationships and trust, whereas Western business culture places emphasis on written contracts and specific procedures.⁷⁸

As mentioned above, the Western and Chinese approach to business relationships differ greatly. The Western views are discussed by describing transaction cost analysis, social exchange and interaction theories while the Chinese view of relationships is based on the related Guanxi concepts of Renqing (favor), defense and network theory, face and the post-Confucian Work Dynamic (See Table 5.).⁷⁹ In order to clearly discern between the two approaches, as well as to draw on possible similarities, we will first present a portrayal of the Western business approach, and then present a description of the Chinese approach to business relationships.

⁷⁶ Ibid

⁷⁷ Wong & Leung, 2001

⁷⁸ Seppälä, 2001

⁷⁹ Wong & Leung, 2001

Table 5. Relationship Classifications According to the Western and Chinese ‘Guanxi’ Approaches

Relationship Type	Western Approach	Chinese Approach
Economic	Transaction Cost Analysis	Defense and Network
Socio-psychological	Social exchange	‘Renqing’ and ‘Face’
Marketing or Business	Interaction Theory	Post-Confucian Work Dynamic

Source: Wong & Leung, 2001

3.5.1 The Western Approach To Relationships

Transaction Cost Analysis

In Western literature, economic analysis is one of the major contributions to the explanation of economic behavior between different persons and organizations. TCA is a commonly used explanation often proposed by economists to explain this Western type of economic behavior and has also be used to explain a varying range of organizational activities such as clan-like relations among firms, the vertical integration of production and bureaucracy. The clan system involves a long process of interactions leading to common values and beliefs, hence, an interdependent relationship is formed, whereby the buyer and seller work together to share information and solve problems. As explained by Wong and Leung, an optimal relationship will reduce the transaction costs of searching for information, relationship monitoring, and contract enforcement.⁸⁰

Social Exchange Theory

The Western social exchange theory provides an ideal framework for examining different buyer-seller relationships. The fundamental underlying concept concerning the building of relations between groups and individuals is the differentiation of the power of the peer group. In this sense, social exchange theory serves as a useful tool to analyze how the rewards and costs in relationships affect the patterns of interaction. There are two major components of social exchange theory, which include trust and power dependence. Studies have shown that in Western cultures, individual performance is often preferred. As noted by Wong and Leung, this phenomenon may be attributed to the fact that Westerners do not easily trust others, so they prefer to perform tasks themselves. Additionally, in negotiating, Westerners do not give priority to personal relationships and prefer to conduct business over the phone, as opposed to face-to-face meetings, like that of the Chinese culture, where a personal relationship is vital to establishing a business relationship.⁸¹

⁸⁰ Wong & Leung, 2001

⁸¹ Ibid

Interaction Theory

There are four key elements, which make up the interaction approach. These include: Different individual exchange episodes between two parties, the distinct characteristics of the interaction parties, the interaction environment and the atmosphere, or, relationship between the two parties. It has been described that a Western firm's internationalization process is opportunistic in nature, and that its concept of opportunism is based on either cost, opportunity, market, financial or, the level of control analysis. As Wong and Leung have noted in their research, the low power distance which exists in Western cultures considers humans basically as equals; the high level of individualism show that Western cultures prefer individual performance; and the low, low levels of long-term orientation show that Western cultures aim at short-term performance.⁸²

3.5.2 Chinese Approach To Relationships

The Chinese culture places emphasis on the significance of maintaining personal harmony and social order in hierarchal personal relationships. Chinese people usually regard Renqing, Guanxi and Mianzi (face) as 'weapons' in a 'power game', to be used to influence people or to obtain the social resources directly controlled by them. As Wong and Leung explain, Guanxi means that a solid relationship is built on pre-existing relationships. One of the major motivations for developing Guanxi is the shortage of everyday necessities, and therefore, the Chinese originally developed Guanxi to obtain these necessities. Today, Guanxi is often built through the exchange of gifts and favors. To be put simply, the legacy of Chinese social history reflects a lack of security, and as a result, Chinese businesspeople have always had to defend their own networks by bonding with members inside a network.⁸³

Defense and Network

The defense instrument in Chinese business organizations is a result a deeply rooted mistrust of the Chinese legal and political systems; therefore, Chinese people tend to interact with one another by building "informal" ties, which become strong bonds leading to the growth of a network, or series of relationships.⁸⁴

Renqing and Face

Chinese people have had a tendency to adopt multiple behavioral standards for interacting with different people. Two of the most important factors, which affect relationship development, are Renqing and Face. Renqing generally has three meanings: Emotional responses, a gift in social exchange and social

⁸² Wong & Leung, 2001

⁸³ Ibid

⁸⁴ Wong & Leung, 2001

norms. Face can be loosely defined as one's respect status, and moral reputation in Chinese society, something that is considered very important.⁸⁵

Post-Confucian Work Dynamic

In traditional Confucian ethics, commerce was not highly regarded, and material possessions, such as property acquired through business did not automatically command respect. Rather, ethics were the primary means for maintaining the stability of social systems and civil justice, in order to prevent the rise of a rich and powerful individual, which might undermine the status quo. These core values of Confucian ethics have been strongly upheld by government officials in the interpretation of business law today.⁸⁶

Guanxi works best when both parties actively participate in the relationship. When someone does a favor for the other, it is expected that the favor will be repaid when the time comes. Guanxi does not work effectively if someone asks for a favor without providing anything in return. Figure 6 below, illustrates both the Western and Chinese approaches to business relationships and the way in which they differ. It is these differences, which have provided us with significant inspiration for our study and a basis for analyzing our empirical research from a relationships perspective. For example, throughout our research we were able to observe how an MNC applies its 'Western procedures' to the Chinese market, where the business environment is very dissimilar, and the business conduct varies greatly. As can be seen in Figure 6, in order for Western practices and values to function smoothly and effectively, in a Chinese business environment, some form of adaptation is necessary.

⁸⁵ Ibid

⁸⁶ Wong & Leung, 2001

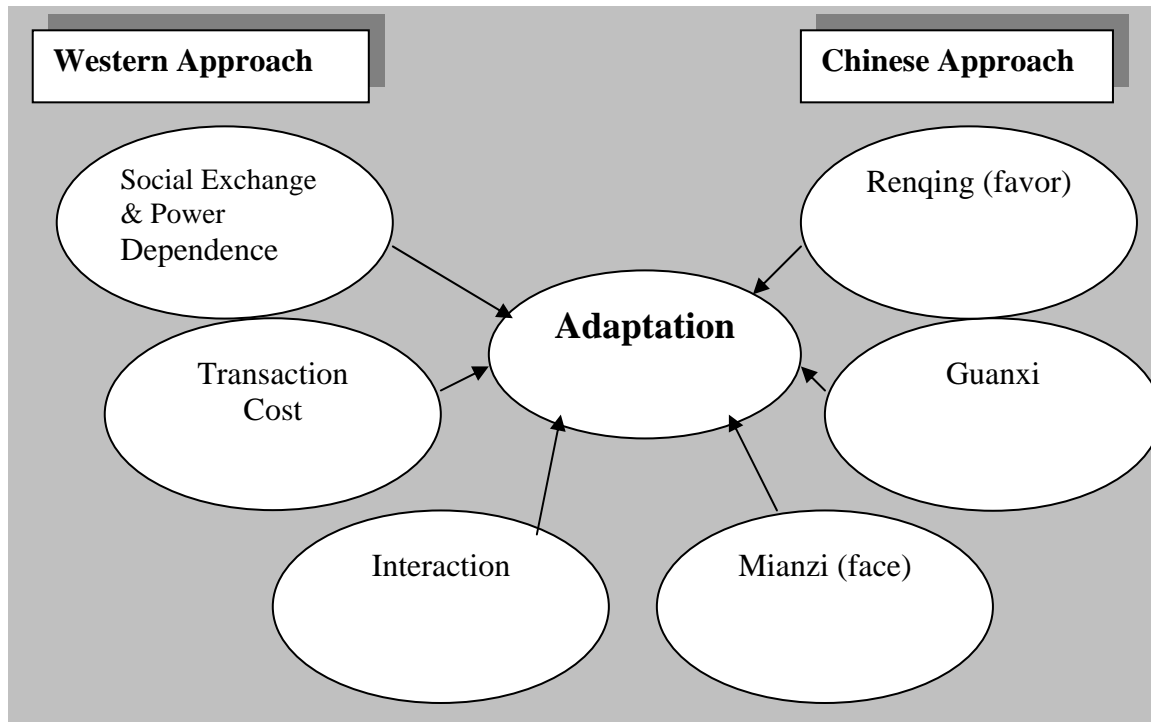


Figure 6. The Western and Chinese Approaches to Inter-Firm Adaptation in Business Relationships

Source: Wong & Leung, 2001

3.6 RESEARCH MODEL

In this chapter we have discussed four major theories including, supplier selection theories, supply network theories, industrial buyer-supplier relationship theories and Guanxi theory, all of which are believed to be important in the analysis of our empirical research. Based on these four theories, we have developed a research model (See Figure 7.), which offers a visual representation of the structure and intended application of these theories in the analysis of our empirical data.

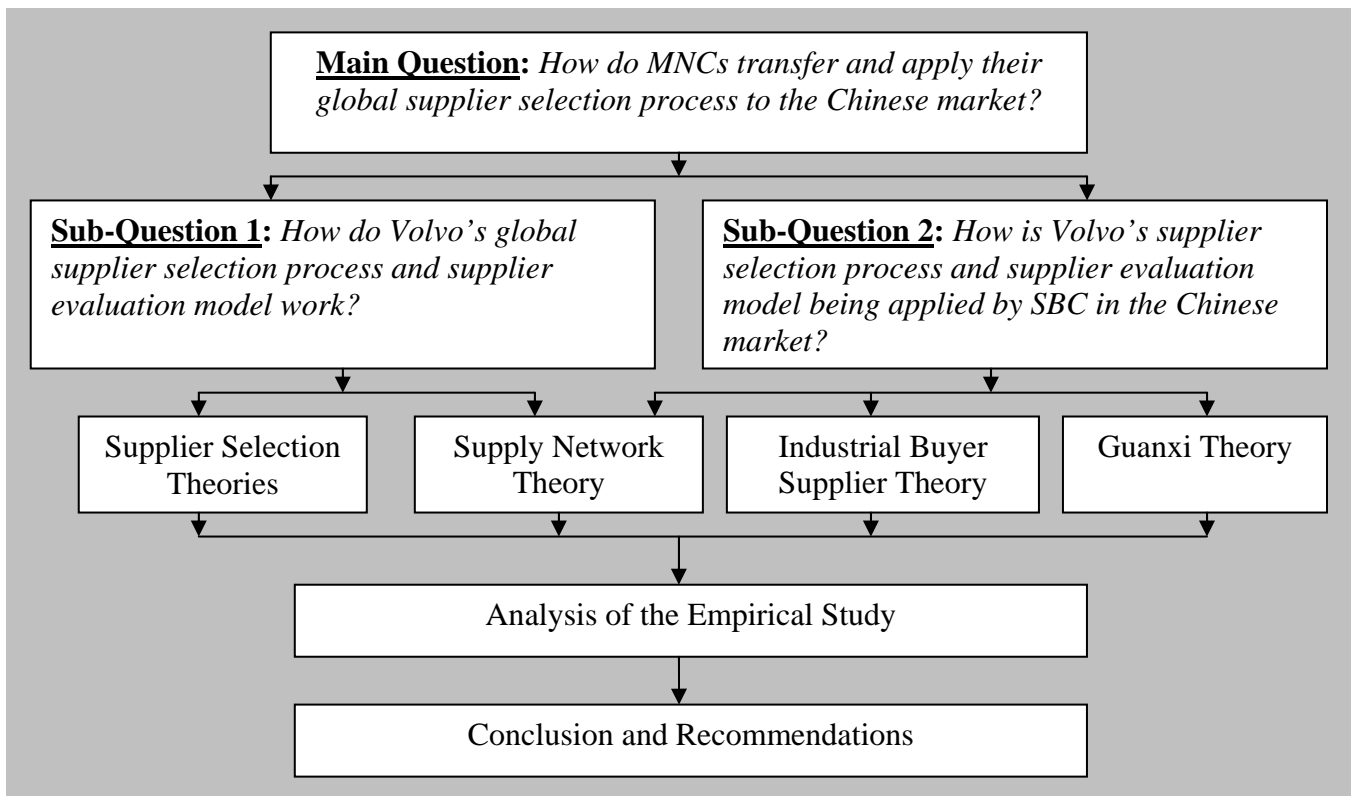


Figure 7. Research Model

Source: Authors

Chapter 4. EMPIRICAL STUDY

Our empirical study will deliver a detailed exploration of Volvo's supplier selection process and how it is being applied by SBC to the Chinese market, in an effort to best answer our research questions. The empirical chapter is divided into two parts: The first part will introduce Volvo Group, with a focus on our case company, VBC. This section will describe Volvo Group's supplier selection process, as well provide as a thorough description of the method they use for selecting their suppliers. The second part of the empirical study presents and describes the findings from our trip to China. Here, we provide an introduction to our Chinese case company, SBC. Next, we present our account of SBC's supplier selection process in the Chinese market, as well as a in-depth portrayal of how Volvo's global supplier evaluation model is being applied by SBC to the Chinese market, as explained by SBC. Finally, we will present an account of the suppliers' perspective and thoughts related to the use of the SEM evaluation and related selection procedures in the Chinese market.

4.1 VOLVO'S SUPPLIER SELECTION PROCESS

The following section will provide an introduction to Volvo Bus Corporation, followed by a discussion of Volvo's core company values and their influence on the supplier selection process. We will then provide an overview of VBC's chassis production procedures and the role that it plays in supplying CKD kits to SBC in China. Following that, we will describe Volvo's sourcing strategies, present the qualities which are characteristic of Volvo's suppliers, as well as provide an introduction to Volvo Group's global supplier evaluation model, which will be presented in two ways: The first explanation will depict how the SEM model is to be used in theory, and the following description will present an account of how the model works in reality.

4.1.1 Volvo and its Determining Factors for Supplier Selection

Volvo uses a number of key factors for determining which qualities and characteristics are necessary for evaluating their potential and existing suppliers during the supplier selection process. These, and other related factors are further explained below.

4.1.1.1 Introduction to Volvo Group

Volvo, headquartered in Gothenburg, Sweden, is one of the world's foremost suppliers of transportation solutions for commercial use and includes Volvo Trucks, Volvo Bus, Volvo Penta, Volvo Aero, Volvo Financial Services and Volvo Construction Equipment. Volvo's founders had no initial intentions to begin producing buses, but rather, the idea grew from a recognizable need in the Swedish market for a medium sized vehicle, and hence, in 1928, the first buses were built on truck chassis using a wooden frame.

Volvo Bus Corporation (VBC) is currently the second biggest bus manufacturer in the world and maintains operations in nearly all parts of the world where they produce coach, city, intercity and trolley buses. The various production plants have been set up and designed to accommodate different production responsibilities, such as those that manufacture complete buses (as SBC does in Xi'an), those which manufacture chassis, and those that are chassis independent manufacturers and CKD body builders (see Appendix 5). For Volvo buses, the 1990's were met by increasing global expansion largely through the strategic acquisition of other companies and through the enlargement of their product range, such as the addition of modern rear-engine models.

The quality standards for all of Volvo Bus' joint ventures should follow the same strict standards, no matter where the bus originates. Volvo sends its audit personnel all over the world to appraise the quality standards and products from its suppliers to ensure that the quality audit is consistent. In the Chinese market, VBC has two separate joint ventures, which produce luxury coaches; Sunwin Bus, which is located in Shanghai, and Xi'an Silver Bus, which is located in the Yanliang Development Zone of Xi'an City. Volvo Buses provides its customers with a diverse selection of vehicle options, including contract maintenance, leasing of the fleet, vehicle replacement planning, and management of the operator's staff and premises.⁸⁷

4.1.1.2 Volvo's Core Company Values

The Volvo brand is one of the most highly regarded brands in the marketplace in terms of quality, safety, and environment, and the strength of its brand rests largely on these core values. Volvo's core values communicate the organization's strongly rooted beliefs, which have endured over time. These core values not only shape the way in which Volvo serves its customers and its community but they have set an unprecedented industry standard. These values are based on quality, safety and environmental care, all of which are key determining factors in Volvo's supplier selection process.

Volvo demands the very highest quality standards from its suppliers in all areas of the world and in all aspects of its production, purchasing, manufacturing, service, management, products and reliability. Safety is also a key requirement of the selection process, as well as one of Volvo's distinguishing core values. Suppliers must meet all safety standards and regulations, no matter how minimal the component they supply. From the initial design, to production, to distribution, to the actual working conditions, suppliers must meet each one of Volvo's strict environmental, safety and quality requirements as part of a larger

⁸⁷ Volvo Corporate Information

commitment to its customers, employees and the general community. The environmental aspect can sometimes be difficult to realize when operating in developing markets, such as China, where many of the standards differ and the need for further market education is very high.⁸⁸

4.1.1.3 Sourcing Strategies

Volvo 3P (a business unit within the Volvo Group responsible for product planning, product development, purchasing and product range management for the three truck companies, Mack, Renault, and Volvo Trucks), Volvo Aero (a partner for the aero space industry which, focuses on the development of components for high technology gas turbine-and rocket engines and the overhaul and repair of aircraft engines, etc.), Volvo Buses (provides a complete range of heavy buses, coaches and chassis, with global operations in North America, South America, Europe and Asia) Volvo Construction Equipment (manufactures market equipment for construction and related industries), Volvo Penta (provides engines and complete power systems to work and leisure boats) and Volvo Powertrain (manufactures heavy duty diesel engines) will soon be introducing a new Internet site for its suppliers as part of an E-business strategy.

The Internet site will act as a single source for accessing information and will be launched in three major phases. The site will include an introduction to Volvo's purchasing departments, whereby the user has the option to search for parts, catalogues and questionnaires. The site will also act as a source of updated information for current Volvo suppliers by providing general information about the company's method of operation, as well as providing secure access for existing and potential suppliers to an electronic library which offers suppliers comprehensive documentation. Finally, the site will broaden access to preferred partners by allowing them to reference internal Volvo applications, such as databases and online component design information⁸⁹. As explained to us during our interview with Jörgen Sjöstedt⁹⁰ at Volvo Bus Corporation, another option for selecting suppliers is through the use of an Internet E-auction, which acts as a price driver. This has become a commonly used method for sourcing suppliers in the car industry because volumes are so high; however, Volvo Bus does not currently utilize e-auctions very often, due to its low bus volumes.⁹¹

VBC currently has around 2,000 active suppliers, of which include the chassis suppliers, and all of VBC's joint venture suppliers. When selecting suppliers, it is important to find those suppliers who are able to do a good job, but who are

⁸⁸ Volvo Group Supplier Portal

⁸⁹ Volvo Corporate Presentation

⁹⁰ Job Title: Global Purchasing within Powertrain

⁹¹ Sjöstedt, Interview, 2004

also capable of supply going above and beyond the basic relationship requirements, such as in the form of a strategic partnership. VBC must look at a broad range of qualitative and quantitative aspects of the supplier's capabilities before making the final decision. While it is of utmost importance that the supplier meets the quality standards set by Volvo, it is impractical to keep a constant watch on the supplier, and therefore, VBC must build their relationships with suppliers based on trust.⁹²

Often times, Volvo will choose their suppliers by benchmarking other reputable companies or competitors who also use global suppliers, such as from China. Volvo usually requires its suppliers to share confidential information with them during the selection process in order to better understand the supplier's position and to increase transparency; in return, the supplier is given access to Volvo's information. When selecting a potential supplier, Volvo must also look closely at the supplier's history, such as whether or not they are currently working with, or have worked for Volvo's competitors. They must also focus on areas where future problems could arise, as well as the supplier's logistics capabilities, etc. After market procedures are also considered to be a major issue in selecting suppliers as a result of the growing issue of piracy, such as copies and the imitations on the market. It is also necessary for Volvo to know for which companies the suppliers are producing. For example, Volvo would want to know if the supplier is working for other reputable companies or OEMs (original equipment manufacturers). Price, local content requirements, SEM scores and quality scores are also major qualifying criteria used in selecting a supplier (see Appendix 3.). Volvo uses a committee for choosing its suppliers so that top management is involved in the final decision-making process, and so that access to a broader selection of resources, such as confidential information, is readily available.⁹³

Volvo has formed groups called emerging markets sourcing committees whose job it is to focus on the different supplier sourcing issues within the company, as well as to define the standard of the supplier, whether existing or potential. The chassis (made up of the engine and axles), the Powertrain (Volvo Powertrain manufactures heavy-duty diesel engines, coordinates Volvo's driveline activities and supplies the entire Volvo Group with driveline components, such as diesel engines and transmission, which are either developed and manufactured by Powertrain or purchased⁹⁴) and the body (the frame of bus or automobile) use three separate sourcing committees to acquire these three separate, major bus components.⁹⁵ These global sourcing committees are present in each department within the Volvo Group Purchasing

⁹² Ibid.

⁹³ Sjostedt, Interview, 2004

⁹⁴ Volvo Group: Global – Volvo Powertrain

⁹⁵ Sjostedt, Interview, 2004

Organizations and each committee has three primary issues on their agenda. The first item on the agenda deals with sourcing issues, such as the potential supplier list and the sourcing status report. The second point centers on standardization, such as reporting all progress within product development in common engineering specifications. And finally, the third point focuses on commodity strategic issues, such as approving strategies for a system to be a part of an already approved supplier structure, in addition to discussing the long-term and short-term critical supplier lists. This process provides a solid framework for optimizing the utilization of resources and maximizing savings potential.⁹⁶

The theoretical selection process versus the actual implementation reality is quite often very different. The long-term, big picture objective for the selection process is that a strategy be developed for each of the components, to ensure consistency and ease in sourcing parts. The more work that is done in the beginning of the supplier selection process, the easier and more comprehensive the process will be, since the suppliers will have already been qualified.⁹⁷

4.1.1.4 Supplier Requirements

Volvo uses a structured set of key characteristics in determining whether or not a supplier would be a good fit for the company. For example, it is important to Volvo Group when selecting its global suppliers that they are capable of supplying globally, but that they are also capable of supplying to the local content markets. It is also essential that the supplier considers Volvo to be a preferred customer and provides them access to innovation and transparency in terms of cost and strategy. The supplier should also possess the necessary technical skills and be able to add value where necessary. Relationships are also another key aspect in selecting suppliers, such as the ability to establish long-term relationships with suppliers, as well as the opportunity to create a relationship where the supplier is pro-active in reducing costs and developing performance. High quality standards, excellent management of sub-suppliers, and quality certificates such, as the ISO 9000 (a certification which specifies requirements for a quality management system which oversees the production of a product or service) and the ISO 14000 (a process to ensure that the manufacturer of a product has the lowest possible environmental impacts, and it pertains to how a product is produced, rather than how it is designed⁹⁸) among others, are also key characteristics of Volvo suppliers.⁹⁹

Volvo also looks for suppliers who possess a ‘Total Quality Management Philosophy’, meaning that an organization works with a quality view in all

⁹⁶ Volvo Sourcing Committee

⁹⁷ Sjostedt, Interview, 2004

⁹⁸ Bamboo Web Dictionary

⁹⁹ Volvo Group, Supplier Portal – Our Requirements

levels of top management and continual focus on improvement involves all employees. Their suppliers must also meet PPM (parts per million) agreements, compliance & cost targets, payment terms, be able to provide cost transparency, meet and exceed environmental terms, excel in delivery precision, provide approved packaging, production and engineering requirements, be able to actively participate in e-communications and have achieved an accepted level (score) on the SEM.¹⁰⁰ However, above all, Volvo values ownership, global ability and complete dependability from its suppliers.¹⁰¹

4.1.1.5 VBC's Role as a Chassis Supplier to SBC

The chassis, which are used by SBC to build complete buses for the Chinese market, are imported directly from the Borås plant in Sweden in the form of CKD (complete knock down) kits. This means that all of the chassis material are broken down into part number level and are shipped in collapsible containers, for assembly in the local market. In 2004, total volumes for CKD kits reached about 3,616, while volumes for CBU (complete build up) buses were around 3,688. Figure 8 illustrates VBC's CKD volume developments for its global CKD plants between 2000 and 2004. As can be seen from the Figure 8, SBC's volumes were down in 2004, largely a result of the SARS epidemic which plagued China. Figure 8 also shows that Sunwin Bus, another Volvo joint venture located in Shanghai, generally has higher production volumes than Silver Bus on average. This is mainly due to the fact that Sunwin Bus produces inner city buses primarily for the Shanghai region, a much larger market. Most of the time Volvo sends CKD kits to its global bus manufacturers mainly because of the high tariffs imposed on sending fully assembled buses abroad. However, the use of CKD kits is also done to comply with the local manufacturing rules about providing certain local parts, as well as to provide jobs locally. Since it is so expensive to send complete buses (CBU), VBC will normally only send a fully assembled chassis in the event a new plant has just opened or if it is a new model, to be used as point of reference. As was explained to us during our interview with Reijo Keränen¹⁰² at the Volvo Bus Corporation Manufacturing Plant in Borås, the chassis can be assembled in just under two hours. A completed bus is made up of about 2/3 body components and about 1/3 chassis components. Many of the parts used in assembling the chassis in the Borås factory are also sourced globally from low-cost development countries like India and China. In addition to producing the chassis, VBC also produces the engine, the breaks and other 'high-risk parts'. These are the parts, which help to ensure the safety and quality components of the Volvo brand, and are all produced at the headquarters in Sweden.¹⁰³

¹⁰⁰ Ibid

¹⁰¹ Sjostedt, Interview, 2004

¹⁰² Job Title: Local Manufacturing & Material Quality Support, KD Operations

¹⁰³ Keränen, Interview, 2004

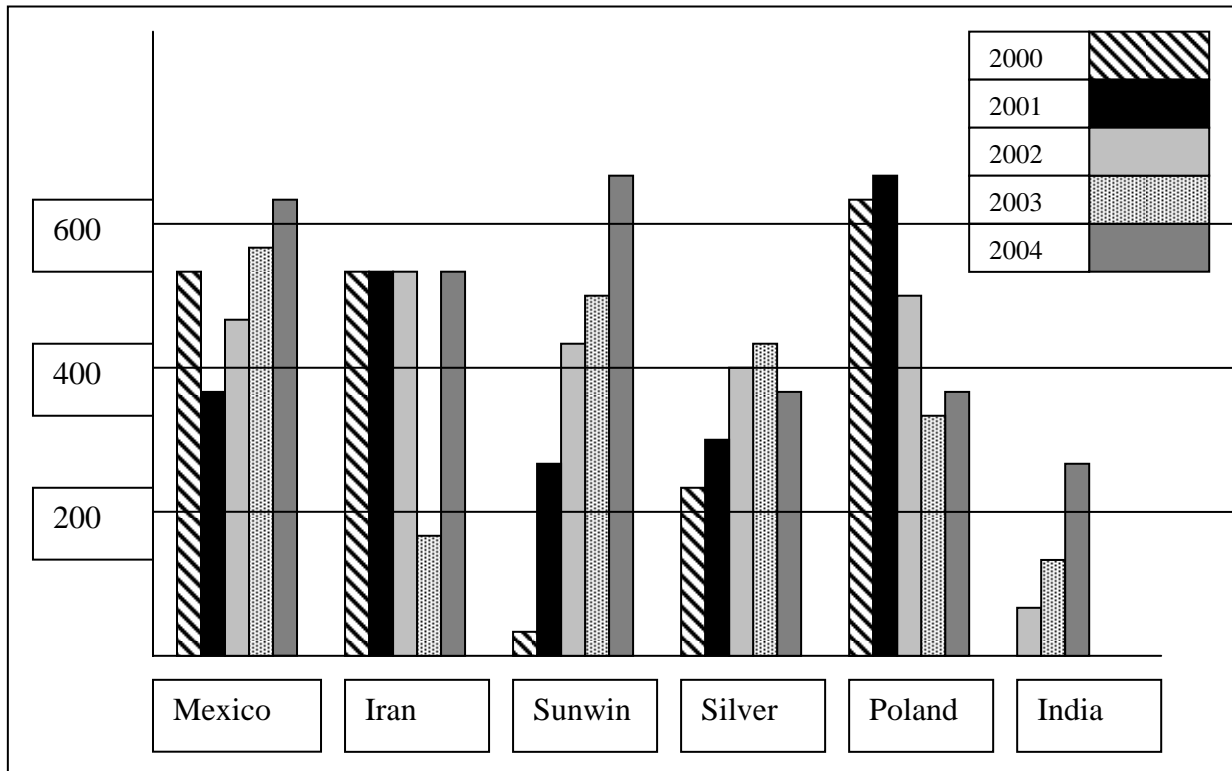


Figure 8. Volvo Bus CKD Volume Developments, 2000-2004

Source: Volvo Bus Corporation, Borås Company Presentation, 2004

Complete buses are manufactured at both of VBC's joint ventures in China. SBC is a designated CKD plant and it imports its bus chassis in the form of CKD kits from Borås. SBC is currently looking into options for localizing its bus chassis as part of a requirement from the government to localize all major bus components; however VBC must first approve the request before it can be localized. All requests for new parts are sent through Borås and will either be approved or rejected. Any time a new bus component is needed by SBC or requested by a customer SBC will send the specifications to Borås and must wait for approval before they can begin using the local supplier. If the initial request is denied, VBC may choose to have the part made in Sweden until the local supplier in China is able to meet the necessary requirements. If the request is approved, then SBC can go ahead and have the part made in China by the local Chinese supplier. Right now is actually a good time for SBC to begin increasing the localization of the body components in the Chinese market, since at present, there is less standardization required on the body parts, than on the chassis components. Eventually, VBC would like to begin exporting chassis directly from China. However, this can be difficult since there are many high level requirements placed on the chassis parts and there are currently no Chinese suppliers producing these high quality chassis', which

meet the standards VBC requires for its luxury coaches. Therefore, the localization of the chassis manufacturing is going to be a gradual process.¹⁰⁴

4.1.2 Volvo's Supplier Selection and SEM

4.1.2.1 SEM in Theory

Volvo Group's method used for selecting and evaluating its potential and current suppliers is formally known as the Supplier Evaluation Model, or SEM. The principles and values used for evaluating suppliers are all based on this model. The evaluation model is designed to comprise all of the aspects necessary for achieving excellent communication and cooperation between Volvo and its first tier suppliers. The SEM model can be used to evaluate all suppliers with the intention of achieving a solid basis for the appropriate selection of suppliers, and the structuring of the supplier base. The SEM's main purpose is to create a common model within Volvo, which can be used as a common tool for identifying supplier strengths and weaknesses. It is also used to improve and further develop a supplier's potential, to expand the knowledge level of each supplier and to share vital information about suppliers with each of the different Volvo organizations. The scope of the model is used to define whether the supplier is existing or potential and whether the supplier is part of a global sourcing process.¹⁰⁵

The SEM is first implemented during the supplier selection process. The basic SEM process begins by Volvo requesting information from the supplier in advance, and then by evaluating as much of the information as possible 'at home', and then finally, by completing the evaluation at the supplier (following the supplier presentation, a tour of the plant, the opportunity to ask questions and a final evaluation of the presentation).¹⁰⁶ Figure 9 presents a step-by-step explanation of the process of the supplier selection, beginning with the process initiation and ending with the final negotiation. The process initiation begins in *Step 1*. The specifications and cost targets are outlined in *Step 2*. The initial supplier evaluation is conducted in *Step 3*. By this step, the potential suppliers have been selected and will be sent a request for quotations and an evaluation form, as can be seen in step four. *Step 4* is where the SEM model is introduced. The suppliers are then asked to fill out the evaluation form (SEM questionnaire) and provide feedback. If the results from the questionnaire are favorable, an on-site supplier evaluation will be conducted, as can be seen in *Step 5*. If the supplier passes the evaluation, and Volvo decides to take them on as a supplier, the negotiation process begins, as seen in *Step 6*. In *Step 7*, the proposal is created and in *Step 8*, the final negotiations are concluded.

¹⁰⁴ Sjostedt, Interview, 2004

¹⁰⁵ Volvo Group, Supplier Evaluation

¹⁰⁶ Ibid.

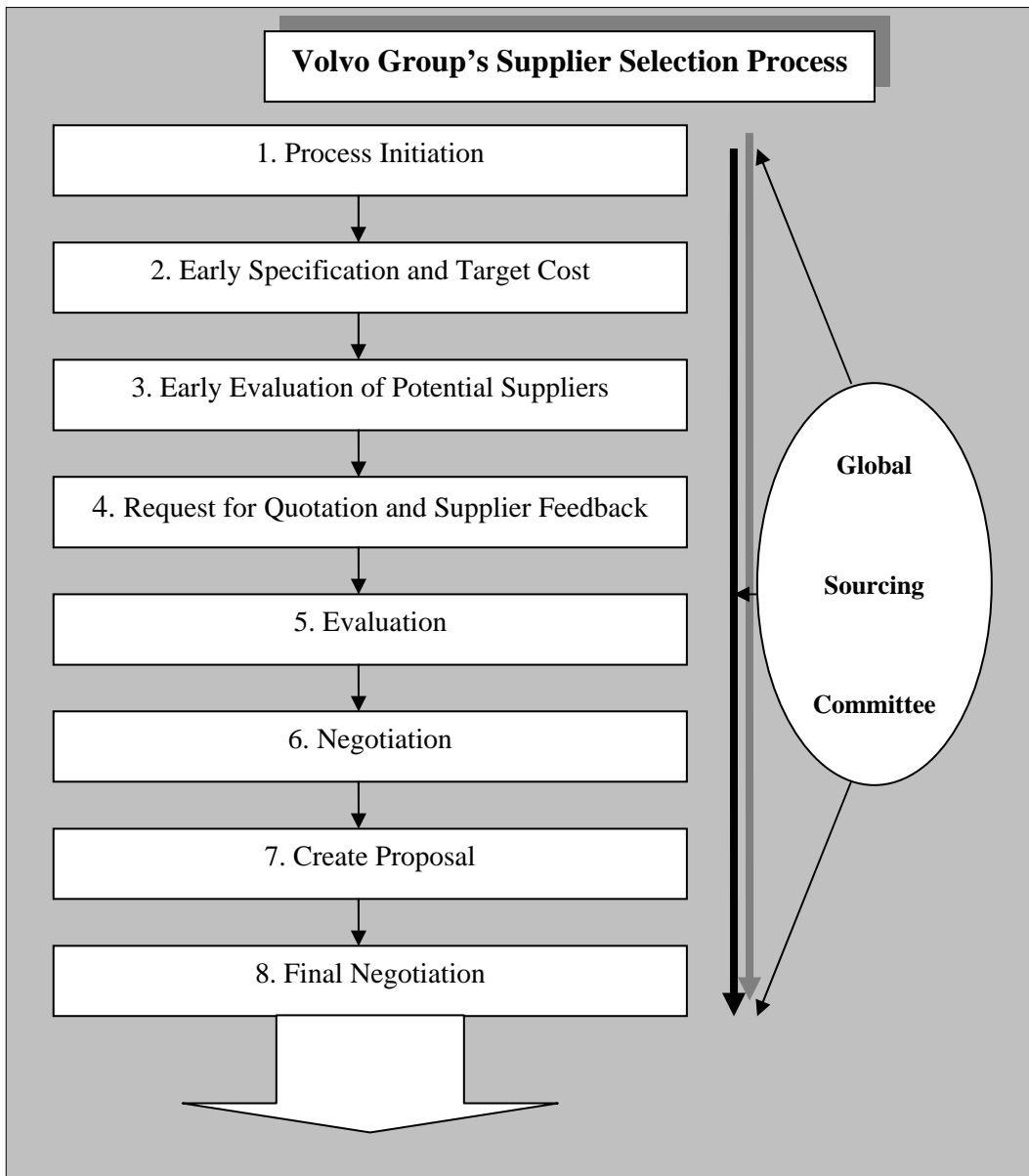


Figure 9. Volvo Group's Supplier Selection Process

Source: Author's Own Elaboration, Volvo Corporation Presentation

A cross-functional team of Volvo staff conducts the SEM evaluation. The team is usually made up of a supplier quality assurance team member, a member of the design department, a member of the logistics department, and a member of the after-market department, etc. The Lead SEM Auditor, which is usually a representative from the purchasing group, is chosen to manage the team and to lead the evaluation process.

There are eleven specific criteria within the SEM framework, which the suppliers will be evaluated on. These are:¹⁰⁷

1. Company Profile
2. Management
3. Environment
4. Quality
5. Logistics
6. After-Market
7. Competence
8. Product Development
9. Finance
10. Productivity
11. Sourcing

The evaluation questions are based on the above criteria. Each question is weighted using a 0, 1, 2 or 3 point grading scale, with three being the highest and zero being the lowest. The final result is then calculated as a percentage share of the total points and is given a grade of either A, B, or C, as can be seen in Table 6 below.

Table 6. Volvo's SEM Grading System

GRADE	PERCENTAGE	IMPLICATION
A=	80%	Excellent - evaluation every three years (or re-evaluation for stop parameters and points that can be improved)
B=	50-80%	Good - evaluation once every year (improvement plan necessary and re-evaluation)
C=	Less than 50%	Weak - a 'no go' (A major quality turnaround by the supplier or the end of the relationship)

Source: Author's Own Elaboration, Volvo Corporate Presentation

The total average points and the stopping parameters determine the supplier's final grade. The suppliers are evaluated using the above criteria and on the eight stopping parameters. The supplier must receive a minimum B-level score (50%-80%) and a minimum score of 1 must be achieved on all eight stopping parameters in order to be considered (see Appendix 4). After the supplier is given their final result, they will be asked to submit an improvement plan.¹⁰⁸

¹⁰⁷ Volvo Group, Supplier Evaluation

¹⁰⁸ Ibid

8 Stopping Parameters

The supplier must receive a score of at least 1 on each of the following stopping parameters in order to be considered as a supplier to Volvo. If a zero is received on any one of the criteria, the supplier will not be considered.

1. Ownership
2. Risk Management
3. Environmental Management System
4. Quality Management System
5. Quality Performance of Deliveries
6. Delivery Precision
7. Industrial Engineering
8. Financial Evaluation

4.1.2.2 Supplier Evaluation Model in Practice

We have discussed how the supplier selection process should work in theory. We will now attempt to describe how Volvo's supplier selection process and SEM evaluation work in practice from a realistic perspective. The SEM model must adhere to the same standards within Volvo Group and all of its global joint ventures and it cannot be adapted. This is done so that the model can be viewed as both reliable, and representative, of the company's values and quality criteria requirements. Therefore, while it is considered acceptable to make local adaptations in certain areas of the selection process, it is not acceptable to make any alterations within the SEM model itself. Although adapting the SEM to an emerging market like China can sometimes be a daunting process, it is done to ensure consistency and quality on a global level, especially if VBC plans on exporting from China in the future. Essentially anything, which could affect the credibility of the score, is not permissible.¹⁰⁹

There are ongoing improvement efforts being made within the SEM model each year in an effort to update the criteria on an annual basis, as well as to help to address and solve some of the more important issues such as the local content regulations and the local operating market realities, such as in the Chinese market. Since the SEM tool is an investment in itself, it is important that the entire process is well thought out from start to finish and it is used to evaluate only those suppliers who have been pre-qualified.¹¹⁰

There are actually two types of SEM evaluation models, which can be carried out on suppliers; these include the short SEM evaluation and the full SEM evaluation. The short SEM format primarily consists of sending a questionnaire to the supplier without making a visit, which allows for faster

¹⁰⁹ Sjostedt, Interview, 2004

¹¹⁰ Ibid

decision-making. The short SEM can be made at a distance, meaning the evaluation is based on the supplier's written answers. For example, SBC could mail a potential Chinese supplier the short SEM questionnaire, but they must send the supplier feedback to a certified SEM Lead Auditor in Volvo Group, so that the information can be evaluated. Most often Volvo will use a short SEM if they are already doing business with a supplier and the relationship is viewed as working well. The second type of evaluation model is the full SEM. The full SEM is more comprehensive of the two evaluations and it requires the initial questionnaire as well as a formal visit to the supplier. Typically, if it is a new supplier relationship, a full SEM will be conducted. In order to conduct a full SEM, you must also be a certified SEM Lead Auditor. As was explained to us during our interview with Bertil Hansson¹¹¹ at Volvo Bus Corporation, there are currently no certified Lead Auditors at either SBC or Sunwin. Therefore, neither SBC nor Sunwin is able to conduct a full SEM without the presence of a Lead Auditor from the Volvo Group. Volvo 3P recently developed a 'Visit Report', which is less formal than an SEM and follows a specific format. The 'Visit Report', which uses similar evaluation criteria to the SEM (however it is less comprehensive), was recently tested at Sunwin Bus in October 2004. As was explained to us, there are currently no plans to introduce this to 'Visit Report' format to SBC. There are however, future plans to qualify an SEM Lead Auditor at SBC.¹¹² Regardless of whether Volvo chooses to perform a short or full supplier SEM, every new part must also be tested as part of the initial product test in qualifying a supplier.¹¹³

Once the SEM evaluation has been completed, the supplier will be given a score. All suppliers must receive an SEM score of either a B or above and they must pass all of the stopping parameters as a minimum requirement. The stopping parameters in the SEM model are very important because if a zero is received on any one of the stopping parameters the supplier will not be considered. B-level suppliers are often potential candidates for global sourcing opportunities within Volvo Group; however, in order to become a global supplier, the supplier must first achieve an A-level score on their full SEM evaluation. The most common way in which a B-level supplier reaches A-level is by making the appropriate changes, which Volvo had asked them to do during a previous evaluation.¹¹⁴

Quite often there is often a big learning curve for suppliers operating in the emerging markets, and this must be taken into account when the decision is first made to begin producing in these countries. Up until recently the process of selecting suppliers in the Chinese market has been mainly left up to SBC. In

¹¹¹ Job Title: Global Purchasing Director

¹¹² Hansson, Interview, 2004

¹¹³ Ibid

¹¹⁴ Sjostedt, Interview, 2004

principal, Volvo would like all of its joint venture suppliers to go through the full SEM evaluation; however, it is not presently the reality. If there were ever an intention to export from China, Volvo would send an SEM Lead Auditor from its Europe operations to work together with SBC in conducting the SEM evaluation of the potential global supplier.¹¹⁵

Some of the biggest hurdles VBC has had to deal with regarding the SEM training process in China have been the resulting language difficulties, since at present the majority of people who speak English in China are very young. This has made it rather difficult to hire older, more experienced workers. However, the most important issue necessary to address during the training procedures is making certain that both parties are able to understand what is being said and why it is being said, and that everyone continues to work towards a common objective. VBC maintains regular contact with SBC in China through weekly meetings with its buyers, designers and the purchasing department. In addition to weekly communication, VBC also receives an update report once a month from SBC.¹¹⁶

4.1.3 VBC's Future Goals for the Chinese Market

China is a growing market with a fast growing customer base and VBC hopes to continue to leverage its position in the market as a high quality luxury coach producer. One way to do this is for VBC to begin exporting products from China in an effort to stay competitive in all other markets in the world.¹¹⁷ It is of foremost importance that the co-operation and communication between VBC and its suppliers is based on common values, shared goals and strategies, and that the development efforts are focused, in order to achieve strong common objectives. The SEM tool is a very good way for Volvo to continue to demand high quality from its suppliers and to encourage their continuous development.

It is also important for VBC to begin focusing its efforts on the changing regulations for joint ventures in the Chinese market, as well as the local content issues, which have once again become a major focus as a result of new government regulations. These new government regulations require foreign joint venture companies to begin increasing their local sourcing quotas. One of VBC's major goals in its joint venture with SBC is to reduce the total number of suppliers, while continuing to localize the key components and begin focusing on the body side. The next section will take a look at how Volvo Group's supplier selection process and SEM are being applied by SBC to the Chinese market.

¹¹⁵ Hansson, Interview, 2004

¹¹⁶ Ibid

¹¹⁷ Sjostedt, Interview, 2004

4.2 SBC's APPLICATION OF THE SUPPLIER SELECTION PROCESS

In this section we will provide an introduction to Silver Bus Corporation, followed by a discussion of the role of the purchasing department, an introduction to the local content regulations, a review of SBC's supplier requirements, an introduction to the general supplier selection process at SBC, as well as a description of how the SEM is being applied by SBC to the Chinese market. The section will conclude with a presentation of the supplier interviews (see Appendix 2), where we present SBC's suppliers' perceptions of the SEM evaluation in the Chinese market.

4.2.1 SBC and its Determining Factors for Supplier Selection

SBC uses a number of key factors for determining what qualities or characteristics are necessary for its supplier selection process. However, most of the criteria, which SBC employs, are based on VBC's own supplier selection requirements.

4.2.1.1 Introduction to Xi'an Silver Bus Corporation

Our case company, Xi'an Silver Bus Corporation, was founded in 1994, and is jointly owned (50/50) by Volvo Bus Corporation and Xi'an Aircraft Industry (Group) Company Limited. It is the first Sino-foreign joint venture to manufacture luxury tourist and inter-city coaches in China. As the first joint venture in China's bus industry, it has received much attention from state leaders as well as considerable support from local and central governments, which has played a key role in contributing to the overall success. As a result of their early market entry advantage and the strong local government support, SBC has been able to create a solid position for themselves in the Chinese market.¹¹⁸

SBC employs around 400 people from the Yanliang area and the majority of their employees come directly from the Xian Aircraft Industry. XAC is also one of the largest and most influential companies in the area and as a result of the solid working relationship they have built with SBC, both companies have managed to mutually benefit from the strong government and local support. SBC's core competencies include production and testing, product development and purchasing, and finance. Since the coordination of both the buyer and supplier plays such an important role in the final product, selecting a supplier who shares the company's strategic goals and long-term objectives is of great importance.

¹¹⁸ SBC Company Presentation, 2004

As was explained to us during our interview (see Appendix 1.) with Neil McGurk, President of SBC, SBC closely follows Volvo Group's strategies and places enormous emphasis on its closeness to the customer. By integrating the expert standards used in aircraft assembly from XAC, SBC has been able to produce some of the highest quality coaches in the Chinese market.¹¹⁹ SBC utilizes advanced technology, Volvo's excellence standards, brand image, core values (safety, quality and environment) and a strong management team in order to provide high quality luxury buses and comprehensive after-market services to all of its customers.

SBC's first vehicles were built back in 1995, when the factory was originally set up as a CKD assembly plant. Since then, SBC has managed to position itself as a market leader in the Chinese luxury coach market and continues to develop new products in order to meet China's growing market requirements. During our interview with Yan Xinyu, Business Plan & Control Manager at SBC, we were told that SBC presently has around 300-400 customers, of which about 240 are very active customers.¹²⁰ The majority of SBC's customers are located in the affluent Guangdong province of southern China; however, SBC does have customers in other parts of China. SBC's annual output typically reaches around 1,000 buses per year.¹²¹

SBC produces a variety of different bus models for the Chinese market. Volvo's B10M bus is the most widely sold luxury coach chassis in the world due to its high reliability, low maintenance costs and excellent fuel economy and was up, until recently, one of the most popular buses sold in the Chinese market. However, the B12M series has recently taken the place of the B10M series in the Chinese market and production of the B10M is soon to be halted on the European market as well, due to a shortage of available chassis for this bus. As described to us during our interview with Zhuang Ying, Purchasing Controller at SBC, SBC's products include the B12M luxury coach and sleeper coach, the B10M luxury coach, the B10MS sleeper coach and the B7R luxury coach. She also went on to explain that the M and the R at the end of the bus description mean that the engine is either at the middle (M) or the rear (R) of the bus, and that the number listed in the description has to do with the number of liters in the engine. At present, SBC is the only one of Volvo's joint ventures to produce a sleeper coach. SBC is currently working on two new models for the B12M and the B7R, including the Mark 1 and Mark 2, and has begun focusing on the localization of the B7R. At present, the frame of the Mark 1 has been almost completely localized.¹²²

¹¹⁹ McGurk, Interview, 2004

¹²⁰ Yan, Interview, 2004

¹²¹ SBC Company Information

¹²² Zhuang, Interview, 2004

Looking ahead, one of the main challenges for SBC is going to be its need to reduce costs to effectively combat continuous price pressures in the market. Fortunately for SBC, they are not so extremely cost-competitive compared to other luxury coach manufacturers, meaning that their selling strategy is not entirely based on price, but rather more on their ability to lower their material costs and increase their volume sales. However, in order to increase their volumes, SBC will need to continue to broaden its customer segment or begin to attract new customers from other companies by leveraging its high brand value, or directly attracting its competitors' sales by expanding its own segments and adjusting its products.¹²³

In summary, 2003 was a very difficult year for most bus manufacturers in the Chinese market, and, for the most part, every major bus company lost sales volume. The majority of SBC's business plan was destroyed due to changes in the market, which they were unable to predict, such as SARS and the global economic slowdown. Not only did their volumes decrease as a result of the market situation, but, their costs actually increased. For the first time ever, SBC will struggle to break even this year with the accompanying negative affect on their earnings. However, next year SBC is predicting that they will be profitable, as economic conditions begin to improve. It is going to continue to be difficult for SBC to predict demand over the next few months; however, they expect that the demand will continue to grow as a result of new highways being built, in addition to the continuing growth of the Chinese economy. Until recently, most of SBC's sales have been generated by new business. The new business is forecasted to continue growing and it is expected that there will be more of a demand for a replacement market services, as the industry begins to mature, equaling numerous opportunities for SBC in the future.¹²⁴

4.2.1.2 Role of the Purchasing Department

The purchasing department plays a very important role within the company. It is currently made up of buyers, SQA (supplier quality assurance) engineers, the purchasing controller and the purchasing director. The purchasing department within SBC is primarily responsible for the sourcing and evaluation of both new and existing suppliers. While the buyer's principal role is negotiating the price, they are also responsible for negotiating the supplier contract. Since SBC uses one-year contracts for all of its suppliers, they must re-negotiate their supplier contracts every year, in addition to sourcing new suppliers.

SBC currently has only two AP buyers and therefore, it is becoming increasingly impractical for them to maintain a large supplier base, due to the limited available resources. As a result, SBC strives to utilize as many of its

¹²³ McGurk, Interview, 2004

¹²⁴ Ibid

existing suppliers for any new part (usually simple parts) required. Instead of opting for a new supplier, most often SBC will have their design department release the component drawings directly to one of their current suppliers who is determined to be capable of making that part. There are two standard ways in which the purchasing department can go about having a new part made. The first way, as mentioned above, is for SBC to release the drawings to their existing suppliers, for simple parts. The second way, for complete or complex parts, is for SBC to visit and test several suppliers by asking for quotes and running quality tests on every new part before it can be used. As was explained to us by Fang Gaorong, a buyer at SBC, it is the SQA who is responsible for overseeing the quality of the products and the supplier evaluation procedures.¹²⁵

There are currently two different departments who focus on the ordering function within SBC. The first is the purchasing department, which is responsible for the contract, the price, the lead-time, service and the payment, and the second is material control, who is responsible for the production application. In order to enhance communication, consistency and reliability between the different departments, it is essential that the purchasing department maintain a close relationship with product design, engineering and material control. As a result of this need for enhanced communication, the entire company has recently begun using a new SAP software program, which is essentially a central database that allows for increased transparency and improved communication among all departments and all coordination processes.

Each year the purchasing department receives a cost down target from SBC as well as future target goals, which they must try their best to meet. These goals include important issues such as localization and reducing the number of total suppliers. In an effort to meet the localization demands imposed by the government, a number of targets have been set by SBC, which will require the purchasing department to reduce the number of actual suppliers, while increasing the number of qualified potential suppliers and locally purchased components.¹²⁶ The purchasing department also hopes to continue a closer working relationship and improved communication with both Sunwin Bus and VBC in order to obtain and share more useful information concerning suppliers, products and internal documentation.

4.2.1.3 Local Content Regulations

China's local content policy is designed to increase the local content rate with the objective of controlling the import of complete cars. According to China's

¹²⁵ Fang, Interview, 2004

¹²⁶ McGurk, Interview, 2004

State Planning Commission, the local content rate can be calculated using the formula seen in Table 7 below.¹²⁷

Table 7. Local Content Rate Calculation

$\text{Local content rate (\%)} = \frac{\text{Manufacturer's price --[CKD price (CIF) + tariffs]}}{\text{Manufacturer's price}} \times 100\%$

Source: Lee, Chen & Fujimoto, 1996

In addition to controlling the import of complete cars, the government also links tariffs on imported CKD parts (such as the chassis) with the local content rate, and calls this a "Classified Tariff". By doing this, the government intends to reward those automakers that increase their local content rate and penalize those that make few efforts. The tariffs on imported CKD parts are set at fifty percent for the first three years. The local content requirement after the fourth year is anywhere from forty to sixty percent, resulting in a forty-eight percent tariff. Those automakers whose local content rates are between sixty to eighty percent will incur a thirty-two percent tariff. Any local content rates operating under forty percent will be subject to an eighty percent tariff.¹²⁸ The CKD tariff will also apply to any of the bus manufacturers who import their chassis as a CKD kit.

At present, about ninety-five percent of SBC's bus chassis are imported. When the joint venture between VBC and SBC was first established back in 1994, there was nothing originally written into the agreement concerning any specific localization procedures. Although nothing was originally specified, targets were set by SBC back in the 90's as a result of pressure from the government to begin localizing bus parts. In order to save on costs SBC had to begin localizing the body of the bus.¹²⁹

China's accession to the WTO in 2001 was supposed to bring with it significant changes to China's heavily protected automotive market. Tariffs were supposed to be reduced from the original, eighty to one hundred percent levels, to around twenty-five percent by 2006. Additionally, the technology transfer and local content requirements once initially placed on foreign automakers were also supposed to be eliminated with China's entry into the WTO. While tariffs have decreased, the government's intention is still to have foreign

¹²⁷ Chunli, Chen & Fujimoto, 1996

¹²⁸ Ibid

¹²⁹ McGurk, Interview, 2004

manufacturers continue to increase their local production. This will continue to have a burdening effect on those manufacturers who must continue to import their key components, such as SBC.¹³⁰

As of January 1, 2005, a new regulation will take effect, which will require all bus manufacturers to source the bulk of their key components (essentially a specific percentage of the total value of the bus) directly from the Chinese market, such as the body and chassis parts. The tariff law will continue to cause problems for SBC for the foreseeable future; even if SBC is able to fulfill its obligation to localize the required component percentage (however, they continue to import their key components, such as the chassis), the government will still continue to view this as importing an entire vehicle.¹³¹ In order to avoid the government imposed tax increase, SBC and other luxury coach manufacturers must speed up their localization process.¹³² This new tariff is not likely to have a direct affect on the 'regular' bus manufactures, all of whom produce their chassis' locally; however, the new tariff will have a direct impact on the entire luxury coach segment in China, which must continue to import its chassis in the form of CKD kits in order to attain the desired product quality.

At present, all luxury bus manufacturers use CKD imported chassis, primarily for quality purposes. Any luxury bus manufacturer that must import more than two key bus components will be faced with the same situation. Although VBC has managed to carve a solid niche for itself, it places them in a vulnerable position because in order to get the right quality, they must import the chassis and will end up having to pay the same price for a CKD chassis as they would for importing an entire bus.¹³³ Due to the extreme negative consequences this tariff would have on the entire luxury coach industry, the government has considered re-appraising this policy and has considered either allowing the producers more time to find local suppliers, or amending the rules.¹³⁴

SBC is presently focused on localizing the chassis; however, before they can localize the chassis parts they must first get approval from Volvo Bus in Borås. This approval is used to determine whether any local supplier in the Chinese market is capable of providing the same level of quality standards as the Western suppliers.¹³⁵ While the chassis is one of the most important components in the bus, as well as one of the most important parts to localize, it is also the most difficult part to localize.

¹³⁰ Zhuang, 2001

¹³¹ Sjostedt, Interview, 2004

¹³² Fang, Interview, 2004

¹³³ McGurk, Interview, 2004

¹³⁴ Ibid.

¹³⁵ Fang, Interview, 2004

There are currently no companies in China manufacturing a chassis, which meets all of Volvo's quality specifications. In order to purchase a locally produced chassis, SBC would need to lower its quality standards, which would result in a completely different product.¹³⁶ One of the major difficulties SBC faces in localizing its chassis production has to do with its low volume levels. The chassis is extremely difficult to localize with such low production volumes and in order to be competitive and obtain a cost benefit, your volumes must be in the thousands; however, most top high end and luxury coaches produce only around 90 to 100 high-end coaches per year.¹³⁷ As was described to us during our interview with Xie Qingfeng, Acting Purchasing Director at SBC, Volvo Group has tried in the past to produce its chassis in China; however, they have faced similar problems with the chassis production, being that the quality is not up to their required standards. However, both SBC and Volvo hope to begin chassis production in China in the near future, possibly in the form of a joint venture between Volvo and one of their suppliers.¹³⁸

SBC intends to continue with the localization of some of its smaller bus components (such as simple metal structures) as soon as possible and hopes to begin importing less of these parts from Volvo in order to cut costs and avoid penalties. SBC has been successful in localizing most of their simple components. Most of this has been accomplished by ordering from the same producer they would have used had they imported the part from Volvo, only the parts are ordered through a local Chinese supplier. This approach merely creates a different channel of transport, but generates significant cost savings because they are able to purchase the parts 'locally'.¹³⁹

At present, the purchasing department is primarily responsible for the localization process. However, in order to continue to enhance the localization process, the purchasing department needs help from their production and development department through an increased emphasis and understanding of all the bus components. Because it is such an important issue and one that needs to be addressed immediately, it is necessary for the entire company to become more focused and involved on resolving the subject of localization.¹⁴⁰

4.2.1.4 Customer Satisfaction

Like Volvo, SBC also places a strong emphasis on customer satisfaction and the overall importance of meeting its customer's expectations, and therefore, SBC also follows a customer-oriented focus. In order to continue to provide high quality service and to meet customers changing needs and expectations,

¹³⁶ McGurk, Interview 2004

¹³⁷ Ibid.

¹³⁸ Xie, Interview, 2004

¹³⁹ Fang, Interview, 2004

¹⁴⁰ Ibid.

SBC is conducting a customer satisfaction survey for the fourth time since the company was started. The survey is conducted with their five key customers and is used primarily as a means to compare themselves to their competitors in order to receive feedback so that they can determine where they need to prioritize their business. The survey is also conducted so that Volvo can acquaint themselves with the industry trends, to see what their customers give preferentiality to, and it allows them to gauge how their customers feel about their products.¹⁴¹

4.2.1.5 Common Suppliers

Another one of SBC's current goals is focused on developing and increasing its common suppliers with Sunwin Bus in Shanghai. Increasing the number of common suppliers is mostly for the benefit of SBC and Sunwin and is not required to do so by VBC. Since there are currently only two AP buyers within SBC, they are presently short on resources for addressing this issue; however, it is an important future goal.¹⁴²

By sharing common suppliers, both SBC and Sunwin may reap long-term advantages, such as the ability to focus on fewer suppliers, take advantage of economies of scale, which would result in lower prices, and the ability to use the same SEM score for the common supplier. There has been increasingly more communication and interaction between SBC and Sunwin over the last few years and SBC hopes to continue to maintain this relationship with Sunwin as well as to continue pursuing the task of working together to increase their total number of common suppliers. SBC's goal by next year is that it will have at least ten percent of its suppliers shared with Sunwin; however, at present, there are less than ten shared suppliers.¹⁴³

4.2.1.6 Supplier Requirements

Supplier requirements play a determining role in the selection process and SBC does everything it can to uphold the same strict standards and requirements as Volvo. Having said this, it is important to keep in mind that the luxury coach industry is fairly new within the last ten years and the suppliers in this industry are not that advanced when compared to western standards. There is still significant margin for SBC to gain as a result of the 'waste costs', which come from many of the products they receive. Meaning that, many of SBC's suppliers do not even understand their own costs and this has proved to be a big problem in the area of saving costs. SBC believes that if the supplier can improve their quality, then SBC can reduce its costs; however this will take a

¹⁴¹ McGurk, Interview, 2004

¹⁴² Fang, Interview, 2004

¹⁴³ Xie, Interview, 2004

lot of time spent in working with the supplier and likely several alterations to get it right.¹⁴⁴

In the past, many of the suppliers were only able to imitate products (as opposed to producing real quality products) because they did not have any major control systems or processes in place, such as quality inspection. It has taken a lot of time to train these suppliers to help them to understand that they are part of a larger process. However, many of SBC's suppliers have begun upgrading their procedures. This is considered to be a great achievement for the suppliers because many of them now have actual processes, checks and standards in place, which save them from having to continuously check each and every individual part, and allows for greater certainty and cost benefits.¹⁴⁵

At present, about 1/3 of the Chinese suppliers are privately owned, and are very small. As a result, these privately owned companies do not usually possess the resources or power necessary to fulfill many of SBC's requirements. For example, SBC needs all of its suppliers to be ISO 14000 certified, however many of the suppliers do not have the capabilities or financial resources to fulfill this requirement. Typically, if the supplier's quality is good and its prices are low, SBC will usually help them to improve and to maintain good quality by working with them to further develop their systems, cut their costs and to meet both government and SBC requirements.¹⁴⁶

SBC has set a number of goals for itself concerning its relationship with its suppliers. Because the Volvo brand is well thought of in the Chinese coach market, most of the suppliers will approach SBC directly in an effort to do business with them. This type of communication has enabled SBC to collect lots of valuable information from these suppliers about their products and capabilities, which makes the research process easier when it comes time to select a new supplier.¹⁴⁷

SBC hopes to continue to utilize as many of its local suppliers as possible. The further away the supplier is located from the company, the higher the transportation costs become, making proximity an important characteristic in choosing a supplier. In addition to increasing the number of common suppliers, SBC has also set goals to reduce their total supply base and are currently working on a suitable target number, which is to be set before the end of next year.¹⁴⁸ SBC currently has about eighty percent of its suppliers

¹⁴⁴ McGurk, Interview, 2004

¹⁴⁵ Ibid

¹⁴⁶ Zhuang, Interview, 2004

¹⁴⁷ McGurk, Interview, 2004

¹⁴⁸ Xie, Interview, 2004

supplying about twenty percent of its value, so there are still many opportunities for them to reduce their total supply base and to cut costs.¹⁴⁹

4.2.2 SBC's Supplier Selection Process and SEM

Our objective in this section is was to focus on the reality component of how the supplier selection process and the supplier evaluation model are being applied to the Chinese market, by presenting as realistic a portrayal as possible.

4.2.2.1 Overview of SBC's Supplier Selection Process

As a result of its favorable reputation in the Chinese bus industry, SBC generally tends to have good working relations with its suppliers and therefore, it is usually the supplier who contacts SBC directly. Most of SBC's suppliers realize that the relationship they have with SBC is supplemented by the intrinsic value of the Volvo brand and the opportunities that working with SBC enables them. For example, many of SBC's suppliers receive new business and several opportunities merely because they are able to say that they are a supplier to a reputable brand like Volvo. Most of the suppliers also realize that they will not earn much money by partnering with SBC, but they choose to preserve the relationship because it is good for their business.¹⁵⁰

SBC's reputation for high quality standards gives them increased flexibility and the ease of lowering their costs from year to year, since SBC's suppliers are also usually willing to lower their own costs. Finding new suppliers who understand the quality requirements and specifications that SBC expects can be a difficult task; therefore, SBC prefers not to change suppliers very often. One example of this is SBC's current agreement with XAC a preferred supplier. This means that if XAC is able to provide them with the best quality at the best price, then SBC will purchase directly from them.¹⁵¹

SBC follows a supplier selection process, which is very similar to that of Volvo Group. SBC's current purchasing process was first explained to the purchasing department by their former purchasing director, who has since left the company. The documents detailing the purchasing and selection process procedures were sent by Volvo, to China, (in English) before later being converted directly into Chinese. As was explained to us during our interviews, the supplier selection process is carried out by the purchasing function in the following way.¹⁵²

First the buyer will research and then contact several suppliers who either produce or are capable of producing the same product for which SBC is

¹⁴⁹ Fang, Interview, 2004

¹⁵⁰ Xie, Interview, 2004

¹⁵¹ Fang, Interview, 2004

¹⁵² Zhuang, Interview, 2004

looking for. The supplier can then send their quotation to SBC and the purchasing controller will choose one or two suppliers (however the buyer usually recommends several) and contact them directly. Next, the product price is negotiated with the supplier by the purchasing controller or the buyer, or it will be a collaborative effort. The purchasing controller usually concurs in the selection of the supplier who is chosen by the buyer; however, occasionally they will disagree if one believes that the price is not low enough. After the supplier has been chosen the purchasing director reports this to the director. In the event that the director disagrees with the decision, which has been recommended, the case must be explained and mutually agreed upon, or a new supplier must be chosen.¹⁵³

Generally at this point in the process SBC will ask for a sample from the supplier, which will be tested by the SQA engineer using an initial five-phase sample product test. If the supplier passes the test, then SBC can take them on as a formal supplier. However, before the final contract is made with the supplier, SBC will either conduct a 'simple model' test, which checks things like quality and delivery time, or the SEM evaluation (either short of full, depending on the supplier and the importance of the component); however, sometimes the SEM/simple model evaluation is carried out before SBC receives the product samples.¹⁵⁴ The product testing process is a very important method for helping SBC to not only select its suppliers but also for helping SBC to bridge the gap between Volvo Group's requirements and the supplier's present capabilities.¹⁵⁵

With regard to the supplier contract, the finance department is not responsible for signing the contract; they only give their approval. Two new steps have recently been added to the contract procedure whereby the president and the CFO must also now approve the supplier contract, as requested by the president. Previously, the purchasing department had the final check in the contract process. While this new policy generally helps to secure the contract (two more people signing off on the process), it also takes longer to approve, which can be crucial in facilitating and coordinating with the suppliers and the production schedule and can sometimes cause a negative impression on the supplier.¹⁵⁶ The sales contract, which is for the complete bus contract, is drawn up and approved by the marketing department as a separate function.

4.2.2.2 Selecting Suppliers

As is true of most automobile industry producers, SBC is under constant pressure to cut costs on an annual basis, specifically on the supply side. SBC

¹⁵³ Ibid.

¹⁵⁴ Fang, Interview, 2004

¹⁵⁵ Xie, Interview, 2004

¹⁵⁶ Zhuang, Interview, 2004

works with its suppliers in order to lower its costs and will usually approach the supplier with a specific target for them to lower their price. Most of the time, the suppliers are unable to reach the price target; although, SBC is usually willing to negotiate. It is not often a problem for SBC to lower its own costs since SBC does not specify an exact order quantity in the contract (only the quantity per bus); therefore they are under no obligation to purchase from the contracted supplier should they find a supplier who is able to offer comparable quality at a lower price.¹⁵⁷

SBC uses a 'simple model' for evaluating the majority of its suppliers. This simple model is developed by SQA and is revised every year. Scores are given to the supplier based on their evaluation using the simple model. In addition to the initial supplier evaluation, SBC also uses periodic checks to measure its supplier's performance. Each month the purchasing department reviews the supplier's PPM (parts per million) statistics, which is based on a six-month rolling value. This is done in an effort to monitor supplier performance on a monthly basis and is reported by the SQA. Therefore, if the suppliers PPM is higher than SBC requires, then they take corrective actions to fix this.¹⁵⁸

One of the most important steps in selecting a supplier is the use of the SEM evaluation or the simple model evaluation process. SBC expects high quality products from its suppliers; however one of the issues they most often struggle with is the supplier's ability to maintain good quality. Even if the supplier is able to produce a quality product today and tomorrow, there is no guarantee that the supplier will be able to continue supplying the right quality product at the right price in the future. The way SBC has chosen to obtain this crucial information is by conducting an SEM evaluation, because it provides SBC with critical supplier information such as the supplier's production capabilities, how the suppliers guarantee their own quality and how the supplier guarantees the quality of its own suppliers.¹⁵⁹

In selecting its suppliers, it is important that SBC chooses suppliers, which are able to meet the appropriate requirements. SBC could very well purchase the necessary parts from larger, more sophisticated manufacturers, however part of the problem in doing this is that it will cost them more and they do not want to pay manufacturers for a part where the quality is actually better than they need, but rather, only for the part where the quality meets their needs.¹⁶⁰ Therefore, it is extremely important that the majority of the work in the supplier selection process is done in the very initial stages, in order to qualify the appropriate suppliers and to help things work more efficiently in the final phases.

¹⁵⁷ Fang, Interview, 2004

¹⁵⁸ Ibid.

¹⁵⁹ Fang, Interview, 2004

¹⁶⁰ Ibid.

While SBC works hard to maintain good relations with its suppliers, they continue to face difficulties from time to time. For example, while negotiating with suppliers is typically a standard contract process, it can sometimes be difficult to negotiate price with some of the bigger, stronger suppliers, because of SBC's low bus volumes. Volume has been an issue with its suppliers because, generally, most of SBC's suppliers have difficulty in forecasting and justifying the production costs associated with the low volumes set by SBC. Since many of the suppliers produce solely for the coach market, it can be difficult for them to get the volumes they need to operate a cost-effective business.

4.2.2.3 SEM in China

The Supplier Evaluation Model, or better known as the SEM evaluation, was first introduced to SBC by its former purchasing director back in 2002.¹⁶¹ Since then, only a handful of SBC's suppliers have successfully gone through and completed this extensive evaluation procedure. The SEM is essentially an advanced tool used for the comprehensive evaluation of its first-tier suppliers, and is formally defined by SBC as 'a unified supplier evaluation standard prepared by Volvo'.¹⁶²

While it is important to understand how the SEM process works in actuality, it is also important to understand what the SEM means in a larger context. For example, what it means for SBC, and what it means for its suppliers in terms of specific criteria and requirements. It is also important that SBC understands which parts of the bus are the most important to their customers, in order to assure the highest quality standards for those parts. For example, the main concerns of the customer historically rest with the toilet system in the bus, the water-heating equipment, the seats and the audio & video equipment, and so in the past, SBC has made it a point to buy complete components from these producers to make sure that they get single source accountability for quality from their suppliers.¹⁶³ The most efficient and reliable way to ensure this complete quality is by employing the SEM evaluation.

The use of the SEM model basically means that SBC has to work in a slightly different way. It is also very important to keep things in perspective when working with limited resources. Meaning that, it is most essential to use the SEM to evaluate those suppliers, which supply the most important components for the bus. For example, it is imperative that a key component supplier (such

¹⁶¹ Zhuang, Interview, 2004

¹⁶² Silver Bus Supplier Choose & Evaluation Manual

¹⁶³ McGurk, Interview, 2004

as a chassis supplier) passes the SEM, whereas the same emphasis may not be necessary for example, for the curtain supplier.¹⁶⁴

The purchasing department at SBC believes that the SEM evaluation is a very useful and powerful tool for selecting the right suppliers in the Chinese market; however, since China is often referred to as an emerging market, the situation is often very different than what exists in the European market. By the end of the year, the purchasing department would like to hold a formal meeting regarding the SEM processes, procedures and applications in the Chinese market, in order to gain a better understanding of each individual step as well as to enhance their understanding of the SEM tool as a whole.¹⁶⁵ There have also been formal SEM training courses run by Volvo approved SEM audit leaders in Shanghai, in an effort to educate and certify its employees in the Chinese market. Last year three of the SQA engineers, the purchasing controller and the two AP buyers from SBC were sent to Shanghai to participate in 'Global Buyer One' training. A global SQA manager and a global purchasing quality manager were sent from VBC to run the training courses in China.¹⁶⁶

4.2.2.4 Introduction to SEM Process

SBC uses the same global Supplier Evaluation Model as used by the Volvo Group. As was explained to us during our interview with Chen Hongxia, a Supplier Quality Assurance Engineer at SBC, the entire SEM evaluation procedure usually takes approximately fifteen days from start to finish. However, if it is done for a new supplier, it normally takes about twenty days from start to finish for the evaluation process to be completed. Once SBC has received back the qualifying information questionnaire from the supplier, SBC can normally go ahead and begin the process (assuming the information is favorable). The SEM is used to evaluate suppliers based on the importance of the component, which they supply. The purchasing department is responsible for conducting the SEM procedures; however, they also coordinate with other departments such as finance, logistics and material control.¹⁶⁷

SBC has about 150 suppliers, of which, about half have gone through the full SEM evaluation since it was first implemented within SBC about two year ago. These suppliers, who have been evaluated using the SEM, include roughly thirty of SBC's biggest key component suppliers and about thirty of their local suppliers. Those suppliers, which have not gone through the SEM evaluation, have been evaluated using SBC's simple model evaluation, as previously explained. SBC's goal by next year is to increase the number of suppliers who are evaluated using the SEM. For those suppliers who have already been

¹⁶⁴ Ibid.

¹⁶⁵ Zhuang, Interview, 2004

¹⁶⁶ Ibid

¹⁶⁷ Chen, Interview, 2004

evaluated using the SEM, they will be asked to continue to improve their quality. While at present, the suppliers are not evaluated on an annual basis; SBC does hope to begin doing this by sometime next year.¹⁶⁸

4.2.2.5 The SEM Procedure

The SEM team is usually made up of a buyer, an SQA engineer, the purchasing controller (who is especially focused on price), a designer, a production engineer and a leader, who should be designated and confirmed by the quality department (usually the SQA engineer or the controller). The SEM team strives hard to maintain the same level of SEM standards, which Volvo also requires from its suppliers.¹⁶⁹ When conducting the SEM evaluation, the first step is to prepare an evaluation or selection plan, which is sent to prospective suppliers. If the initial information, which they receive, is favorable, they will send out the SEM questionnaire to the supplier, asking them to evaluate themselves and return it to SBC within fifteen days. SBC then gives the supplier a score based on the evaluation questionnaire. If the detailed information that they receive back is suitable, then they can begin the full SEM process; however if the results are not suitable or the supplier initially fails to pass one of the stopping parameters then the supplier will not be considered.¹⁷⁰

Following the initial questionnaire, an on-site evaluation is conducted. The on-site supplier evaluation usually takes about one full day to complete and is one of the most important steps in the selection process. This is an opportunity for SBC to visit the supplier, check the production process and ask any questions they might have.¹⁷¹ During the on-site evaluation, the group leader will usually check a number of specific criteria such as the supplier's management and risk management capabilities, the staff, the warehouses, quality issues, such as the production line, the manufacturing equipment, the quality control system, their quality certificates and the general working environment. They will also check the material control and test the different materials (such as paint and other chemical products), check for the supplier's customer satisfaction feedback, check to see what actions the supplier has taken to guarantee its own customer satisfaction, and whether the supplier has implemented some sort of feedback or improvement survey for its customers. This is also a time for the SEM leader to ask for explanations to any questions they might have concerning additional SEM criteria. If the supplier is found to be missing any one of the eight SEM stopping parameters then they will receive an immediate zero and will not be considered as a supplier.¹⁷²

¹⁶⁸ Xie, Interview, 2004

¹⁶⁹ Zhao, Interview, 2004

¹⁷⁰ Zhuang, Interview, 2004

¹⁷¹ Zhao, Interview, 2004

¹⁷² Chen, Interview, 2004

After the on-site evaluation has been completed, the evaluation team will then assess the information. The SEM score is given to the supplier immediately following the evaluation. After the score has been determined, the evaluation team will tell the supplier which aspects were good and which aspects of the evaluation need to be changed or improved upon. The team then asks the supplier to submit a plan for improvement. Following the on-site evaluation, the purchasing department will issue a formal score, and a formal announcement for the supplier's improvement will be sent to the supplier. In approximately six month's time, the team will perform another SEM evaluation to see if the supplier has improved and issue them a new score.¹⁷³

Occasionally it happens that a supplier who does not pass the evaluation criteria may bypass SBC by going directly to the end customer and asking them to use their products. In this situation, it is the end customer who assumes all product and quality responsibility.¹⁷⁴ The following section will focus on the supplier's perspective and thoughts concerning the application of the SEM evaluation by SBC in the Chinese market.

4.2.3 The SEM From a Supplier Perspective – Relevance of the Selection Criteria

In this section we will present the suppliers' views of the SEM tool and the supplier selection criteria and their perceived relevance for the Chinese market. This is done in an effort to further identify those criteria within the selection process, where the suppliers believe that value is added, as well as to identify those aspects of the process, which the suppliers have determined as inappropriate for the Chinese market.

4.2.3.1 Suppliers and the SEM

Because there is often a steep learning curve with suppliers in emerging markets, communication is usually a step-by-step process. In order to help the suppliers to better understand and accept the SEM evaluation process, it is important to SBC to continue to select good suppliers who are willing to learn and to meet these requirements. Each year SBC holds an annual meeting for its suppliers in order to discuss requirements and to help its suppliers to better understand various supply issues, new regulations and SBC's requirements. The SEM from Volvo Group is the first time that many of the Chinese suppliers have been introduced to such a comprehensive evaluation process. Up until now they have only been required to abide by government standards, such as CCC (China Compulsory Certificate¹⁷⁵) and other industry quality certificates, such as the ISO 9000 and ISO 14000.

¹⁷³ Ibid

¹⁷⁴ Zhuang, Interview, 2004

¹⁷⁵ A new standard for the Chinese Automobile Industry

Each year at the annual meeting, SBC introduces the SEM, what it means and why the supplier should work to meet and fulfill the various SEM criteria. The meeting also focuses on how suppliers can improve their product quality, as well as an opportunity for the suppliers to ask questions of SBC. Most of the suppliers want to improve themselves after going through the SEM. Having realized this, SBC makes every effort to help them to achieve this goal.¹⁷⁶

4.2.3.2 Suppliers Interviews

The suppliers we interviewed were chosen by SBC, primarily based on their relationship to the company, as well as their geographic proximity to SBC. This “sorting” may have introduced a bias; however, this approach was the only possible option given our limited time in China. Our objective was to interview those suppliers who had been evaluated by SBC using the SEM, and also those suppliers who had not yet gone through the SEM process, but were at least familiar with it. The following interviews are discussed in order to provide an introduction to SBC’s suppliers as well as to present an overview of the suppliers’ general opinions concerning the SEM and the overall supplier selection process.

Xi’an Haoke Electromechanical Equipment Trading Limited (Automotive Refinishes), Authorized Distributor For PPG

Xi’an Haoke began working with SBC back in 2002. They also supply to Sunwin Bus. Their parent company, PPG Paints, is 100% foreign owned. PPG’s major customers include high-end automobile manufacturers and their products meet all international standards, since they are global suppliers. PPG’s entire R&D is done in the US, where they invest significant money in developing new products, which meet international standards. Xi’an Haoke currently has twenty-four employees and SBC is their biggest customer. They strive to maintain low costs for SBC, with whom they have had a long working relationship. They are also the first supplier to work with SBC to achieve ‘zero inventory’. Xi’an Haoke provides long-term technical support to its customers and maintains a large inventory. They first went through the SEM evaluation last year and they believe that the SEM is a very good way to measure quality. Xi’an Haoke was sent the short SEM and was given a basic score on this. They were later visited by SBC in order to check the quality certificates, their equipment, all environmental issues and working conditions, etc. Xi’an Haoke also recently moved their production line to SBC in order to better satisfy their customer’s needs for zero inventory and quality review.

¹⁷⁶ Xie, Interview, 2004

Xian Shen Wei Engineer Plastic Company (supplier)

The Xian Shen Wei Company started their business about fifteen years ago and they currently employ about fifty people. They are primarily responsible for producing the plastic parts for the inside decoration of the bus, such as the frame for the TV. Their sales reach around three million RMB annually and about twenty percent of their sales are attributable to SBC. They have been doing business with SBC since 1994; however, they also produce plastic parts for other customers, such as the suppliers for military aircraft, textiles and medical equipment. Because of SBC's zero inventory policy, their low volumes, and their ability to bargain for low prices, Xian Shen Wei does not earn much money by doing business with SBC. They believe that SBC conducts most of its supplier dealings based on the closeness of the relationship to that supplier (Guanxi), rather than on price. They believe that they are able to produce the same quality and the same price as the other suppliers, yet often times SBC will choose to use the other suppliers instead of them, because of the relationship. While SBC has asked them to become ISO certified, they do not currently hold any quality certificates. This is because in order to attain the ISO certification, they must invest a lot of capital. They do have a plan for ISO certification once they are able to expand their business, however at present they are not able to afford it. Xian Shen Wei does not have a formal supplier selection process for their suppliers but they do believe that good quality is most important, as is cost and delivery time. There is not much technology involved in the products, which they produce so they must place most of their emphasis on achieving competitive prices, high quality service, prompt delivery times and after-market services. Xian Shen Wei believes that they have learned a lot from SBC; however, they still feel that they are not presently able to fully compete with many of the larger SBC suppliers. They strive to maintain good working relations and good communication with SBC and their small company size allows them ample freedom in terms of flexibility, meaning that any necessary changes can be made fairly quickly, as opposed to having to go through corporate red tape before the change can be implemented.

Ruian Feipeng Corporation

Ruian Feipeng was set up in 1989, and they currently produce power generators. They employ about two hundred people and generate about 16 million RMB in sales annually. Their major customers include Chinese bus producers and they export their products to Europe, Southeast Asia and North America. Most of their suppliers are raw material suppliers and are selected based on their ability to provide quality products and services. Most of their R&D research is developed based on the needs of their customers. They have been supplying SBC since about 1994, and they believe that the most important thing that SBC does, which differs from their other customers, is that they run strict tests on their supplier's products, they check their supplier's quality,

production line and capabilities, and they also check to make sure that the supplier's are able to pass the environmental standards. They currently hold the ISO 9000 and the ISO 1649, EMA (European standard) quality certificates. They believe that the SEM is a very good process with high standards and it has taught them a lot. When conducting the SEM, SBC conducts a very thorough check of almost everything within their company, such as the quality of their raw material, their quality control system and how they manage their warehouse. However, Ruian Feipeng believes that certain parts of the SEM that are not reliable because there are different people giving different scores. They feel that SBC did not provide enough information or specific communication with them regarding the SEM and they would like to develop a better understanding of it. They believe that there are certain criteria within the SEM are too strict, such as the management criteria. Since most of the smaller companies don't have a management team, this is often a very difficult criterion for them to meet. They also believe that the environmental and working environment issues are too strict and not realistic for the Chinese market.

Xi'an Aircraft Electronic Equipment Manufacturer

The company, a subsidiary of XAC was first set up in 1958, and they have been providing service and repairs to XAC ever since. They have one hundred and twenty-nine employees and about 17 million RMB in sales annually. Their major businesses include repair & renovations and sixty percent of their business goes to working on the frame and other bus components. Their main customers include XAC and SBC, and while they would like to begin producing components for other companies, they do not believe they presently have the capacity to do this. They believe that their quality is still not as good as they would like it to be and they are trying to improve this by meeting SBC's quality requirements. They have not yet gone through the SEM, but SBC always checks their quality and tests their products and then asks them for improvement. In fact, SBC asks them to improve their quality annually and sometimes they perform random quality checks. They believe that SBC is very satisfied with their production capabilities and their delivery precision.

Xi'an Aircraft Industry Shunda Seat Cooperation Company Ltd.

The Shunda Seat Company was set up in 1994 and changed ownership in 2000. It is about forty nine percent owned by Xi'an Aircraft Industry Group and about fifty-one percent owned by the staff employees. Their products include passenger seats, driver seats for trucks and they are presently trying to develop train seats. They devote about six to seven percent of their sales annually to R&D development. The majority of their business is devoted to developing passenger seats for SBC, which makes up about forty percent of their sales, however they do have other customers. Their company was specifically set up

in the beginning to supply SBC, since they are a subsidiary of Xi'an Aircraft Group (joint venture partner with SBC).

Their working relationship with SBC is very important, since they are a long-term supplier, and trust between them is essential and appears to be good. For example, if SBC invests in the manufacturing development for a certain component for XAC Shunda, they cannot sell it to SBC's competitors. They maintain excellent communication with SBC, since they are located just down the street, and they do everything possible to maintain good quality and to responsively lower their costs. Shunda also does a good job of providing JIT inventory delivery for SBC, as a result of flexible management and good inventory control. Shunda currently has about thirty-eight suppliers, one-third of which, are ISO 9000 certified. They expect that more of their suppliers in the future will continue to achieve higher standards, such as the ISO 9000, however it is not a one hundred percent quality guarantee. When they conduct the selection of their own suppliers, they also consider the location because transportation costs are so high. From time to time SBC will conduct interviews with Shunda's suppliers for certain items, such as seat covers. Shunda has not yet gone through the SEM evaluation but they hope to do so in the future.

Xiahua New Technology Corporation, Subsidiary of Xiameng Overseas Electronic Corporation

The Xiahua New Technology Corporation produce automobile electronics, VCD's, DVD's and multi-purpose television screens. They have a seventy-five percent share of the Chinese market for automobile electronics. Fifty percent of their company is devoted to exporting products to countries such as Africa and Egypt. Their customers include major bus producers in China, Africa, Southeast Asia and Europe. They have about seventy employees, most of who are in sales, while the parent company does most of the production. Their sales are about one hundred and thirty to one hundred and fifty million RMB annually. They have supplied SBC since 1994, and they recently became a global supplier for Volvo Group in 2003. They hold the ISO 9000 quality certificate as well as the QS 9000 and the European CE quality certificate. They maintain strict guidelines for their own quality systems and all raw materials must be checked using different quality procedures.

They first went through the SEM in 2003 and it was very complete; however, they remember when they first began working with SBC back in 1994, that the supplier selection process evaluation was not very thorough. During their recent SEM evaluation, the major criteria, which were checked, were the PPM rate, the financial aspects, the environmental aspects and their quality control system. Other company information, which was evaluated, included

determining whether Xiahua was a global or Chinese company, which type(s) of software was used by their engineers, their management capabilities, their after-market service and their delivery time. None of their other customers have ever performed such a thorough check when selecting them as a supplier.

Xiahua believes that the SEM is a challenge, but is also an opportunity for them to improve themselves. For instance, after the SEM, they focused more of their attention on their customer satisfaction and actually conducted a customer satisfaction survey because SBC required more information. Additionally, they managed to improve their PPM rate and devoted more work towards improving the companies' environmental issues. While they believe that the SEM is a positive tool, they still feel that some of the criteria are not suitable for the Chinese market and that some aspects of the evaluation are difficult to understand. For instance, they feel that some of the environmental issues are far too strict for the Chinese market and that how they treat their employees should not be included as a criterion in the evaluation.

Xi'an Aircraft International Manufacturing Corporation, 24th Manufacturer

Xi'an Aircraft International Manufacturing Corporation currently employs about two hundred and thirty-three people and their staff includes twenty-two technicians and eighteen engineers. They have annual sales of about forty million RMB, with around twenty-five percent of those sales going to SBC. They have been a supplier for SBC since 1994 and they primarily produce the storage door on the bus. Their R&D activities depend primarily on SBC's needs. They meet all the quality standards required by XAC, such as the ISO 9000. For the selection of their own suppliers, they look at the quality, the delivery time, the management capabilities and their supplier's equipment. They also try to maintain their own high quality standards at low prices and as a result, on some products they do not make a profit. They work hard to maintain their relationship with SBC, and if SBC needs a special part, they will invest in special equipment to make it for them. While some of the managers believe that this is risky, the competition in the industry is very fierce so they must do this to stay at the forefront of their competitors. SBC's volume is quite low and they believe that if SBC were able to produce more buses, then they would be able to make more of a profit. They have not yet gone through the SEM but they plan to do so in the future. One of the reasons they have not yet gone through the SEM is because they are a subsidiary of XAC and XAC has an agreement with SBC as a preferred supplier, meaning if their quality and price are good, SBC will use their products.

Shaan Linyun Electronic Company

The Shaan Linyun Electronic Company currently employs about two hundred and ten people. Eight to nine percent of their employees are

technicians, eight percent is management, thirteen percent is sales, nine percent focus on assistance and repairs and the rest are workers. Their sales usually reach more than fifty million RMB annually. Their main products include batteries and their major customers include car and bus companies, military car and military bus producers. They have been suppliers to SBC since 1997. They currently hold the ISO 9000 quality certificate and they are applying for the ISO 14000 environment certificate; however, they have not yet been certified. They do have a comprehensive process for environmental controls since the battery components pose a potential for environmental pollution. Each year the environmental control office from the central government checks to make sure they pass the government requirements and if they do not do a good job they will shut down. Shaan Linyun went through the SEM at the end of last year and they felt that the SEM was much more specific than the ISO 9000 standards, however, some of it overlapped. They think that SBC should eliminate those criteria checks, which overlap with the ISO 9000 for the suppliers, which are already ISO 9000 certified. They also believe that the SEM process is far too complicated and some of the criteria are too strict. However, they do believe that the SEM is very complete, especially the environmental restrictions, and that it helps them to improve as a company.

Jiang Su Suguang, Engineered Plastic Corporation

The Jiang Su Suguang Corporation is a producer of automobile components. They currently have two branches, both of which are supported by the government. They employ around two hundred and twenty people and their sales usually total around two hundred and forty RMB annually. Their major products include plastic parts and oil tanks. Their customers include Chinese automobile producers and truck and bus producers. They have been supplying to SBC since 2002. Since SBC's volumes are very low, it is difficult for Jiang Su Suguang to profit financially by working with them, however they do use Volvo's reputable brand, which helps to attract many other customers. Their products are mainly developed by using samples provided by their customers. They currently hold the QS 9000 and the ISO 16949 quality certificates, in addition to implementing their own thorough quality management system. They select all of their own suppliers based on the supplier's quality, technological capabilities and price requirements. They have not yet gone through the SEM evaluation; however, they believe that it is a very complete system.

Wu Xi District 81 Plastic Manufacturer

The Wu Xi Company is a producer of different types of plastic parts and they currently employ around four hundred employees. Their major products are plastic parts used for the inside decoration of the bus, and they also produce plastic leather and plastic carpets for the floors. They develop most of their

new products based on the needs of their customers and they spend approximately ten million RMB annually for developing and testing new products. Ninety percent of their customers are high-end bus producers. They have passed the ISO 9000 and they continue to pass the state-issued quality test every year. However, they believe that there is still a large gap between their quality and the international standards and that compared with the European and American products; their quality is a little lower. They continuously strive to improve their quality by learning from the international companies and standards. They believe that the SEM is a very good measure for controlling quality and is very thorough. They believe that the SEM is a very strict process, but that it is reasonable because the Volvo brand is so reputable. They feel that they have learned a lot from the SEM and would like to maintain the quality that the Volvo brand requires.

4.2.3.3 Summary of Supplier Feedback

Table 8 presents a tabular summary of the supplier's perceptions and familiarity with the SEM, their quality certifications, as well as some relevant background information necessary for discerning between the differences in opinion between the smaller and larger suppliers, as well as drawing further conclusions.

Table 8. Summary of Supplier Feedback

SUPPLIER	COMPONENT	SALES (IN MILLION RMB)	LOCATION	QUALITY CERTIFICATE	EVALUATED USING THE SEM OR FAMILIAR WITH SEM¹⁷⁷	OPINION OF SEM¹⁷⁸
Wu Xi District 81 Plastic Manufacturer	Plastic parts	100	Jiangsu (East Coast)	ISO 9000	Yes	Excellent
Jiang Su Suguang, Engineer Plastic Corporation	Plastic parts oil tanks	240	Jiangsu (East Coast)	QS 9000&ISO 16949	No, but familiar	Good
Shaan Linyun Electronic Company	Batteries	50	Shaanxi (Local)	ISO 9000	Yes	Fair
XAC 24th Manufacturer	Storage Door	40	Shaanxi (Local)	ISO 9000 and XAC standard	No, and Unfamiliar	N/A
Xiahua New Technology Corporation	VCD, DVD, TV	130-150	Fujian (South)	ISO 9000, QS 9000, CE ¹⁷⁹	Yes	Good
XAC Shunda Seat Cooperation Company Ltd.	Passenger Seats	N/A	Shaanxi (Local)	ISO 9000 and XAC standard	No, but Familiar	Good
XAC Electronic Equipment Manufacturer	Frame	17	Shaanxi (Local)	ISO 9000 and XAC standard	No, but Familiar	Good
Ruian Feipeng Corporation	Power Generators	16	Zhejiang (South)	ISO9000, ISO 16949 and EMA ¹⁸⁰	Yes	Excellent
Xian Shen Wei Engineer Plastic Company	Plastic Parts	3	Shaanxi (Local)	None	No, but Familiar	Good

Source: Author's Own Elaboration

¹⁷⁷ Evaluated Using SEM: Yes, No & Familiar With SEM: Familiar, Unfamiliar

¹⁷⁸ Opinion for SEM contains: Excellent, good, fair, and poor

¹⁷⁹ CE: A European Quality Standard

¹⁸⁰ EMA: A European Standard

4.2.4 Conclusion

Momentum is now working for SBC and things are beginning to turn in their favor. The Volvo brand has always been a sort of icon in the Chinese market for having the highest quality and for producing the top end luxury coaches. As long as SBC's customers continue to think of Volvo as the strongest brand on the market and associate it with SBC, then SBC should continue to have the strongest brand on the Chinese market. Therefore, SBC must continue to find ways to constantly improve themselves in order to maintain this position, which is based on perception and performance.¹⁸¹

¹⁸¹ McGurk, Interview, 2004

Chapter 5. ANALYSIS OF EMPIRICAL FINDINGS

In this chapter we will present an analysis of our empirical findings. The analysis will follow similar guidelines, which were used to communicate our empirical study in the preceding chapter. An analysis of Volvo's supplier selection process is presented first, followed by an analysis of SBC's application of the supplier selection process to the Chinese market, and finally an analysis of the supplier feedback is presented with the objective of achieving a better understanding of how the SEM is actually perceived in the Chinese market.

5.1 VOLVO'S SUPPLIER SELECTION PROCESS

In this section we analyze Volvo's supplier selection process with a particular emphasis on their Supplier Evaluation Model (SEM). The supplier selection process is analyzed using Gadde-Hakansson's Supply Network Strategy theory, which focuses on the buyer's relationship with the supplier, the network strategies, the purchasing and resource structure, and the activities, roles and challenges faced within the purchasing department, or more specifically for our purposes, the roles, relationships and challenges faced during the selection process.

5.1.1 Volvo's Determining Factors for Supplier Selection

The identity of a company, such as how it is viewed by other industry players, can have a potential impact on its ability to become an active participant within a specific network. Some of the characteristics, which create identity, come from within and other the other characteristics grow from relationships with other players. The identity of a company is partly determined by its belonging to a larger entity, such as how the company relates to other actors in the market, and partly by its specialties, such as its internal capabilities, technical knowledge, in addition to how well established the company is. The identity of a company essentially provides a picture of what the company is, and what it is not.¹⁸²

Volvo's identity, or brand image, is that of quality, safety and environmental concern. As a result of Volvo's solid image as a producer of high quality and reliable products, it has managed to build a solid position for itself in the automotive market. These Volvo 'identities' have also carried over into the supply market and have become one of the major influencing factors in the supplier selection process, in that Volvo also demands good performance on each of these criteria from all of its suppliers. Volvo's suppliers, whether they are located in Europe or in China, must be able to meet all of the criteria set out

¹⁸² Gadde & Hakansson, 2001

by Volvo. This is especially important for the future of Volvo's global sourcing strategy, since it is necessary for Volvo to ensure that they are providing the same quality products to their customers, no matter where the product or its components originated. Volvo's suppliers must meet specific, key characteristics in order to be considered as a supplier. The changing relationship between the producers and their component suppliers has also had a major effect on the expectations and the level of quality a supplier must possess. Our research has shown that this has become a general trend of almost all automotive manufacturers operating on a global scale. There is more of a need for consistency, reliability and standard processes to be put in place when operating across different markets and therefore, it has become of utmost importance that suppliers are able to meet these challenges by producing and maintaining superior levels of quality.

Volvo upholds strict standards in each of its markets of operation and it is these consistent, global standards, which help to differentiate Volvo from its competitors. In order to maintain its reputation as a leader, Volvo utilizes a global supplier selection process in all of its joint ventures and partnerships around world. In order to ensure consistency, Volvo must send auditors to its global locations for continuous and consistent training in each of the local market ventures. Since Volvo's operations are located in several different emerging market countries, they must deal with issues such as market fragmentation, steep learning curve's, underdeveloped technology and varying market requirements, experiences, quality procedures and processes. Volvo has found that it can be very difficult to adopt a single model to be used in different market environments where the level of social, technical, environmental, quality, economical and political awareness varies greatly. Although these differences often prove to be minor and sometimes major obstacles, Volvo is not willing to lower or change its standards in any of its markets of operations, such as, for example, in the Chinese market. While requiring the same standards from the Chinese market may prove to be difficult initially, lowering its standards would mean changing its products and therefore, this is not viewed as an acceptable option. In order to require the same standards from the Chinese market, VBC will need to continue to enhance communication and training procedures with both SBC and SBC's suppliers.

5.1.2 Volvo's Supplier Selection Process and SEM

Volvo's supplier selection process and method for selecting suppliers are an important part of the supply network structure. Since the main feature of a network structure has to do with the increasing interdependence of the different components, such as the buyer, the supplier and the customer, the process and the criteria used in selecting the supplier will continue to have a profound impact on both the customer and the buyer. The appropriate selection of

suppliers can indirectly enhance the overall performance of the buyer, as well as to serve as a means for ensuring a quality product for the end customer.

Volvo's supplier selection process is similar to the methods and major trends used in selecting suppliers, as was introduced earlier in the theory. These have to do with the specific criteria, which, they employ, as well as the combination of the methods that are used within the SEM. Volvo's SEM is a valuable tool in the appropriate selection of suppliers both in theory and in practice. The SEM combines the strengths of several different methods used for supplier selection, such as AHP, which is one of the reasons it can be viewed as a powerful and reliable tool for the systematic selection of suppliers.

The SEM is consistent with Volvo's core value, and serves as a tool for helping Volvo to maintain its high standards and superior reputation in the automotive industry. After comparing the SEM with the supplier selection theories, we have found that it is loosely based on a range of related academic theories. The SEM appears to be a combination of both practical industry experience and theory combined in a model, used for the selection of suppliers. In order to better analyze the SEM, we will first attempt to identify the basic advantages and disadvantages.

The SEM evaluation criteria can be loosely divided into two basic parts, which include the actual criteria on which the supplier is evaluated, and the stopping parameters, both of which are based on a selection of quantitative and qualitative criteria. The criteria, which appear within the SEM, are almost always consistent with the criteria presented in the commonly used theories and supplier selection literature reviews. The different methods used for weighting the criteria are also similar to those presented in theory; therefore, one could assume that the SEM is based on many of the criteria and specifications found in popular supplier selection theories. However, we also know that there are a number of other practical, and internal company-related aspects, which have also shaped the criteria and evaluation parameters, included within the SEM tool.

Some of the major advantages of the SEM are its systematic and scientific nature, which help in assuring a consistent selection process anywhere in the world. The SEM is a very comprehensive tool and it covers a range of qualitative and quantitative criteria, which are considered extremely useful in selecting a dependable supplier. Another advantage of the SEM is its use of stopping parameters, or those criteria, which must be met at the most minimal level in order for a supplier to be considered. These stopping parameters take into account some of the most fundamental aspects of operation, such as the supplier's risk management capabilities and the supplier's financial

qualifications and management competencies. They are also a solid measure for assuring Volvo that the supplier is capable of fulfilling the task requirements and relationship responsibilities.

One aspect, which could be considered a disadvantage of the SEM, is the number of qualitative criteria used for the selecting of a supplier, as opposed to using strictly quantitative methods. Quantitative methods have traditionally been used as the basis for selecting suppliers; however, it is now becoming more important to judge suppliers on a number of related qualitative criteria, such as those criteria, which cannot be captured in a mathematical formula. This is especially true in China, where many of the suppliers still do not possess the real quantitative, technological abilities or processes, and most of their strengths lie in their qualitative abilities, such as relationship. Since a qualitative criterion requires more personal judgment, it is extremely important that the management or decision makers are experienced and reliable, and that they follow a common method for analyzing the qualitative feedback. Furthermore, the SEM is a process, which takes considerable time, money and resources to conduct. Therefore, it is important that Volvo Group is able to correctly qualify its potential suppliers before conducting the SEM, since it is not intended to be used on all suppliers, but rather, only those suppliers who demonstrate sufficient minimum capabilities.

As we observed during the research process, the SEM is often very comprehensive when applied in theory; however, it is sometimes slightly different when used in practice. The SEM may only be conducted and analyzed by an SEM Lead Auditor, which is done to ensure its accuracy and integrity. The SEM was developed using Western market standards, and therefore, it is oftentimes difficult to apply directly to the emerging markets, like China. One major obstacle affecting MNCs operating in the global automotive industry is the difficulty they face when attempting to transfer 'Western' technologies, resources and processes directly to their subsidiary operations in emerging markets. The following section will present an analysis of how Volvo's joint venture company, SBC, conducts their supplier selection process, as well as how they are applying Volvo's global SEM model to the Chinese market.

5.2 SBC's APPLICATION OF THE SUPPLIER SELECTION PROCESS

The following section will examine and assess how SBC is applying the supplier selection process and Volvo Group's supplier evaluation model to the Chinese market. This application process is studied using the industrial buyer-supplier relationship theory as a guide. The selection process will be discussed from the perspective of buyer-supplier relationships, relationship components,

communication and information exchange, cooperation and the impact of Guanxi in the Chinese business environment.

5.2.1 Determining Factors for Supplier Selection

There is a clear relationship between the local development of a vehicle and the local supply. Local vehicle design and development afford local enterprises greater opportunities to participate in the overall design process. Not only does this create further opportunities for the local enterprise, but it also offers the local or 'national' suppliers the chance to link into the supply chain.¹⁸³ Incorporating the local suppliers into a 'global' process can be a challenging and time consuming task; however, it is one worth investing in. SBC has a fair degree of independence in choosing its suppliers; however, the selection criterion it uses is closely based on Volvo's global selection criteria standards. As a result, all of SBC's suppliers must also comply with Volvo's high quality, safety and environmental standards, which can sometimes be challenging in the Chinese market. This portion of the analysis will be analyzed from a supplier-buyer relationship perspective, with a focus on industrial markets, such as the bus industry. Since the customer base in industrial markets is often much narrower than in the consumer mass-markets, it suggests that industrial markets are more stable, whereby suggesting the study of relationships –between buyers and suppliers, rather than single transactions. This is meant to offer a further insight into the complexity of the industrial market reality by portraying a picture of the relationships and business interactions, which make it function.¹⁸⁴ The suggested stability of the industrial markets is not always the reality, as is suggested above; but rather, industrial markets can also be characterized by low volumes, fragmented customer segments and suppliers, who are unable to match the Western standards. This issue can be seen in the Chinese bus market.

5.2.1.1 The Role of the Purchasing Department

Purchasing operations have shifted from being primarily internal operations with administrative characteristics to strategically based procedures. This shift of focus has also changed the perception of the purchasing function in the sense that, when purchasing is more important, the suppliers become more important. In order to get the most out of the purchasing process, a re-acquaintance with the suppliers and their resources is necessary. The best way to gain access to these resources is by forming close relationships with the suppliers.¹⁸⁵ Since the company was first established back in 1994, the role of the purchasing department within SBC has changed significantly. Not only has the purchasing department taken on more responsibility for sourcing and developing its

¹⁸³ Salerno, Marx & Zilbovicius, 2003

¹⁸⁴ Seppälä, 2001

¹⁸⁵ Gadde & Hakansson, 2001

suppliers, but they have also come under constant pressure to choose dependable suppliers, while continuously trying to trim the supply base and cut costs. There has also been a move by SBC, which can also be viewed as a general industry trend, to further involve top management in the selection process, further validating the importance of the purchasing function.

SBC's purchasing department is still quite small compared with Volvo Group's global operations, resulting in limited resources to devote to the advancement of the overall supplier selection process. Because the purchasing department plays such a significant role within the company, it is essential that they strive to maintain good relationships with their suppliers. As could be observed during our visit to SBC, the purchasing department has made it a point to maintain close contact and to establish 'personal' relationships with its most important suppliers. Since the relationship concept is so important in the Chinese market, this aspect is essential for doing good business. As previously mentioned, the term for relationship in Chinese is Guanxi. Guanxi has a remarkable influence on all business transactions in the Chinese market in that it places more emphasis on personal relationships and trust, than on the actual contract procedure. This became obvious to us during our visits to the suppliers, whereby it was easy to identify the significance the relationship between SBC and its suppliers played in forging business transactions.¹⁸⁶

The purchasing department is also under constant pressure to cut their costs each year. One of the major ways to do this is by establishing more common suppliers with Sunwin Bus. Companies must begin making investments in changes to their value chain structure in order to reduce the overall number of suppliers. Meaning that, in order to reduce its suppliers, SBC must take a look at how its value chain is structured, in order to determine where changes are necessary and which changes will add the most value in helping them to achieve their objective. In the early 90's, reducing the number of suppliers generally meant reducing the number of suppliers per piece or part, rather than the conversion of parts into sub assemblies.¹⁸⁷ Presently, one option for SBC to reduce their suppliers is to have their current suppliers assemble a more complete module for the bus, so that there is an actual need for fewer suppliers. By establishing more common suppliers, SBC would also be able to save on costs as well begin to decrease their supply base through the use of shared suppliers with Sunwin.

It is also the task of the purchasing department to begin localizing more of their key components, such as the chassis. However, accomplishing this task is going to need to be a company-wide effort, due to its magnitude and

¹⁸⁶ Wong & Leung, 2001

¹⁸⁷ Salerno, Marx & Zilbovicius, 2003

complexity. According to the supply network theory, it is necessary that the purchasing department coordinate its activities with other departments. Although the communication and coordination process has been recently enhanced with the introduction of a new company-wide software system (which also enables SBC to coordinate its activities with Volvo), there is still a need for further coordination of the different departments, especially those involved in the supplier selection process (such as after-market, finance, logistics, design and material control). The localization tariff is going to have a measurable impact on the future of the bottom line if the requirements are not met soon. Therefore, it is essential that SBC continue to devote more time and resources to solving this obstacle from both a short-term and a long-term perspective.

5.2.2 Supplier Selection Process and SEM

SBC's supplier selection process is very similar to that of Volvo Group's, in that they require the same criteria of their suppliers as Volvo would of its suppliers. SBC uses a 'simple supplier evaluation' for evaluating the majority of its suppliers. The criteria for this evaluation is based largely on supplier quality, delivery time and production capabilities. However, all of SBC's key component suppliers must be evaluated using the SEM procedure. This means that the key component suppliers must pass all eleven SEM criteria, as well as pass all eight stopping parameters outlined in the SEM model. This requirement that all key component suppliers must pass the SEM is going to continue to pose a challenge to SBC in that they must continue to train their suppliers in order to bring them up to the appropriate levels of operation, so that they are able to meet these requirements. Although we do not focus much on the issue of price, it is generally a major determining factor in winning orders. For example, if the evaluated suppliers all meet the required standards, such as quality certification, financing capability or engineering capacity, and their overall history is good, they are generally approved as potential suppliers; however, it is the supplier that quotes the best price that normally wins the order. However, for our specific purposes, it is those suppliers, which meet all of the necessary criteria, but rather, have the best relationship with SBC, who will win the order.

5.2.2.1 Overview of SBC's Supplier Selection Process

The next section will discuss the various aspects of SBC's supplier selection process from a buyer-supplier relationship perspective.

Buyer-Supplier Partnerships

High levels of commitment to the relationship, with the overall objective of achieving mutual benefits, should characterize a buyer-supplier relationship. It is not necessary for the buyer and the supplier to share jointly owned assets,

and therefore, their connection is usually characterized by relationship-specific investments, which ultimately increase dependence. SBC regards relationships as an extremely important issue when conducting their supplier selection. This can clearly be seen in SBC's relationship with XAC, one of its joint venture parent companies. One of the best ways to enhance these types of partner relationships is through frequent face-to-face visits with suppliers. Since XAC is located just down the road from SBC, both companies often make it a point to meet in person to address any sort of business or work-related issues. This relationship is one of SBC's most important high-involvement relationships; meaning that, a lot of time is devoted to working together with XAC to develop new products, strategies and strengthening the relationship. XAC also provides a lot of support and assistance to SBC. For example, XAC often makes relationship-specific investments for SBC, whether it is a new machine to build a new part, or the purchase of a new material. These investments are sometimes viewed as rather risky by XAC; however, they continue to make these types of investments in order to maintain a good working relationship with SBC, as well as to stay competitive in the market. In return, SBC has a contract with XAC as their preferred supplier. This type of affiliation demonstrates that both XAC and SBC are involved in a relationship, which is characterized, by definite commitment and the mutual sharing of information, risks & rewards.

One of the purchasing department's most forward-looking objectives is to continue to develop strategic relationships with a few of its key suppliers. SBC hopes that, by working closely with these suppliers both parties will benefit. One of the major defining characteristics of a strong buyer-supplier relationship has to do with the level of involvement of a company's suppliers in new product development at an early stage of the development process.¹⁸⁸ For example, SBC hopes to benefit from this type of relationship by first investing in these suppliers by working with them on the design side, in an effort to continue to develop new products together. This is especially important to SBC, since they regard these suppliers to be experts in their field, whereby SBC believes that they can learn from their suppliers. SBC also wants to begin helping certain key suppliers to develop cost target plans in order to reduce both the supplier's costs, as well as SBC's costs.

With regard to information sharing and exchange, SBC asks all of its suppliers at the beginning of the selection process to provide as much information as possible, in order to enhance transparency. This is an essential step in sourcing good suppliers, as well as building an initial foundation for information sharing and technology exchange between the SBC and the supplier. Aside from its key component suppliers, which are now characterized by a greater move

¹⁸⁸ Seppälä, 2001

towards high involvement relationships, most of SBC's supplier relationships resemble low involvement investments, due to the strain on costs and resources involved in maintaining a high involvement relationship.

Relationship Components

When working with its suppliers, SBC must instill a large degree of trust. Since trust is one of the most essential aspects of a successful relationship, it must be performed in all daily transactions in order to work effectively. Usually commitment and trust go hand and hand. Although trust is generally something that is built up over time, once SBC receives a commitment from, or rather, commits to its suppliers, the element of trust permeates the foundation of the relationship. In selecting their suppliers, SBC must choose those suppliers, which they believe are capable of meeting all of the necessary requirements, as well as choosing suppliers, which they believe that they can trust. Since it is virtually impossible for SBC to keep a close watch on all of their suppliers, they must establish the initial relationship based on trust and mutual understanding.

One of the best ways for SBC to ensure quality and reliability from its suppliers is through the use of the SEM; however, it is not a substitute for trust. Additionally, since SBC's first-tier suppliers are directly responsible for choosing and managing their own second and third-tier suppliers, SBC must trust that their first-tier suppliers also share the same goals and are working towards the same quality, safety and environmental objectives as SBC. In the short-term, transactional sense, trust is believed to be present when both the buyer and the supplier honor verbal agreements and do not find it to be necessary to have every element agreed in writing.¹⁸⁹ This is also very true of the Chinese culture, whereby the relationship and the aspect of trust typically holds more weight than the formal contract. While SBC does use contracts for all of its supplier orders, the ability to gain the suppliers trust and to establish a mutually beneficial relationship, is far more important. As was observed during our trip, the closer our relationship became to SBC, and the more they began to trust us, the more information they were willing to share.

Communication and Information Exchange

As described in the theory, a developed relationship should be based on solid communication and open, honest information exchange. This is also true of what SBC expects from its suppliers. In the initial phases of the supplier selection process, SBC asks its suppliers to disclose confidential information in order to help SBC to make a better decision. In return, the supplier will also typically receive similar types of information from SBC, or access to its resources. If it is an established relationship, often times SBC will invite the

¹⁸⁹ Seppälä, 2001

supplier to come to the company to receive information or benefit from personal training from its managers. Additionally, sometimes SBC will provide assistance or training to the supplier in other areas of business, in order to help both the supplier and the buyer to achieve a greater knowledge of what the other is doing and how it is being done. SBC spends a lot of time and resources investing in its suppliers, such as holding annual supplier meetings and making frequent trips to visit its suppliers, and therefore, they would like to be able to expect the same in return.

Cooperation

Cooperation is most easily achieved between the buyer and the supplier when there is the presence of common goals and joint planning efforts. There is currently a high degree of cooperation between SBC and many of its suppliers. While SBC can't cooperate closely with all of its suppliers, they do their best to work with those suppliers who have invested in or are willing to invest in SBC. Since cutting costs is a major objective, SBC works with its suppliers to help them to lower their prices and increase their quality. Since one of the biggest issues SBC has with its suppliers is getting them to maintain their quality from year to year, it is necessary for SBC to cooperate with the suppliers in order to help them to improve. This is done by providing training, and by teaching the suppliers to establish formal working procedures, so that both companies are able to reach their objectives. This type of cooperation is essential for the overall success of SBC and its suppliers, as well as for achieving common goals.

Commitment

Commitment can be described as a continuing desire to maintain a valued relationship with another party, such as a supplier. The overall trend in the automotive industry towards establishing committed relationships with a few key suppliers is also true of SBC. Over the last few years, SBC has begun placing more emphasis on establishing committed, mutually beneficial relationships with its most important suppliers in an effort to enhance shared strategies and success. SBC makes commitments to its suppliers in a number of ways, such as by establishing preferred suppliers, as is the case with XAC. SBC is also committed to the further development of its suppliers, which can be seen in all aspects of the working relationship, especially during the supplier selection process. After having gone through the supplier evaluation, SBC provides its suppliers with essential feedback on where and how the supplier can improve. This demonstrates SBC's commitment to the supplier and the relationship.

Guanxi

The application of Volvo's supplier selection process at SBC can also be explained from the Guanxi theory perspective. The Guanxi theory is primarily concerned with that of relationship and the principles on which the relationships are based. Guanxi primarily focuses on the means or specific cultural values used as the basis for establishing these relationships. In Figure 10 the Guanxi concept demonstrates one major difference between Volvo and SBC's approach to business and relationship transactions. For example, Volvo's supplier selection process is built on the Western approach to relationships, whereas SBC's approach is based on the Chinese approach, which is believed by SBC to be the most suitable approach for dealing with the Chinese suppliers.

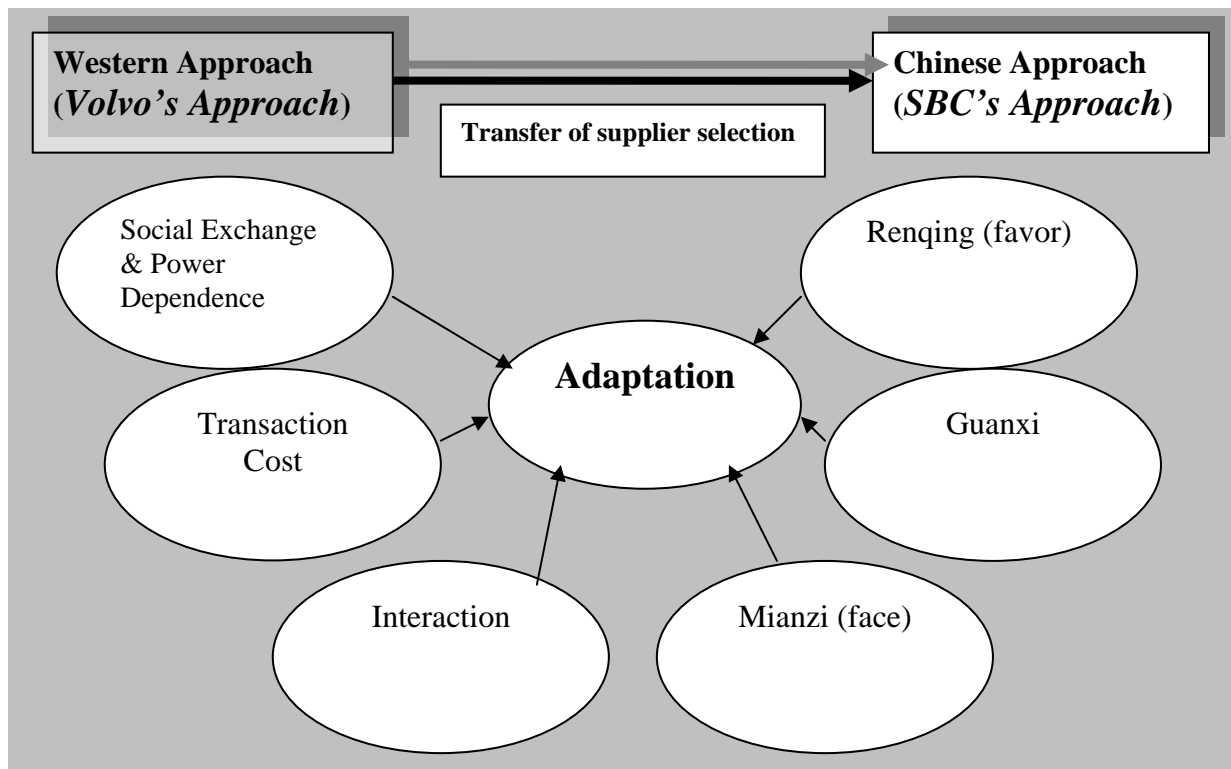


Figure 10. The Western and Chinese Approaches to Inter-Firm Adaptation in Business Relationships

Source: Author's Own Adaptation, Based on Wong & Leung 2001

As can be seen in Figure 10, the Western approach to business relationships, such as Volvo's relationship approach to its own supplier selection, works best when applied to a 'Westernized environment'. When the Western approach is adapted directly to the Chinese way of conducting business relationships, as can be seen in Figure 11, it becomes apparent that a direct transferal of the application does not work in facilitating smooth transactions, but rather, the

two approaches produce conflicting results. This is especially true of the direct application of Volvo’s supplier selection process and SEM tool to the Chinese market. Since the Western approach is based more heavily upon ‘measurable’ processes and the Chinese approach relies more on the qualitative aspect of relationships, it can be very difficult to fuse the two approaches, and even more difficult to find a common ground in which both players can gain equal footing, and understanding.

Therefore, when conducting Volvo’s supplier selection process in the Chinese market, it would be nearly impossible not to make any type of adaptations, necessary for better transacting with the Chinese suppliers. The underlying concept of Guanxi is extremely important to SBC when selecting its suppliers and many of their supplier orders develop from well-established relationships with capable suppliers. We conclude that in order to conduct business and to be successful in the Chinese market, it is necessary for SBC to continue to employ the concept of Guanxi, since it is a vital factor for dealing with other Chinese companies, especially suppliers. Since many of SBC’s suppliers are very small and are deeply rooted within the traditional Chinese society and all of its cultural norms, it is important to approach business in this way. This is one very important aspect of doing business locally in China that MNCs like Volvo, must continue take into consideration and implement.

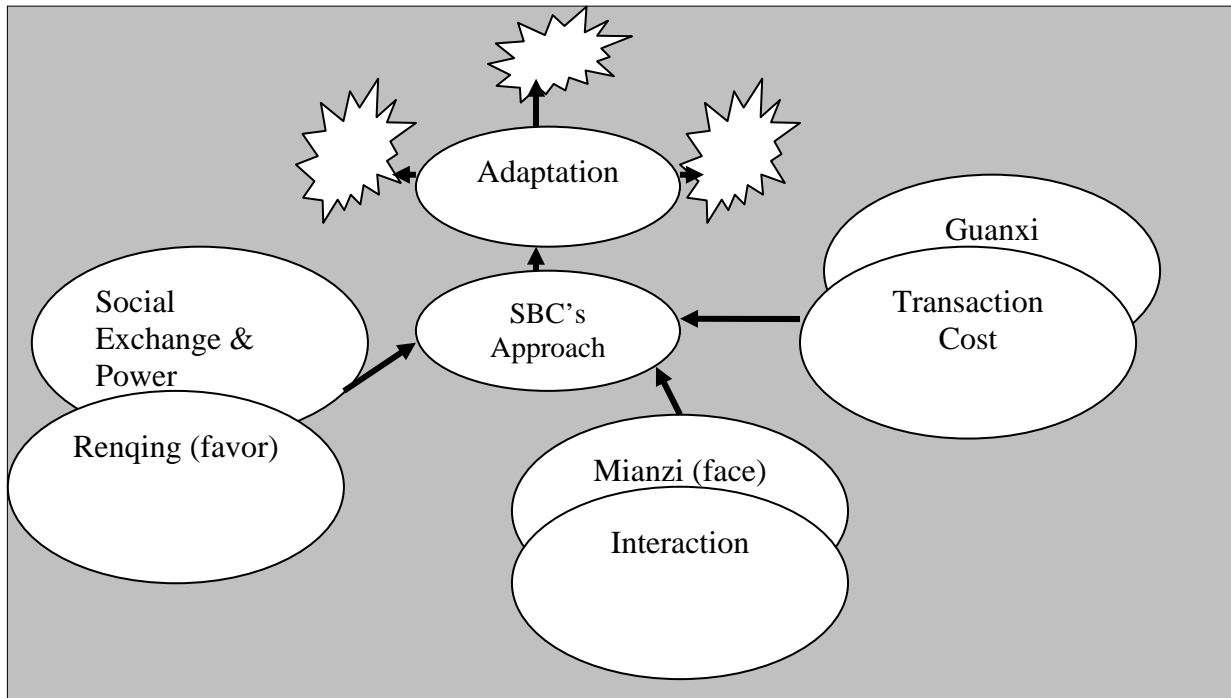


Figure 11. A Modified Description of the Western and Chinese Approaches to Inter-Firm Adaptations in Business Relationships

Source: Author’s Own Adaptation, Based on Wong & Leung, 2001

5.2.2.3 SEM in China

Organizational structures and management systems probably face the fewest hurdles if they strive to be consistent with national cultures. Often times, many of the problems encountered in international expansion and system implementation have come about as a result of imposing specific structures and management processes on overseas subsidiaries that were developed within the home country.¹⁹⁰ After conducting our interviews with SBC and several of its suppliers, we discovered that many aspects of the SEM model were either considered to be too strict, or were considered unsuitable for the Chinese market. We also found that the specific requirements, which were determined to be too challenging for the Chinese suppliers, were either lessened or disregarded altogether, depending on their significance.

The SEM is considered to be a very powerful, comprehensive tool and when used properly, it can produce some very positive results. However, as viewed by SBC, the SEM standards are very strict and can be very difficult for suppliers in the Chinese market to attain; therefore SBC believes that some of these requirements should be better adapted to reflect the realities of the Chinese market and the suppliers' present capabilities. While the SEM concepts and criteria are sound in practice, there are certain aspects, which have been found to be generally not suitable for the Chinese market, by both SBC and its suppliers. Most of SBC's large suppliers have a good understanding of the SEM, but the smaller suppliers quite often cannot understand its strict requirements.¹⁹¹

Ideally, VBC would like for all its subsidiaries to begin using the SEM evaluation however this will happen gradually; this is the reality on the Chinese market. The SEM is a fundamental tool used for supplier selection by both Volvo and SBC. The SEM score most often determines whether a supplier or not a supplier is qualified. However in the Chinese market, relationship also plays a determining factor in qualifying suppliers, whereas this is not as much so in the Western market.

While the purchasing department believes that the SEM is very useful, there are aspects of the evaluation model, which they believe are not suited for the Chinese market, such as specific environmental issues and some of the stopping parameters. As was observed during our interviews, one of the main differences between Volvo's requirements and the Chinese suppliers' was the environmental concept. Since many of the suppliers do not possess the knowledge necessary for improving and developing this aspect of their

¹⁹⁰ Grant, 2002

¹⁹¹ Chen, Interview, 2004

business, it is very difficult for them to grasp a formal understanding of the concept of environment.

Often times the suppliers are already satisfied with the environmental improvements, which they have made, and the concept of constant improvement is somewhat foreign to them. For example, even though XAC is SBC's preferred supplier, they are not currently ISO 14000 certified and they were not previously aware that they should apply for it. While this doesn't directly affect the quality of their products, and their working environment appears to be in good condition, it is still an SEM requirement.¹⁹² This was another one of the major differences we were able to discern during our interviews. While SBC felt that, from an 'appearance perspective', XAC's working environment looked to be sufficient and up to standards, our interviews with VBC suggested that XAC's working environment did not meet all of the required standards, such as for instance, workers were not wearing the proper protection while working with hazardous chemicals, etc. This example is one of the major difficulties and differences in perspectives, which face MNCs operating in emerging markets, like China.

At present about ninety-eight percent of the suppliers do not have the ISO 14000 certification and therefore, very few of the suppliers receive the full three points allocated in the SEM for this item. However, if the supplier has plans to apply for the ISO 14000 they will receive one point; otherwise they will get a zero.¹⁹³ Although the same environmental standards are not necessarily recognized in the Chinese market, SBC does ask its suppliers to grasp, respect, and begin to understand the concept of environmental awareness and protections and to make the necessary improvements.¹⁹⁴

Several other issues, which arose in our research, included the supplier's inability to meet the necessary EDI data requirements. EDI is defined as 'electronic data interface', and is essentially the electronic exchange of standardized data between Volvo/SBC's computer applications and a web interface, where the seller or supplier partner manually controls the data.¹⁹⁵ This had to do with many of the suppliers' inability to obtain working Internet and e-mail access, network access and the use of fax machines necessary for sending invoices and other important company documents to SBC. Many of SBC's smaller suppliers are either located in remote regions of China where this kind of technology is unavailable, or they simply do not have the resources needed to invest in these types of technology requirements. Another difficult requirement of the SEM is obtaining full financial transparency from the

¹⁹² Zhuang, Interview, 2004

¹⁹³ Chen, Interview, 2004

¹⁹⁴ Xie, Interview, 2004

¹⁹⁵ Volvo Group, Supplier Portal – Web EDI/EDI

supplier. For instance, in China it can be difficult to understand the supplier's full financial position, since most companies do not provide balance sheets or income statements at free will. However, the suppliers will usually comply for the most part, when asked to provide these types of documents.

In reality, every supplier is supposed to meet the same standards, which Volvo Group requires; however, taking into account the reality of the Chinese market, SBC is usually willing to work with these suppliers or give them time to improve if they do not meet all of the requirements from the start. Sometimes the purchasing department will invite the supplier to SBC to speak to one of their SQA engineers, or technology managers to help them to further improve and to align themselves with SBC's requirements.¹⁹⁶ For some of SBC's suppliers, the SEM is just a concept; however, after they have been evaluated using the SEM model, the supplier is usually able to see the benefits and usually decides on their own that they want to try and improve themselves in order to reach the appropriate standards. At present, SBC has no A-level suppliers but they have chosen to work with a few of their key component suppliers in an effort to upgrade them to be global suppliers. Around eighty percent of SBC's current local suppliers are operating at B-level and a handful of suppliers are operating at C-level. While it is difficult to directly apply these 'Western standards' to an emerging market like China, SBC must continue to do its best to adhere to the same level of quality, safety and environmental requirements. Therefore, its suppliers who are operating at C-level are generally given three months to improve.¹⁹⁷

5.2.3 The SEM From a Supplier Perspective

As the supply industry continues to change, so do its suppliers; many of which are becoming stronger and stronger. Many of the suppliers will tell you that this is a result of the help (such as technology improvements and management skills) that they have received from SBC over the last few years, in addition to having gone through the SEM evaluation, which lets them know exactly where they need to improve. SBC also recognizes that many of its suppliers have shown definite improvement since they first began working with them.

Many of the suppliers whom we interviewed had either gone through the SEM evaluation or were familiar with it. While most of the suppliers felt that the SEM was a very thorough process, there were also those suppliers who felt that there were certain criteria and standards within the SEM, which were too strict and inappropriate for the Chinese suppliers' present capabilities, especially the smaller suppliers. The major requirements, which were determined to be too difficult, were the environmental and management requirements. For example,

¹⁹⁶ Xie, Interview, 2004

¹⁹⁷ Ibid

some suppliers are not able to make the investments needed for modernizing their systems and SBC has found that some show a lack of interest in certification altogether, however this was not characteristic of any of the suppliers with whom we spoke. Additionally, some of the suppliers felt that there were certain aspects of the SEM, which were very difficult to understand; however at the same time, it was also these same suppliers who were interested in learning more about the SEM in order to develop a better understanding. On the whole, most of the suppliers believe that the SEM uses a very comprehensive process and is a good tool for helping them to improve their overall operations.

Chapter 6. CONCLUSIONS AND RECOMMENDATIONS

The general aim of this chapter is to convey our findings to the reader and to bring some finality to our research study. Our conclusions are based on the analysis of our empirical results and are presented in the following way: conclusions from VBC's supplier selection process & SEM, and conclusions from SBC's application of the supplier selection process and SEM to the Chinese market. Finally we will seek to answer and conclude our major research question, "how do MNC's transfer and apply their global supplier selection process to the Chinese market". We will also offer our recommendations to VBC and SBC, as well as offer our suggestions and ideas for future research.

6.1 CONCLUSIONS FROM VBC'S SUPPLIER SELECTION PROCESS & SEM

In this section we will present the conclusions from our study of VBC's supplier selection process and supplier evaluation model (SEM).

6.1.1 Volvo Group's Determining Factors for Supplier Selection

We have established that there are several factors, which influence Volvo's supplier selection criteria and overall supplier selection process. Among these factors, we have found that the most important criteria are derived directly from Volvo's core values and everything that the Volvo brand stands for. These criteria, which include safety, quality and environment, have far reaching effects in all areas of Volvo Group's business operations, and as we have seen, this is especially true within its global supplier selection process. We have also found that it is these specific criteria requirements, which set Volvo apart from its major industry competitors in that, while many of their competitors are focused on cost, Volvo's determining factors for its supplier selection process revolves around its customer-oriented focus and its commitment to being a socially responsible player in the market. We also believe that, because Volvo's supplier selection process is based on strong, and differentiating criteria, and the fact that it is guided by the 'right' factors, such as high quality, for example, that this will continue to give them a sustainable and strategic advantage within the competitive Chinese bus industry.

6.1.2 Volvo's Supplier Selection Process and SEM

Volvo Group's overall supplier selection process and SEM tool are extremely powerful and an accurate means for the selection of its suppliers. Our research has shown that not only is Volvo Group's SEM model one of the most comprehensive selection tools currently being employed by a bus producer in the Chinese market, but judging from the supplier feedback and interviews with

SBC, it has also been distinguished as one of the most reliable and respected tools for supplier selection in the Chinese market. However, while we have found the SEM to be favorable in the Chinese market, our research has also shown that this strict and demanding supplier selection tool is best suited to those markets (primarily Western markets, for which it was originally developed) where the technology, infrastructure and supplier capabilities are more advanced. In order to apply this type of advanced selection tool to the Chinese market, adaptations must be made. While the SEM tool is not intended to be modified, so as not to affect its credibility in any way, we have found that it is almost impossible to currently expect the same level of standards and criteria (specifically the environmental, quality, EDI and risk management issues) from the majority of the Chinese suppliers whose present capabilities do not match the Western standards. As can be seen in Table 9, we have concluded a number of advantages and disadvantages specific to the SEM tool. These strengths and weaknesses should always be given individual assessment as well as should they be considered for the specific environment in which they are to be applied, in order to ensure appropriate fit.

Table 9. Advantages and Disadvantages of Volvo’s SEM

Volvo’s Supplier Evaluation Model (SEM)	
Advantages	Disadvantages
<ul style="list-style-type: none"> • Systematic and scientific • Comprehensive criteria • Important stopping parameters • Uses a combination of several supplier selection methods • Fusion of practical experience and supplier selection theories • Requires a well-trained Lead Auditor 	<ul style="list-style-type: none"> • Time consuming • Expensive to conduct • Several Qualitative Criteria • Some of the stopping parameters are too strict for the Chinese market • Changes or adaptations to the SEM are not allowed • Criteria are not suitable/realistic for all intended markets of operation

Source: Authors

6.2 CONCLUSIONS FROM SBC’S APPLICATION OF THE SUPPLIER SELECTION PROCESS AND SEM

In this section we will present our conclusions from our study of SBC’s supplier selection process and application of Volvo Group’s SEM to the Chinese market.

6.2.1 Silver Bus Corporation's Determining Factors for Supplier Selection

Although SBC's supplier selection process is very similar to that of Volvo Group's, there are several additional influencing factors within the Chinese market, which make it impossible to duplicate the process exactly, such as the local content regulations. Since China has still not yet made the crossover to being a purely market driven economy, the government continues to play a large and somewhat interfering role in setting regulations and inserting themselves in business transactions. Many of the local Chinese content regulations make it very difficult for foreign companies to do business in the Chinese market and have a direct affect on the different aspects surrounding their supplier selection processes. For example, with the new regulation to increase the local sourcing requirements, SBC will have to adjust their entire outlook on the selection process, such as the number of suppliers needed, the means by which they will acquire or select these suppliers, as well as a need to determine how important or necessary it is to establish a close working and personal relationship with these suppliers. However, while these local content regulations may pose a number of difficulties, we believe that they will ultimately be helpful for the further development of SBC as a local manufacturer. It is necessary for SBC to continue to further integrate their total activities into the local market, thereby giving the local suppliers a chance to further integrate into the company's supply chain. We have also found that it is necessary to focus on the increasing significance of the role of the purchasing department within SBC, the size and capabilities of the purchasing department, as well as different types of formal training, which they receive from VBC, when trying to conclude the different aspects involved in the selection process and the impact, which they have.

6.2.2 Silver Bus Corporation's Supplier Selection Process and SEM

SBC's supplier selection process sets it apart from its competitors in the market in that it is considered to be one of the most comprehensive selection processes to which they have ever been exposed. More specifically, the use of the SEM tool by SBC in the Chinese market has afforded many opportunities and made several positive contributions to the Chinese bus industry on the whole, as well as its suppliers. The criteria included within the SEM, such as the quality, management and environmental requirements, have all challenged the Chinese suppliers to want to improve themselves so that they are able to pass the SEM. So in this sense, the SEM has raised the bar for excellence and performance standards in the Chinese bus market. However, in addition to all of the positive contributions the SEM has made, it has also brought with it the reality of its strict standards and difficult requirements for the Chinese market.

Contrary to what we originally thought, the SEM is not a widely used tool in the Chinese market; but rather, it is used mostly for the key component and global suppliers. Aside from the fact the SEM tool is a costly investment and time consuming to use, there are presently not enough people or resources within the SBC purchasing department to conduct the SEM on all of SBC's suppliers; therefore, they usually perform anywhere from ten to fifteen SEM evaluations per year. Although SBC uses the same SEM procedure and the same methods for evaluating and scoring its suppliers as Volvo, the actual score appears to take on a different meaning within the Chinese market. For example, while Volvo Group's global SEM evaluation specifies that all suppliers must receive a B-level score, most of the suppliers who have 'passed' the SEM in the Chinese market have in actuality, only achieved a C-level score; implying that, the standards have been lowered so that suppliers who meet the C-level requirements are actually given a B-level score. Since many of the requirements within the SEM are believed to be unrealistic for the Chinese market, often times SBC will lower the standards on the less important criteria (those criteria which do not affect the quality, safety or environmental requirements of the product), because reality dictates that it would be difficult and somewhat unrealistic to believe that the majority of current Chinese suppliers could fully meet all of the requirements set out by Volvo Group's SEM.

Having said this, we have also found that the SEM, as it is intended to be used, is not always practical for ensuring an effective selection process use in the Chinese market because of the varying degrees of supplier capability in the Chinese market. Many of the suppliers are simply unable to meet all of the strict criteria and stopping parameters required within the SEM. The toughest criteria for the Chinese suppliers appear to be the environmental, management, quality and EDI requirements. This has to do with the fact that many of the suppliers either do not understand the significance of these criteria, they do not have the technological capacity, resources or capabilities to meet these criteria, or they firmly believe that they already do meet these requirements and they cannot understand why SBC would think otherwise. Many of SBC's larger suppliers have a good understanding of the requirements; however, the smaller, less technologically advanced suppliers, often do not.

We have also found that relationships and the underlying Guanxi concept play an important role in determining the supplier selection. While many of SBC's suppliers hold the required quality and environmental certificates, there are also those suppliers, which do not; however, SBC uses them anyway. This is another one of the realities in the Chinese market, which differs greatly from that of the Western way of conducting business. The significance of the relationship oftentimes overrides the 'rules' and requirements in a Chinese

business environment. This is another important aspect for MNCs to understand and address when doing business in the Chinese market.

It is also very important when working in a trans-continental business situation, that the communication procedures are constant and effective. While the communication between VBC and SBC initially appeared to be good, we later concluded that perhaps this was not so, and that there was still much work which needed to be done in this area. One of our major research findings from this study focused on the importance of successful communication and an MNCs ability to, not only transfer its technology and its processes to its subsidiaries, but also its ability to communicate effectively the basic rules and procedures of the operation. While we found the SEM to be a very useful tool for SBC and its Chinese suppliers, we also discovered that a Lead SEM Auditor is the only qualified person to conduct an SEM; at present, no one in SBC is Lead Auditor certified. While we originally believed that the SEM was too strict for the Chinese market, what we found was that SBC should not really be using the SEM to evaluate its suppliers at all. Judging from the suppliers' inability to fully grasp all of the criteria outlined within the SEM, as well as their inability to meet many of the requirements, we too, believe that the SEM tool should not be used to evaluate the Chinese suppliers, and therefore, this is why it is necessary that a standardized and simplified evaluation tool be introduced. This is also why SBC has not been given the authorization to begin using the SEM in the Chinese market. Our findings showed that perhaps it is not an issue of modifying and adapting the SEM criteria to the Chinese market, but rather it is an issue of resolving the communication gap between the different joint venture locations.

6.3 CONCLUSION TO OUR MAJOR RESEARCH QUESTION

In order to be successful in emerging markets such as China, it is necessary for MNCs to adapt their supplier selection processes to the local market of operation. Before attempting to transfer Western technologies, processes or practices to the Chinese market, MNCs must be very clear about the local market requirements, technologies, business customs and internal market capabilities. It is very easy to misinterpret, or misuse the Western selection procedures in the Chinese market and therefore, it is very important that MNCs carefully introduce and thoroughly explain any changes to the local operation. MNCs must also consider how much time, money and training they are willing to allocate to the local market in order to make sure these transferred processes, or tools, run smoothly and are carried out correctly, whereby, they actually serve their intended purpose.

China's entry into the WTO has helped to make it easier for foreign companies to continue to operate in China in terms of international standards and

requirements, laws, tariffs and administrative issues. The easing of these requirements has also made it easier for MNCs to conduct their purchasing and supplier selection processes in the local business environment. In order to increase the effectiveness of their local operations, it is sometimes necessary for MNCs to play by the 'home team' rules. Before transferring these processes and technologies to the local markets, MNCs must decide how long they are willing to wait for the emerging market suppliers to be able to meet the necessary standards and how much of their time and resources they are willing to invest in order to make the transferal a success.

6.4 RECOMMENDATIONS

In this section we will present our recommendations to VBC and SBC regarding their supplier selection processes.

6.4.1 Recommendations to Volvo Bus Corporation

- VBC should continue to place more emphasis on the importance of communication with SBC by setting reliable measures or processes in place to ensure regular, open and effective communication with SBC
- VBC should also continue to familiarize themselves further with SBC's daily purchasing department activities and supplier selection processes, in order for increased coordination among the joint ventures
- More training is necessary for SBC and its suppliers to ensure a complete understanding of VBC's core requirements and policies. It is also necessary for VBC to ensure that the supplier selection processes and SEM procedures are clearly communicated to SBC and that they are being carried out as they are intended to be
- We believe it is necessary for VBC to consider adapting certain aspects (those which will not directly affect the quality or reliability of the results) of its supplier selection process and requirements to the Chinese market

6.4.2 Recommendations to Silver Bus Corporation

- SBC should continue to be more proactive in working to increase and maintain better communication with VBC
- In order to ensure high quality and consistency, it is necessary for SBC to begin working towards requiring the same standards and quality certifications from all of its suppliers, regardless of the relationship, for increased standardization
- It is also important for SBC to continue to communicate both the positive and negative issues that it comes across during its daily activities, with its suppliers, and especially during the supplier selection process. It is important that SBC begin communicating these issues to VBC on a more regular basis so that both VBC and SBC can begin to resolve them.

- It is also necessary for SBC to communicate those aspects of the supplier selection process and SEM criteria, which they feel, are unrealistic for the Chinese market, directly to VBC, in order to bring about change.

6.5 SUGGESTIONS FOR FUTURE STUDY

In this section we will suggest a few topics, which we believe would be of interest for further study.

- Our research focused on the application of Volvo Group's supplier selection process and supplier evaluation model to the Chinese market. It would be interesting to see whether our findings would also be true of other emerging markets where VBC has its joint venture operations, or whether our findings were specific to the Chinese market.
- The Chinese economy has been growing very rapidly over the last few years; however, sooner or later, it is bound to attenuate. It would be interesting to do a follow up study which focuses on the future of the Chinese bus industry and the related factors which, will continue to have a direct impact on its future. These factors include the building of new highways, the future capabilities of the Chinese suppliers, the future for the development of high quality chassis' in the Chinese market and the issue of overcapacity in the bus industry.

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INTERVIEWS

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Suppliers

Jiang Su Suguang, Engineer Plastic Corporation

Ruian Feipeng Corporation

Shaan Linyun Electronic Company

Wu Xi District 81 Plastic Manufacturer

XAC 24th Manufacturer

XAC Electronic Equipment Manufacturer

XAC Shunda Seat Cooperation Company Ltd.

Xi'an Haoke Electro-mechanical Equipment Trading Limited

Xiahua New Technology Corporation

Xi'an Shen Wei Engineer Plastic Company

Company Material

Silver Bus Corporation Company Presentation

Silver Bus Supplier Choose & Evaluation Manual

APPENDIX

Appendix 1. Questionnaire for VBC & SBC

Questions To: Volvo Bus Corporation & Silver Bus Corporation

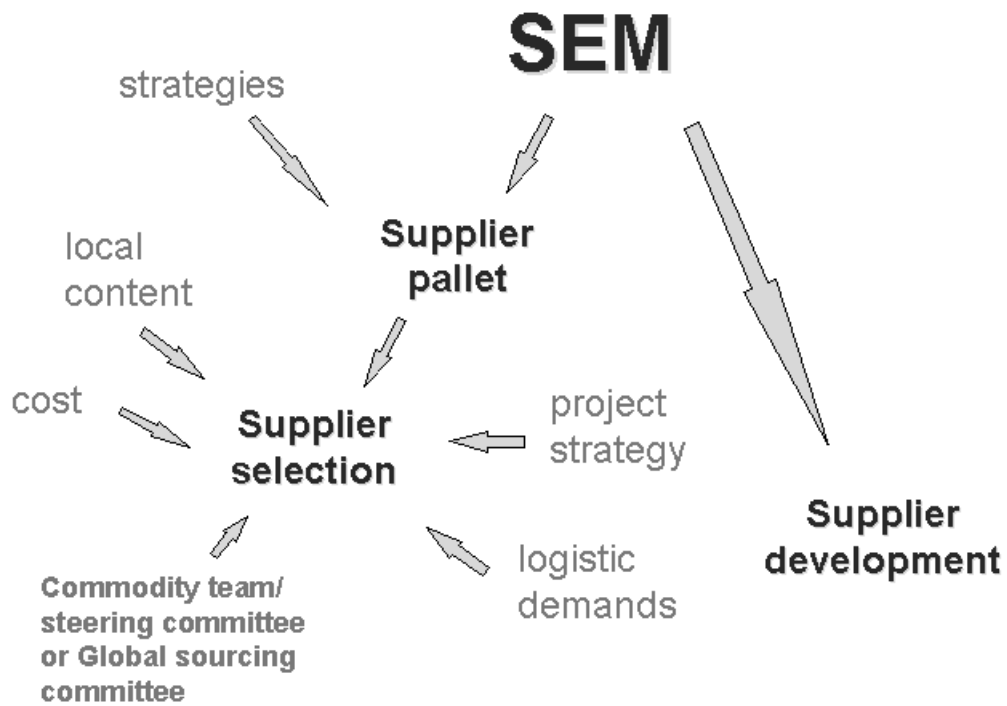
1. How does the supplier selection process work and what are the specific details of each step?
2. What are the most important steps of the process and why?
3. Does Silver Bus Corporation's use the same supplier selection process as Volvo? If not, where does it differ and how has it been adjusted to the Chinese market?
4. What is the intended purpose/use of the supplier selection process and the supplier evaluation model?
5. How is the supplier selection process being applied to the Chinese market (how does it work in practice)?
6. How do you interpret the supplier's understanding or opinion on the supplier selection process?
7. Are there any specific areas where this process conflict with the Chinese market conditions?
8. How many suppliers does Silver Bus currently have (what percentage is domestic/global)?
9. Which parts are supplied locally?
10. What are the local content rules and how do they affect the supplier selection process?
11. What are the short and long-term goals for suppliers (resources, number of suppliers, capabilities, etc.)?
12. How can Volvo better contribute to the suppliers understanding of the selection process?
13. Where does Silver Bus feel the supplier selection process could be improved upon (in theory and in practice)?
14. Is it true that the objective for both Silver and Sunwin is to use the same suppliers? If so, how would this affect the supplier selection process?

Appendix 2. Supplier Questionnaire

Questions to Suppliers

1. What do you think about the supplier selection process?
2. Are there any areas where you feel this process could be improved upon?
3. What do they feel are the most important criteria and working relationship requirements?
4. How would you the supplier, weight the different evaluation criteria?
5. Which criteria do you feel are unrealistic, unimportant to the overall process, or not compatible with the Chinese market realities?
6. Are there any specific supplier strengths, which you believe are ignored in the current selection and evaluation process?
7. What are your suggestions for better measuring or accounting for those strengths, which you feel, are overlooked in the evaluation?
8. Which components do you supply to Silver Bus?
9. How many people work for you?
10. What are your production and supply capabilities?
11. Which quality certificates do you have?
12. Who is your customer base?
13. What are your own requirements and specifications for choosing your suppliers?
14. What types of resources and capabilities do you possess for developing new products?
15. What aspects could you stand to improve upon?
16. What is your understanding and expectations of the supplier selection process and SEM?

Appendix 3. Volvo's SEM and Supplier Selection



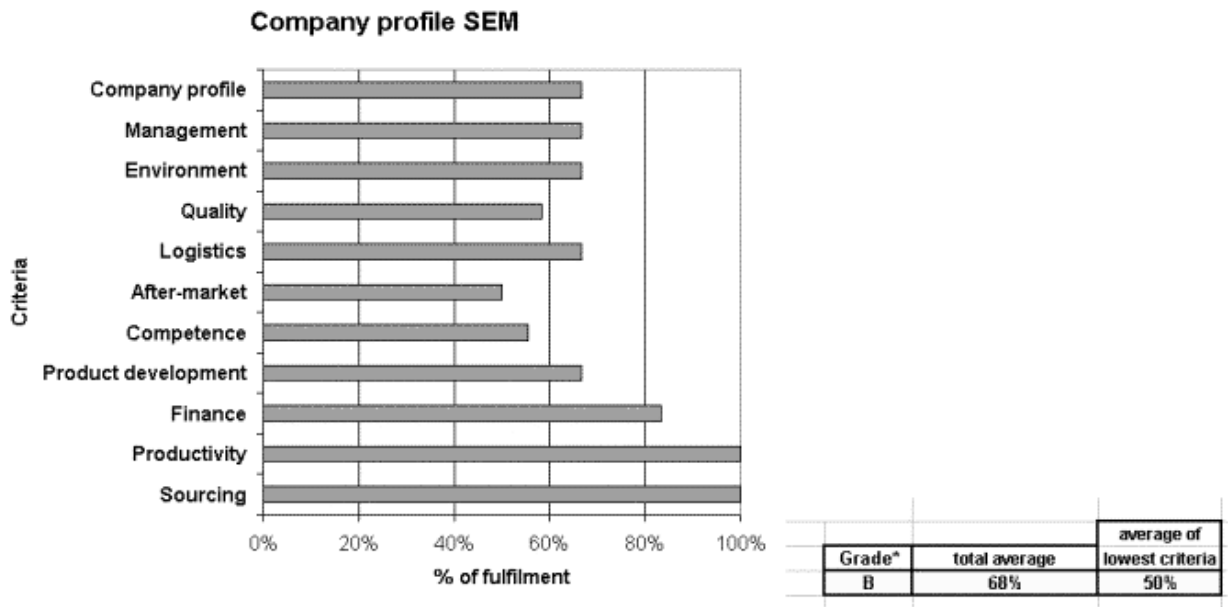
Volvo 2004-04-27

VOLVO

Source: Volvo Corporate Presentation

Appendix 4. Volvo's Sample Results of a Supplier's SEM Score

EXAMPLE OF RESULTS



Volvo 2004-04-27

VOLVO

Source: Volvo Corporate Presentation

Appendix 5. VBC's Global Production Plants & Production Operations

Global production plants



Source: Volvo Corporate Presentation